



Ameren Illinois Energy Efficiency Market Potential Assessment

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CONTENTS

A..... M
MARKET PROFILES A-1

B..... R
RESIDENTIAL ENERGY EFFICIENCY EQUIPMENT AND MEASURE DATA B-1

C..... C
COMMERCIAL ENERGY EFFICIENCY EQUIPMENT AND MEASURE DATA C-1

D I
INDUSTRIAL ENERGY EFFICIENCY EQUIPMENT AND MEASURE DATA D-1

E..... M
MARKET ADOPTION FACTORS E-1

F..... A
ANNUAL MEASURE-LEVEL SAVINGS F-1

G P
PROGRAM MEASURE-LEVEL DETAILS G-1

LIST OF TABLES

Table A-1	Residential Single Family Electric Customer Only Market Profile, 2011	A-2
Table A-2	Multi Family Electric Customer Only Market Profile, 2011	A-3
Table A-3	Residential Single Family Electric/Gas Customer Market Profile 2011	A-4
Table A-4	Multi Family Electric/Gas Customer Market Profile, 2011	A-6
Table A-5	Single Family Gas Only Customer Market Profile, 2011.....	A-8
Table A-6	Multi Family Gas Customer Only Market Profile, 2011	A-8
Table A-7	Commercial Electric Customer - Office Market Profile, 2011.....	A-9
Table A-8	Commercial Natural Gas Customer -Office Market Profile, 2011	A-10
Table A-9	Commercial Electric Customer - Restaurant Market Profile, 2011	A-10
Table A-10	Commercial Natural Gas Customer - Restaurant Market Profile, 2011	A-12
Table A-11	Commercial Electric Customer - Retail Market Profile, 2011	A-12
Table A-12	Commercial Natural Gas Customer - Retail Market Profile, 2011.....	A-13
Table A-13	Commercial Electric Customer – Grocery Market Profile, 2011	A-14
Table A-14	Commercial Natural Gas Customer - Grocery Market Profile, 2011	A-15
Table A-15	Commercial Electric Customer - College Market Profile, 2011.....	A-15
Table A-16	Commercial Natural Gas Customer - College Market Profile	A-16
Table A-17	Commercial Electric Customer - School Market Profile, 2011.....	A-17
Table A-18	Commercial Natural Gas Customer - School Market Profile, 2011	A-18
Table A-19	Commercial Electric Customer - Health Market Profile, 2011.....	A-18
Table A-20	Commercial Natural Gas Customer - Health Market Profile, 2011	A-19
Table A-21	Commercial Electric Customer - Lodging Market Profile, 2011.....	A-19
Table A-22	Commercial Natural Gas Customer - Lodging Market Profile, 2011	A-21
Table A-23	Commercial Electric Customer - Warehouse Market Profile, 2011	A-21
Table A-24	Commercial Natural Gas Customer - Warehouse Market Profile, 2011	A-22
Table A-25	Commercial Electric Customer - Miscellaneous Market Profile, 2011	A-23
Table A-26	Commercial Natural Gas Customer - Miscellaneous Market Profile, 2011.....	A-24
Table A-27	Industrial Electric Food Products Market Profile, 2011.....	A-24
Table A-28	Industrial Natural Gas Food Products Market Profile, 2011	A-25
Table A-29	Industrial Electric Petroleum Market Profile, 2011.....	A-25
Table A-30	Industrial Natural Gas Petroleum Market Profile, 2011	A-26
Table A-31	Industrial Electric Metals Market Profile, 2011	A-26
Table A-32	Industrial Natural Gas Metals Market Profile, 2011	A-27
Table A-33	Industrial Electric Machinery Market Profile, 2011.....	A-28
Table A-34	Industrial Natural Gas Machinery Market Profile, 2011	A-29
Table A-35	Industrial Electric Other Industrial Market Profile, 2011.....	A-29
Table A-36	Industrial Natural Gas Other Industrial Market Profile, 2011	A-30
Table B-1	Residential Energy Efficiency Equipment Measure Descriptions	B-2
Table B-2	Residential Energy Efficiency Non-Equipment Measure Descriptions	B-7

Table B-3	Energy Efficiency Equipment Data, Electric Customer Only—Single Family, Existing Vintage	B-12
Table B-4	Energy Efficiency Equipment Data, Electric Customer Only—Single Family, New Vintage	B-15
Table B-5	Energy Efficiency Equipment Data, Electric Customer Only—Multi Family, Existing Vintage	B-18
Table B-6	Energy Efficiency Equipment Data, Electric Customer Only—Multi Family, New Vintage	B-21
Table B-7	Energy Efficiency Equipment Data, Single Family Electric/Gas Customer, (Electric) Existing Vintage	B-24
Table B-8	Energy Efficiency Equipment Data, Single Family Electric/Gas Customer, (Gas) - Existing Vintage	B-27
Table B-9	Energy Efficiency Equipment Data, Single Family Electric/Gas Customer, (Electric) - New Vintage	B-28
Table B-10	Energy Efficiency Equipment Data, Single Family Electric/Gas Customer, (Gas) - New Vintage	B-31
Table B-11	Energy Efficiency Equipment Data, Multi Family Electric/Gas Customer, (Electric) - Existing Vintage	B-32
Table B-12	Energy Efficiency Equipment Data, Multi Family Electric/Gas Customer, (Gas) Existing Vintage	B-35
Table B-13	Energy Efficiency Equipment Data, Multi Family Electric/Gas Customer, (Electric) - New Vintage	B-36
Table B-14	Energy Efficiency Equipment Data, Multi Family Electric/Gas Customer, (Gas) - New Vintage	B-39
Table B-15	Energy Efficiency Equipment Data, Single Family Gas Customer Only, Existing Vintage	B-40
Table B-16	Energy Efficiency Equipment Data, Single Family Gas Customer Only, New Vintage	B-41
Table B-17	Energy Efficiency Equipment Data, Multi Family Gas Customer Only, Existing Vintage	B-42
Table B-18	Energy Efficiency Equipment Data, Multi Family Gas Customer Only, New Vintage .	B-43
Table B-19	Energy Efficiency Non-Equipment Data, Single Family Electric Customer Only, Existing Vintage	B-44
Table B-20	Energy Efficiency Non-Equipment Data, Single Family Electric Customer Only, New Vintage	B-45
Table B-21	Energy Efficiency Non-Equipment Data, Multi Family Electric Customer Only, Existing Vintage	B-46
Table B-22	Energy Efficiency Non-Equipment Data, Multi Family Electric Customer Only, New Vintage	B-47
Table B-23	Energy Efficiency Non-Equipment Data, Single Family Electric/Gas Customer, Existing Vintage	B-48
Table B-24	Energy Efficiency Non-Equipment Data, Single Family Electric/Gas Customer, New Vintage	B-49
Table B-25	Energy Efficiency Non-Equipment Data, Multi Family Electric/Gas Customer, Existing Vintage	B-50
Table B-26	Energy Efficiency Non-Equipment Data, Multi Family Electric/Gas Customer, New Vintage	B-51
Table B-27	Energy Efficiency Non-Equipment Data, Single Family Gas Only Customer, Existing Vintage	B-52
Table B-28	Energy Efficiency Non-Equipment Data, Single Family Gas Only Customer, New Vintage	B-53
Table B-29	Energy Efficiency Non-Equipment Data, Multi Family Gas Only Customer, Existing Vintage	B-54
Table B-30	Energy Efficiency Non-Equipment Data, Multi Family Gas Only Customer, New Vintage	B-55
Table C-1	Commercial Energy Efficiency Equipment Measure Descriptions.....	C-2

Table C-2	Commercial Energy Efficiency Non-Equipment Measure Descriptions.....	C-6
Table C-3	Energy Efficiency Equipment Data, Electric-Office, Existing Vintage.....	C-15
Table C-4	Energy Efficiency Equipment Data, Natural Gas-Office, Existing Vintage	C-19
Table C-5	Energy Efficiency Equipment Data Electric-Office, New Vintage	C-20
Table C-6	Energy Efficiency Equipment Data, Natural Gas-Office, New Vintage.....	C-24
Table C-7	Energy Efficiency Equipment Data, Electric-Restaurant, Existing Vintage	C-25
Table C-8	Energy Efficiency Equipment Data, Natural Gas- Restaurant, Existing Vintage.....	C-29
Table C-9	Energy Efficiency Equipment Data, Electric—Restaurant, New Vintage	C-30
Table C-10	Energy Efficiency Equipment Data, Natural Gas-Restaurant, New Vintage.....	C-34
Table C-11	Energy Efficiency Equipment Data, Electric-Retail, Existing Vintage	C-35
Table C-12	Energy Efficiency Equipment Data, Natural Gas-Retail, Existing Vintage	C-39
Table C-13	Energy Efficiency Equipment Data, Electric-Retail, New Vintage.....	C-40
Table C-14	Energy Efficiency Equipment Data, Natural Gas-Retail, New Vintage	C-44
Table C-15	Energy Efficiency Equipment Data, Electric-Grocery, Existing Vintage.....	C-45
Table C-16	Energy Efficiency Equipment Data, Natural Gas-Grocery, Existing Vintage	C-49
Table C-17	Energy Efficiency Equipment Data, Electric-Grocery, New Vintage.....	C-50
Table C-18	Energy Efficiency Equipment Data, Natural Gas-Grocery, New Vintage	C-54
Table C-19	Energy Efficiency Equipment Data, Electric-College, Existing Vintage	C-55
Table C-20	Energy Efficiency Equipment Data, Natural Gas-College, Existing Vintage	C-59
Table C-21	Energy Efficiency Equipment Data, Electric-College, New Vintage	C-60
Table C-22	Energy Efficiency Equipment Data, Natural Gas-College, New Vintage.....	C-64
Table C-23	Energy Efficiency Equipment Data, Electric-School Existing Vintage	C-65
Table C-24	Energy Efficiency Equipment Data, Natural Gas-School, Existing Vintage	C-69
Table C-25	Energy Efficiency Equipment Data, Electric-School, New Vintage	C-70
Table C-26	Energy Efficiency Equipment Data, Natural Gas-School, New Vintage.....	C-74
Table C-27	Energy Efficiency Equipment Data, Electric-Health, Existing Vintage.....	C-75
Table C-28	Energy Efficiency Equipment Data, Natural Gas-Health, Existing Vintage	C-79
Table C-29	Energy Efficiency Equipment Data, Electric-Health, New Vintage	C-80
Table C-30	Energy Efficiency Equipment Data, Natural Gas-Health, New Vintage	C-84
Table C-31	Energy Efficiency Equipment Data, Electric-Lodging, Existing Vintage.....	C-85
Table C-32	Energy Efficiency Equipment Data, Natural Gas-Lodging, Existing Vintage	C-89
Table C-33	Energy Efficiency Equipment Data, Electric-Lodging, New Vintage	C-90
Table C-34	Energy Efficiency Equipment Data, Natural Gas-Lodging, New Vintage.....	C-94
Table C-35	Energy Efficiency Equipment Data, Electric-Warehouse, Existing Vintage.....	C-95
Table C-36	Energy Efficiency Equipment Data, Natural Gas-Warehouse, Existing Vintage	C-99
Table C-37	Energy Efficiency Equipment Data, Electric-Warehouse, New Vintage.....	C-100
Table C-38	Energy Efficiency Equipment Data, Natural Gas-Warehouse, New Vintage	C-104
Table C-39	Energy Efficiency Equipment Data, Electric-Miscellaneous, Existing Vintage	C-105
Table C-40	Energy Efficiency Equipment Data, Natural Gas-Miscellaneous, Existing Vintage...	C-109
Table C-41	Energy Efficiency Equipment Data, Electric-Miscellaneous, New Vintage	C-110
Table C-42	Energy Efficiency Equipment Data, Natural Gas-Miscellaneous, New Vintage.....	C-114
Table C-43	Energy Efficiency Non-Equipment Data- Electric Office, Existing Vintage.....	C-115
Table C-44	Energy Efficiency Non-Equipment Data-Natural Gas Office, Existing Vintage	C-118
Table C-45	Energy Efficiency Non-Equipment Data-Electric Office, New Vintage	C-122
Table C-46	Energy Efficiency Non-Equipment Data-Natural Gas Office, New Vintage.....	C-126

Table C-47	Energy Efficiency Non-Equipment Data-Electric Restaurant, Existing Vintage	C-130
Table C-48	Energy Efficiency Non-Equipment Data-Natural Gas Restaurant, Existing Vintage..	C-134
Table C-49	Energy Efficiency Non-Equipment Data-Electric Restaurant, New Vintage	C-138
Table C-50	Energy Efficiency Non-Equipment Data-Natural Gas Restaurant, New Vintage.....	C-142
Table C-51	Energy Efficiency Non-Equipment Data-Electric Retail, Existing Vintage.....	C-146
Table C-52	Energy Efficiency Non-Equipment Data-Natural Gas Retail, Existing Vintage	C-150
Table C-53	Energy Efficiency Non-Equipment Data-Electric Retail, New Vintage.....	C-154
Table C-54	Energy Efficiency Non-Equipment Data-Natural Gas Retail, New Vintage	C-158
Table C-55	Energy Efficiency Non-Equipment Data-Electric Grocery, Existing Vintage.....	C-162
Table C-56	Energy Efficiency Non-Equipment Data-Natural Gas Grocery, Existing Vintage	C-166
Table C-57	Energy Efficiency Non-Equipment Data-Electric Grocery, New Vintage	C-170
Table C-58	Energy Efficiency Non-Equipment Data-Natural Gas Grocery, New Vintage	C-174
Table C-59	Energy Efficiency Non-Equipment Data-Electric College, Existing Vintage	C-178
Table C-60	Energy Efficiency Non-Equipment Data-Natural Gas College, Existing Vintage.....	C-182
Table C-61	Energy Efficiency Non-Equipment Data-Electric College New Vintage	C-186
Table C-62	Energy Efficiency Non-Equipment Data-Natural Gas College, New Vintage.....	C-190
Table C-63	Energy Efficiency Non-Equipment Data-Electric School, Existing Vintage	C-194
Table C-64	Energy Efficiency Non-Equipment Data-Natural Gas School, Existing Vintage.....	C-198
Table C-65	Energy Efficiency Non-Equipment Data-Electric School, New Vintage	C-202
Table C-66	Energy Efficiency Non-Equipment Data-Natural Gas School, New Vintage.....	C-206
Table C-67	Energy Efficiency Non-Equipment Data-Electric Health, Existing Vintage.....	C-210
Table C-68	Energy Efficiency Non-Equipment Data-Natural Gas Health, Existing Vintage	C-214
Table C-69	Energy Efficiency Non-Equipment Data-Electric Health, New Vintage	C-218
Table C-70	Energy Efficiency Non-Equipment Data-Natural Gas Health, New Vintage.....	C-222
Table C-71	Energy Efficiency Non-Equipment Data-Electric Lodging, Existing Vintage	C-226
Table C-72	Energy Efficiency Non-Equipment Data-Natural Gas Lodging, Existing Vintage	C-230
Table C-73	Energy Efficiency Non-Equipment Data-Electric Lodging, New Vintage	C-234
Table C-74	Energy Efficiency Non-Equipment Data-Natural Gas Lodging, New Vintage.....	C-238
Table C-75	Energy Efficiency Non-Equipment Data-Electric Warehouse, Existing Vintage.....	C-242
Table C-76	Energy Efficiency Non-Equipment Data-Natural Gas Warehouse, Existing Vintage .	C-246
Table C-77	Energy Efficiency Non-Equipment Data-Electric Warehouse, New Vintage.....	C-250
Table C-78	Energy Efficiency Non-Equipment Data-Natural Gas Warehouse, New Vintage	C-254
Table C-79	Energy Efficiency Non-Equipment Data-Electric Miscellaneous, Existing Vintage	C-258
Table C-80	Energy Efficiency Non-Equipment Data-Natural Gas Miscellaneous, Existing Vintage	C-262
Table C-81	Energy Efficiency Non-Equipment Data-Electric Miscellaneous, New Vintage	C-266
Table C-82	Energy Efficiency Non-Equipment Data-Natural Gas Miscellaneous, New Vintage ..	C-270
Table D-1	Industrial Energy Efficiency Equipment Measure Descriptions.....	D-3
Table D-2	Industrial Energy Efficiency Non-Equipment Measure Descriptions.....	D-5
Table D-3	Energy Efficiency Equipment Data, Electric-Food Products, Existing Vintage	D-12
Table D-4	Energy Efficiency Equipment Data, Natural Gas-Food Products, Existing Vintage....	D-14
Table D-5	Energy Efficiency Equipment Data, Electric-Food Products, New Vintage	D-15
Table D-6	Energy Efficiency Equipment Data, Natural Gas-Food Products, New Vintage.....	D-18
Table D-7	Energy Efficiency Equipment Data, Electric-Petroleum, Existing Vintage	D-19
Table D-8	Energy Efficiency Equipment Data, Natural Gas-Petroleum, Existing Vintage.....	D-22
Table D-9	Energy Efficiency Equipment Data, Electric-Petroleum, New Vintage	D-23

Table D-10	Energy Efficiency Equipment Data, Natural Gas-Petroleum, New Vintage.....	D-26
Table D-11	Energy Efficiency Equipment Data, Electric-Metals, Existing Vintage.....	D-27
Table D-12	Energy Efficiency Equipment Data, Natural Gas-Metals, Existing Vintage	D-30
Table D-13	Energy Efficiency Equipment Data, Electric-Metals, New Vintage.....	D-31
Table D-14	Energy Efficiency Equipment Data, Natural Gas-Metals, New Vintage	D-34
Table D-15	Energy Efficiency Equipment Data, Electric-Machinery, Existing Vintage	D-35
Table D-16	Energy Efficiency Equipment Data, Natural Gas-Machinery, Existing Vintage.....	D-38
Table D-17	Energy Efficiency Equipment Data, Electric-Machinery, New Vintage	D-39
Table D-18	Energy Efficiency Equipment Data, Natural Gas-Machinery, New Vintage.....	D-42
Table D-19	Energy Efficiency Equipment Data, Electric-Other Industrial, Existing Vintage	D-44
Table D-20	Energy Efficiency Equipment Data, Natural Gas-Other Industrial, Existing Vintage..	D-47
Table D-21	Energy Efficiency Equipment Data, Electrics-Other Industrial, New Vintage.....	D-48
Table D-22	Energy Efficiency Equipment Data, Natural Gas-Other Industrial, New Vintage.....	D-51
Table D-23	Energy Efficiency Non-Equipment Data- Electric Food Products, Existing Vintage ...	D-52
Table D-24	Energy Efficiency Non-Equipment Data-Natural Gas Food Products, Existing VintageD-55	
Table D-25	Energy Efficiency Non-Equipment Data-Electric Food Products, New Vintage	D-58
Table D-26	Energy Efficiency Non-Equipment Data-Natural Gas Food Products, New Vintage...	D-61
Table D-27	Energy Efficiency Non-Equipment Data-Electric Petroleum, Existing Vintage	D-64
Table D-28	Energy Efficiency Non-Equipment Data-Natural Gas Petroleum, Existing Vintage....	D-67
Table D-29	Energy Efficiency Non-Equipment Data-Electric Petroleum, New Vintage	D-70
Table D-30	Energy Efficiency Non-Equipment Data-Natural Gas Petroleum, New Vintage.....	D-73
Table D-31	Energy Efficiency Non-Equipment Data-Electric Metals, Existing Vintage.....	D-76
Table D-32	Energy Efficiency Non-Equipment Data-Natural Gas Metals, Existing Vintage	D-79
Table D-33	Energy Efficiency Non-Equipment Data-Electric Metals, New Vintage.....	D-82
Table D-34	Energy Efficiency Non-Equipment Data-Natural Gas Metals, New Vintage	D-85
Table D-35	Energy Efficiency Non-Equipment Data-Electric Machinery, Existing Vintage	D-89
Table D-36	Energy Efficiency Non-Equipment Data-Natural Gas Machinery, Existing Vintage....	D-92
Table D-37	Energy Efficiency Non-Equipment Data-Electric Machinery, New Vintage	D-95
Table D-38	Energy Efficiency Non-Equipment Data-Natural Gas Machinery, New Vintage.....	D-98
Table D-39	Energy Efficiency Non-Equipment Data-Electric Other Industrial, Existing Vintage	D-101
Table D-40	Energy Efficiency Non-Equipment Data-Natural Gas Other Industrial, Existing VintageD-104	
Table D-41	Energy Efficiency Non-Equipment Data-Electric Other Industrial, New Vintage	D-107
Table D-42	Energy Efficiency Non-Equipment Data-Natural Gas Other Industrial, New VintageD-110	
Table E-1	Single Family Electric Only Customer Equipment Measures—(Maximum Achievable Potential factor)	E-2
Table E-2	Single Family Electric Only Customer Non-Equipment Measures—(Maximum Achievable Potential factor)	E-4
Table E-3	Single Family Electric Only Equipment Customer Measures—(Maximum Achievable Potential factor x Realistic Achievable Potential factor).....	E-6
Table E-4	Single Family Electric Only Customer Non-Equipment Measures—(Maximum Achievable Potential factor x Realistic Achievable Potential factor).....	E-8
Table E-5	Multi Family Electric Only Customer Equipment Measures—(Maximum Achievable Potential factor)	E-10
Table E-6	Multi Family Electric Only Customer Non-Equipment Measures—(Maximum Achievable Potential factor)	E-12

Table E-7	Multi Family Electric Only Customer Equipment Measures—(Maximum Achievable Potential factor x Realistic Achievable Potential factor)	E-14
Table E-8	Multi Family Electric Only Customer Non-Equipment Measures—(Maximum Achievable Potential factor x Realistic Achievable Potential factor)	E-16
Table E-9	Single Family Gas/Electric Customer Equipment Measures— Electric (Maximum Achievable Potential factor).....	E-18
Table E-10	Single Family Gas/Electric Customer Equipment Measures — Gas (Maximum Achievable Potential factor)	E-19
Table E-11	Single Family Gas/Electric Customer Non-Equipment Measures—(Maximum Achievable Potential factor)	E-21
Table E-12	Single Family Gas/Electric Customer Equipment Measures— Electric (Maximum Achievable Potential factor x Realistic Achievable Potential factor)	E-23
Table E-13	Single Family Gas/Electric Customer Equipment Measures— Gas (Maximum Achievable Potential factor x Realistic Achievable Potential factor)	E-24
Table E-14	Single Family Gas/Electric Customer Non-Equipment Measures—(Maximum Achievable Potential factor x Realistic Achievable Potential factor)	E-25
Table E-15	Multi Family Gas/Electric Customer Equipment Measures—Electric (Maximum Achievable Potential factor).....	E-27
Table E-16	Multi Family Gas/Electric Customer Equipment Measures — Gas (Maximum Achievable Potential factor)	E-28
Table E-17	Multi Family Gas/Electric Customer Non-Equipment Measures— (Maximum Achievable Potential factor)	E-29
Table E-18	Multi Family Gas/Electric Customer Equipment Measures— Electric (Maximum Achievable Potential factor x Realistic Achievable Potential factor)	E-31
Table E-19	Multi Family Gas/Electric Customer Equipment Measures—Gas (Maximum Achievable Potential factor x Realistic Achievable Potential factor)	E-32
Table E-20	Multi Family Gas/Electric Customer Non-Equipment Measures—(Maximum Achievable Potential factor x Realistic Achievable Potential factor)	E-33
Table E-21	Single Family Gas Only Customer Equipment Measures—(Maximum Achievable Potential factor)	E-34
Table E-22	Single Family Gas Only Customer Non-Equipment Measures—(Maximum Achievable Potential factor)	E-35
Table E-23	Single Family Gas Only Customer Equipment Measures—(Maximum Achievable Potential factor x Realistic Achievable Potential factor)	E-36
Table E-24	Single Family Gas Only Customer Non-Equipment Measures—(Maximum Achievable Potential factor x Realistic Achievable Potential factor)	E-37
Table E-25	Multi Family Gas Only Customer Equipment Measures—(Maximum Achievable Potential factor).....	E-38
Table E-26	Multi Family Gas Only Customer Non-Equipment Measures—(Maximum Achievable Potential factor)	E-39
Table E-27	Multi Family Gas Only Customer Equipment Measures—(Maximum Achievable Potential factor x Realistic Achievable Potential factor)	E-40
Table E-28	Multi Family Gas Only Customer Non-Equipment Measures—(Maximum Achievable Potential factor x Realistic Achievable Potential factor)	E-41
Table E-29	Commercial Electric Equipment Measures (Maximum Achievable Potential factor) ...	E-43
Table E-30	Commercial Electric Non-Equipment Measures (Maximum Achievable Potential factor)	E-45
Table E-31	Commercial Electric Equipment Measures (Maximum Achievable Potential factor x Realistic Achievable Potential factor)	E-48

Table E-32	Commercial Electric Non-Equipment Measures (Maximum Achievable Potential factor x Realistic Achievable Potential factor)	E-50
Table E-33	Commercial Gas Equipment Measures (Maximum Achievable Potential factor)	E-53
Table E-34	Commercial Gas Non-Equipment Measures (Maximum Achievable Potential factor)	E-54
Table E-35	Commercial Gas Equipment Measures (Maximum Achievable Potential factor x Realistic Achievable Potential factor)	E-57
Table E-36	Commercial Gas Non-Equipment Measures (Maximum Achievable Potential factor x Realistic Achievable Potential factor)	E-58
Table E-37	Industrial Electric Equipment Measures (Maximum Achievable Potential factor)	E-61
Table E-38	Industrial Natural Gas Equipment Measures (Maximum Achievable Potential factor)	E-62
Table E-39	Industrial Non-Equipment Measures (Maximum Achievable Potential factor)	E-63
Table E-40	Industrial Electric Equipment Measures (Maximum Achievable Potential factor x Realistic Achievable Potential factor)	E-66
Table E-41	Industrial Natural Gas Equipment Measures (Maximum Achievable Potential factor x Realistic Achievable Potential factor)	E-67
Table E-42	Industrial Non-Equipment Measures (Maximum Achievable Potential factor x Realistic Achievable Potential factor)	E-68
Table F-1	Annual Electric Energy Savings, All Sectors	F-1
Table F-2	Annual Electric Peak Demand Savings, All Sectors	F-2
Table F-3	Annual Natural Gas Energy Savings, All Sectors	F-3
Table F-4	Annual Electric Energy Savings, Residential	F-4
Table F-5	Annual Electric Peak Demand Savings, Residential	F-5
Table F-6	Annual Natural Gas Energy Savings, Residential	F-6
Table F-7	Annual Electric Energy Savings, Commercial	F-7
Table F-8	Annual Electric Peak Demand Savings, Commercial	F-8
Table F-9	Annual Natural Gas Energy Savings, Commercial	F-9
Table F-10	Annual Electric Energy Savings, Industrial	F-10
Table F-11	Annual Electric Peak Demand Savings, Industrial	F-11
Table F-12	Annual Natural Gas Energy Savings, Industrial	F-12
Table G-1	Residential Lighting (MAP)	G-1
Table G-2	Residential ENERGY STAR Homes (MAP)	G-3
Table G-3	Residential Home Energy Performance (MAP)	G-5
Table G-4	Residential Multi Family (MAP)	G-10
Table G-5	Residential Moderate Income (MAP)	G-14
Table G-6	Residential Appliance Recycling (MAP)	G-16
Table G-7	Residential HVAC (MAP)	G-17
Table G-8	Residential Efficient Products (MAP)	G-18
Table G-8	Residential School Kits (MAP)	G-23
Table G-10	Small Business Direct Install (MAP)	G-24
Table G-11	Business (MAP)	G-44
Table G-12	C&I Custom (MAP)	G-108
Table G-13	C&I Behavior Change (MAP)	G-111
Table G-14	Building Codes and Standards (MAP)	G-114
Table G-14	Retro Commissioning (MAP)	G-115
Table G-16	Residential Lighting (RAP)	G-116
Table G-17	Residential ENERGY STAR Homes (RAP)	G-118

Table G-18 Residential Home Energy Performance (RAP)	G-121
Table G-19 Residential Multi Family (RAP)	G-126
Table G-20 Residential Moderate Income (RAP)	G-131
Table G-21 Residential Appliance Recycling (RAP)	G-133
Table G-22 Residential HVAC (RAP)	G-134
Table G-23 Residential Behavior Change (RAP)	G-136
Table G-24 Residential Efficient Products (RAP)	G-137
Table G-25 Residential School Kits (RAP)	G-142
Table G-1 Small Business Direct Install (RAP)	G-143

MARKET PROFILES

Market profiles describe electricity use by sector, segment, end use and technology in the base year of the study (2011). The market profiles are given for average buildings and new vintages.

As explained in Chapter 2 of Volume 3, a market profile includes the following elements:

- **Market size** is a representation of the number of customers in the segment. For the residential sector, it is number of households. In the commercial sector, it is floor space measured in square feet. For the industrial sector, it is number of employees.
- **Saturations** define the fraction of buildings with the specific technologies. (e.g., homes with electric space heating)
- **UEC (unit energy consumption) or EUI (energy-use index)** describes the amount of energy consumed in the base year by a specific technology in buildings that have the technology. We use UECs expressed in kWh/household for the residential sector, and EUIs expressed in kWh/square foot or kWh/employee for the commercial and industrial sectors respectively.
- **Intensity** for the residential sector represents the average energy use for the technology across all households in the base year. It is computed as the product of the saturation and the UEC and is defined as kWh/household for electricity. For the commercial and industrial sectors, intensity, computed as the product of the saturation and the EUI, represents the average use for the technology across all floor space or all employees in the base year.
- **Usage** is the annual energy use by a technology/end use in the segment. It is the product of the market size and intensity and is quantified in GWh for electricity.

This appendix presents the following market profiles:

- Residential market profiles by segment (Table A-1 through Table A-6)
- Commercial market profiles by building type (Table A-7 through Table A-26)
- Industrial market profiles (Table A-27 through Table A-36)

Table A-1 Residential Single Family Electric Customer Only Market Profile, 2011

Average Market Profile						New Units			
End Use	Technology	Saturation	UEC (kWh)	Intensity (kWh/HH)	Usage (GWh)	Saturation	UEC (kWh)	Intensity (kWh/HH)	Compared to Average
Cooling	Central AC	71%	2,688	1,916.3	660.0	81%	2,173	1,766.8	-19.1%
Cooling	Room AC	14%	1,051	151.4	52.1	4%	938	41.3	-10.8%
Cooling	Air-Source Heat Pump	6%	2,199	137.5	47.4	6%	1,519	95.0	-30.9%
Cooling	Geothermal Heat Pump	5%	1,952	88.8	30.6	5%	1,304	59.3	-33.2%
Cooling	PTHP	0%	1,051	-	-	0%	1,051	-	0.0%
Heating	Electric Room Heat	3%	12,009	359.3	123.7	3%	12,009	359.3	0.0%
Heating	Furnace	10%	12,609	1,231.1	424.0	10%	12,609	1,231.1	0.0%
Heating	Air-Source Heat Pump	5%	8,571	422.0	145.3	5%	6,096	300.2	-28.9%
Heating	Geothermal Heat Pump	4%	4,899	175.4	60.4	4%	4,794	171.6	-2.1%
Heating	PTHP	0%	1,007	-	-	0%	1,007	-	0.0%
Water Heating	Water Heater <= 55 gal	22%	2,695	596.3	205.4	22%	2,591	573.2	-3.9%
Water Heating	Water Heater > 55 gal	13%	2,873	367.0	126.4	13%	2,761	352.7	-3.9%
Interior Lighting	Screw-in	100%	1,140	1,139.7	392.5	100%	1,136	1,135.9	-0.3%
Interior Lighting	Linear Fluorescent	100%	142	142.5	49.1	100%	139	139.3	-2.2%
Interior Lighting	Specialty	100%	301	300.7	103.6	100%	298	297.8	-1.0%
Exterior Lighting	Screw-in	100%	247	247.3	85.2	100%	201	201.0	-18.7%
Appliances	Refrigerator	98%	718	702.5	241.9	98%	433	423.3	-39.7%
Appliances	Second Refrigerator	35%	837	289.5	99.7	35%	504	174.4	-39.7%
Appliances	Freezer	58%	572	329.0	113.3	58%	464	266.9	-18.9%
Appliances	Clothes Washer	96%	95	90.8	31.3	96%	78	74.1	-18.4%
Appliances	Clothes Dryer	68%	731	495.3	170.6	68%	506	343.0	-30.8%
Appliances	Dishwasher	72%	395	285.1	98.2	72%	216	155.6	-45.4%
Appliances	Stove	58%	449	262.5	90.4	58%	450	262.5	0.0%
Appliances	Microwave	98%	118	115.5	39.8	98%	118	115.5	0.0%
Electronics	Personal Computers	79%	249	196.9	67.8	79%	259	204.2	3.8%
Electronics	Monitor	79%	50	39.2	13.5	79%	49	38.6	-1.4%
Electronics	Laptops	108%	107	115.9	39.9	108%	103	111.1	-4.2%
Electronics	TVs	301%	203	609.9	210.0	301%	136	409.7	-32.8%
Electronics	Printer/Fax/Copier	100%	38	38.1	13.1	100%	34	33.9	-11.0%
Electronics	Set-top Boxes/DVR	253%	129	325.7	112.2	253%	103	261.1	-19.8%
Electronics	Devices and Gadgets	100%	95	95.0	32.7	100%	95	95.0	0.0%
Miscellaneous	Air Purifier/Cleaner	11%	1,160	125.3	43.1	11%	1,160	125.3	0.0%
Miscellaneous	Dehumidifier	36%	1,809	656.7	226.1	36%	1,379	500.6	-23.8%
Miscellaneous	Pool Heater	7%	4,732	324.1	111.6	7%	4,117	282.0	-13.0%
Miscellaneous	Pool Pump	12%	1,425	163.9	56.4	12%	1,425	163.9	0.0%
Miscellaneous	Hot Tub / Spa	2%	903	19.9	6.8	2%	903	19.9	0.0%
Miscellaneous	Well Pump	12%	533	66.3	22.8	12%	533	66.3	0.0%
Miscellaneous	Furnace Fan	100%	501	500.6	172.4	100%	500	499.7	-0.2%
Miscellaneous	Bathroom Exhaust Fan	33%	134	43.9	15.1	33%	100	32.5	-25.8%
Miscellaneous	Miscellaneous	100%	379	378.8	130.4	100%	379	378.8	0.0%
Total				13,545.3	4,665.0			11,762.5	-13.2%

Table A-2 Multi Family Electric Customer Only Market Profile, 2011

Average Market Profile						New Units			
End Use	Technology	Saturation	UEC (kWh)	Intensity (kWh/HH)	Usage (GWh)	Saturation	UEC (kWh)	Intensity (kWh/HH)	Compared to Average
Cooling	Central AC	66%	790	518.4	86.4	76%	624	471.8	-21.0%
Cooling	Room AC	27%	331	88.2	14.7	17%	295	49.2	-10.8%
Cooling	Air-Source Heat Pump	0%	616	-	-	0%	427	-	-30.7%
Cooling	Geothermal Heat Pump	0%	511	-	-	0%	455	-	-10.9%
Cooling	PTHP	0%	331	-	-	0%	331	-	0.0%
Heating	Electric Room Heat	14%	3,032	417.8	69.6	14%	3,032	417.8	0.0%
Heating	Furnace	28%	3,184	879.9	146.6	28%	3,184	879.9	0.0%
Heating	Air-Source Heat Pump	0%	2,923	-	-	0%	2,087	-	-28.6%
Heating	Geothermal Heat Pump	0%	2,191	-	-	0%	2,037	-	-7.0%
Heating	PTHP	0%	352	-	-	0%	352	-	0.0%
Water Heating	Water Heater <= 55 gal	79%	1,719	1,352.2	225.2	79%	1,654	1,301.1	-3.8%
Water Heating	Water Heater > 55 gal	4%	1,832	64.8	10.8	4%	1,763	62.3	-3.8%
Interior Lighting	Screw-in	100%	799	799.0	133.1	100%	791	791.1	-1.0%
Interior Lighting	Linear Fluorescent	100%	63	63.1	10.5	100%	63	62.9	-0.3%
Interior Lighting	Specialty	100%	211	210.8	35.1	100%	211	211.2	0.2%
Exterior Lighting	Screw-in	100%	108	107.6	17.9	100%	90	90.3	-16.1%
Appliances	Refrigerator	96%	718	687.9	114.6	96%	433	414.5	-39.7%
Appliances	Second Refrigerator	10%	836	81.1	13.5	10%	504	48.9	-39.7%
Appliances	Freezer	16%	572	93.2	15.5	16%	464	75.6	-18.9%
Appliances	Clothes Washer	46%	95	44.0	7.3	46%	77	35.9	-18.4%
Appliances	Clothes Dryer	89%	649	577.3	96.2	89%	450	399.9	-30.7%
Appliances	Dishwasher	33%	395	130.5	21.7	33%	216	71.2	-45.4%
Appliances	Stove	84%	433	363.9	60.6	84%	433	364.0	0.0%
Appliances	Microwave	95%	118	112.5	18.7	95%	118	112.5	0.0%
Electronics	Personal Computers	39%	249	97.2	16.2	39%	259	100.8	3.8%
Electronics	Monitor	39%	50	19.3	3.2	39%	49	19.1	-1.4%
Electronics	Laptops	92%	107	98.8	16.5	92%	103	94.6	-4.2%
Electronics	TVs	190%	203	385.0	64.1	190%	136	258.6	-32.8%
Electronics	Printer/Fax/Copier	52%	38	19.7	3.3	52%	34	17.6	-11.0%
Electronics	Set-top Boxes/DVR	163%	129	209.8	35.0	163%	103	168.2	-19.8%
Electronics	Devices and Gadgets	100%	95	95.0	15.8	100%	95	95.0	0.0%
Miscellaneous	Air Purifier/Cleaner	9%	1,160	107.9	18.0	9%	1,160	107.9	0.0%
Miscellaneous	Dehumidifier	10%	1,809	188.1	31.3	10%	1,379	143.4	-23.8%
Miscellaneous	Pool Heater	1%	4,732	47.3	7.9	1%	4,117	41.2	-13.0%
Miscellaneous	Pool Pump	1%	1,425	14.3	2.4	1%	1,425	14.3	0.0%
Miscellaneous	Hot Tub / Spa	0%	903	-	-	0%	903	-	0.0%
Miscellaneous	Well Pump	0%	528	-	-	0%	528	-	0.0%
Miscellaneous	Furnace Fan	91%	260	236.7	39.4	91%	259	236.2	-0.2%
Miscellaneous	Bathroom Exhaust Fan	12%	134	16.5	2.7	12%	100	12.2	-25.8%
Miscellaneous	Miscellaneous	100%	233	233.3	38.9	100%	233	233.3	0.0%
Total				8,361.1	1,392.8			7,402.6	-11.5%

Table A-3 Residential Single Family Electric/Gas Customer Market Profile 2011

Electric Average Market Profile						New Units			
End Use	Technology	Saturation	UEC (kWh)	Intensity (kWh/HH)	Usage (GWh)	Saturation	UEC (kWh)	Intensity (kWh/HH)	Compared to Average
Cooling	Central AC	84%	2,540	2,130.8	970.6	94%	2,054	1,928.3	-19.1%
Cooling	Room AC	14%	993	140.0	63.8	4%	886	36.3	-10.8%
Cooling	Air-Source Heat Pump	1%	2,078	15.6	7.1	1%	1,435	10.8	-30.9%
Cooling	Geothermal Heat Pump	1%	1,845	10.1	4.6	1%	1,232	6.7	-33.2%
Cooling	PTHP	0%	993	-	-	0%	993	-	0.0%
Heating	Electric Room Heat	0%	11,889	14.3	6.5	0%	11,889	14.3	0.0%
Heating	Furnace	2%	12,483	272.1	124.0	2%	12,483	272.1	0.0%
Heating	Air-Source Heat Pump	0%	8,485	12.8	5.8	0%	6,035	9.1	-28.9%
Heating	Geothermal Heat Pump	0%	4,850	5.3	2.4	0%	4,746	5.2	-2.1%
Heating	PTHP	0%	997	-	-	0%	997	-	0.0%
Water Heating	Water Heater <= 55 gal	9%	2,695	238.0	108.4	9%	2,591	228.7	-3.9%
Water Heating	Water Heater > 55 gal	2%	2,873	59.5	27.1	2%	2,761	57.2	-3.9%
Interior Lighting	Screw-in	100%	1,140	1,139.7	519.1	100%	1,136	1,135.8	-0.3%
Interior Lighting	Linear Fluorescent	100%	142	142.5	64.9	100%	139	139.2	-2.3%
Interior Lighting	Specialty	100%	301	300.7	137.0	100%	298	298.1	-0.9%
Exterior Lighting	Screw-in	100%	247	247.3	112.6	100%	265	264.7	7.0%
Appliances	Refrigerator	99%	718	707.5	322.3	99%	463	456.5	-35.5%
Appliances	Second Refrigerator	30%	837	249.3	113.6	30%	540	160.9	-35.5%
Appliances	Freezer	47%	572	268.4	122.2	47%	464	217.7	-18.9%
Appliances	Clothes Washer	96%	95	91.3	41.6	96%	85	81.4	-10.8%
Appliances	Clothes Dryer	67%	731	486.6	221.6	67%	506	336.9	-30.8%
Appliances	Dishwasher	67%	395	264.5	120.5	67%	257	171.9	-35.0%
Appliances	Stove	53%	449	239.6	109.1	53%	450	239.6	0.0%
Appliances	Microwave	98%	118	115.5	52.6	98%	118	115.5	0.0%
Electronics	Personal Computers	81%	249	201.8	91.9	81%	249	201.4	-0.2%
Electronics	Monitor	81%	50	40.2	18.3	81%	48	39.0	-2.9%
Electronics	Laptops	99%	107	106.3	48.4	99%	107	106.1	-0.2%
Electronics	TVs	286%	203	579.5	264.0	286%	170	486.9	-16.0%
Electronics	Printer/Fax/Copier	100%	38	38.1	17.3	100%	36	36.3	-4.5%
Electronics	Set-top Boxes/DVR	260%	129	334.7	152.4	260%	127	329.6	-1.5%
Electronics	Devices and Gadgets	100%	95	95.0	43.3	100%	95	95.0	0.0%
Miscellaneous	Air Purifier/Cleaner	10%	1,160	119.5	54.4	10%	1,160	119.5	0.0%
Miscellaneous	Dehumidifier	33%	1,809	595.1	271.1	33%	1,379	453.7	-23.8%
Miscellaneous	Pool Heater	4%	4,732	178.9	81.5	4%	4,117	155.6	-13.0%
Miscellaneous	Pool Pump	5%	1,425	77.0	35.1	5%	1,425	77.0	0.0%
Miscellaneous	Hot Tub / Spa	3%	903	29.8	13.6	3%	903	29.8	0.0%
Miscellaneous	Well Pump	12%	533	66.3	30.2	12%	533	66.3	0.0%
Miscellaneous	Furnace Fan	91%	501	457.2	208.3	91%	500	456.4	-0.2%
Miscellaneous	Bathroom Exhaust Fan	39%	134	52.3	23.8	39%	134	52.3	0.0%
Miscellaneous	Miscellaneous	100%	353	353.5	161.0	100%	353	353.5	0.0%
Total				10,476.4	4,772.1			9,245.4	-11.8%

Natural Gas Average Market Profile

End Use	Technology	Saturation	UEC (kWh)	Intensity (kWh/HH)	Usage (GWh)
Heating	Furnace	89%	543	484.0	220.5
Heating	Boiler	9%	738	69.4	31.6
Heating	Other Heating	2%	427	9.0	4.1
Water Heating	Water Heater <= 55 gal	73%	192	139.4	63.5
Water Heating	Water Heater > 55 gal	16%	203	33.3	15.2
Appliances	Clothes Dryer	33%	27	9.0	4.1
Appliances	Stove	46%	55	25.6	11.6
Miscellaneous	Pool Heater	11%	154	17.1	7.8
Miscellaneous	Hot Tub / Spa	0%	52	-	-
Miscellaneous	Miscellaneous	100%	31	31.2	14.2
Total				818.0	372.6

New Units

Saturation	UEC (kWh)	Intensity (kWh/HH)	Compared to Average
89%	484	431.5	-10.9%
9%	388	36.5	-47.4%
2%	427	9.0	0.0%
73%	175	127.0	-8.9%
16%	185	30.4	-8.9%
33%	16	5.2	-42.7%
46%	52	24.1	-5.6%
11%	154	17.1	0.0%
0%	52	-	0.0%
100%	31	31.2	0.0%
		711.9	-13.0%

Table A-4 Multi Family Electric/Gas Customer Market Profile, 2011

Electric Average Market Profile						New Units			
End Use	Technology	Saturation	UEC (kWh)	Intensity (kWh/HH)	Usage (GWh)	Saturation	UEC (kWh)	Intensity (kWh/HH)	Compared to Average
Cooling	Central AC	83%	1,778	1,474.0	140.5	93%	1,404	1,304.5	-21.0%
Cooling	Room AC	12%	744	90.7	8.6	2%	663	14.6	-10.8%
Cooling	Air-Source Heat Pump	0%	1,386	-	-	0%	960	-	-30.7%
Cooling	Geothermal Heat Pump	0%	1,150	-	-	0%	1,024	-	-10.9%
Cooling	PTHP	0%	744	-	-	0%	744	-	0.0%
Heating	Electric Room Heat	0%	6,064	-	-	0%	6,064	-	0.0%
Heating	Furnace	3%	6,367	193.6	18.4	3%	6,367	193.6	0.0%
Heating	Air-Source Heat Pump	0%	5,846	-	-	0%	4,174	-	-28.6%
Heating	Geothermal Heat Pump	0%	4,381	-	-	0%	4,073	-	-7.0%
Heating	PTHP	0%	703	-	-	0%	703	-	0.0%
Water Heating	Water Heater <= 55 gal	9%	2,629	243.7	23.2	9%	2,530	234.5	-3.8%
Water Heating	Water Heater > 55 gal	5%	2,802	129.7	12.4	5%	2,696	124.8	-3.8%
Interior Lighting	Screw-in	100%	925	925.1	88.2	100%	918	918.4	-0.7%
Interior Lighting	Linear Fluorescent	100%	63	63.1	6.0	100%	64	63.8	1.2%
Interior Lighting	Specialty	100%	244	244.1	23.3	100%	243	243.1	-0.4%
Exterior Lighting	Screw-in	100%	125	124.6	11.9	100%	124	124.1	-0.4%
Appliances	Refrigerator	100%	718	718.0	68.4	100%	463	463.2	-35.5%
Appliances	Second Refrigerator	13%	836	107.1	10.2	13%	540	69.1	-35.5%
Appliances	Freezer	26%	572	145.8	13.9	26%	464	118.3	-18.9%
Appliances	Clothes Washer	92%	95	86.8	8.3	92%	85	77.4	-10.8%
Appliances	Clothes Dryer	83%	649	538.3	51.3	83%	450	372.9	-30.7%
Appliances	Dishwasher	53%	395	210.3	20.0	53%	257	136.7	-35.0%
Appliances	Stove	60%	433	261.7	24.9	60%	433	261.7	0.0%
Appliances	Microwave	95%	118	112.5	10.7	95%	118	112.5	0.0%
Electronics	Personal Computers	73%	249	181.9	17.3	73%	249	181.5	-0.2%
Electronics	Monitor	73%	50	36.2	3.4	73%	48	35.2	-2.9%
Electronics	Laptops	91%	107	97.7	9.3	91%	107	97.5	-0.2%
Electronics	TVs	249%	203	504.5	48.1	249%	170	423.9	-16.0%
Electronics	Printer/Fax/Copier	52%	38	19.7	1.9	52%	36	18.9	-4.5%
Electronics	Set-top Boxes/DVR	293%	129	377.1	35.9	293%	127	371.4	-1.5%
Electronics	Devices and Gadgets	100%	95	95.0	9.1	100%	95	95.0	0.0%
Miscellaneous	Air Purifier/Cleaner	6%	1,160	74.2	7.1	6%	1,160	74.2	0.0%
Miscellaneous	Dehumidifier	13%	1,809	231.5	22.1	13%	1,379	176.5	-23.8%
Miscellaneous	Pool Heater	2%	4,732	99.4	9.5	2%	4,117	86.5	-13.0%
Miscellaneous	Pool Pump	2%	1,425	29.9	2.9	2%	1,425	29.9	0.0%
Miscellaneous	Hot Tub / Spa	0%	903	-	-	0%	903	-	0.0%
Miscellaneous	Well Pump	0%	528	-	-	0%	528	-	0.0%
Miscellaneous	Furnace Fan	83%	260	216.2	20.6	83%	259	215.8	-0.2%
Miscellaneous	Bathroom Exhaust Fan	13%	134	17.3	1.6	13%	134	17.3	0.0%
Miscellaneous	Miscellaneous	100%	194	193.8	18.5	100%	194	193.8	0.0%
Total				7,843.9	747.4			6,850.9	-12.7%

Natural Gas Average Market Profile

End Use	Technology	Saturation	UEC (therm)	Intensity (therm/HH)	Usage (MMTherms)
Heating	Furnace	80%	413	331.4	31.6
Heating	Boiler	5%	576	29.5	2.8
Heating	Other Heating	0%	198	-	-
Water Heating	Water Heater <= 55 gal	75%	140	105.6	10.1
Water Heating	Water Heater > 55 gal	11%	149	16.0	1.5
Appliances	Clothes Dryer	15%	21	3.1	0.3
Appliances	Stove	40%	55	21.8	2.1
Miscellaneous	Pool Heater	0%	54	-	-
Miscellaneous	Hot Tub / Spa	0%	52	-	-
Miscellaneous	Miscellaneous	100%	17	16.7	1.6
Total				524.2	50.0

New Units

Saturation	UEC (therm)	Intensity (therm/HH)	Compared to Average
80%	373	299.4	-9.7%
5%	309	15.8	-46.3%
0%	198	-	0.0%
75%	129	97.2	-8.0%
11%	137	14.7	-8.0%
15%	12	1.8	-42.7%
40%	52	20.6	-5.6%
0%	54	-	0.0%
0%	52	-	0.0%
100%	17	16.7	0.0%
		466.3	-11.1%

Table A-5 Single Family Gas Only Customer Market Profile, 2011

Natural Gas Average Market Profile					
End Use	Technology	Saturation	UEC (therm)	Intensity (therm/HH)	Usage (MMTherms)
Heating	Furnace	90%	501	452.1	82.0
Heating	Boiler	8%	681	52.7	9.6
Heating	Other Heating	5%	394	18.9	3.4
Water Heating	Water Heater <= 55 gal	59%	177	105.0	19.1
Water Heating	Water Heater > 55 gal	27%	188	51.0	9.2
Appliances	Clothes Dryer	36%	27	9.8	1.8
Appliances	Stove	49%	55	27.1	4.9
Miscellaneous	Pool Heater	13%	154	19.3	3.5
Miscellaneous	Hot Tub / Spa	0%	52	-	-
Miscellaneous	Miscellaneous	100%	30	30.0	5.4
Total				766.0	138.9

New Units			
Saturation	UEC (therm)	Intensity (therm/HH)	Compared to Average
90%	447	403.1	-10.9%
8%	358	27.7	-47.4%
5%	394	18.9	0.0%
59%	161	95.7	-8.9%
27%	171	46.4	-8.9%
36%	16	5.6	-42.7%
49%	52	25.6	-5.6%
13%	154	19.3	0.0%
0%	52	-	0.0%
100%	30	30.0	0.0%
			672.4
			-12.2%

Table A-6 Multi Family Gas Customer Only Market Profile, 2011

Natural Gas Average Market Profile					
End Use	Technology	Saturation	UEC (therm)	Intensity (therm/HH)	Usage (MMTherms)
Heating	Furnace	85%	349	296.7	4.2
Heating	Boiler	6%	486	31.4	0.4
Heating	Other Heating	0%	167	-	-
Water Heating	Water Heater <= 55 gal	100%	124	123.7	1.8
Water Heating	Water Heater > 55 gal	0%	131	-	-
Appliances	Clothes Dryer	33%	21	7.1	0.1
Appliances	Stove	29%	55	15.8	0.2
Miscellaneous	Pool Heater	0%	54	-	-
Miscellaneous	Hot Tub / Spa	0%	52	-	-
Miscellaneous	Miscellaneous	100%	16	16.2	0.2
Total				490.9	7.0

New Units			
Saturation	UEC (therm)	Intensity (therm/HH)	Compared to Average
85%	315	268.0	-9.7%
6%	261	16.9	-46.3%
0%	167	-	0.0%
100%	114	113.8	-8.0%
0%	121	-	-8.0%
33%	12	4.1	-42.7%
29%	52	14.9	-5.6%
0%	54	-	0.0%
0%	52	-	0.0%
100%	16	16.2	0.0%
			433.9
			-11.6%

Table A-7 Commercial Electric Customer - Office Market Profile, 2011

Electric Average Market Profile						New Units			
End Use	Technology	Saturation	UEC (kWh)	Intensity (kWh/HH)	Usage (GWh)	Saturation	UEC (kWh)	Intensity (kWh/HH)	Compared to Average
Cooling	Air-Cooled Chiller	4%	3.40	0.12	18.42	4%	3.00	0.11	-11.7%
Cooling	Water-Cooled Chiller	1%	3.28	0.02	3.24	1%	1.69	0.01	-48.4%
Cooling	Roof top AC	74%	3.31	2.45	374.46	74%	2.42	1.79	-26.9%
Cooling	Air Source Heat Pump	0%	3.34	-	-	0%	2.92	-	-12.5%
Cooling	Geothermal Heat Pump	0%	2.23	-	-	0%	1.49	-	-33.3%
Cooling	PTAC	2%	2.52	0.04	6.47	2%	2.12	0.04	-15.9%
Cooling	PTHP	2%	2.52	0.05	7.67	2%	2.12	0.04	-15.9%
Cooling	Evaporative AC	0%	2.48	-	-	0%	2.48	-	0.0%
Heating	Air Source Heat Pump	0%	2.35	-	-	0%	2.03	-	-13.7%
Heating	Geothermal Heat Pump	0%	1.57	-	-	0%	1.23	-	-21.3%
Heating	Electric Room Heat	1%	3.44	0.03	4.70	1%	3.44	0.03	0.0%
Heating	Electric Furnace	21%	3.61	0.74	113.63	21%	3.61	0.74	0.0%
Heating	PTAC	2%	1.72	0.03	4.41	2%	1.72	0.03	0.0%
Heating	PTHP	2%	1.37	0.03	4.19	2%	1.36	0.03	-1.2%
Ventilation	Ventilation	100%	1.92	1.92	292.58	100%	1.79	1.79	-6.8%
Water Heating	Water Heating	54%	0.64	0.34	52.24	54%	0.62	0.33	-2.9%
Interior Lighting	Screw-in	100%	0.40	0.40	61.52	100%	0.43	0.43	5.8%
Interior Lighting	High-Bay Fixtures	100%	0.18	0.18	27.72	100%	0.15	0.15	-15.7%
Interior Lighting	Linear Fluorescent	100%	2.68	2.68	408.91	100%	2.12	2.12	-21.1%
Exterior Lighting	Screw-in	100%	0.07	0.07	10.77	100%	0.07	0.07	1.1%
Exterior Lighting	HID	100%	0.31	0.31	47.70	100%	0.17	0.17	-45.4%
Exterior Lighting	Linear Fluorescent	100%	0.02	0.02	3.13	100%	0.02	0.02	-23.9%
Refrigeration	Walk-in Refrigerator	1%	-	-	-	1%	-	-	0.0%
Refrigeration	Reach-in Refrigerator	8%	0.04	0.00	0.45	8%	0.01	0.00	-61.7%
Refrigeration	Glass Door Display	45%	0.15	0.07	10.12	45%	0.12	0.05	-19.1%
Refrigeration	Open Display Case	45%	0.07	0.03	4.57	45%	0.05	0.02	-19.8%
Refrigeration	Icemaker	45%	0.04	0.02	2.78	45%	0.04	0.02	-11.4%
Refrigeration	Vending Machine	45%	0.07	0.03	4.96	45%	0.05	0.02	-37.7%
Food Prep.	Oven	0%	1.50	-	-	0%	1.40	-	-6.9%
Food Prep.	Fryer	0%	2.23	-	-	0%	2.22	-	-0.7%
Food Prep.	Dishwasher	3%	3.44	0.11	16.69	3%	2.90	0.09	-15.8%
Food Prep.	Hot Food Container	0%	0.98	-	-	0%	0.59	-	-39.9%
Food Prep.	Other	0%	0.62	-	-	0%	0.58	-	-6.2%
Office Equip.	Desktop Computer	98%	1.69	1.65	252.26	98%	1.68	1.64	-0.7%
Office Equip.	Laptop	93%	0.26	0.24	37.04	93%	0.26	0.24	-0.7%
Office Equip.	Server	98%	0.20	0.20	29.83	98%	0.19	0.19	-4.7%
Office Equip.	Monitor	100%	0.31	0.31	47.67	100%	0.30	0.30	-2.8%
Office Equip.	Printer/Copier/Fax	100%	0.13	0.13	20.56	100%	0.15	0.15	13.8%
Office Equip.	POS Terminal	35%	0.01	0.00	0.59	35%	0.01	0.00	-15.6%
Miscellaneous	Non-HVAC Motors	90%	0.14	0.13	19.74	90%	0.15	0.13	0.4%
Miscellaneous	Pool Pump	0%	0.02	-	-	0%	0.02	-	3.1%
Miscellaneous	Miscellaneous	100%	0.48	0.48	73.29	100%	0.48	0.48	0.0%

Total	12.86	1,962.31

Table A-8 Commercial Natural Gas Customer - Office Market Profile, 2011**Natural Gas Average Market Profile**

End Use	Technology	Saturation	UEC (therm)	Intensity (therm/HH)	Usage (MMTherms)
Heating	Furnace	82%	0.23	0.19	9.18
Heating	Boiler	1%	0.77	0.01	0.26
Heating	Unit Heater	2%	0.21	0.00	0.17
Water Heating	Water Heating	40%	0.10	0.04	1.99
Food Prep.	Oven	2%	0.32	0.01	0.25
Food Prep.	Fryer	2%	0.49	0.01	0.37
Food Prep.	Broiler	0%	0.50	-	-
Food Prep.	Griddle	2%	0.37	0.01	0.28
Food Prep.	Range	2%	0.36	0.01	0.28
Food Prep.	Steamer	0%	0.58	-	-
Food Prep.	Other	0%	0.15	-	-
Miscellaneous	Pool Heater	0%	-	-	-
Miscellaneous	Miscellaneous	7%	0.16	0.01	0.54
Total				0.28	13.32

11.24	-12.6%

New Units

Saturation	UEC (therm)	Intensity (therm/HH)	Compared to Average
82%	0.22	0.18	-4.9%
1%	0.65	0.00	-16.3%
2%	0.21	0.00	0.0%
40%	0.10	0.04	-5.6%
2%	0.28	0.00	-12.5%
2%	0.56	0.01	13.6%
0%	0.44	-	-11.8%
2%	0.37	0.01	-0.3%
2%	0.33	0.01	-8.2%
0%	0.51	-	-10.8%
0%	0.15	-	-1.7%
0%	-	-	0.0%
7%	0.16	0.01	0.0%
		0.26	-4.5%

Table A-9 Commercial Electric Customer - Restaurant Market Profile, 2011**Electric Average Market Profile**

End Use	Technology	Saturation	UEC (kWh)	Intensity (kWh/HH)	Usage (GWh)
Cooling	Air-Cooled Chiller	1%	7.63	0.04	1.42
Cooling	Water-Cooled Chiller	0%	8.01	-	-
Cooling	Roof top AC	87%	5.95	5.17	166.78
Cooling	Air Source Heat Pump	2%	7.72	0.19	6.19
Cooling	Geothermal Heat Pump	2%	5.15	0.08	2.63
Cooling	PTAC	3%	4.53	0.15	5.00
Cooling	PTHP	1%	4.53	0.04	1.40
Cooling	Evaporative AC	0%	4.46	-	-
Heating	Air Source Heat Pump	2%	4.56	0.11	3.66
Heating	Geothermal Heat Pump	2%	3.04	0.05	1.56
Heating	Electric Room Heat	0%	5.91	-	-
Heating	Electric Furnace	8%	6.20	0.52	16.78
Heating	PTAC	3%	2.95	0.10	3.26
Heating	PTHP	1%	2.36	0.02	0.73
Ventilation	Ventilation	100%	1.97	1.97	63.38
Water Heating	Water Heating	44%	6.98	3.10	100.08
Interior Lighting	Screw-in	100%	2.14	2.14	68.91
Interior Lighting	High-Bay Fixtures	100%	1.11	1.11	35.93
Interior Lighting	Linear Fluorescent	100%	2.84	2.84	91.70
Exterior Lighting	Screw-in	100%	0.16	0.16	5.00
Exterior Lighting	HID	100%	1.60	1.60	51.65
Exterior Lighting	Linear Fluorescent	100%	0.01	0.01	0.17

New Units

Saturation	UEC (kWh)	Intensity (kWh/HH)	Compared to Average
1%	7.26	0.04	-4.8%
0%	5.17	-	-35.5%
87%	4.35	3.78	-26.9%
2%	5.90	0.15	-23.6%
2%	2.18	0.03	-57.7%
3%	3.67	0.13	-19.1%
1%	3.67	0.04	-19.1%
0%	4.46	-	0.0%
2%	3.87	0.10	-15.2%
2%	1.98	0.03	-34.8%
0%	5.91	-	0.0%
8%	6.20	0.52	0.0%
3%	2.95	0.10	0.0%
1%	2.26	0.02	-4.4%
100%	1.59	1.59	-19.3%
44%	6.83	3.03	-2.3%
100%	1.61	1.61	-24.8%
100%	0.87	0.87	-21.9%
100%	2.10	2.10	-26.3%
100%	0.14	0.14	-8.8%
100%	1.15	1.15	-28.4%
100%	0.00	0.00	-28.9%

Electric Average Market Profile

End Use	Technology	Saturation	UEC (kWh)	Intensity (kWh/HH)	Usage (GWh)
Refrigeration	Walk-in Refrigerator	24%	5.14	1.25	40.45
Refrigeration	Reach-in Refrigerator	16%	0.79	0.13	4.08
Refrigeration	Glass Door Display	97%	3.32	3.23	104.06
Refrigeration	Open Display Case	97%	1.50	1.46	46.98
Refrigeration	Icemaker	97%	0.91	0.89	28.58
Refrigeration	Vending Machine	97%	0.81	0.79	25.48
Food Prep	Oven	10%	6.29	0.64	20.48
Food Prep	Fryer	13%	9.37	1.19	38.40
Food Prep	Dishwasher	41%	7.20	2.93	94.51
Food Prep	Hot Food Container	19%	2.06	0.39	12.46
Food Prep	Other	0%	1.29	-	-
Office Equip.	Desktop Computer	76%	0.26	0.20	6.45
Office Equip.	Laptop	55%	0.03	0.02	0.58
Office Equip.	Server	55%	0.37	0.20	6.59
Office Equip.	Monitor	75%	0.05	0.04	1.18
Office Equip.	Printer/Copier/Fax	45%	0.05	0.02	0.73
Office Equip.	POS Terminal	83%	0.10	0.08	2.72
Miscellaneous	Non-HVAC Motors	20%	0.23	0.05	1.49
Miscellaneous	Pool Pump	0%	-	-	-
Miscellaneous	Pool Heater	0%	-	-	-
Miscellaneous	Miscellaneous	100%	1.00	1.00	32.27
Total				33.93	1,093.70

New Units

Saturation	UEC (kWh)	Intensity (kWh/HH)	Compared to Average
24%	2.27	0.55	-55.8%
16%	0.30	0.05	-61.7%
97%	2.68	2.61	-19.1%
97%	1.20	1.17	-19.8%
97%	0.81	0.79	-11.4%
97%	0.50	0.49	-38.6%
10%	5.85	0.59	-6.9%
13%	9.30	1.18	-0.7%
41%	6.07	2.47	-15.8%
19%	1.24	0.23	-39.9%
0%	1.21	-	-6.3%
76%	0.26	0.20	-0.7%
55%	0.03	0.02	-0.7%
55%	0.36	0.19	-4.7%
75%	0.05	0.04	-2.8%
45%	0.06	0.03	13.8%
83%	0.09	0.07	-15.6%
20%	0.23	0.05	0.4%
0%	-	-	0.0%
0%	-	-	0.0%
100%	1.00	1.00	0.0%
		27.14	-20.0%

Table A-10 Commercial Natural Gas Customer - Restaurant Market Profile, 2011

Natural Gas Average Market Profile					
End Use	Technology	Saturation	UEC (therm)	Intensity (therm/HH)	Usage (MMTherms)
Heating	Furnace	92%	0.25	0.23	3.88
Heating	Boiler	0%	0.65	0.00	0.05
Heating	Unit Heater	1%	0.23	0.00	0.03
Water Heating	Water Heating	89%	0.37	0.33	5.57
Food Prep.	Oven	13%	0.17	0.02	0.37
Food Prep.	Fryer	90%	0.26	0.23	3.89
Food Prep.	Broiler	77%	0.26	0.20	3.40
Food Prep.	Griddle	88%	0.20	0.17	2.89
Food Prep.	Range	81%	0.19	0.16	2.61
Food Prep.	Steamer	6%	0.30	0.02	0.29
Food Prep.	Other	0%	0.04	0.00	0.00
Miscellaneous	Pool Heater	0%	-	-	-
Miscellaneous	Miscellaneous	8%	0.22	0.02	0.28
Total				1.39	23.27

New Units			
Saturation	UEC (therm)	Intensity (therm/HH)	Compared to Average
92%	0.24	0.22	-4.9%
0%	0.59	0.00	-9.0%
1%	0.23	0.00	0.0%
89%	0.36	0.32	-5.0%
13%	0.15	0.02	-12.5%
90%	0.29	0.26	13.6%
77%	0.23	0.18	-11.8%
88%	0.20	0.17	-0.3%
81%	0.18	0.14	-8.2%
6%	0.27	0.02	-10.8%
0%	0.04	0.00	-1.7%
0%	-	-	0.0%
8%	0.22	0.02	0.0%
1.35			-2.8%

Table A-11 Commercial Electric Customer - Retail Market Profile, 2011

Electric Average Market Profile					
End Use	Technology	Saturation	UEC (kWh)	Intensity (kWh/HH)	Usage (GWh)
Cooling	Air-Cooled Chiller	0%	2.54	-	-
Cooling	Water-Cooled Chiller	0%	2.45	0.00	0.09
Cooling	Roof top AC	35%	3.87	1.34	207.77
Cooling	Air Source Heat Pump	1%	3.91	0.04	6.60
Cooling	Geothermal Heat Pump	0%	2.61	0.01	1.55
Cooling	PTAC	3%	2.94	0.09	13.25
Cooling	PTHP	0%	2.94	0.01	1.10
Cooling	Evaporative AC	0%	2.90	-	-
Heating	Air Source Heat Pump	1%	3.94	0.04	6.65
Heating	Geothermal Heat Pump	0%	2.62	0.01	1.56
Heating	Electric Room Heat	2%	5.76	0.11	17.08
Heating	Electric Furnace	4%	6.04	0.26	39.72
Heating	PTAC	3%	2.88	0.08	12.95
Heating	PTHP	0%	2.30	0.01	0.86
Ventilation	Ventilation	100%	0.94	0.94	145.36
Water Heating	Water Heating	59%	0.76	0.45	69.67
Interior Lighting	Screw-in	100%	0.30	0.30	46.49
Interior Lighting	High-Bay Fixtures	100%	0.14	0.14	21.59
Interior Lighting	Linear Fluorescent	100%	4.37	4.37	676.74
Exterior Lighting	Screw-in	100%	0.49	0.49	75.68
Exterior Lighting	HID	100%	0.27	0.27	42.27
Exterior Lighting	Linear Fluorescent	100%	0.01	0.01	0.81

New Units			
Saturation	UEC (kWh)	Intensity (kWh/HH)	Compared to Average
0%	2.47	-	-2.8%
0%	1.58	0.00	-35.5%
35%	2.83	0.98	-26.9%
1%	2.99	0.03	-23.6%
0%	1.74	0.01	-33.3%
3%	2.47	0.07	-16.1%
0%	2.47	0.01	-16.1%
0%	2.90	-	0.0%
1%	3.78	0.04	-4.0%
0%	2.20	0.01	-16.3%
2%	5.76	0.11	0.0%
4%	6.04	0.26	0.0%
3%	2.88	0.08	0.0%
0%	2.27	0.01	-1.4%
100%	0.92	0.92	-1.9%
59%	0.74	0.44	-2.4%
100%	0.20	0.20	-32.1%
100%	0.14	0.14	1.9%
100%	3.33	3.33	-23.8%
100%	0.24	0.24	-51.6%
100%	0.19	0.19	-30.7%
100%	0.00	0.00	-26.5%

Electric Average Market Profile

End Use	Technology	Saturation	UEC (kWh)	Intensity (kWh/HH)	Usage (GWh)
Refrigeration	Walk-in Refrigerator	0%	0.67	-	-
Refrigeration	Reach-in Refrigerator	29%	0.10	0.03	4.70
Refrigeration	Glass Door Display	52%	0.43	0.23	35.10
Refrigeration	Open Display Case	52%	0.20	0.10	15.84
Refrigeration	Icemaker	52%	0.24	0.12	19.28
Refrigeration	Vending Machine	52%	0.21	0.11	17.19
Food Prep	Oven	4%	0.67	0.03	4.02
Food Prep	Fryer	2%	0.99	0.02	3.83
Food Prep	Dishwasher	12%	1.53	0.18	27.32
Food Prep	Hot Food Container	0%	0.44	-	-
Food Prep	Other	0%	0.27	-	-
Office Equip.	Desktop Computer	94%	0.15	0.14	22.00
Office Equip.	Laptop	79%	0.02	0.02	2.88
Office Equip.	Server	78%	0.21	0.17	26.08
Office Equip.	Monitor	94%	0.03	0.03	4.07
Office Equip.	Printer/Copier/Fax	85%	0.01	0.01	1.92
Office Equip.	POS Terminal	82%	0.06	0.05	7.38
Miscellaneous	Non-HVAC Motors	40%	0.29	0.12	18.11
Miscellaneous	Pool Pump	0%	-	-	-
Miscellaneous	Pool Heater	0%	-	-	-
Miscellaneous	Miscellaneous	100%	0.40	0.40	61.92
Total				10.72	1,659.44

New Units

Saturation	UEC (kWh)	Intensity (kWh/HH)	Compared to Average
0%	0.30	-	-55.8%
29%	0.04	0.01	-61.7%
52%	0.35	0.18	-19.1%
52%	0.16	0.08	-19.8%
52%	0.21	0.11	-11.4%
52%	0.13	0.07	-38.6%
4%	0.62	0.02	-6.9%
2%	0.98	0.02	-0.7%
12%	1.29	0.15	-15.8%
0%	0.26	-	-39.9%
0%	0.26	-	-6.2%
94%	0.15	0.14	-0.7%
79%	0.02	0.02	-0.7%
78%	0.20	0.16	-4.7%
94%	0.03	0.03	-2.8%
85%	0.02	0.01	13.8%
82%	0.05	0.04	-15.6%
40%	0.29	0.12	0.4%
0%	-	-	0.0%
0%	-	-	0.0%
100%	0.40	0.40	0.0%
			8.64
			-19.4%

Table A-12 Commercial Natural Gas Customer - Retail Market Profile, 2011

Natural Gas Average Market Profile

End Use	Technology	Saturation	UEC (therm)	Intensity (therm/HH)	Usage (MMTherms)
Heating	Furnace	84%	0.32	0.27	22.04
Heating	Boiler	5%	0.61	0.03	2.26
Heating	Unit Heater	8%	0.29	0.02	1.83
Water Heating	Water Heating	29%	0.14	0.04	3.32
Food Prep.	Oven	0%	0.97	0.00	0.26
Food Prep.	Fryer	0%	1.48	0.00	0.40
Food Prep.	Broiler	0%	1.51	-	-
Food Prep.	Griddle	0%	1.13	-	-
Food Prep.	Range	0%	1.10	-	-
Food Prep.	Steamer	0%	1.74	-	-
Food Prep.	Other	0%	0.47	-	-
Miscellaneous	Pool Heater	0%	-	-	-
Miscellaneous	Miscellaneous	7%	0.12	0.01	0.67
Total				0.38	30.78

New Units

Saturation	UEC (therm)	Intensity (therm/HH)	Compared to Average
84%	0.31	0.26	-3.8%
5%	0.54	0.02	-11.4%
8%	0.29	0.02	0.0%
29%	0.13	0.04	-5.6%
0%	0.85	0.00	-12.5%
0%	1.68	0.01	13.6%
0%	1.33	-	-11.8%
0%	1.12	-	-0.3%
0%	1.01	-	-8.2%
0%	1.55	-	-10.8%
0%	0.46	-	-1.7%
0%	-	-	0.0%
7%	0.12	0.01	0.0%
			0.36
			-4.1%

Table A-13 Commercial Electric Customer – Grocery Market Profile, 2011

Electric Average Market Profile						New Units			
End Use	Technology	Saturation	UEC (kWh)	Intensity (kWh/HH)	Usage (GWh)	Saturation	UEC (kWh)	Intensity (kWh/HH)	Compared to Average
Cooling	Air-Cooled Chiller	0%	5.36	-	-	0%	5.10	-	-4.8%
Cooling	Water-Cooled Chiller	0%	5.17	-	-	0%	3.34	-	-35.5%
Cooling	Roof top AC	74%	8.17	6.09	103.43	74%	5.97	4.45	-26.9%
Cooling	Air Source Heat Pump	1%	8.20	0.11	1.90	1%	6.27	0.09	-23.6%
Cooling	Geothermal Heat Pump	0%	5.47	-	-	0%	3.64	-	-33.4%
Cooling	PTAC	0%	6.22	-	-	0%	5.03	-	-19.1%
Cooling	PTHP	5%	6.22	0.28	4.81	5%	5.03	0.23	-19.1%
Cooling	Evaporative AC	0%	6.13	-	-	0%	6.13	-	0.0%
Heating	Air Source Heat Pump	1%	6.41	0.09	1.49	1%	6.04	0.08	-5.8%
Heating	Geothermal Heat Pump	0%	4.28	-	-	0%	3.60	-	-16.0%
Heating	Electric Room Heat	0%	6.72	-	-	0%	6.72	-	0.0%
Heating	Electric Furnace	40%	7.05	2.84	48.24	40%	7.05	2.84	0.0%
Heating	PTAC	0%	3.36	-	-	0%	3.36	-	0.0%
Heating	PTHP	5%	2.69	0.12	2.08	5%	2.57	0.12	-4.5%
Ventilation	Ventilation	100%	2.34	2.34	39.75	100%	1.91	1.91	-18.4%
Water Heating	Water Heating	27%	2.45	0.66	11.20	27%	2.43	0.65	-1.1%
Interior Lighting	Screw-in	100%	0.77	0.77	13.15	100%	0.43	0.43	-43.9%
Interior Lighting	High-Bay Fixtures	100%	0.11	0.11	1.82	100%	0.10	0.10	-4.6%
Interior Lighting	Linear Fluorescent	100%	8.81	8.81	149.66	100%	7.22	7.22	-18.0%
Exterior Lighting	Screw-in	100%	0.28	0.28	4.73	100%	0.11	0.11	-60.5%
Exterior Lighting	HID	100%	0.96	0.96	16.38	100%	0.48	0.48	-49.7%
Exterior Lighting	Linear Fluorescent	100%	0.04	0.04	0.66	100%	0.03	0.03	-20.9%
Refrigeration	Walk-in Refrigerator	17%	9.03	1.50	25.48	17%	3.99	0.66	-55.8%
Refrigeration	Reach-in Refrigerator	7%	0.40	0.03	0.45	7%	0.15	0.01	-61.7%
Refrigeration	Glass Door Display	99%	16.65	16.47	279.96	99%	13.47	13.32	-19.1%
Refrigeration	Open Display Case	99%	7.52	7.44	126.38	99%	6.03	5.96	-19.8%
Refrigeration	Icemaker	99%	0.23	0.23	3.85	99%	0.20	0.20	-11.3%
Refrigeration	Vending Machine	99%	0.41	0.40	6.86	99%	0.25	0.25	-38.0%
Food Prep	Oven	28%	0.69	0.20	3.34	28%	0.65	0.18	-6.9%
Food Prep	Fryer	28%	1.03	0.29	4.97	28%	1.03	0.29	-0.7%
Food Prep	Dishwasher	22%	1.59	0.36	6.05	22%	1.34	0.30	-15.8%
Food Prep	Hot Food Container	69%	0.45	0.31	5.31	69%	0.27	0.19	-39.9%
Food Prep	Other	3%	0.28	0.01	0.16	3%	0.27	0.01	-6.3%
Office Equip.	Desktop Computer	96%	0.17	0.16	2.72	96%	0.17	0.16	-0.7%
Office Equip.	Laptop	66%	0.03	0.02	0.29	66%	0.03	0.02	-0.7%
Office Equip.	Server	66%	0.12	0.08	1.34	66%	0.11	0.08	-4.7%
Office Equip.	Monitor	94%	0.03	0.03	0.50	94%	0.03	0.03	-2.8%
Office Equip.	Printer/Copier/Fax	100%	0.02	0.02	0.27	100%	0.02	0.02	13.8%
Office Equip.	POS Terminal	100%	0.08	0.08	1.37	100%	0.07	0.07	-15.6%
Miscellaneous	Non-HVAC Motors	35%	0.45	0.15	2.63	35%	0.45	0.16	0.4%
Miscellaneous	Pool Pump	0%	-	-	-	0%	-	-	0.0%
Miscellaneous	Miscellaneous	100%	1.00	1.00	17.04	100%	1.00	1.00	0.0%
Total				52.26	888.24			41.64	-20.3%

Table A-14 Commercial Natural Gas Customer - Grocery Market Profile, 2011

Natural Gas Average Market Profile					
End Use	Technology	Saturation	UEC (therm)	Intensity (therm/HH)	Usage (MMTherms)
Heating	Furnace	100%	0.29	0.29	2.37
Heating	Boiler	0%	0.55	-	-
Heating	Unit Heater	0%	0.26	-	-
Water Heating	Water Heating	96%	0.13	0.13	1.03
Food Prep.	Oven	29%	0.04	0.01	0.09
Food Prep.	Fryer	29%	0.06	0.02	0.13
Food Prep.	Broiler	0%	0.06	-	-
Food Prep.	Griddle	29%	0.04	0.01	0.10
Food Prep.	Range	29%	0.04	0.01	0.10
Food Prep.	Steamer	0%	0.06	-	-
Food Prep.	Other	0%	0.02	-	-
Miscellaneous	Pool Heater	0%	-	-	-
Miscellaneous	Miscellaneous	3%	0.04	0.00	0.01
Total				0.46	3.82

New Units			
Saturation	UEC (therm)	Intensity (therm/HH)	Compared to Average
100%	0.27	0.27	-4.9%
0%	0.49	-	-10.4%
0%	0.26	-	0.0%
96%	0.12	0.12	-5.5%
29%	0.03	0.01	-12.5%
29%	0.06	0.02	13.6%
0%	0.05	-	-11.8%
29%	0.04	0.01	-0.3%
29%	0.04	0.01	-8.2%
0%	0.06	-	-10.8%
0%	0.02	-	-1.7%
0%	-	-	0.0%
3%	0.04	0.00	0.0%
0.44			-4.6%

Table A-15 Commercial Electric Customer - College Market Profile, 2011

Electric Average Market Profile					
End Use	Technology	Saturation	UEC (kWh)	Intensity (kWh/HH)	Usage (GWh)
Cooling	Air-Cooled Chiller	19%	4.23	0.81	92.94
Cooling	Water-Cooled Chiller	61%	4.08	2.47	283.29
Cooling	Roof top AC	11%	2.98	0.34	38.72
Cooling	Air Source Heat Pump	0%	2.54	-	-
Cooling	Geothermal Heat Pump	0%	1.69	-	-
Cooling	PTAC	4%	2.27	0.09	10.08
Cooling	PTHP	0%	2.27	-	-
Cooling	Evaporative AC	0%	2.24	-	-
Heating	Air Source Heat Pump	0%	10.28	-	-
Heating	Geothermal Heat Pump	0%	6.86	-	-
Heating	Electric Room Heat	0%	15.04	-	-
Heating	Electric Furnace	0%	15.79	-	-
Heating	PTAC	4%	7.52	0.29	33.40
Heating	PTHP	0%	6.01	-	-
Ventilation	Ventilation	100%	1.20	1.20	137.10
Water Heating	Water Heating	12%	1.63	0.20	22.91
Interior Lighting	Screw-in	100%	0.29	0.29	33.55
Interior Lighting	High-Bay Fixtures	100%	0.32	0.32	36.98
Interior Lighting	Linear Fluorescent	100%	3.61	3.61	413.67
Exterior Lighting	Screw-in	100%	0.11	0.11	13.10
Exterior Lighting	HID	100%	0.57	0.57	64.91
Exterior Lighting	Linear Fluorescent	100%	0.00	0.00	0.10
Refrigeration	Walk-in Refrigerator	2%	0.25	0.01	0.72
Refrigeration	Reach-in Refrigerator	13%	0.08	0.01	1.18

New Units			
Saturation	UEC (kWh)	Intensity (kWh/HH)	Compared to Average
19%	3.59	0.69	-15.1%
61%	2.64	1.60	-35.3%
11%	2.18	0.25	-26.9%
0%	1.94	-	-23.6%
0%	1.13	-	-33.3%
4%	1.91	0.07	-15.9%
0%	1.91	-	-15.9%
0%	2.24	-	0.0%
0%	7.66	-	-25.5%
0%	5.68	-	-17.2%
0%	15.04	-	0.0%
0%	15.79	-	0.0%
4%	7.52	0.29	0.0%
0%	5.94	-	-1.2%
100%	0.88	0.88	-26.8%
12%	1.62	0.20	-1.1%
100%	0.29	0.29	-1.1%
100%	0.26	0.26	-19.0%
100%	3.23	3.23	-10.7%
100%	0.15	0.15	35.0%
100%	0.35	0.35	-38.7%
100%	0.00	0.00	-13.9%
2%	0.11	0.00	-55.8%
13%	0.03	0.00	-61.7%

Electric Average Market Profile

End Use	Technology	Saturation	UEC (kWh)	Intensity (kWh/HH)	Usage (GWh)
Refrigeration	Glass Door Display	27%	0.16	0.04	4.97
Refrigeration	Open Display Case	27%	0.07	0.02	2.24
Refrigeration	Icemaker	27%	0.09	0.02	2.73
Refrigeration	Vending Machine	27%	0.08	0.02	2.43
Food Prep	Oven	49%	0.05	0.03	2.90
Food Prep	Fryer	49%	0.08	0.04	4.32
Food Prep	Dishwasher	55%	0.12	0.07	7.49
Food Prep	Hot Food Container	54%	0.03	0.02	2.11
Food Prep	Other	0%	0.02	-	-
Office Equip.	Desktop Computer	100%	0.43	0.43	49.75
Office Equip.	Laptop	65%	0.07	0.04	5.02
Office Equip.	Server	37%	0.21	0.08	8.73
Office Equip.	Monitor	100%	0.08	0.08	9.22
Office Equip.	Printer/Copier/Fax	100%	0.07	0.07	7.94
Office Equip.	POS Terminal	33%	0.07	0.02	2.62
Miscellaneous	Non-HVAC Motors	89%	0.06	0.05	5.96
Miscellaneous	Pool Pump	90%	0.00	0.00	0.20
Miscellaneous	Pool Heater	36%	0.00	0.00	0.15
Miscellaneous	Miscellaneous	100%	0.36	0.36	40.69
Total				11.72	1,342.09

New Units

Saturation	UEC (kWh)	Intensity (kWh/HH)	Compared to Average
27%	0.13	0.04	-19.1%
27%	0.06	0.02	-19.8%
27%	0.08	0.02	-11.4%
27%	0.05	0.01	-37.7%
49%	0.05	0.02	-6.9%
49%	0.08	0.04	-0.7%
55%	0.10	0.06	-15.8%
54%	0.02	0.01	-39.9%
0%	0.02	-	-6.3%
100%	0.43	0.43	-0.7%
65%	0.07	0.04	-0.7%
37%	0.20	0.07	-4.7%
100%	0.08	0.08	-2.8%
100%	0.08	0.08	13.8%
33%	0.06	0.02	-15.6%
89%	0.06	0.05	0.4%
90%	0.00	0.00	3.1%
36%	0.00	0.00	7.8%
100%	0.36	0.36	0.0%
		9.61	-18.0%

Table A-16 Commercial Natural Gas Customer - College Market Profile

Natural Gas Average Market Profile

End Use	Technology	Saturation	UEC (therm)	Intensity (therm/HH)	Usage (MMTherms)
Heating	Furnace	64%	0.36	0.23	9.64
Heating	Boiler	10%	0.57	0.06	2.28
Heating	Unit Heater	0%	0.33	-	-
Water Heating	Water Heating	58%	0.19	0.11	4.58
Food Prep.	Oven	17%	0.05	0.01	0.35
Food Prep.	Fryer	11%	0.08	0.01	0.35
Food Prep.	Broiler	17%	0.08	0.01	0.55
Food Prep.	Griddle	24%	0.06	0.01	0.58
Food Prep.	Range	29%	0.06	0.02	0.70
Food Prep.	Steamer	10%	0.09	0.01	0.40
Food Prep.	Other	1%	0.02	0.00	0.01
Miscellaneous	Pool Heater	0%	0.02	-	-
Miscellaneous	Miscellaneous	8%	0.19	0.01	0.61
Total				0.49	20.05

New Units

Saturation	UEC (therm)	Intensity (therm/HH)	Compared to Average
64%	0.35	0.22	-4.6%
10%	0.47	0.05	-18.7%
0%	0.33	-	0.0%
58%	0.18	0.11	-5.1%
17%	0.04	0.01	-12.5%
11%	0.09	0.01	13.6%
17%	0.07	0.01	-11.8%
24%	0.06	0.01	-0.3%
29%	0.05	0.02	-8.2%
10%	0.08	0.01	-10.8%
1%	0.02	0.00	-1.7%
0%	0.02	-	0.0%
8%	0.19	0.01	0.0%
		0.46	-6.3%

Table A-17 Commercial Electric Customer - School Market Profile, 2011

Electric Average Market Profile						New Units			
End Use	Technology	Saturation	UEC (kWh)	Intensity (kWh/HH)	Usage (GWh)	Saturation	UEC (kWh)	Intensity (kWh/HH)	Compared to Average
Cooling	Air-Cooled Chiller	5%	3.24	0.17	17.83	5%	2.75	0.14	-15.1%
Cooling	Water-Cooled Chiller	5%	3.13	0.15	16.31	5%	2.02	0.10	-35.3%
Cooling	Roof top AC	12%	2.28	0.28	29.97	12%	1.67	0.21	-26.9%
Cooling	Air Source Heat Pump	0%	1.94	-	-	0%	1.49	-	-23.6%
Cooling	Geothermal Heat Pump	2%	1.30	0.03	2.76	2%	0.86	0.02	-33.3%
Cooling	PTAC	2%	1.74	0.04	3.98	2%	1.46	0.03	-15.9%
Cooling	PTHP	0%	1.74	-	-	0%	1.46	-	-15.9%
Cooling	Evaporative AC	0%	1.71	-	-	0%	1.71	-	0.0%
Heating	Air Source Heat Pump	0%	5.92	-	-	0%	4.41	-	-25.5%
Heating	Geothermal Heat Pump	2%	3.95	0.08	8.40	2%	3.27	0.07	-17.2%
Heating	Electric Room Heat	0%	8.66	-	-	0%	8.66	-	0.0%
Heating	Electric Furnace	1%	9.09	0.11	12.14	1%	9.09	0.11	0.0%
Heating	PTAC	2%	4.33	0.09	9.93	2%	4.33	0.09	0.0%
Heating	PTHP	0%	3.46	-	-	0%	3.42	-	-1.2%
Ventilation	Ventilation	100%	0.76	0.76	81.16	100%	0.56	0.56	-26.8%
Water Heating	Water Heating	5%	1.06	0.05	5.77	5%	1.05	0.05	-1.1%
Interior Lighting	Screw-in	100%	0.10	0.10	10.37	100%	0.06	0.06	-40.0%
Interior Lighting	High-Bay Fixtures	100%	0.18	0.18	18.77	100%	0.16	0.16	-11.2%
Interior Lighting	Linear Fluorescent	100%	3.38	3.38	360.65	100%	2.66	2.66	-21.3%
Exterior Lighting	Screw-in	100%	0.07	0.07	7.55	100%	0.05	0.05	-25.3%
Exterior Lighting	HID	100%	0.46	0.46	49.01	100%	0.32	0.32	-31.1%
Exterior Lighting	Linear Fluorescent	100%	0.00	0.00	0.08	100%	0.00	0.00	-24.1%
Refrigeration	Walk-in Refrigerator	20%	0.28	0.06	5.97	20%	0.13	0.02	-55.8%
Refrigeration	Reach-in Refrigerator	21%	0.09	0.02	1.99	21%	0.03	0.01	-61.7%
Refrigeration	Glass Door Display	66%	0.18	0.12	12.87	66%	0.15	0.10	-19.1%
Refrigeration	Open Display Case	66%	0.08	0.05	5.81	66%	0.07	0.04	-19.8%
Refrigeration	Icemaker	66%	0.10	0.07	7.07	66%	0.09	0.06	-11.4%
Refrigeration	Vending Machine	66%	0.09	0.06	6.30	66%	0.06	0.04	-37.7%
Food Prep	Oven	17%	0.14	0.02	2.43	17%	0.13	0.02	-6.9%
Food Prep	Fryer	2%	0.20	0.00	0.34	2%	0.20	0.00	-0.7%
Food Prep	Dishwasher	57%	0.31	0.18	19.08	57%	0.26	0.15	-15.8%
Food Prep	Hot Food Container	26%	0.09	0.02	2.52	26%	0.05	0.01	-39.9%
Food Prep	Other	0%	0.06	-	-	0%	0.05	-	-6.3%
Office Equip.	Desktop Computer	98%	0.19	0.19	20.16	98%	0.19	0.19	-0.7%
Office Equip.	Laptop	96%	0.02	0.02	2.03	96%	0.02	0.02	-0.7%
Office Equip.	Server	96%	0.18	0.18	18.65	96%	0.17	0.17	-4.7%
Office Equip.	Monitor	100%	0.04	0.04	3.80	100%	0.03	0.03	-2.8%
Office Equip.	Printer/Copier/Fax	100%	0.06	0.06	6.54	100%	0.07	0.07	13.8%
Office Equip.	POS Terminal	22%	0.02	0.01	0.57	22%	0.02	0.00	-15.6%
Miscellaneous	Non-HVAC Motors	44%	0.04	0.02	1.87	44%	0.04	0.02	0.4%
Miscellaneous	Pool Pump	8%	0.00	0.00	0.00	8%	0.00	0.00	3.1%
Miscellaneous	Pool Heater	0%	0.00	-	-	0%	0.00	-	7.8%
Miscellaneous	Miscellaneous	100%	0.21	0.21	22.84	100%	0.21	0.21	0.0%
Total				7.28	775.53			5.80	-20.3%

Table A-18 Commercial Natural Gas Customer - School Market Profile, 2011

Natural Gas Average Market Profile						New Units			
End Use	Technology	Saturation	UEC (therm)	Intensity (therm/HH)	Usage (MMTherms)	Saturation	UEC (therm)	Intensity (therm/HH)	Compared to Average
Heating	Furnace	26%	0.16	0.04	4.04	26%	0.16	0.04	-4.6%
Heating	Boiler	47%	0.26	0.12	11.63	47%	0.21	0.10	-18.7%
Heating	Unit Heater	4%	0.15	0.01	0.60	4%	0.15	0.01	0.0%
Water Heating	Water Heating	82%	0.11	0.09	8.37	82%	0.10	0.08	-5.1%
Food Prep.	Oven	45%	0.02	0.01	0.84	45%	0.02	0.01	-12.5%
Food Prep.	Fryer	15%	0.03	0.00	0.41	15%	0.03	0.00	13.6%
Food Prep.	Broiler	32%	0.03	0.01	0.94	32%	0.03	0.01	-11.8%
Food Prep.	Griddle	28%	0.02	0.01	0.60	28%	0.02	0.01	-0.3%
Food Prep.	Range	34%	0.02	0.01	0.71	34%	0.02	0.01	-8.2%
Food Prep.	Steamer	10%	0.03	0.00	0.32	10%	0.03	0.00	-10.8%
Food Prep.	Other	0%	0.01	-	-	0%	0.01	-	-1.7%
Miscellaneous	Pool Heater	8%	0.01	0.00	0.05	8%	0.01	0.00	0.0%
Miscellaneous	Miscellaneous	2%	0.10	0.00	0.22	2%	0.10	0.00	0.0%
Total				0.30	28.74	0.27 -10.6%			

Table A-19 Commercial Electric Customer - Health Market Profile, 2011

Electric Average Market Profile						New Units			
End Use	Technology	Saturation	UEC (kWh)	Intensity (kWh/HH)	Usage (GWh)	Saturation	UEC (kWh)	Intensity (kWh/HH)	Compared to Average
Cooling	Air-Cooled Chiller	7%	4.94	0.36	29.76	7%	4.36	0.32	-11.7%
Cooling	Water-Cooled Chiller	23%	4.75	1.07	87.63	23%	2.46	0.56	-48.2%
Cooling	Roof top AC	38%	5.86	2.20	179.76	38%	4.29	1.61	-26.9%
Cooling	Air Source Heat Pump	0%	6.08	0.01	0.81	0%	5.32	0.01	-12.5%
Cooling	Geothermal Heat Pump	2%	4.06	0.09	7.13	2%	2.70	0.06	-33.3%
Cooling	PTAC	1%	4.46	0.06	4.60	1%	3.75	0.05	-15.9%
Cooling	PTHP	1%	4.46	0.06	4.60	1%	3.75	0.05	-15.9%
Heating	Air Source Heat Pump	0%	5.26	0.01	0.70	0%	4.07	0.01	-22.6%
Heating	Geothermal Heat Pump	2%	3.51	0.08	6.17	2%	2.98	0.06	-15.1%
Heating	Electric Room Heat	0%	7.69	-	-	0%	7.69	-	0.0%
Heating	Electric Furnace	27%	8.08	2.19	178.57	27%	8.08	2.19	0.0%
Heating	PTAC	1%	3.85	0.05	3.96	1%	3.85	0.05	0.0%
Heating	PTHP	1%	3.08	0.04	3.17	1%	3.04	0.04	-1.2%
Ventilation	Ventilation	100%	2.48	2.48	202.84	100%	1.76	1.76	-29.0%
Water Heating	Water Heating	16%	2.15	0.33	27.34	16%	2.13	0.33	-1.1%
Interior Lighting	Screw-in	100%	0.54	0.54	44.32	100%	0.42	0.42	-22.8%
Interior Lighting	High-Bay Fixtures	100%	0.25	0.25	20.19	100%	0.22	0.22	-11.1%
Interior Lighting	Linear Fluorescent	100%	3.16	3.16	258.03	100%	2.52	2.52	-20.2%
Exterior Lighting	Screw-in	100%	0.03	0.03	2.07	100%	0.01	0.01	-60.5%
Exterior Lighting	HID	100%	0.33	0.33	26.70	100%	0.18	0.18	-44.2%
Exterior Lighting	Linear Fluorescent	100%	0.00	0.00	0.04	100%	0.00	0.00	-23.0%
Refrigeration	Walk-in Refrigerator	8%	0.30	0.02	1.91	8%	0.13	0.01	-55.8%

Refrigeration	Reach-in Refrigerator	8%	0.05	0.00	0.29	8%	0.02	0.00	-61.7%
Refrigeration	Glass Door Display	87%	0.20	0.17	13.99	87%	0.16	0.14	-19.1%
Refrigeration	Open Display Case	87%	0.09	0.08	6.31	87%	0.07	0.06	-19.8%
Refrigeration	Icemaker	87%	0.11	0.09	7.68	87%	0.10	0.08	-11.4%
Refrigeration	Vending Machine	87%	0.10	0.08	6.85	87%	0.06	0.05	-37.7%
Food Prep	Oven	17%	0.45	0.08	6.29	17%	0.42	0.07	-6.9%
Food Prep	Fryer	17%	0.67	0.12	9.41	17%	0.67	0.11	-0.7%
Food Prep	Dishwasher	51%	1.04	0.53	42.97	51%	0.87	0.44	-15.8%
Food Prep	Hot Food Container	12%	0.30	0.04	2.98	12%	0.18	0.02	-39.9%
Food Prep	Other	0%	0.19	0.00	0.03	0%	0.17	0.00	-6.3%
Office Equip.	Desktop Computer	98%	0.32	0.32	25.85	98%	0.32	0.31	-0.7%
Office Equip.	Laptop	73%	0.05	0.04	2.99	73%	0.05	0.04	-0.7%
Office Equip.	Server	90%	0.11	0.10	8.41	90%	0.11	0.10	-4.7%
Office Equip.	Monitor	99%	0.06	0.06	4.86	99%	0.06	0.06	-2.8%
Office Equip.	Printer/Copier/Fax	100%	0.08	0.08	6.31	100%	0.09	0.09	13.8%
Office Equip.	POS Terminal	90%	0.08	0.07	5.69	90%	0.07	0.06	-15.6%
Miscellaneous	Non-HVAC Motors	74%	0.88	0.65	53.34	74%	0.89	0.66	0.4%
Miscellaneous	Pool Pump	0%	0.01	-	-	0%	0.01	-	3.1%
Miscellaneous	Pool Heater	0%	0.02	-	-	0%	0.02	-	7.8%
Miscellaneous	Miscellaneous	100%	2.05	2.05	167.40	100%	2.05	2.05	0.0%
Total				17.90	1,461.95			14.80	-17.3%

Table A-20 Commercial Natural Gas Customer - Health Market Profile, 2011**Natural Gas Average Market Profile**

End Use	Technology	Saturation	UEC (therm)	Intensity (therm/HH)	Usage (MMTherms)
Heating	Furnace	67%	0.55	0.37	15.35
Heating	Boiler	3%	1.01	0.03	1.44
Heating	Unit Heater	0%	0.49	-	-
Water Heating	Water Heating	72%	0.45	0.32	13.43
Food Prep.	Oven	4%	0.16	0.01	0.26
Food Prep.	Fryer	23%	0.24	0.06	2.33
Food Prep.	Broiler	5%	0.25	0.01	0.54
Food Prep.	Griddle	5%	0.19	0.01	0.40
Food Prep.	Range	22%	0.18	0.04	1.65
Food Prep.	Steamer	2%	0.29	0.01	0.29
Food Prep.	Other	0%	0.08	-	-
Miscellaneous	Pool Heater	0%	0.22	-	-
Miscellaneous	Miscellaneous	9%	0.46	0.04	1.79
Total				0.90	37.46

Table A-21 Commercial Electric Customer - Lodging Market Profile, 2011**Electric Average Market Profile**

End Use	Technology	Saturation	UEC (kWh)	Intensity (kWh/HH)	Usage (GWh)
Cooling	Air-Cooled Chiller	0%	0.80	-	-
Cooling	Water-Cooled Chiller	3%	0.77	0.02	1.50

New Units

Saturation	UEC (therm)	Intensity (therm/HH)	Compared to Average
67%	0.53	0.35	-3.8%
3%	0.87	0.03	-13.4%
0%	0.49	-	0.0%
72%	0.42	0.30	-5.6%
4%	0.14	0.01	-12.5%
23%	0.28	0.06	13.6%
5%	0.22	0.01	-11.8%
5%	0.19	0.01	-0.3%
22%	0.17	0.04	-8.2%
2%	0.26	0.01	-10.8%
0%	0.08	-	-1.7%
0%	0.22	-	0.0%
9%	0.46	0.04	0.0%
0.86			-3.9%

New Units

Saturation	UEC (kWh)	Intensity (kWh/HH)	Compared to Average
0%	0.67	-	-16.5%
3%	0.44	0.01	-42.9%

Electric Average Market Profile

End Use	Technology	Saturation	UEC (kWh)	Intensity (kWh/HH)	Usage (GWh)
Cooling	Roof top AC	16%	2.28	0.37	28.14
Cooling	Air Source Heat Pump	0%	2.27	-	-
Cooling	Geothermal Heat Pump	0%	1.51	-	-
Cooling	PTAC	36%	1.74	0.63	47.77
Cooling	PTHP	34%	1.74	0.59	44.95
Cooling	Evaporative AC	0%	1.71	-	-
Heating	Air Source Heat Pump	0%	2.54	-	-
Heating	Geothermal Heat Pump	0%	1.70	-	-
Heating	Electric Room Heat	6%	3.72	0.23	17.31
Heating	Electric Furnace	6%	3.90	0.25	18.62
Heating	PTAC	36%	1.86	0.67	51.04
Heating	PTHP	34%	1.49	0.51	38.41
Ventilation	Ventilation	100%	0.64	0.64	48.76
Water Heating	Water Heating	52%	2.18	1.13	85.66
Interior Lighting	Screw-in	100%	1.74	1.74	131.86
Interior Lighting	High-Bay Fixtures	100%	0.08	0.08	5.84
Interior Lighting	Linear Fluorescent	100%	0.90	0.90	67.85
Exterior Lighting	Screw-in	100%	0.13	0.13	9.52
Exterior Lighting	HID	100%	0.24	0.24	18.48
Exterior Lighting	Linear Fluorescent	100%	0.00	0.00	0.06
Refrigeration	Walk-in Refrigerator	13%	0.35	0.05	3.50
Refrigeration	Reach-in Refrigerator	13%	0.05	0.01	0.54
Refrigeration	Glass Door Display	59%	0.22	0.13	10.02
Refrigeration	Open Display Case	59%	0.10	0.06	4.53
Refrigeration	Icemaker	59%	0.06	0.04	2.75
Refrigeration	Vending Machine	59%	0.11	0.06	4.91
Food Prep	Oven	43%	0.06	0.02	1.79
Food Prep	Fryer	13%	0.08	0.01	0.82
Food Prep	Dishwasher	91%	0.13	0.12	8.72
Food Prep	Hot Food Container	0%	0.04	-	-
Food Prep	Other	0%	0.02	-	-
Office Equip.	Desktop Computer	93%	0.05	0.04	3.34
Office Equip.	Laptop	78%	0.01	0.01	0.43
Office Equip.	Server	84%	0.03	0.03	2.14
Office Equip.	Monitor	91%	0.01	0.01	0.61
Office Equip.	Printer/Copier/Fax	91%	0.00	0.00	0.31
Office Equip.	POS Terminal	75%	0.00	0.00	0.26
Miscellaneous	Non-HVAC Motors	91%	0.07	0.06	4.55
Miscellaneous	Pool Pump	51%	0.01	0.00	0.25
Miscellaneous	Pool Heater	4%	0.01	0.00	0.03
Miscellaneous	Miscellaneous	100%	0.47	0.47	35.42
Total				9.26	700.71

New Units

Saturation	UEC (kWh)	Intensity (kWh/HH)	Compared to Average
16%	2.08	0.34	-8.7%
0%	2.17	-	-4.1%
0%	1.24	-	-18.0%
36%	1.46	0.53	-15.9%
34%	1.46	0.50	-15.9%
0%	1.71	-	0.0%
0%	2.34	-	-8.0%
0%	1.52	-	-10.3%
6%	3.72	0.23	0.0%
6%	3.90	0.25	0.0%
36%	1.86	0.67	0.0%
34%	1.47	0.50	-1.2%
100%	0.64	0.64	-0.8%
52%	2.13	1.10	-2.4%
100%	1.29	1.29	-25.8%
100%	0.07	0.07	-9.7%
100%	0.63	0.63	-29.4%
100%	0.12	0.12	-6.7%
100%	0.12	0.12	-51.8%
100%	0.00	0.00	-31.9%
13%	0.15	0.02	-55.8%
13%	0.02	0.00	-61.9%
59%	0.18	0.11	-19.1%
59%	0.08	0.05	-19.8%
59%	0.05	0.03	-11.3%
59%	0.06	0.04	-41.9%
43%	0.05	0.02	-6.9%
13%	0.08	0.01	-0.7%
91%	0.11	0.10	-15.8%
0%	0.02	-	-39.9%
0%	0.02	-	-6.2%
93%	0.05	0.04	-0.7%
78%	0.01	0.01	-0.7%
84%	0.03	0.03	-4.7%
91%	0.01	0.01	-2.8%
91%	0.01	0.00	13.8%
75%	0.00	0.00	-15.6%
91%	0.07	0.06	0.4%
51%	0.01	0.00	3.1%
4%	0.01	0.00	7.8%
100%	0.47	0.47	0.0%
		8.01	-13.5%

Table A-22 Commercial Natural Gas Customer - Lodging Market Profile, 2011

Natural Gas Average Market Profile					
End Use	Technology	Saturation	UEC (therm)	Intensity (therm/HH)	Usage (MMTherms)
Heating	Furnace	20%	0.18	0.04	0.45
Heating	Boiler	24%	0.26	0.06	0.76
Heating	Unit Heater	2%	0.16	0.00	0.04
Water Heating	Water Heating	78%	0.25	0.20	2.45
Food Prep.	Oven	25%	0.05	0.01	0.14
Food Prep.	Fryer	10%	0.07	0.01	0.08
Food Prep.	Broiler	10%	0.07	0.01	0.09
Food Prep.	Griddle	25%	0.05	0.01	0.17
Food Prep.	Range	0%	0.05	0.00	0.00
Food Prep.	Steamer	0%	0.08	0.00	0.00
Food Prep.	Other	0%	0.02	-	-
Miscellaneous	Pool Heater	41%	0.01	0.00	0.04
Miscellaneous	Miscellaneous	3%	0.07	0.00	0.03
Total				0.34	4.26

New Units			
Saturation	UEC (therm)	Intensity (therm/HH)	Compared to Average
20%	0.17	0.03	-4.9%
24%	0.24	0.06	-8.0%
2%	0.16	0.00	0.0%
78%	0.24	0.19	-5.6%
25%	0.04	0.01	-12.5%
10%	0.08	0.01	13.6%
10%	0.06	0.01	-11.8%
25%	0.05	0.01	-0.3%
0%	0.05	0.00	-8.2%
0%	0.07	0.00	-10.8%
0%	0.02	-	-1.7%
41%	0.01	0.00	0.0%
3%	0.07	0.00	0.0%
0.32			-5.6%

Table A-23 Commercial Electric Customer - Warehouse Market Profile, 2011

Electric Average Market Profile					
End Use	Technology	Saturation	UEC (kWh)	Intensity (kWh/HH)	Usage (GWh)
Cooling	Air-Cooled Chiller	0%	1.81	-	-
Cooling	Water-Cooled Chiller	0%	1.75	-	-
Cooling	Roof top AC	5%	2.76	0.13	16.74
Cooling	Air Source Heat Pump	0%	2.79	0.00	0.21
Cooling	Geothermal Heat Pump	4%	1.86	0.07	8.61
Cooling	PTAC	0%	2.10	-	-
Cooling	PTHP	0%	2.10	-	-
Cooling	Evaporative AC	0%	2.07	-	-
Heating	Air Source Heat Pump	0%	5.49	0.00	0.41
Heating	Geothermal Heat Pump	4%	3.66	0.14	16.94
Heating	Electric Room Heat	0%	8.03	-	-
Heating	Electric Furnace	6%	8.43	0.50	62.28
Heating	PTAC	0%	4.01	-	-
Heating	PTHP	0%	3.21	-	-
Ventilation	Ventilation	100%	0.24	0.24	30.36
Water Heating	Water Heating	14%	0.22	0.03	3.80
Interior Lighting	Screw-in	100%	0.22	0.22	27.11
Interior Lighting	High-Bay Fixtures	100%	0.55	0.55	68.19
Interior Lighting	Linear Fluorescent	100%	1.35	1.35	167.02
Exterior Lighting	Screw-in	100%	0.00	0.00	0.12
Exterior Lighting	HID	100%	0.40	0.40	50.09
Exterior Lighting	Linear Fluorescent	100%	0.00	0.00	0.01
Refrigeration	Walk-in Refrigerator	0%	1.59	-	-
Refrigeration	Reach-in Refrigerator	0%	-	-	-
Refrigeration	Glass Door Display	18%	-	-	-

New Units			
Saturation	UEC (kWh)	Intensity (kWh/HH)	Compared to Average
0%	1.67	-	-7.8%
0%	1.13	-	-35.5%
5%	2.02	0.10	-26.9%
0%	2.44	0.00	-12.6%
4%	1.24	0.05	-33.3%
0%	1.77	-	-15.9%
0%	1.77	-	-15.9%
0%	2.07	-	0.0%
0%	5.28	0.00	-3.9%
4%	3.06	0.11	-16.3%
0%	8.03	-	0.0%
6%	8.43	0.50	0.0%
0%	4.01	-	0.0%
0%	3.17	-	-1.2%
100%	0.24	0.24	-1.7%
14%	0.22	0.03	-1.1%
100%	0.12	0.12	-43.0%
100%	0.36	0.36	-35.3%
100%	0.96	0.96	-28.4%
100%	0.00	0.00	-52.7%
100%	0.19	0.19	-53.5%
100%	0.00	0.00	-30.9%
0%	0.70	-	-55.8%
0%	-	-	0.0%
18%	-	-	0.0%

Electric Average Market Profile

End Use	Technology	Saturation	UEC (kWh)	Intensity (kWh/HH)	Usage (GWh)
Refrigeration	Open Display Case	18%	-	-	-
Refrigeration	Icemaker	18%	1.13	0.20	25.16
Refrigeration	Vending Machine	18%	1.00	0.18	22.43
Food Prep	Oven	0%	0.01	-	-
Food Prep	Fryer	2%	0.01	0.00	0.03
Food Prep	Dishwasher	33%	0.02	0.01	0.75
Food Prep	Hot Food Container	0%	-	-	-
Food Prep	Other	0%	0.00	-	-
Office Equip.	Desktop Computer	79%	0.09	0.07	8.58
Office Equip.	Laptop	37%	0.01	0.00	0.49
Office Equip.	Server	65%	0.12	0.08	10.00
Office Equip.	Monitor	75%	0.02	0.01	1.50
Office Equip.	Printer/Copier/Fax	68%	0.01	0.01	0.70
Office Equip.	POS Terminal	3%	0.02	0.00	0.07
Miscellaneous	Non-HVAC Motors	50%	0.13	0.06	7.88
Miscellaneous	Miscellaneous	100%	0.16	0.16	19.90
Total				4.43	549.39

New Units

Saturation	UEC (kWh)	Intensity (kWh/HH)	Compared to Average
18%	-	-	0.0%
18%	1.00	0.18	-11.4%
18%	0.61	0.11	-39.2%
0%	0.01	-	-6.9%
2%	0.01	0.00	-0.7%
33%	0.02	0.01	-15.8%
0%	-	-	0.0%
0%	0.00	-	-6.3%
79%	0.09	0.07	-0.7%
37%	0.01	0.00	-0.7%
65%	0.12	0.08	-4.7%
75%	0.02	0.01	-2.8%
68%	0.01	0.01	13.8%
3%	0.01	0.00	-15.6%
50%	0.13	0.06	0.4%
100%	0.16	0.16	0.0%
			3.36
			-24.2%

Table A-24 Commercial Natural Gas Customer - Warehouse Market Profile, 2011

Natural Gas Average Market Profile

End Use	Technology	Saturation	UEC (therm)	Intensity (therm/HH)	Usage (MMTherms)
Heating	Furnace	44%	0.17	0.07	4.52
Heating	Boiler	1%	2.15	0.03	1.76
Heating	Unit Heater	24%	0.15	0.04	2.22
Water Heating	Water Heating	50%	0.03	0.01	0.87
Food Prep.	Oven	0%	-	-	-
Food Prep.	Fryer	0%	-	-	-
Food Prep.	Broiler	0%	-	-	-
Food Prep.	Griddle	0%	-	-	-
Food Prep.	Range	0%	-	-	-
Food Prep.	Steamer	0%	-	-	-
Food Prep.	Other	0%	-	-	-
Miscellaneous	Pool Heater	0%	-	-	-
Miscellaneous	Miscellaneous	2%	0.04	0.00	0.05
Total				0.15	9.42

New Units

Saturation	UEC (therm)	Intensity (therm/HH)	Compared to Average
44%	0.16	0.07	-3.8%
1%	1.86	0.03	-13.1%
24%	0.15	0.04	0.0%
50%	0.03	0.01	-5.6%
0%	-	-	0.0%
0%	-	-	0.0%
0%	-	-	0.0%
0%	-	-	0.0%
0%	-	-	0.0%
0%	-	-	0.0%
0%	-	-	0.0%
0%	-	-	0.0%
0%	-	-	0.0%
2%	0.04	0.00	0.0%
			0.15
			-4.8%

Table A-25 Commercial Electric Customer - Miscellaneous Market Profile, 2011

Electric Average Market Profile						New Units			
End Use	Technology	Saturation	UEC (kWh)	Intensity (kWh/HH)	Usage (GWh)	Saturation	UEC (kWh)	Intensity (kWh/HH)	Compared to Average
Cooling	Air-Cooled Chiller	0%	1.55	-	-	0%	1.31	-	-15.6%
Cooling	Water-Cooled Chiller	2%	1.50	0.03	7.15	2%	0.97	0.02	-35.5%
Cooling	Roof top AC	70%	2.37	1.66	392.08	70%	1.73	1.22	-26.9%
Cooling	Air Source Heat Pump	0%	2.40	-	-	0%	2.10	-	-12.6%
Cooling	Geothermal Heat Pump	1%	1.60	0.01	2.82	1%	1.07	0.01	-33.3%
Cooling	PTAC	2%	1.80	0.04	9.04	2%	1.52	0.03	-15.9%
Cooling	PTHP	2%	1.80	0.04	8.69	2%	1.52	0.03	-15.9%
Cooling	Evaporative AC	0%	1.78	-	-	0%	1.78	-	0.0%
Heating	Air Source Heat Pump	0%	3.01	-	-	0%	2.56	-	-14.9%
Heating	Geothermal Heat Pump	1%	2.01	0.02	3.54	1%	1.56	0.01	-22.2%
Heating	Electric Room Heat	0%	4.40	0.02	5.11	0%	4.40	0.02	0.0%
Heating	Electric Furnace	6%	4.62	0.26	61.72	6%	4.62	0.26	0.0%
Heating	PTAC	2%	2.20	0.05	11.02	2%	2.20	0.05	0.0%
Heating	PTHP	2%	1.76	0.04	8.47	2%	1.74	0.04	-1.2%
Ventilation	Ventilation	100%	0.53	0.53	124.54	100%	0.48	0.48	-8.3%
Water Heating	Water Heating	38%	1.00	0.38	89.98	38%	0.99	0.38	-1.1%
Interior Lighting	Screw-in	100%	0.56	0.56	132.55	100%	0.30	0.30	-46.7%
Interior Lighting	High-Bay Fixtures	100%	0.28	0.28	66.83	100%	0.27	0.27	-3.9%
Interior Lighting	Linear Fluorescent	100%	2.26	2.26	531.97	100%	1.85	1.85	-18.1%
Exterior Lighting	Screw-in	100%	0.23	0.23	54.06	100%	0.16	0.16	-29.5%
Exterior Lighting	HID	100%	0.48	0.48	113.91	100%	0.23	0.23	-52.7%
Exterior Lighting	Linear Fluorescent	100%	0.26	0.26	61.18	100%	0.21	0.21	-21.0%
Refrigeration	Walk-in Refrigerator	15%	0.34	0.05	12.46	15%	0.15	0.02	-55.8%
Refrigeration	Reach-in Refrigerator	15%	0.05	0.01	1.92	15%	0.02	0.00	-61.7%
Refrigeration	Glass Door Display	22%	0.22	0.05	11.27	22%	0.18	0.04	-19.1%
Refrigeration	Open Display Case	22%	0.10	0.02	5.09	22%	0.08	0.02	-19.8%
Refrigeration	Icemaker	22%	0.06	0.01	3.10	22%	0.05	0.01	-11.4%
Refrigeration	Vending Machine	22%	0.11	0.02	5.52	22%	0.07	0.01	-37.9%
Food Prep	Oven	34%	0.06	0.02	5.03	34%	0.06	0.02	-6.9%
Food Prep	Fryer	2%	0.09	0.00	0.55	2%	0.09	0.00	-0.7%
Food Prep	Dishwasher	21%	0.14	0.03	7.00	21%	0.12	0.03	-15.8%
Food Prep	Hot Food Container	10%	0.04	0.00	0.96	10%	0.02	0.00	-39.9%
Food Prep	Other	0%	0.03	-	-	0%	0.02	-	-6.3%
Office Equip.	Desktop Computer	72%	0.24	0.17	40.99	72%	0.24	0.17	-0.7%
Office Equip.	Laptop	57%	0.04	0.02	4.99	57%	0.04	0.02	-0.7%
Office Equip.	Server	44%	0.17	0.07	17.53	44%	0.16	0.07	-4.7%
Office Equip.	Monitor	68%	0.04	0.03	7.17	68%	0.04	0.03	-2.8%
Office Equip.	Printer/Copier/Fax	45%	0.05	0.02	4.93	45%	0.05	0.02	13.8%
Office Equip.	POS Terminal	37%	0.09	0.03	8.06	37%	0.08	0.03	-15.6%
Miscellaneous	Non-HVAC Motors	60%	0.31	0.19	44.37	60%	0.32	0.19	0.4%
Miscellaneous	Pool Pump	80%	0.00	0.00	0.30	80%	0.00	0.00	3.1%
Miscellaneous	Pool Heater	0%	0.00	-	-	0%	0.00	-	7.8%
Miscellaneous	Miscellaneous	100%	0.49	0.49	114.55	100%	0.49	0.49	0.0%

Electric Average Market Profile

End Use	Technology	Saturation	UEC (kWh)	Intensity (kWh/HH)	Usage (GWh)
Total				8.41	1,980.41

New Units

Saturation	UEC (kWh)	Intensity (kWh/HH)	Compared to Average
		6.75	-19.7%

Table A-26 Commercial Natural Gas Customer - Miscellaneous Market Profile, 2011

Natural Gas Average Market Profile

End Use	Technology	Saturation	UEC (therm)	Intensity (therm/HH)	Usage (MMTherms)
Heating	Furnace	83%	0.14	0.11	19.10
Heating	Boiler	7%	0.26	0.02	3.24
Heating	Unit Heater	0%	0.13	0.00	0.10
Water Heating	Water Heating	70%	0.07	0.05	8.72
Food Prep.	Oven	66%	0.00	0.00	0.39
Food Prep.	Fryer	3%	0.01	0.00	0.03
Food Prep.	Broiler	32%	0.01	0.00	0.30
Food Prep.	Griddle	36%	0.00	0.00	0.25
Food Prep.	Range	40%	0.00	0.00	0.27
Food Prep.	Steamer	0%	0.01	-	-
Food Prep.	Other	0%	0.00	-	-
Miscellaneous	Pool Heater	80%	0.01	0.01	1.13
Miscellaneous	Miscellaneous	24%	0.05	0.01	1.94
Total				0.21	35.46

New Units

Saturation	UEC (therm)	Intensity (therm/HH)	Compared to Average
83%	0.14	0.12	1.4%
7%	0.23	0.02	-13.8%
0%	0.13	0.00	0.0%
70%	0.07	0.05	-5.6%
66%	0.00	0.00	-12.5%
3%	0.01	0.00	13.6%
32%	0.00	0.00	-11.8%
36%	0.00	0.00	-0.3%
40%	0.00	0.00	-8.2%
0%	0.01	-	-10.8%
0%	0.00	-	-1.7%
80%	0.01	0.01	0.0%
24%	0.05	0.01	0.0%
		0.21	-2.2%

Table A-27 Industrial Electric Food Products Market Profile, 2011

Electric Average Market Profile

End Use	Technology	Saturation	UEC (kWh)	Intensity (kWh/HH)	Usage (GWh)
Cooling	Air-Cooled Chiller	3%	4,593.5	114.84	7.84
Cooling	Water-Cooled Chiller	3%	4,434.2	110.86	7.56
Cooling	Roof top AC	2%	7,001.6	116.79	7.97
Cooling	Air Source Heat Pump	0%	7,079.5	4.28	0.29
Cooling	Geothermal Heat Pump	4%	4,722.0	176.10	12.02
Cooling	Other Cooling	0%	-	-	-
Heating	Air Source Heat Pump	0%	13,939.7	8.43	0.58
Heating	Geothermal Heat Pump	4%	9,297.8	346.75	23.66
Heating	Electric Resistance	0%	-	-	-
Heating	Electric Furnace	6%	21,407.1	1,274.42	86.96
Ventilation	Ventilation	100%	-	-	-
Interior Lighting	Screw-in	100%	430.8	430.77	29.39
Interior Lighting	High-Bay Fixtures	100%	91.7	91.69	6.26
Interior Lighting	Linear Fluorescent	100%	1,254.8	1,254.83	85.63
Exterior Lighting	Screw-in	100%	0.8	0.81	0.05
Exterior Lighting	HID	100%	339.4	339.37	23.16

New Units

Saturation	UEC (kWh)	Intensity (kWh/HH)	Compared to Average
3%	4,194.8	110.11	-8.7%
3%	4,144.3	108.79	-6.5%
2%	5,886.9	98.19	-15.9%
0%	6,130.5	3.89	-13.4%
4%	4,340.0	169.95	-8.1%
0%	-	-	0.0%
0%	12,790.7	8.12	-8.2%
4%	8,339.7	326.57	-10.3%
0%	-	-	0.0%
6%	21,407.1	1,274.42	0.0%
100%	-	-	0.0%
100%	245.3	245.33	-43.0%
100%	63.9	63.94	-30.3%
100%	989.5	989.51	-21.1%
100%	0.4	0.38	-52.7%
100%	220.5	220.45	-35.0%

Electric Average Market Profile

End Use	Technology	Saturation	UEC (kWh)	Intensity (kWh/HH)	Usage (GWh)
Exterior Lighting	Linear Fluorescent	100%	0.1	0.10	0.01
Motors	Pumps	100%	3,845.8	3,845.75	262.42
Motors	Fans & Blowers	100%	2,766.0	2,765.99	188.74
Motors	Compressed Air	100%	1,558.8	1,558.84	106.37
Motors	Matl Handling	100%	2,356.7	2,356.74	160.82
Motors	Matl Processing	100%	3,346.8	3,346.80	228.37
Motors	Other Motors	100%	-	-	-
Process	Process Heating	100%	2,204.9	2,204.95	150.46
Process	Process Cooling and Refrig	100%	7,328.5	7,328.47	500.07
Process	Electro-Chemical Processes	100%	17.4	17.36	1.18
Process	Other Process	100%	164.3	164.33	11.21
Miscellaneous	Miscellaneous	100%	1,005.2	1,005.17	68.59
Total				28,864.42	1,969.60

New Units

Saturation	UEC (kWh)	Intensity (kWh/HH)	Compared to Average
100%	0.1	0.08	-20.1%
105%	3,844.8	4,037.02	0.0%
105%	2,765.3	2,903.53	0.0%
105%	1,558.5	1,636.42	0.0%
105%	2,356.1	2,473.95	0.0%
105%	3,345.9	3,513.24	0.0%
105%	-	-	0.0%
105%	2,204.9	2,315.19	0.0%
105%	7,328.5	7,694.90	0.0%
105%	17.4	18.22	0.0%
105%	164.3	172.54	0.0%
100%	1,005.2	1,005.17	0.0%
		29,389.94	1.8%

Table A-28 Industrial Natural Gas Food Products Market Profile, 2011

Natural Gas Average Market Profile

End Use	Technology	Saturation	UEC (therm)	Intensity (therm/HH)	Usage (MMTherms)
Heating	Furnace	44%	230.7	101.91	8.38
Heating	Boiler	1%	2,949.2	39.69	3.27
Heating	Other Heating	24%	207.6	50.16	4.13
Process	Process Heating	100%	1,080.5	1,080.45	88.88
Process	Process Boiler	100%	1,708.9	1,708.89	140.58
Process	Process Cooling	100%	8.1	8.07	0.66
Process	Other Process	100%	56.5	56.47	4.65
Miscellaneous	Miscellaneous	100%	126.1	126.09	10.37
Total				3,171.74	260.92

New Units

Saturation	UEC (therm)	Intensity (therm/HH)	Compared to Average
44%	199.7	88.22	-13.4%
1%	2,395.4	32.24	-18.8%
24%	176.7	42.68	-14.9%
100%	918.4	918.38	-15.0%
100%	1,393.3	1,393.31	-18.5%
100%	6.9	6.86	-15.0%
100%	48.0	48.00	-15.0%
100%	126.1	126.09	0.0%
		2,656	-16.3%

Table A-29 Industrial Electric Petroleum Market Profile, 2011

Electric Average Market Profile

End Use	Technology	Saturation	UEC (kWh)	Intensity (kWh/HH)	Usage (GWh)
Cooling	Air-Cooled Chiller	3%	20,644.7	516.12	6.81
Cooling	Water-Cooled Chiller	3%	19,929.0	498.22	6.57
Cooling	Roof top AC	2%	31,467.9	524.89	6.93
Cooling	Air Source Heat Pump	0%	31,817.9	19.25	0.25
Cooling	Geothermal Heat Pump	4%	21,222.5	791.47	10.44
Cooling	Other Cooling	0%	-	-	-
Heating	Air Source Heat Pump	0%	62,650.1	37.90	0.50
Heating	Geothermal Heat Pump	4%	41,787.6	1,558.43	20.56

New Units

Saturation	UEC (kWh)	Intensity (kWh/HH)	Compared to Average
3%	18,852.8	494.89	-8.7%
3%	18,626.1	488.93	-6.5%
2%	26,457.9	441.32	-15.9%
0%	27,552.8	17.50	-13.4%
4%	19,505.5	763.81	-8.1%
0%	-	-	0.0%
0%	57,486.3	36.51	-8.2%
4%	37,481.7	1,467.74	-10.3%

Electric Average Market Profile						New Units			
End Use	Technology	Saturation	UEC (kWh)	Intensity (kWh/HH)	Usage (GWh)	Saturation	UEC (kWh)	Intensity (kWh/HH)	Compared to Average
Heating	Electric Resistance	0%	-	-	-	0%	-	-	0.0%
Heating	Electric Furnace	6%	96,211.3	5,727.70	75.58	6%	96,211.3	5,727.70	0.0%
Ventilation	Ventilation	100%	-	-	-	100%	-	-	0.0%
Interior Lighting	Screw-in	100%	1,521.2	1,521.18	20.07	100%	866.4	866.35	-43.0%
Interior Lighting	High-Bay Fixtures	100%	323.8	323.78	4.27	100%	225.8	225.80	-30.3%
Interior Lighting	Linear Fluorescent	100%	4,431.2	4,431.22	58.47	100%	3,494.3	3,494.27	-21.1%
Exterior Lighting	Screw-in	100%	2.8	2.84	0.04	100%	1.3	1.34	-52.7%
Exterior Lighting	HID	100%	1,198.4	1,198.41	15.81	100%	778.5	778.49	-35.0%
Exterior Lighting	Linear Fluorescent	100%	0.3	0.34	0.00	100%	0.3	0.27	-20.1%
Motors	Pumps	100%	84,590.2	84,590.15	1,116.15	105%	84,568.8	88,797.23	0.0%
Motors	Fans & Blowers	100%	33,633.7	33,633.68	443.79	105%	33,625.0	35,306.20	0.0%
Motors	Compressed Air	100%	38,789.2	38,789.21	511.82	105%	38,780.6	40,719.64	0.0%
Motors	Matl Handling	100%	-	-	-	105%	-	-	0.0%
Motors	Matl Processing	100%	91,206.6	91,206.61	1,203.45	105%	91,183.3	95,742.48	0.0%
Motors	Other Motors	100%	18,241.3	18,241.32	240.69	105%	18,236.7	19,148.50	0.0%
Process	Process Heating	100%	12,785.6	12,785.61	168.70	105%	12,785.6	13,424.89	0.0%
Process	Process Cooling and Refrig	100%	15,504.1	15,504.15	204.57	105%	15,504.1	16,279.35	0.0%
Process	Electro-Chemical Processes	100%	77.2	77.20	1.02	105%	77.2	81.06	0.0%
Process	Other Process	100%	1,425.9	1,425.93	18.81	105%	1,425.9	1,497.22	0.0%
Miscellaneous	Miscellaneous	100%	2,734.1	2,734.15	36.08	100%	2,734.1	2,734.15	0.0%
Total				316,139.77	4,171.41			328,535.66	3.9%

Table A-30 Industrial Natural Gas Petroleum Market Profile, 2011

Natural Gas Average Market Profile						New Units			
End Use	Technology	Saturation	UEC (therm)	Intensity (therm/HH)	Usage (MMTherms)	Saturation	UEC (therm)	Intensity (therm/HH)	Compared to Average
Heating	Furnace	44%	234.2	103.47	0.44	44%	202.7	89.56	-13.4%
Heating	Boiler	1%	2,994.1	40.30	0.17	1%	2,431.9	32.73	-18.8%
Heating	Other Heating	24%	210.8	50.92	0.22	24%	179.4	43.33	-14.9%
Process	Process Heating	100%	8,846.0	8,846.00	37.97	100%	7,519.1	7,519.10	-15.0%
Process	Process Boiler	100%	4,432.4	4,432.45	19.03	100%	3,613.9	3,613.89	-18.5%
Process	Process Cooling	100%	11.5	11.47	0.05	100%	9.8	9.75	-15.0%
Process	Other Process	100%	491.7	491.69	2.11	100%	417.9	417.94	-15.0%
Miscellaneous	Miscellaneous	100%	229.2	229.22	0.98	100%	229.2	229.22	0.0%
Total				14,205.52	60.98			11,956	-15.8%

Table A-31 Industrial Electric Metals Market Profile, 2011

Electric Average Market Profile						New Units			
End Use	Technology	Saturation	UEC (kWh)	Intensity (kWh/HH)	Usage (GWh)	Saturation	UEC (kWh)	Intensity (kWh/HH)	Compared to Average
Cooling	Air-Cooled Chiller	3%	2,730.2	68.25	4.64	3%	2,493.2	65.45	-8.7%

Electric Average Market Profile						New Units			
End Use	Technology	Saturation	UEC (kWh)	Intensity (kWh/HH)	Usage (GWh)	Saturation	UEC (kWh)	Intensity (kWh/HH)	Compared to Average
Cooling	Water-Cooled Chiller	3%	2,635.5	65.89	4.48	3%	2,463.2	64.66	-6.5%
Cooling	Roof top AC	2%	4,161.5	69.41	4.72	2%	3,498.9	58.36	-15.9%
Cooling	Air Source Heat Pump	0%	4,207.8	2.55	0.17	0%	3,643.7	2.31	-13.4%
Cooling	Geothermal Heat Pump	4%	2,806.6	104.67	7.12	4%	2,579.5	101.01	-8.1%
Cooling	Other Cooling	0%	-	-	-	0%	-	-	0.0%
Heating	Air Source Heat Pump	0%	8,285.2	5.01	0.34	0%	7,602.3	4.83	-8.2%
Heating	Geothermal Heat Pump	4%	5,526.2	206.10	14.02	4%	4,956.8	194.10	-10.3%
Heating	Electric Resistance	0%	-	-	-	0%	-	-	0.0%
Heating	Electric Furnace	6%	12,723.5	757.46	51.52	6%	12,723.5	757.46	0.0%
Ventilation	Ventilation	100%	-	-	-	100%	-	-	0.0%
Interior Lighting	Screw-in	100%	299.2	299.16	20.35	100%	170.4	170.38	-43.0%
Interior Lighting	High-Bay Fixtures	100%	63.7	63.68	4.33	100%	44.4	44.41	-30.3%
Interior Lighting	Linear Fluorescent	100%	871.5	871.45	59.27	100%	687.2	687.19	-21.1%
Exterior Lighting	Screw-in	100%	0.6	0.56	0.04	100%	0.3	0.26	-52.7%
Exterior Lighting	HID	100%	235.7	235.68	16.03	100%	153.1	153.10	-35.0%
Exterior Lighting	Linear Fluorescent	100%	0.1	0.07	0.00	100%	0.1	0.05	-20.1%
Motors	Pumps	100%	1,252.2	1,252.22	85.16	105%	1,251.9	1,314.50	0.0%
Motors	Fans & Blowers	100%	2,087.0	2,087.04	141.94	105%	2,086.5	2,190.82	0.0%
Motors	Compressed Air	100%	2,087.0	2,087.04	141.94	105%	2,086.6	2,190.90	0.0%
Motors	Matl Handling	100%	2,504.4	2,504.45	170.33	105%	2,503.8	2,629.00	0.0%
Motors	Matl Processing	100%	2,754.9	2,754.89	187.36	105%	2,754.2	2,891.90	0.0%
Motors	Other Motors	100%	2,921.9	2,921.85	198.72	105%	2,921.1	3,067.16	0.0%
Process	Process Heating	100%	11,268.8	11,268.76	766.39	105%	11,268.8	11,832.20	0.0%
Process	Process Cooling and Refrig	100%	361.5	361.51	24.59	105%	361.5	379.59	0.0%
Process	Electro-Chemical Processes	100%	5,439.8	5,439.81	369.96	105%	5,439.8	5,711.80	0.0%
Process	Other Process	100%	295.2	295.19	20.08	105%	295.2	309.94	0.0%
Miscellaneous	Miscellaneous	100%	449.1	449.13	30.55	100%	449.1	449.13	0.0%
Total				34,171.81	2,324.03			35,270.52	3.2%

Table A-32 Industrial Natural Gas Metals Market Profile, 2011

Natural Gas Average Market Profile						New Units			
End Use	Technology	Saturation	UEC (therm)	Intensity (therm/HH)	Usage (MMTherms)	Saturation	UEC (therm)	Intensity (therm/HH)	Compared to Average
Heating	Furnace	44%	468.2	206.87	8.05	44%	405.3	179.07	-13.4%
Heating	Boiler	1%	5,986.3	80.57	3.14	1%	4,862.2	65.44	-18.8%
Heating	Other Heating	24%	421.4	101.81	3.96	24%	358.6	86.63	-14.9%
Process	Process Heating	100%	3,811.4	3,811.37	148.35	100%	3,239.7	3,239.67	-15.0%
Process	Process Boiler	100%	443.4	443.44	17.26	100%	361.5	361.55	-18.5%
Process	Process Cooling	100%	13.4	13.40	0.52	100%	11.4	11.39	-15.0%
Process	Other Process	100%	105.7	105.67	4.11	100%	89.8	89.82	-15.0%
Miscellaneous	Miscellaneous	100%	118.3	118.34	4.61	100%	118.3	118.34	0.0%
Total				4,881.47	190.00			4,152	-14.9%

Table A-33 Industrial Electric Machinery Market Profile, 2011

Electric Average Market Profile						New Units			
End Use	Technology	Saturation	UEC (kWh)	Intensity (kWh/HH)	Usage (GWh)	Saturation	UEC (kWh)	Intensity (kWh/HH)	Compared to Average
Cooling	Air-Cooled Chiller	3%	10,591.2	264.78	9.72	3%	9,671.8	253.89	-8.7%
Cooling	Water-Cooled Chiller	3%	10,223.9	255.60	9.39	3%	9,555.5	250.83	-6.5%
Cooling	Roof top AC	2%	16,143.6	269.28	9.89	2%	13,573.4	226.41	-15.9%
Cooling	Air Source Heat Pump	0%	16,323.2	9.87	0.36	0%	14,135.1	8.98	-13.4%
Cooling	Geothermal Heat Pump	4%	10,887.6	406.04	14.91	4%	10,006.7	391.85	-8.1%
Cooling	Other Cooling	0%	-	-	-	0%	-	-	0.0%
Heating	Air Source Heat Pump	0%	32,140.8	19.44	0.71	0%	29,491.6	18.73	-8.2%
Heating	Geothermal Heat Pump	4%	21,437.9	799.51	29.36	4%	19,228.8	752.98	-10.3%
Heating	Electric Resistance	0%	-	-	-	0%	-	-	0.0%
Heating	Electric Furnace	6%	49,358.3	2,938.43	107.92	6%	49,358.3	2,938.43	0.0%
Ventilation	Ventilation	100%	-	-	-	100%	-	-	0.0%
Interior Lighting	Screw-in	100%	715.0	714.99	26.26	100%	407.2	407.21	-43.0%
Interior Lighting	High-Bay Fixtures	100%	152.2	152.18	5.59	100%	106.1	106.13	-30.3%
Interior Lighting	Linear Fluorescent	100%	2,082.8	2,082.78	76.50	100%	1,642.4	1,642.39	-21.1%
Exterior Lighting	Screw-in	100%	1.3	1.34	0.05	100%	0.6	0.63	-52.7%
Exterior Lighting	HID	100%	563.3	563.28	20.69	100%	365.9	365.91	-35.0%
Exterior Lighting	Linear Fluorescent	100%	0.2	0.16	0.01	100%	0.1	0.13	-20.1%
Motors	Pumps	100%	2,130.6	2,130.59	78.25	105%	2,130.1	2,236.56	0.0%
Motors	Fans & Blowers	100%	2,558.7	2,558.71	93.98	105%	2,558.1	2,685.95	0.0%
Motors	Compressed Air	100%	2,068.9	2,068.95	75.99	105%	2,068.5	2,171.91	0.0%
Motors	Matl Handling	100%	881.5	881.50	32.38	105%	881.3	925.34	0.0%
Motors	Matl Processing	100%	3,494.5	3,494.52	128.35	105%	3,493.6	3,668.31	0.0%
Motors	Other Motors	100%	73.4	73.43	2.70	105%	73.4	77.09	0.0%
Process	Process Heating	100%	1,656.0	1,656.01	60.82	105%	1,656.0	1,738.82	0.0%
Process	Process Cooling and Refrig	100%	651.2	651.24	23.92	105%	651.2	683.80	0.0%
Process	Electro-Chemical Processes	100%	54.6	54.58	2.00	105%	54.6	57.31	0.0%
Process	Other Process	100%	447.4	447.36	16.43	105%	447.4	469.73	0.0%
Miscellaneous	Miscellaneous	100%	1,194.1	1,194.12	43.86	100%	1,194.1	1,194.12	0.0%
Total				23,688.70	870.05			23,273.42	-1.8%

Table A-34 Industrial Natural Gas Machinery Market Profile, 2011

Natural Gas Average Market Profile					
End Use	Technology	Saturation	UEC (therm)	Intensity (therm/HH)	Usage (MMTherms)
Heating	Furnace	44%	1,181.5	521.97	11.94
Heating	Boiler	1%	15,104.8	203.29	4.65
Heating	Other Heating	24%	1,063.3	256.89	5.87
Process	Process Heating	100%	652.4	652.36	14.92
Process	Process Boiler	100%	503.9	503.90	11.52
Process	Process Cooling	100%	17.9	17.91	0.41
Process	Other Process	100%	111.0	110.96	2.54
Miscellaneous	Miscellaneous	100%	87.1	87.06	1.99
Total				2,354.34	53.84

New Units			
Saturation	UEC (therm)	Intensity (therm/HH)	Compared to Average
44%	1,022.7	451.83	-13.4%
1%	12,268.5	165.12	-18.8%
24%	904.8	218.59	-14.9%
100%	554.5	554.51	-15.0%
100%	410.8	410.84	-18.5%
100%	15.2	15.22	-15.0%
100%	94.3	94.31	-15.0%
100%	87.1	87.06	0.0%
1,997			-15.2%

Table A-35 Industrial Electric Other Industrial Market Profile, 2011

Electric Average Market Profile					
End Use	Technology	Saturation	UEC (kWh)	Intensity (kWh/HH)	Usage (GWh)
Cooling	Air-Cooled Chiller	3%	8,974.5	224.36	39.21
Cooling	Water-Cooled Chiller	3%	8,663.4	216.58	37.85
Cooling	Roof top AC	2%	13,679.5	228.18	39.88
Cooling	Air Source Heat Pump	0%	13,831.6	8.37	1.46
Cooling	Geothermal Heat Pump	4%	9,225.7	344.06	60.13
Cooling	Other Cooling	0%	-	-	-
Heating	Air Source Heat Pump	0%	27,234.9	16.48	2.88
Heating	Geothermal Heat Pump	4%	18,165.6	677.47	118.41
Heating	Electric Resistance	0%	-	-	-
Heating	Electric Furnace	6%	41,824.3	2,489.91	435.18
Ventilation	Ventilation	100%	-	-	-
Interior Lighting	Screw-in	100%	652.1	652.07	113.97
Interior Lighting	High-Bay Fixtures	100%	138.8	138.79	24.26
Interior Lighting	Linear Fluorescent	100%	1,899.5	1,899.49	331.99
Exterior Lighting	Screw-in	100%	1.2	1.22	0.21
Exterior Lighting	HID	100%	513.7	513.71	89.79
Exterior Lighting	Linear Fluorescent	100%	0.1	0.15	0.03
Motors	Pumps	100%	1,283.3	1,283.29	224.29
Motors	Fans & Blowers	100%	1,541.2	1,541.16	269.36
Motors	Compressed Air	100%	1,246.2	1,246.16	217.80
Motors	Matl Handling	100%	530.9	530.94	92.80
Motors	Matl Processing	100%	2,104.8	2,104.81	367.87
Motors	Other Motors	100%	44.2	44.23	7.73
Process	Process Heating	100%	2,072.8	2,072.82	362.28
Process	Process Cooling and Refrig	100%	1,085.9	1,085.85	189.78
Process	Electro-Chemical Processes	100%	51.7	51.72	9.04
Process	Other Process	100%	136.8	136.82	23.91
Miscellaneous	Miscellaneous	100%	1,056.8	1,056.76	184.70

New Units			
Saturation	UEC (kWh)	Intensity (kWh/HH)	Compared to Average
3%	8,195.6	225.38	-8.7%
3%	8,097.0	222.67	-6.5%
2%	11,501.6	191.85	-15.9%
0%	11,977.6	7.97	-13.4%
4%	8,479.3	347.85	-8.1%
0%	-	-	0.0%
0%	24,990.1	16.63	-8.2%
4%	16,293.8	668.43	-10.3%
0%	-	-	0.0%
6%	41,824.3	2,489.91	0.0%
100%	-	-	0.0%
100%	371.4	371.37	-43.0%
100%	96.8	96.79	-30.3%
100%	1,497.9	1,497.86	-21.1%
100%	0.6	0.58	-52.7%
100%	333.7	333.71	-35.0%
100%	0.1	0.12	-20.1%
110%	1,283.0	1,411.26	0.0%
110%	1,540.8	1,694.83	0.0%
110%	1,245.9	1,370.47	0.0%
110%	530.8	583.89	0.0%
110%	2,104.3	2,314.70	0.0%
110%	44.2	48.64	0.0%
110%	2,072.8	2,280.10	0.0%
110%	1,085.9	1,194.44	0.0%
110%	51.7	56.89	0.0%
110%	136.8	150.51	0.0%
100%	1,056.8	1,056.76	0.0%

Electric Average Market Profile						New Units			
End Use	Technology	Saturation	UEC (kWh)	Intensity (kWh/HH)	Usage (GWh)	Saturation	UEC (kWh)	Intensity (kWh/HH)	Compared to Average
	Total			18,565.40	3,244.83			18,633.59	0.4%

Table A-36 Industrial Natural Gas Other Industrial Market Profile, 2011

Natural Gas Average Market Profile						New Units			
End Use	Technology	Saturation	UEC (therm)	Intensity (therm/HH)	Usage (MMTherms)	Saturation	UEC (therm)	Intensity (therm/HH)	Compared to Average
Heating	Furnace	44%	1,464.6	647.03	73.82	44%	1,267.8	560.09	-13.4%
Heating	Boiler	1%	18,723.9	252.00	28.75	1%	15,208.0	204.68	-18.8%
Heating	Other Heating	24%	1,318.1	318.44	36.33	24%	1,121.6	270.96	-14.9%
Process	Process Heating	100%	380.7	380.71	43.43	100%	323.6	323.60	-15.0%
Process	Process Boiler	100%	273.6	273.65	31.22	100%	223.1	223.11	-18.5%
Process	Process Cooling	100%	2.9	2.86	0.33	100%	2.4	2.43	-15.0%
Process	Other Process	100%	111.6	111.57	12.73	100%	94.8	94.83	-15.0%
Miscellaneous	Miscellaneous	100%	138.0	138.01	15.74	100%	138.0	138.01	0.0%
Total				2,124.28	242.34			1,818	-14.4%

RESIDENTIAL ENERGY EFFICIENCY EQUIPMENT AND MEASURE DATA

This appendix presents detailed information for all energy-efficiency measures (*equipment* and *non-equipment* measures per the LoadMAP taxonomy) that were evaluated as part of this study. Several sets of tables are provided.

Measure Descriptions

Table B-1 and Table B-2 provide brief descriptions for all equipment and non-equipment measures that were assessed for potential.

Equipment Measure Data

Table B-3 through Table B-18 list the detailed unit-level data for the equipment measures for each of the housing type segments — Single Family, Multi Family, and for existing and new construction, respectively. Savings are in annual kWh per household, and incremental costs are in \$/household (\$/HH), unless noted otherwise. The BC ratio shown in the tables are for the first year of the potential analysis (2011), although the B/C ratio is calculated within LoadMAP for each year of the forecast. The B/C ratio in the tables is 1.00 if the measure represents the baseline technology, and zero if the technology is not available in 2013. The final data item in these tables is the levelized cost of conserved energy, which is defined as the cost of the measure divided by the cumulative amount of energy savings accrued over the measure's lifetime (\$/kWh).

Non-Equipment Measure Data

Table B-19 through Table B-30 list the detailed unit-level data for the non-equipment energy efficiency measures for each of the housing type segments and for existing and new construction, respectively. Because these measures can produce energy-use savings for multiple end-use loads (e.g., insulation affects heating and cooling energy use) savings are expressed as a net percentage of all the relevant, combined end-use loads. Base saturation indicates the percentage of homes in which the measure is already installed. Applicability is a factor that accounts for whether the measure can be applied to the building. Cost is expressed in \$/household. The detailed measure-level tables present the results of the benefit/cost (B/C) analysis for the first year of the analysis (2011) although the B/C ratio is calculated within LoadMAP for each year of the forecast. These tables also contain the levelized cost of conserved energy, which is defined as the cost of the measure divided by the cumulative amount of energy savings accrued over the measure's lifetime. This metric is given in terms of \$/kWh.

Table B-1 Residential Energy Efficiency Equipment Measure Descriptions

Cooling	Central AC	Central air conditioners consist of a refrigeration system using a direct expansion cycle. Equipment includes a compressor, an air-cooled condenser (located outdoors), an expansion valve, and an evaporator coil. A supply fan near the evaporator coil distributes supply air through air ducts to the building. Cooling efficiencies vary based on materials used, equipment size, condenser type, and system configuration. CACs may be unitary (all components housed in a factory-built assembly) or split system (an outdoor condenser section and an indoor evaporator section connected by refrigerant lines and with the compressor either indoors or outdoors). Energy efficiency is rated according to the size of the unit using the Seasonal Energy Efficiency Rating (SEER). Ductless systems with Variable Refrigerant Flow further improve the operating efficiency.
Cooling	Room AC	Room air conditioners are designed to cool a single room or space. They incorporate a complete air-cooled refrigeration and air-handling system in an individual package. Room air conditioners come in several forms, including window, split-type, and packaged terminal units. Energy efficiency is rated according to the size of the unit using the Energy Efficiency Rating (EER).
Cooling / Heating	Air-Source Heat Pump	A central heat pump consists of components similar to a CAC system, but is usually designed to function both as a heat pump and an air conditioner. It consists of a refrigeration system using a direct expansion (DX) cycle. Equipment includes a compressor, an air-cooled condenser (located outdoors), an expansion valve, and an evaporator coil (located in the supply air duct near the supply fan) and a reversing valve to change the DX cycle from cooling to heating when required. The cooling and heating efficiencies vary based on the materials used, equipment size, condenser type, and system configuration. Heat pumps may be unitary (all components housed in a factory-built assembly) or a split system (an outdoor condenser section and an indoor evaporator section connected by refrigerant lines, with either outdoors or indoors. A high-efficiency option for a ductless mini-split system is also analyzed.
Cooling / Heating	Geothermal Heat Pump	Geothermal heat pumps are similar to air-source heat pumps, but use the ground or groundwater instead of outside air to provide a heat source/sink. A geothermal heat pump system generally consists of three major subsystems or parts: a geothermal heat pump to move heat between the building and the fluid in the earth connection, an earth connection for transferring heat between the fluid and the earth, and a distribution subsystem for delivering heating or cooling to the building. The system may also have a desuperheater to supplement the building's water heater, or a full-demand water heater to meet all of the building's hot water needs.
Cooling / Heating	PTHP	This measure includes efficiency upgrades to other small cooling systems including room AC units, packaged terminal air conditioning (PTAC) units, and packaged terminal heat pumps (PTHP).
Heating	Electric Resistance	Resistive heating elements are used to convert electricity directly to heat. Conductive fins surrounding the element or another mechanism is used to deliver the heat directly to the surrounding room or area. These are typically either baseboard or wall-mounted units.
Heating	Furnace/Boiler	Furnaces heat air and distribute the heated air through the building using ducts. Efficiency improvements can include: exhaust fan controls, electronic ignition (no pilot light), compact size and lighter weight to

		reduce cycling losses, smaller-diameter flue pipe, and sealed combustion. Very high efficiency units, or condensing units, condense the water vapor produced in the combustion process and also use the heat from this condensation.
Water Heating	Water Heater	For electric hot water heating, the most common type is a storage heater, which incorporates an electric heating element, storage tank, outer jacket, insulation, and controls in a single unit. Efficient units are characterized by a high recovery or thermal efficiency and low standby losses (the ratio of heat lost per hour to the content of the stored water). A further efficiency gain is available through a heat pump water heater (HPWH), which uses a vapor-compression thermodynamic cycle similar to that found in an air-conditioner or refrigerator to extract heat from an available source (e.g., air) and reject that heat to a higher temperature sink, in this case, the water in the water heater. Electric instantaneous water heaters are available, but are excluded from this study due to potentially high instantaneous demand concerns. For natural gas hot water heating, the most common type is a storage heater, which incorporates a burner, storage tank, outer jacket, insulation, and controls in a single unit. Efficient units are characterized by a high recovery or thermal efficiency and low standby losses (the ratio of heat lost per hour to the content of the stored water). A further efficiency gain is available in condensing units, which condense the water vapor produced in the combustion process and also use the heat from this condensation.
Interior Lighting	Screw-in	Infrared halogen lamps are designed to be a replacement for standard incandescent lamps. Also referred to as advanced incandescent lamps, these products meet the Energy Independence and Security Act (EISA) lighting standards and are phased in as the baseline technology screw-in lamp technology to reflect the timeline over which the EISA lighting standards take effect. Compact fluorescent lamps are designed to be a replacement for standard incandescent lamps and use about 25% of the energy used by standard incandescent lamps to produce the same lumen output. They can use either electronic or magnetic ballasts. Integral compact fluorescent lamps have the ballast integrated into the base of the lamp and have a standard screw-in base that permits installation into existing incandescent fixtures. Light-emitting diode (LED) lighting has seen recent penetration in specific applications such as traffic lights and exit signs. With the potential for extremely high efficiency, LEDs show promise to provide general-use lighting for interior spaces. Current models commercially available have efficacies comparable to CFLs. However, theoretical efficiencies are significantly higher. LED models under development are expected to provide improved efficacies.
Interior Lighting	Linear Fluorescent	T8 fluorescent lamps are smaller in diameter than standard T12 lamps, resulting in greater light output per watt. T8 lamps also operate at a lower current and wattage, which increases the efficiency of the ballast but requires the lamps to be compatible with the ballast. Fluorescent lamp fixtures can include a reflector that increases the light output from the fixture, and thus make it possible to use a fewer number of lamps in each fixture. T5 lamps further increase efficiency by reducing the lamp diameter to 5/8". Light-emitting diode (LED) lighting has seen recent penetration in specific applications such as traffic lights and exit signs. With the potential for extremely high efficiency, LEDs show promise to provide general-use lighting for interior spaces. Current models commercially available have efficacies comparable to CFLs. However, theoretical efficiencies are

		significantly higher. LED models under development are expected to provide improved efficacies.
Interior Lighting	Specialty Lighting	Bulbs that the DOE does not consider conventional and are not covered by federal efficiency standards. These include: appliance bulbs, heavy-duty bulbs, dimmable bulbs, three-way bulbs, G shape (globe) lamps, candelabra base, and others.
Exterior Lighting	Screw-in	Infrared halogen lamps are designed to be a replacement for standard incandescent lamps. Also referred to as advanced incandescent lamps, these products meet the Energy Independence and Security Act (EISA) lighting standards and are phased in as the baseline technology screw-in lamp technology to reflect the timeline over which the EISA lighting standards take effect. Compact fluorescent lamps are designed to be a replacement for standard incandescent lamps and use about 25% of the energy used by standard incandescent lamps to produce the same lumen output. They can use either electronic or magnetic ballasts. Integral compact fluorescent lamps have the ballast integrated into the base of the lamp and have a standard screw-in base that permits installation into existing incandescent fixtures. Light-emitting diode (LED) lighting has seen recent penetration in specific applications such as traffic lights and exit signs. With the potential for extremely high efficiency, LEDs show promise to provide general-use lighting for interior spaces. Current models commercially available have efficacies comparable to CFLs. However, theoretical efficiencies are significantly higher. LED models under development are expected to provide improved efficacies.
Appliances	Refrigerator	Energy-efficient refrigerators/freezers incorporate features such as improved cabinet insulation, more efficient compressors and evaporator fans, defrost controls, mullion heaters, oversized condenser coils, and improved door seals. Further efficiency increases can be obtained by reducing the volume of refrigerated space, or adding multiple compartments to reduce losses from opening doors.
Appliances	Second Refrigerator	Energy-efficient refrigerators/freezers incorporate features such as improved cabinet insulation, more efficient compressors and evaporator fans, defrost controls, mullion heaters, oversized condenser coils, and improved door seals. Further efficiency increases can be obtained by reducing the volume of refrigerated space, or adding multiple compartments to reduce losses from opening doors.
Appliances	Freezer	Energy-efficient refrigerators/freezers incorporate features such as improved cabinet insulation, more efficient compressors and evaporator fans, defrost controls, mullion heaters, oversized condenser coils, and improved door seals. Further efficiency increases can be obtained by reducing the volume of refrigerated space, or adding multiple compartments to reduce losses from opening doors.
Appliances	Clothes Washer	High efficiency clothes washers use superior designs that require less water. Sensors match the hot water needs to the size and soil level of the load, preventing energy waste. Further energy and water savings can be achieved through advanced technologies such as inverter-drive or combination washer-dryer units. MEF is the official energy efficiency metric used to compare relative efficiencies of different clothes washers. MEF considers the energy used to run the washer, heat the water, and run the dryer. The higher the MEF, the more efficient the clothes washer.

Appliances	Clothes Dryer	An energy-efficient clothes dryer has a moisture-sensing device to terminate the drying cycle rather than using a timer and an energy-efficient motor is used for spinning the dryer tub. Application of a heat pump cycle for extracting the moisture from clothes leads to additional energy savings.
Appliances	Dishwasher	High efficiency dishwashers save by using both improved technology for the primary wash cycle, and by using less hot water. Construction includes more effective washing action, energy-efficient motors, and other advanced technology such as sensors that determine the length of the wash cycle and the temperature of the water necessary to clean the dishes.
Appliances	Stove	These products have additional insulation in the oven compartment and tighter-fitting oven door gaskets and hinges to save energy. Conventional ovens must first heat up about 35 pounds of steel and a large amount of air before they heat up the food. Higher efficiency options include convection ovens, halogen burners, and induction burners.
Appliances	Microwave	Appliance that heats food with microwave radiation. No high efficiency option is modeled.
Electronics	Personal Computers	Improved power management can significantly reduce the annual energy consumption of PCs and monitors in both standby and normal operation. ENERGY STAR and Climate Savers labeled products provide increasing level of energy efficiency.
Electronics	Monitor	High efficiency electronics use efficient components and employ sleep/power save modes.
Electronics	Laptops	High efficiency electronics use efficient components and employ sleep/power save modes.
Electronics	Printer/Fax/Copier	High efficiency electronics use efficient components and employ sleep/power save modes.
Electronics	TVs	In the average home, electronic products consumed significant energy, even when they are turn off, to maintain features like clocks, remote control, and channel/station memory. ENERGY STAR labeled consumer electronics can drastically reduce consumption during standby mode, in addition to saving energy through advanced power management during normal use.
Electronics	Devices and Gadgets	High efficiency electronics can use efficient components and employ sleep/power save modes.
Electronics	Set-top Boxes/DVR	High efficiency electronics can use efficient components and employ sleep/power save modes.
Miscellaneous	Pool Heater	Efficient pool heaters can make use of heat pump technology to achieve significantly higher coefficients of performance in the COP=5.0 range. Gas pool heaters have a burner to heat water in a loop. Efficiency improvements can include: exhaust fan controls, electronic ignition (no pilot light), compact size and lighter weight to reduce cycling losses, and sealed combustion. Very high efficiency units, or condensing units, condense the water vapor produced in the combustion process and also use the heat from this condensation.
Miscellaneous	Pool Pump	High-efficiency motors and two-speed pumps provide improved energy

		efficiency for this load.
Miscellaneous	Furnace Fan	In homes heated by a furnace, there is still substantial energy use by the fan responsible for moving the hot air throughout the ductwork. Application of an Electronically Commutating Motor (ECM) ensures that motor speed matches the heating requirements of the system and saves energy when compared to a continuously operating standard motor.
Miscellaneous	Well Pump	Existing well pumps can achieve efficiency improvements by using optimized system components and more efficient motors. Efficiencies: Baseline 40% EF, High Efficiency 60% EF
Miscellaneous	Hot Tub/Spa	High-efficiency motors and two-speed pumps provide improved energy efficiency for this load.
Miscellaneous	Air Purifier/Cleaner	An air purifier (cleaner) meeting the efficiency specifications of ENERGY STAR is purchased and installed in place of a model meeting the current federal standard.
Miscellaneous	Dehumidifier	A dehumidifier meeting the minimum qualifying efficiency standard established by the current ENERGY STAR (Version 2.1 or 3.0) is purchased and installed in a residential setting in place of a unit that meets the minimum federal standard efficiency.
Miscellaneous	Bathroom Exhaust Fan	This market opportunity is defined by the need for continuous mechanical ventilation due to reduced air-infiltration from a tighter building shell. In retrofit projects, existing fans may be too loud, or insufficient in other ways, to be operated as required for proper ventilation. This measure assumes a fan capacity of 50 CFM rated at a sound level of less than 2.0 sones at 0.1 inches of water column static pressure. This measure may be applied to larger capacity, up to 130 CFM, efficient fans with bi-level controls because the savings and incremental costs are very similar. All eligible installations shall be sized to provide the mechanical ventilation rate indicated by ASHRAE 62.2.
Miscellaneous	Miscellaneous	Improvement of miscellaneous electricity uses.

Table B-2 Residential Energy Efficiency Non-Equipment Measure Descriptions

HVAC (All)	Insulation - Ceiling	Thermal insulation is material or combinations of materials that are used to inhibit the flow of heat energy by conductive, convective, and radiative transfer modes. Thus, thermal insulation above ceilings can conserve energy by reducing the heat loss or gain into attics and/or through roofs. The type of building construction defines insulating possibilities. Typical insulating materials include: loose-fill (blown) cellulose, loose-fill (blown) fiberglass, and rigid polystyrene.
Cooling	Insulation - Ducting	Air distribution ducts can be insulated to reduce heating or cooling losses. Best results can be achieved by covering the entire surface area with insulation. Several types of ducts and duct insulation are available, including flexible duct, pre-insulated duct, duct board, duct wrap, tacked, or glued rigid insulation, and waterproof hard shell materials for exterior ducts. This analysis assumes that installing duct insulation can reduce the temperature drop/gain in ducts by 50%.
HVAC (All)	Insulation - Foundation	Thermal insulation is material or combinations of materials that are used to inhibit the flow of heat energy by conductive, convective, and radiative transfer modes. Thus, thermal insulation can conserve energy by reducing heat loss or gain from a building. The type of building construction defines insulating possibilities. Typical insulating materials include: loose-fill (blown) cellulose, loose-fill (blown) fiberglass, and rigid polystyrene. Foundation insulation is modeled for new construction / major retrofits only.
HVAC (All)	Insulation - Infiltration Control	Lowering the air infiltration rate by caulking small leaks and weather-stripping around window frames, doorframes, power outlets, plumbing, and wall corners can provide significant energy savings. Weather-stripping doors and windows will create a tight seal and further reduce air infiltration.
HVAC (All)	Insulation - Radiant Barrier	Radiant barriers are materials installed to reduce the heat gain in buildings. Radiant barriers are made from materials that are highly reflective and have low emissivity like aluminum. The closer the emissivity is to 0 the better they will perform. Radiant barriers can be placed above the insulation or on the roof rafters.
HVAC (All)	Insulation - Wall Cavity	Thermal insulation is material or combinations of materials that are used to inhibit the flow of heat energy by conductive, convective, and radiative transfer modes. Thus, thermal insulation can conserve energy by reducing heat loss or gain from a building. The type of building construction defines insulating possibilities. Typical insulating materials include: loose-fill (blown) cellulose, loose-fill (blown) fiberglass, and rigid polystyrene. Wall insulation is modeled for new construction / major retrofits only.
HVAC (All)	Insulation - Wall Sheathing	Thermal insulation is material or combinations of materials that are used to inhibit the flow of heat energy by conductive, convective, and radiative transfer modes. Thus, thermal insulation can conserve energy by reducing heat loss or gain from a building. The type of building construction defines insulating possibilities. Typical insulating materials include: loose-fill (blown) cellulose, loose-fill (blown) fiberglass, and rigid polystyrene. Wall sheathing is modeled for new construction / major retrofits only.
Cooling	Ducting - Repair and Sealing	Leakage in unsealed ducts varies considerably because of the differences in fabricating machinery used, the methods for assembly, installation workmanship, and age of the ductwork. Air leaks from the system to the outdoors result in a direct loss proportional to the amount of leakage and the difference in enthalpy between the outdoor air and the conditioned air. To seal ducts, a wide variety of sealing methods and products exist. Each has a relatively short shelf life, and no documented research has identified the aging characteristics of sealant applications.
HVAC (All)	Windows - High Efficiency/ENERGY STAR	High-efficiency windows, such as those labeled under the ENERGY STAR Program, are designed to reduce energy use and increase occupant comfort. High-efficiency windows reduce the amount of heat transfer through the glazing surface. For example, some windows have a low-E coating, a thin film of

		metallic oxide coating on the glass surface that allows passage of short-wave solar energy through glass and prevents long-wave energy from escaping. Another example is double-pane glass that reduces conductive and convective heat transfer. Some double-pane windows are gas-filled (usually argon) to further increase the insulating properties of the window.
HVAC (All)	Windows - Install Reflective Film	Reflective films applied to the window interior help reduce solar gain into the space and thus lower cooling energy use.
HVAC (All)	Doors - Storm and Thermal	Like other components of the shell, doors are subject to several types of heat loss: conduction, infiltration, and radiant losses. Similar to a storm window, a storm door creates an insulating air space between the storm and primary doors. A tight fitting storm door can also help reduce air leakage or infiltration. Thermal doors have exceptional thermal insulation properties and also are provided with weather-stripping on the doorframe to reduce air leakage.
HVAC (All)	Roofs - High Reflectivity	The color and material of a building structure surface will determine the amount of solar radiation absorbed by that surface and subsequently transferred into a building. This is called solar absorptance. By using a living roof or a roofing material with a light color (and a lower solar absorptance), the roof will absorb less solar radiation and consequently reduce the cooling load. Living roofs also reduce stormwater runoff.
HVAC (All)	Attic Fan - Installation	Attic fans can reduce the need for AC by reducing heat transfer from the attic through the ceiling of the house. A well-ventilated attic can be several degrees cooler than a comparable, unventilated attic. An option for an attic fan equipped with a small solar photovoltaic generator is also modeled.
HVAC (All)	Attic Fan - Photovoltaic - Installation	Attic fans can reduce the need for AC by reducing heat transfer from the attic through the ceiling of the house. A well-ventilated attic can be several degrees cooler than a comparable, unventilated attic. An option for an attic fan equipped with a small solar photovoltaic generator is also modeled.
HVAC (All)	Whole-House Fan - Installation	Whole-house fans can reduce the need for AC on moderate-weather days or on cool evenings. The fan facilitates a quick air change throughout the entire house. Several windows must be open to achieve the best results. The fan is mounted on the top floor of the house, usually in a hallway ceiling.
HVAC (All)	Ceiling Fan - Installation	Ceiling fans can reduce the need for air conditioning. However, the house occupants must also select a ceiling fan with a high-efficiency motor and either shutoff the AC system or setup the thermostat temperature of the air conditioning system to realize the potential energy savings. Some ceiling fans also come with lamps. In this analysis, it is assumed that there are no lamps, and installing a ceiling fan will allow occupants to increase the thermostat cooling setpoint up by 2°F.
HVAC (All)	Thermostat - Clock/Programmable	A programmable thermostat can be added to most heating/cooling systems. They are typically used during winter to lower temperatures at night and in summer to increase temperatures during the afternoon. The energy savings from this type of thermostat are identical to those of a "setback" strategy with standard thermostats, but the convenience of a programmable thermostat makes it a much more attractive option. In this analysis, the baseline is assumed to have no thermostat setback.
HVAC (All)	Home Energy Management System	A centralized home energy management system can be used to control and schedule cooling, space heating, lighting, and possibly appliances as well. Some designs also allow the homeowner to remotely control loads via the Internet.
Cooling	Central AC - Early Replacement	CAC systems currently on the market are significantly more efficient than older units, due to technology improvement and stricter appliance standards. This measure incents homeowners to replace an aging but still working unit with a new, higher-efficiency one.
Cooling	Central AC - Maintenance and Tune-Up	An air conditioner's filters, coils, and fins require regular cleaning and maintenance for the unit to function effectively and efficiently throughout its life. Neglecting necessary maintenance leads to a steady decline in performance, requiring the AC unit to use more energy for the same cooling

		load.
Cooling / Heating	Central Heat Pump - Maintenance	A heat pump's filters, coils, and fins require regular cleaning and maintenance for the unit to function effectively and efficiently throughout its life. Neglecting necessary maintenance ensures a steady decline in performance while energy use steadily increases.
Cooling	Room AC - Removal of Second Unit	Homeowners may have a second room AC unit that is extremely inefficient. This measure incents homeowners to recycle the second unit and thus also eliminates associated electricity use.
Heating	Boiler- Hot Water Reset	Automatic control algorithm for boilers that varies the water temperature of the supply loop in an inverse relationship with the measured outside air temperature. If it is warmer outside, the hot water supply loop does not have to be as hot, thereby tailoring boiler heat output to the demand and saving energy.
Heating	Boiler- Pipe Insulation	Insulating hot water pipes decreases energy losses from piping that distributes hot water throughout the building. It also results in quicker delivery of hot water and may allow the lowering of the hot water set point, which saves energy. The most common insulation materials for this purpose are polyethylene and neoprene.
Heating	Boiler- Maintenance	A boiler's combustion controls, circulation loops, and heat exchanger require regular checks and maintenance for the unit to function effectively and efficiently throughout its life. Neglecting necessary maintenance leads to a steady decline in performance, requiring the unit to use more energy for the same heating load.
Heating	Furnace- Maintenance	A furnace's combustion controls, ventilation systems, and heat exchanger require regular checks and maintenance for the unit to function effectively and efficiently throughout its life. Neglecting necessary maintenance leads to a steady decline in performance, requiring the unit to use more energy for the same heating load.
Water Heating	Water Heater - Drainwater Heat Recovery	Drainwater Heat Recovery is a system in which drain water is used to preheat cold water entering the water heater. While these systems themselves are relatively inexpensive, upgrading an existing system could be unreasonable because of demolition costs. Thus they are modeled for new vintage only.
Water Heating	Water Heater - Faucet Aerators	Water faucet aerators are threaded screens that attach to existing faucets. They reduce the volume of water coming out of faucets while introducing air into the water stream. This measure provides energy saving by reducing hot water use, as well as water conservation for both hot and cold water.
Water Heating	Water Heater - Low-Flow Showerheads	Similar to faucet aerators, low-flow showerheads reduce the consumption of hot water, which in turn decreases water heating energy use.
Water Heating	Water Heater - Pipe Insulation	Insulating hot water pipes decreases energy losses from piping that distributes hot water throughout the building. It also results in quicker delivery of hot water and may allow the lowering of the hot water set point, which saves energy. The most common insulation materials for this purpose are polyethylene and neoprene.
Water Heating	Water Heater - Timer	These measures use either a programmable thermostat or a timer to adjust the water heater setpoint at times of low usage, typically when a home is unoccupied.
Water Heating	Water Heater - Desuperheater	A desuperheater can be added to an existing geothermal heat pump system (typically installed with the primary function of space heating and cooling) in order to draw off a portion of the geothermal heat for water heating purposes. The system can either supplement the building's water heater, or be a full-demand water heater that meets all of the building's hot water needs.
Water Heating	Water Heater - Solar System	Solar water heating systems can be used in residential buildings that have an appropriate near-south-facing roof or nearby unshaded grounds for installing a collector. Although system types vary, in general these systems use a solar absorber surface within a solar collector or an actual storage tank. Either a

		heat-transfer fluid or the actual potable water flows through tubes attached to the absorber and transfers heat from it. (Systems with a separate heat-transfer-fluid loop include a heat exchanger that then heats the potable water.) The heated water is stored in a separate preheat tank or a conventional water heater tank. If additional heat is needed, it is provided by a conventional water-heating system.
Interior Lighting	Interior Lighting - Occupancy Sensors	Occupancy sensors turn lights off when a space is unoccupied. They are appropriate for areas with intermittent use, such as bathrooms or storage areas.
Exterior Lighting	Exterior Lighting - Photosensor Control	Photosensor controls turn exterior lighting on or off based on ambient lighting levels. Compared with manual operation, this can reduce the operation of exterior lighting during daylight hours.
Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Solar photovoltaic generation may be used to power exterior lighting and thus eliminate all or part of the electrical energy use.
Exterior Lighting	Exterior Lighting - Timeclock Installation	Lighting timers turn exterior lighting on or off based on a preset schedule. Compared with manual operation, this can reduce the operation of exterior lighting during daylight hours.
Appliances	Refrigerator - Early Replacement	Refrigerators/freezers currently on the market are significantly more efficient than older units, due to technology improvement and stricter appliance standards. This measure incents homeowners to replace an aging but still working unit with a new, higher-efficiency one.
Appliances	Refrigerator - Maintenance	This measure includes repairing and recharging refrigerant lines, cleaning condenser coils, and replacing the oil. This reduces energy consumption by improving the rate at which the system can compress and cool refrigerant as it moves through the system.
Appliances	Refrigerator - Remove Second Unit	Homeowners may have a second refrigerator or freezer that is not used to full capacity and that, because of its age, is extremely inefficient. This measure incents homeowners to recycle the second unit and thus also eliminates associated electricity use.
Appliances	Freezer - Remove Second Unit	Homeowners may have a second refrigerator or freezer that is not used to full capacity and that, because of its age, is extremely inefficient. This measure incents homeowners to recycle the second unit and thus also eliminates associated electricity use.
Appliances	Freezer - Early Replacement	Refrigerators/freezers currently on the market are significantly more efficient than older units, due to technology improvement and stricter appliance standards. This measure incents homeowners to replace an aging but still working unit with a new, higher-efficiency one.
Appliances	Freezer - Maintenance	This measure includes repairing and recharging refrigerant lines, cleaning condenser coils, and replacing the oil. This reduces energy consumption by improving the rate at which the system can compress and cool refrigerant as it moves through the system.
Electronics	Electronics - Smart Power Strips	Representing a growing portion of home electricity consumption, plug-in electronics such as set-top boxes, DVD players, gaming systems, digital video recorders, and even battery chargers for mobile phones and laptop computers are often designed to supply a set voltage. When the units are not in use, this voltage could be dropped significantly (~1 W) and thereby generate a significant energy savings, assumed for this analysis to be between 4-5% on average. These savings are in excess of the measures already discussed for computers and televisions.
Miscellaneous	Pool Pump - Timer	A pool pump timer allows the pump to turn off automatically, eliminating the wasted energy associated with unnecessary pumping.
Miscellaneous	Pool Heater - Solar System	This measure replaces a conventional pool heater with a solar system.
HVAC (All)	ENERGY STAR Home	ENERGY STAR home design uses an integrated approach to the design of new

	Design	buildings to account for the interaction of building systems. Designs may specify the building orientation, building shell, proper sizing of equipment and systems, and controls strategies with the goal of optimizing building energy efficiency and comfort. Options that may be evaluated and incorporated include passive solar strategies, increased thermal mass, natural ventilation, energy recovery ventilation, daylighting strategies, and shading strategies; but with specific requirements that adhere to the ENERGY STAR standard and measurement system. This measure is modeled for new vintage only.
Miscellaneous	Information Based Energy Efficiency Programs	This measure will include the impacts from behavioral information-based programs such as Opower, where the evaluations have isolated valid behavioral effects from the technology effects of all the other measures listed here.
Miscellaneous	Combined Boiler and Water Heating Unit	This measure applies to natural gas boilers that supply hot water for space heat and domestic hot water through on-demand supply. In order for this characterization to apply, the efficient equipment must be a condensing boiler for space heating with on-demand domestic hot water and a AFUE great than or equal to 90%. It is assumed to be installed in a non-residential space and replace existing natural gas equipment used for the same purpose.
Miscellaneous	Pool/Spa Cover	A pool or spa cover (also referred to as a solar cover or solar blanket) keeps the water in the pool warmer by absorbing heat from the sun and transferring the heat to the pool water, reducing the energy used by the pool heater.

Table B-3 Energy Efficiency Equipment Data, Electric Customer Only—Single Family, Existing Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/HH/yr)	Incremental Cost (\$/HH)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Central AC	SEER 13	-	-	18	1.00	-
Cooling	Central AC	SEER 14.5 (Energy Star)	189.48	\$404.13	18	1.01	\$0.20
Cooling	Central AC	SEER 15 (CEE Tier 2)	273.33	\$808.27	18	0.73	\$0.27
Cooling	Central AC	SEER 16 (CEE Tier 3)	344.31	\$1,212.40	18	0.61	\$0.33
Cooling	Central AC	Ductless Minisplit	404.68	\$2,631.48	18	0.33	\$0.60
Cooling	Central AC	SEER 21	763.15	\$3,083.65	18	0.53	\$0.38
Cooling	Room AC	EER 9.8	-	-	12	-	-
Cooling	Room AC	EER 10.8 (Energy Star)	93.57	\$39.29	12	-	\$0.05
Cooling	Room AC	EER 11.0	110.37	\$78.58	12	1.00	\$0.08
Cooling	Room AC	EER 11.5	149.52	\$390.44	12	0.20	\$0.31
Cooling	Room AC	EER 12.0	185.43	\$702.29	12	0.19	\$0.45
Cooling	Air-Source Heat Pump	SEER 13, HSPF 7.7	-	-	18	1.00	-
Cooling	Air-Source Heat Pump	SEER 14, HSPF 8.0	129.00	\$132.23	18	2.22	\$0.10
Cooling	Air-Source Heat Pump	SEER 15, HSPF 8.2	188.48	\$264.46	18	1.62	\$0.13
Cooling	Air-Source Heat Pump	SEER 16, HSPF 8.5	238.64	\$396.70	18	1.37	\$0.15
Cooling	Air-Source Heat Pump	Ductless Minisplit	281.28	\$3,040.37	18	0.21	\$1.00
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	18	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	96.98	\$647.88	18	0.34	\$0.62
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	171.73	\$2,105.60	18	0.19	\$1.14
Cooling	Geothermal Heat Pump	EER 30, COP 5	708.86	\$6,478.78	18	0.25	\$0.85
Cooling	PTHP	EER 9.8	-	-	15	1.00	-
Cooling	PTHP	EER 10.2	41.22	\$17.14	15	4.33	\$0.04
Cooling	PTHP	EER 10.8	97.32	\$42.86	15	4.09	\$0.05
Cooling	PTHP	EER 11	114.67	\$51.43	15	4.01	\$0.05
Cooling	PTHP	EER 11.5	155.38	\$72.86	15	3.84	\$0.05
Heating	Furnace	Standard	-	-	15	1.00	-
Heating	Electric Room Heat	Standard	-	-	20	1.00	-
Heating	Air-Source Heat Pump	SEER 13, HSPF 7.7	-	-	18	1.00	-
Heating	Air-Source Heat Pump	SEER 14, HSPF 8.0	484.08	\$71.45	18	4.32	\$0.01
Heating	Air-Source Heat Pump	SEER 15, HSPF 8.2	882.72	\$142.91	18	3.94	\$0.02
Heating	Air-Source Heat Pump	SEER 16, HSPF 8.5	1,210.54	\$214.36	18	3.60	\$0.02
Heating	Air-Source Heat Pump	Ductless Minisplit	1,473.69	\$1,642.89	18	0.56	\$0.10
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	18	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	251.50	\$691.66	18	0.23	\$0.26
Heating	Geothermal Heat Pump	EER 18, COP 3.8	436.69	\$2,247.90	18	0.12	\$0.48
Heating	Geothermal Heat Pump	EER 30, COP 5	2,540.84	\$6,916.60	18	0.23	\$0.25
Heating	PTHP	EER 9.8	-	-	15	1.00	-
Heating	PTHP	EER 10.2	39.50	\$17.14	15	1.17	\$0.04
Heating	PTHP	EER 10.8	93.28	\$42.86	15	1.10	\$0.05
Heating	PTHP	EER 11	109.89	\$51.43	15	1.08	\$0.05
Heating	PTHP	EER 11.5	148.92	\$72.86	15	1.04	\$0.05
Water Heating	Water Heater <= 55 gal	EF 0.9	-	-	13	1.00	-
Water Heating	Water Heater <= 55 gal	EF 0.95	137.26	\$100.00	13	0.68	\$0.08
Water Heating	Water Heater <= 55 gal	EF 2.0 (HP)	1,435.36	\$1,575.00	13	0.49	\$0.12
Water Heating	Water Heater <= 55 gal	EF 2.3 (HP)	1,588.55	\$1,703.00	13	0.50	\$0.12
Water Heating	Water Heater > 55 gal	EF 0.9	-	-	13	1.00	-
Water Heating	Water Heater > 55 gal	EF 0.95	146.31	\$40.00	13	1.81	\$0.03
Water Heating	Water Heater > 55 gal	EF 2.0 (HP)	1,530.02	\$574.44	13	1.47	\$0.04
Water Heating	Water Heater > 55 gal	EF 2.3 (HP)	1,693.30	\$731.11	13	1.26	\$0.05
Interior Lighting	Screw-in	Incandescent	-	-	3	-	-
Interior Lighting	Screw-in	Infrared Halogen	293.12	\$119.61	4	1.00	\$0.11
Interior Lighting	Screw-in	Infrared Halogen (2020)	1,069.58	\$119.61	4	-	\$0.03
Interior Lighting	Screw-in	CFL	1,212.55	\$48.18	6	1.00	\$0.01
Interior Lighting	Screw-in	LED	1,272.23	\$3,947.28	15	0.12	\$0.32
Interior Lighting	Screw-in	LED (2020)	1,403.50	\$225.96	15	-	\$0.02
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Interior Lighting	Linear Fluorescent	T8	13.08	(\$4.64)	10	1.00	(\$0.05)

End Use	Technology	Efficiency Definition	Savings (kWh/HH/yr)	Incremental Cost (\$/HH)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Interior Lighting	Linear Fluorescent	LED (2011)	28.71	\$2,916.92	20	-	\$8.97
Interior Lighting	Linear Fluorescent	Super T8	39.18	\$37.06	10	0.24	\$0.13
Interior Lighting	Linear Fluorescent	T5	39.74	\$63.56	10	0.15	\$0.21
Interior Lighting	Linear Fluorescent	LED (2020)	78.01	\$128.03	20	-	\$0.14
Interior Lighting	Specialty	Incandescent	-	-	3	1.00	-
Interior Lighting	Specialty	Infrared Halogen	65.97	\$148.56	4	0.04	\$0.62
Interior Lighting	Specialty	CFL	272.89	\$59.85	6	0.89	\$0.04
Interior Lighting	Specialty	LED	286.32	\$1,629.20	15	0.07	\$0.58
Interior Lighting	Specialty	LED (2020)	315.87	\$88.53	15	-	\$0.03
Exterior Lighting	Screw-in	Incandescent	-	-	3	-	-
Exterior Lighting	Screw-in	Infrared Halogen	26.86	\$23.34	4	1.00	\$0.24
Exterior Lighting	Screw-in	Infrared Halogen (2020)	166.17	\$23.34	4	-	\$0.04
Exterior Lighting	Screw-in	CFL	191.82	\$12.04	5	1.00	\$0.01
Exterior Lighting	Screw-in	LED	208.31	\$773.14	10	0.10	\$0.49
Exterior Lighting	Screw-in	LED (2020)	226.09	\$44.17	15	-	\$0.02
Appliances	Refrigerator	Standard	-	-	12	-	-
Appliances	Refrigerator	Energy Star	97.48	\$30.00	12	-	\$0.04
Appliances	Refrigerator	High Efficiency	130.83	\$500.00	12	-	\$0.45
Appliances	Refrigerator	AHAM (2014)	155.63	\$293.00	12	1.00	\$0.22
Appliances	Refrigerator	High Efficiency (2014)	177.01	\$770.00	12	0.02	\$0.51
Appliances	Second Refrigerator	Standard	-	-	12	-	-
Appliances	Second Refrigerator	Energy Star	113.55	\$30.00	12	-	\$0.03
Appliances	Second Refrigerator	High Efficiency	152.39	\$500.00	12	-	\$0.39
Appliances	Second Refrigerator	AHAM (2014)	181.28	\$293.00	12	1.00	\$0.19
Appliances	Second Refrigerator	High Efficiency (2014)	206.18	\$770.00	12	0.03	\$0.44
Appliances	Freezer	Standard	-	-	11	-	-
Appliances	Freezer	Energy Star	46.71	\$35.00	11	-	\$0.09
Appliances	Freezer	High Efficiency	77.26	\$300.00	11	-	\$0.48
Appliances	Freezer	AHAM (2014)	80.85	\$356.27	11	1.00	\$0.55
Appliances	Freezer	High Efficiency (2014)	92.53	\$550.00	11	0.03	\$0.74
Appliances	Clothes Washer	Standard (1.26)	-	-	14	1.00	-
Appliances	Clothes Washer	ENERGY STAR(1.72)	11.96	\$141.66	14	-	\$1.27
Appliances	Clothes Washer	ENERGY STAR(MEF 2.0)	19.95	\$210.00	14	0.05	\$1.13
Appliances	Clothes Washer	Compact (MEF 2.79)	39.70	\$458.00	14	0.05	\$1.23
Appliances	Clothes Dryer	Baseline	-	-	13	1.00	-
Appliances	Clothes Dryer	High Efficiency	25.46	\$100.00	13	0.13	\$0.44
Appliances	Clothes Dryer	Baseline (2015+)	26.73	\$75.00	13	-	\$0.31
Appliances	Clothes Dryer	High Efficiency (2015+)	59.86	\$175.00	13	-	\$0.33
Appliances	Dishwasher	Standard (EF 0.63)	-	-	13	-	-
Appliances	Dishwasher	ENERGY STAR(EF 0.73)	42.83	\$50.00	13	-	\$0.13
Appliances	Dishwasher	AHAM (EF 0.73)	42.83	\$50.00	13	1.00	\$0.13
Appliances	Dishwasher	Ultra Efficient (EF 1.1)	185.61	\$425.00	13	0.20	\$0.26
Appliances	Stove	Standard	-	-	13	1.00	-
Appliances	Stove	Convection	1.29	\$121.00	13	0.01	\$10.50
Appliances	Stove	Halogen Burner	4.25	\$580.00	13	0.00	\$15.26
Appliances	Stove	Induction	23.88	\$898.00	13	0.02	\$4.21
Appliances	Microwave	Standard	-	-	9	1.00	-
Electronics	Personal Computers	Standard	-	-	5	1.00	-
Electronics	Personal Computers	Energy Star	91.86	\$0.01	5	1,674.83	\$0.00
Electronics	Monitor	Standard	-	-	5	1.00	-
Electronics	Monitor	Energy Star	12.50	\$0.01	5	227.97	\$0.00
Electronics	Laptops	Standard	-	-	4	1.00	-
Electronics	Laptops	Energy Star	42.32	\$0.01	4	600.47	\$0.00
Electronics	TVs	Standard	-	-	11	1.00	-
Electronics	TVs	ENERGY STAR(3.1)	46.21	\$0.01	11	-	\$0.00
Electronics	TVs	ENERGY STAR(4.1)	98.90	\$0.02	11	-	\$0.00
Electronics	TVs	ENERGY STAR(5.1)	111.37	\$0.03	11	1,556.93	\$0.00
Electronics	Printer/Fax/Copier	Standard	-	-	5	1.00	-
Electronics	Printer/Fax/Copier	Energy Star	11.70	\$0.01	5	213.26	\$0.00
Electronics	Set-top Boxes/DVR	Standard	-	-	5	1.00	-

Residential Energy Efficiency Equipment and Measure Data

End Use	Technology	Efficiency Definition	Savings (kWh/HH/yr)	Incremental Cost (\$/HH)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Electronics	Set-top Boxes/DVR	ENERGY STAR(2009)	38.03	\$0.01	5	-	\$0.00
Electronics	Set-top Boxes/DVR	ENERGY STAR(2011)	50.71	\$0.02	5	462.23	\$0.00
Electronics	Devices and Gadgets	Standard	-	-	5	1.00	-
Miscellaneous	Air Purifier/Cleaner	Standard	-	-	9	1.00	-
Miscellaneous	Air Purifier/Cleaner	Energy Star	498.75	\$70.00	9	2.53	\$0.02
Miscellaneous	Dehumidifier	Standard	-	-	12	1.00	-
Miscellaneous	Dehumidifier	Energy Star	434.15	\$45.00	12	4.59	\$0.01
Miscellaneous	Pool Pump	Standard	-	-	15	1.00	-
Miscellaneous	Pool Pump	High Efficiency	146.94	\$85.00	15	1.03	\$0.06
Miscellaneous	Pool Pump	Two-Speed	587.75	\$579.00	15	0.60	\$0.10
Miscellaneous	Pool Heater	Electric Resistance	-	-	15	1.00	-
Miscellaneous	Pool Heater	Heat Pump (COP = 5.0)	3,579.82	\$2,550.00	15	0.84	\$0.07
Miscellaneous	Hot Tub / Spa	Standard	-	-	15	1.00	-
Miscellaneous	Hot Tub / Spa	Efficient Pumps	135.38	\$300.00	15	0.27	\$0.23
Miscellaneous	Hot Tub / Spa	Improved Controls and Pumps	180.50	\$350.00	15	0.31	\$0.20
Miscellaneous	Well Pump	Standard	-	-	5	1.00	-
Miscellaneous	Furnace Fan	Standard	-	-	20	1.00	-
Miscellaneous	Furnace Fan	ECM	87.65	\$97.00	20	0.70	\$0.10
Miscellaneous	Bathroom Exhaust Fan	Standard	-	-	19	1.00	-
Miscellaneous	Bathroom Exhaust Fan	High Efficiency	84.55	\$43.50	19	1.44	\$0.05
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table B-4 Energy Efficiency Equipment Data, Electric Customer Only—Single Family, New Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/HH/yr)	Incremental Cost (\$/HH)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Central AC	SEER 13	-	-	18	1.00	-
Cooling	Central AC	SEER 14.5 (Energy Star)	229.17	\$507.67	18	0.97	\$0.21
Cooling	Central AC	SEER 15 (CEE Tier 2)	333.69	\$1,015.33	18	0.71	\$0.28
Cooling	Central AC	SEER 16 (CEE Tier 3)	421.45	\$1,523.00	18	0.59	\$0.34
Cooling	Central AC	Ductless Minisplit	496.35	\$3,305.62	18	0.32	\$0.62
Cooling	Central AC	SEER 21	561.12	\$3,873.62	18	0.31	\$0.64
Cooling	Room AC	EER 9.8	-	-	12	-	-
Cooling	Room AC	EER 10.8 (Energy Star)	104.85	\$39.29	12	-	\$0.04
Cooling	Room AC	EER 11.0	123.47	\$78.58	12	1.00	\$0.07
Cooling	Room AC	EER 11.5	167.41	\$390.44	12	0.22	\$0.27
Cooling	Room AC	EER 12.0	207.62	\$702.29	12	0.21	\$0.40
Cooling	Air-Source Heat Pump	SEER 13, HSPF 7.7	-	-	18	1.00	-
Cooling	Air-Source Heat Pump	SEER 14, HSPF 8.0	146.91	\$149.87	18	2.23	\$0.09
Cooling	Air-Source Heat Pump	SEER 15, HSPF 8.2	213.92	\$299.74	18	1.63	\$0.13
Cooling	Air-Source Heat Pump	SEER 16, HSPF 8.5	270.17	\$449.61	18	1.37	\$0.15
Cooling	Air-Source Heat Pump	Ductless Minisplit	318.19	\$3,445.89	18	0.21	\$1.01
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	18	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	155.86	\$734.29	18	0.48	\$0.44
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	276.12	\$2,386.45	18	0.26	\$0.80
Cooling	Geothermal Heat Pump	EER 30, COP 5	1,150.84	\$7,342.91	18	0.36	\$0.59
Cooling	PTHP	EER 9.8	-	-	15	1.00	-
Cooling	PTHP	EER 10.2	41.22	\$17.14	15	4.33	\$0.04
Cooling	PTHP	EER 10.8	97.32	\$42.86	15	4.09	\$0.05
Cooling	PTHP	EER 11	114.67	\$51.43	15	4.01	\$0.05
Cooling	PTHP	EER 11.5	155.38	\$72.86	15	3.84	\$0.05
Heating	Furnace	Standard	-	-	15	1.00	-
Heating	Electric Room Heat	Standard	-	-	20	1.00	-
Heating	Air-Source Heat Pump	SEER 13, HSPF 7.7	-	-	18	1.00	-
Heating	Air-Source Heat Pump	SEER 14, HSPF 8.0	491.23	\$80.98	18	3.87	\$0.02
Heating	Air-Source Heat Pump	SEER 15, HSPF 8.2	887.48	\$161.97	18	3.49	\$0.02
Heating	Air-Source Heat Pump	SEER 16, HSPF 8.5	1,212.42	\$242.95	18	3.18	\$0.02
Heating	Air-Source Heat Pump	Ductless Minisplit	1,465.01	\$1,862.02	18	0.49	\$0.12
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	18	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	210.38	\$783.92	18	0.17	\$0.35
Heating	Geothermal Heat Pump	EER 18, COP 3.8	360.02	\$2,547.74	18	0.09	\$0.66
Heating	Geothermal Heat Pump	EER 30, COP 5	2,743.39	\$7,839.21	18	0.22	\$0.27
Heating	PTHP	EER 9.8	-	-	15	1.00	-
Heating	PTHP	EER 10.2	39.50	\$17.14	15	1.17	\$0.04
Heating	PTHP	EER 10.8	93.28	\$42.86	15	1.10	\$0.05
Heating	PTHP	EER 11	109.89	\$51.43	15	1.08	\$0.05
Heating	PTHP	EER 11.5	148.92	\$72.86	15	1.04	\$0.05
Water Heating	Water Heater <= 55 gal	EF 0.9	-	-	13	1.00	-
Water Heating	Water Heater <= 55 gal	EF 0.95	124.19	\$100.00	13	0.61	\$0.09
Water Heating	Water Heater <= 55 gal	EF 2.0 (HP)	1,298.66	\$1,575.00	13	0.44	\$0.14
Water Heating	Water Heater <= 55 gal	EF 2.3 (HP)	1,437.26	\$1,703.00	13	0.45	\$0.13
Water Heating	Water Heater > 55 gal	EF 0.9	-	-	13	1.00	-
Water Heating	Water Heater > 55 gal	EF 0.95	132.38	\$40.00	13	1.64	\$0.03
Water Heating	Water Heater > 55 gal	EF 2.0 (HP)	1,384.30	\$574.44	13	1.33	\$0.05
Water Heating	Water Heater > 55 gal	EF 2.3 (HP)	1,532.03	\$731.11	13	1.14	\$0.05
Interior Lighting	Screw-in	Incandescent	-	-	3	-	-
Interior Lighting	Screw-in	Infrared Halogen	265.71	\$108.42	4	1.00	\$0.11
Interior Lighting	Screw-in	Infrared Halogen (2020)	969.55	\$108.42	4	-	\$0.03
Interior Lighting	Screw-in	CFL	1,099.14	\$43.68	6	1.00	\$0.01
Interior Lighting	Screw-in	LED	1,153.24	\$3,578.10	15	0.12	\$0.32
Interior Lighting	Screw-in	LED (2020)	1,272.24	\$204.83	15	-	\$0.02
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Interior Lighting	Linear Fluorescent	T8	1.23	(\$0.44)	10	1.00	(\$0.05)

Residential Energy Efficiency Equipment and Measure Data

End Use	Technology	Efficiency Definition	Savings (kWh/HH/yr)	Incremental Cost (\$/HH)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Interior Lighting	Linear Fluorescent	LED (2011)	2.71	\$274.92	20	-	\$8.97
Interior Lighting	Linear Fluorescent	Super T8	3.69	\$3.49	10	0.24	\$0.13
Interior Lighting	Linear Fluorescent	T5	3.75	\$5.99	10	0.15	\$0.21
Interior Lighting	Linear Fluorescent	LED (2020)	7.35	\$12.07	20	-	\$0.14
Interior Lighting	Specialty	Incandescent	-	-	3	1.00	-
Interior Lighting	Specialty	Infrared Halogen	65.58	\$147.68	4	0.04	\$0.62
Interior Lighting	Specialty	CFL	271.28	\$59.49	6	0.89	\$0.04
Interior Lighting	Specialty	LED	284.63	\$1,619.59	15	0.07	\$0.58
Interior Lighting	Specialty	LED (2020)	314.00	\$88.01	15	-	\$0.03
Exterior Lighting	Screw-in	Incandescent	-	-	3	-	-
Exterior Lighting	Screw-in	Infrared Halogen	25.13	\$21.84	4	1.00	\$0.24
Exterior Lighting	Screw-in	Infrared Halogen (2020)	155.48	\$21.84	4	-	\$0.04
Exterior Lighting	Screw-in	CFL	179.47	\$11.27	5	1.00	\$0.01
Exterior Lighting	Screw-in	LED	194.90	\$723.37	10	0.10	\$0.49
Exterior Lighting	Screw-in	LED (2020)	211.53	\$41.33	15	-	\$0.02
Appliances	Refrigerator	Standard	-	-	12	-	-
Appliances	Refrigerator	Energy Star	97.48	\$30.00	12	-	\$0.04
Appliances	Refrigerator	High Efficiency	130.83	\$500.00	12	-	\$0.45
Appliances	Refrigerator	AHAM (2014)	155.63	\$293.00	12	1.00	\$0.22
Appliances	Refrigerator	High Efficiency (2014)	177.01	\$770.00	12	0.02	\$0.51
Appliances	Second Refrigerator	Standard	-	-	12	-	-
Appliances	Second Refrigerator	Energy Star	113.55	\$30.00	12	-	\$0.03
Appliances	Second Refrigerator	High Efficiency	152.39	\$500.00	12	-	\$0.39
Appliances	Second Refrigerator	AHAM (2014)	181.28	\$293.00	12	1.00	\$0.19
Appliances	Second Refrigerator	High Efficiency (2014)	206.18	\$770.00	12	0.03	\$0.44
Appliances	Freezer	Standard	-	-	11	-	-
Appliances	Freezer	Energy Star	46.71	\$35.00	11	-	\$0.09
Appliances	Freezer	High Efficiency	77.26	\$300.00	11	-	\$0.48
Appliances	Freezer	AHAM (2014)	80.85	\$356.27	11	1.00	\$0.55
Appliances	Freezer	High Efficiency (2014)	92.53	\$550.00	11	0.03	\$0.74
Appliances	Clothes Washer	Standard (1.26)	-	-	14	1.00	-
Appliances	Clothes Washer	ENERGY STAR(1.72)	11.96	\$141.66	14	-	\$1.27
Appliances	Clothes Washer	ENERGY STAR(MEF 2.0)	19.95	\$210.00	14	0.05	\$1.13
Appliances	Clothes Washer	Compact (MEF 2.79)	39.70	\$458.00	14	0.05	\$1.23
Appliances	Clothes Dryer	Baseline	-	-	13	1.00	-
Appliances	Clothes Dryer	High Efficiency	25.46	\$100.00	13	0.13	\$0.44
Appliances	Clothes Dryer	Baseline (2015+)	26.73	\$75.00	13	-	\$0.31
Appliances	Clothes Dryer	High Efficiency (2015+)	59.86	\$175.00	13	-	\$0.33
Appliances	Dishwasher	Standard (EF 0.63)	-	-	13	-	-
Appliances	Dishwasher	ENERGY STAR(EF 0.73)	42.83	\$50.00	13	-	\$0.13
Appliances	Dishwasher	AHAM (EF 0.73)	42.83	\$50.00	13	1.00	\$0.13
Appliances	Dishwasher	Ultra Efficient (EF 1.1)	185.61	\$425.00	13	0.20	\$0.26
Appliances	Stove	Standard	-	-	13	1.00	-
Appliances	Stove	Convection	1.29	\$121.00	13	0.01	\$10.50
Appliances	Stove	Halogen Burner	4.25	\$580.00	13	0.00	\$15.26
Appliances	Stove	Induction	23.88	\$898.00	13	0.02	\$4.21
Appliances	Microwave	Standard	-	-	9	1.00	-
Electronics	Personal Computers	Standard	-	-	5	1.00	-
Electronics	Personal Computers	Energy Star	91.86	\$0.01	5	1,674.83	\$0.00
Electronics	Monitor	Standard	-	-	5	1.00	-
Electronics	Monitor	Energy Star	12.50	\$0.01	5	227.97	\$0.00
Electronics	Laptops	Standard	-	-	4	1.00	-
Electronics	Laptops	Energy Star	42.32	\$0.01	4	600.47	\$0.00
Electronics	TVs	Standard	-	-	11	1.00	-
Electronics	TVs	ENERGY STAR(3.1)	46.21	\$0.01	11	-	\$0.00
Electronics	TVs	ENERGY STAR(4.1)	98.90	\$0.02	11	-	\$0.00
Electronics	TVs	ENERGY STAR(5.1)	111.37	\$0.03	11	1,556.93	\$0.00
Electronics	Printer/Fax/Copier	Standard	-	-	5	1.00	-
Electronics	Printer/Fax/Copier	Energy Star	11.70	\$0.01	5	213.26	\$0.00
Electronics	Set-top Boxes/DVR	Standard	-	-	5	1.00	-

End Use	Technology	Efficiency Definition	Savings (kWh/HH/yr)	Incremental Cost (\$/HH)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Electronics	Set-top Boxes/DVR	ENERGY STAR(2009)	38.03	\$0.01	5	-	\$0.00
Electronics	Set-top Boxes/DVR	ENERGY STAR(2011)	50.71	\$0.02	5	462.23	\$0.00
Electronics	Devices and Gadgets	Standard	-	-	5	1.00	-
Miscellaneous	Air Purifier/Cleaner	Standard	-	-	9	1.00	-
Miscellaneous	Air Purifier/Cleaner	Energy Star	498.75	\$70.00	9	2.53	\$0.02
Miscellaneous	Dehumidifier	Standard	-	-	12	1.00	-
Miscellaneous	Dehumidifier	Energy Star	434.15	\$45.00	12	4.59	\$0.01
Miscellaneous	Pool Pump	Standard	-	-	15	1.00	-
Miscellaneous	Pool Pump	High Efficiency	146.94	\$85.00	15	1.03	\$0.06
Miscellaneous	Pool Pump	Two-Speed	587.75	\$579.00	15	0.60	\$0.10
Miscellaneous	Pool Heater	Electric Resistance	-	-	15	1.00	-
Miscellaneous	Pool Heater	Heat Pump (COP = 5.0)	3,579.82	\$2,550.00	15	0.84	\$0.07
Miscellaneous	Hot Tub / Spa	Standard	-	-	15	1.00	-
Miscellaneous	Hot Tub / Spa	Efficient Pumps	135.38	\$300.00	15	0.27	\$0.23
Miscellaneous	Hot Tub / Spa	Improved Controls and Pumps	180.50	\$350.00	15	0.31	\$0.20
Miscellaneous	Well Pump	Standard	-	-	5	1.00	-
Miscellaneous	Furnace Fan	Standard	-	-	20	1.00	-
Miscellaneous	Furnace Fan	ECM	87.65	\$97.00	20	0.70	\$0.10
Miscellaneous	Bathroom Exhaust Fan	Standard	-	-	19	1.00	-
Miscellaneous	Bathroom Exhaust Fan	High Efficiency	84.55	\$43.50	19	1.44	\$0.05
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table B-5 Energy Efficiency Equipment Data, Electric Customer Only—Multi Family, Existing Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/HH/yr)	Incremental Cost (\$/HH)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Central AC	SEER 13	-	-	18	1.00	-
Cooling	Central AC	SEER 14.5 (Energy Star)	55.66	\$369.67	18	0.31	\$0.62
Cooling	Central AC	SEER 15 (CEE Tier 2)	109.25	\$739.34	18	0.30	\$0.63
Cooling	Central AC	SEER 16 (CEE Tier 3)	154.27	\$1,109.01	18	0.28	\$0.67
Cooling	Central AC	Ductless Minisplit	192.58	\$2,407.07	18	0.16	\$1.16
Cooling	Central AC	SEER 21	283.95	\$2,820.67	18	0.21	\$0.92
Cooling	Room AC	EER 9.8	-	-	12	-	-
Cooling	Room AC	EER 10.8 (Energy Star)	29.45	\$48.98	12	-	\$0.20
Cooling	Room AC	EER 11.0	34.70	\$97.95	12	1.00	\$0.33
Cooling	Room AC	EER 11.5	47.01	\$486.70	12	0.04	\$1.22
Cooling	Room AC	EER 12.0	58.30	\$875.45	12	0.04	\$1.77
Cooling	Air-Source Heat Pump	SEER 13, HSPF 7.7	-	-	18	1.00	-
Cooling	Air-Source Heat Pump	SEER 14, HSPF 8.0	36.13	\$37.03	18	2.12	\$0.10
Cooling	Air-Source Heat Pump	SEER 15, HSPF 8.2	52.79	\$74.07	18	1.55	\$0.13
Cooling	Air-Source Heat Pump	SEER 16, HSPF 8.5	66.84	\$111.10	18	1.31	\$0.15
Cooling	Air-Source Heat Pump	Ductless Minisplit	78.78	\$851.53	18	0.20	\$1.00
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	18	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	33.01	\$169.64	18	0.42	\$0.48
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	58.46	\$551.34	18	0.23	\$0.88
Cooling	Geothermal Heat Pump	EER 30, COP 5	241.30	\$1,696.44	18	0.31	\$0.65
Cooling	PTHP	EER 9.8	-	-	15	1.00	-
Cooling	PTHP	EER 10.2	12.96	\$17.14	15	1.30	\$0.14
Cooling	PTHP	EER 10.8	30.60	\$42.86	15	1.22	\$0.14
Cooling	PTHP	EER 11	36.06	\$51.43	15	1.20	\$0.15
Cooling	PTHP	EER 11.5	48.86	\$72.86	15	1.15	\$0.15
Heating	Furnace	Standard	-	-	15	1.00	-
Heating	Electric Room Heat	Standard	-	-	20	1.00	-
Heating	Air-Source Heat Pump	SEER 13, HSPF 7.7	-	-	18	1.00	-
Heating	Air-Source Heat Pump	SEER 14, HSPF 8.0	165.10	\$24.37	18	4.32	\$0.01
Heating	Air-Source Heat Pump	SEER 15, HSPF 8.2	301.05	\$48.74	18	3.94	\$0.02
Heating	Air-Source Heat Pump	SEER 16, HSPF 8.5	412.85	\$73.11	18	3.60	\$0.02
Heating	Air-Source Heat Pump	Ductless Minisplit	502.60	\$560.31	18	0.56	\$0.10
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	18	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	106.84	\$309.29	18	0.22	\$0.27
Heating	Geothermal Heat Pump	EER 18, COP 3.8	185.51	\$1,005.21	18	0.12	\$0.50
Heating	Geothermal Heat Pump	EER 30, COP 5	1,079.39	\$3,092.94	18	0.22	\$0.27
Heating	PTHP	EER 9.8	-	-	15	1.00	-
Heating	PTHP	EER 10.2	13.79	\$17.14	15	0.41	\$0.13
Heating	PTHP	EER 10.8	32.57	\$42.86	15	0.39	\$0.14
Heating	PTHP	EER 11	38.37	\$51.43	15	0.38	\$0.14
Heating	PTHP	EER 11.5	52.00	\$72.86	15	0.36	\$0.14
Water Heating	Water Heater <= 55 gal	EF 0.9	-	-	13	1.00	-
Water Heating	Water Heater <= 55 gal	EF 0.95	87.61	\$100.00	13	0.43	\$0.13
Water Heating	Water Heater <= 55 gal	EF 2.0 (HP)	915.48	\$1,575.00	13	0.31	\$0.19
Water Heating	Water Heater <= 55 gal	EF 2.3 (HP)	1,013.18	\$1,703.00	13	0.32	\$0.19
Water Heating	Water Heater > 55 gal	EF 0.9	-	-	13	1.00	-
Water Heating	Water Heater > 55 gal	EF 0.95	93.39	\$40.00	13	1.15	\$0.05
Water Heating	Water Heater > 55 gal	EF 2.0 (HP)	975.85	\$574.44	13	0.93	\$0.07
Water Heating	Water Heater > 55 gal	EF 2.3 (HP)	1,079.99	\$731.11	13	0.80	\$0.08
Interior Lighting	Screw-in	Incandescent	-	-	3	-	-
Interior Lighting	Screw-in	Infrared Halogen	203.54	\$54.67	4	1.00	\$0.07
Interior Lighting	Screw-in	Infrared Halogen (2020)	742.69	\$54.67	4	-	\$0.02
Interior Lighting	Screw-in	CFL	841.96	\$22.02	6	1.00	\$0.01
Interior Lighting	Screw-in	LED	883.41	\$1,804.28	15	0.19	\$0.21
Interior Lighting	Screw-in	LED (2020)	974.56	\$103.29	15	-	\$0.01
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Interior Lighting	Linear Fluorescent	T8	5.90	(\$1.64)	10	1.00	(\$0.04)

End Use	Technology	Efficiency Definition	Savings (kWh/HH/yr)	Incremental Cost (\$/HH)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Interior Lighting	Linear Fluorescent	LED (2011)	12.96	\$1,028.97	20	-	\$7.01
Interior Lighting	Linear Fluorescent	Super T8	17.68	\$13.07	10	0.31	\$0.10
Interior Lighting	Linear Fluorescent	T5	17.93	\$22.42	10	0.19	\$0.17
Interior Lighting	Linear Fluorescent	LED (2020)	35.20	\$45.16	20	-	\$0.11
Interior Lighting	Specialty	Incandescent	-	-	3	1.00	-
Interior Lighting	Specialty	Infrared Halogen	47.33	\$71.60	4	0.06	\$0.42
Interior Lighting	Specialty	CFL	195.80	\$28.84	6	1.33	\$0.03
Interior Lighting	Specialty	LED	205.44	\$785.22	15	0.11	\$0.39
Interior Lighting	Specialty	LED (2020)	226.64	\$42.67	15	-	\$0.02
Exterior Lighting	Screw-in	Incandescent	-	-	3	-	-
Exterior Lighting	Screw-in	Infrared Halogen	11.89	\$4.39	4	1.00	\$0.10
Exterior Lighting	Screw-in	Infrared Halogen (2020)	73.59	\$4.39	4	-	\$0.02
Exterior Lighting	Screw-in	CFL	84.95	\$2.27	5	1.00	\$0.01
Exterior Lighting	Screw-in	LED	92.25	\$145.50	10	0.23	\$0.21
Exterior Lighting	Screw-in	LED (2020)	100.12	\$8.31	15	-	\$0.01
Appliances	Refrigerator	Standard	-	-	12	-	-
Appliances	Refrigerator	Energy Star	97.45	\$30.00	12	-	\$0.04
Appliances	Refrigerator	High Efficiency	130.78	\$500.00	12	-	\$0.45
Appliances	Refrigerator	AHAM (2014)	155.57	\$293.00	12	1.00	\$0.22
Appliances	Refrigerator	High Efficiency (2014)	176.94	\$770.00	12	0.02	\$0.51
Appliances	Second Refrigerator	Standard	-	-	12	-	-
Appliances	Second Refrigerator	Energy Star	113.51	\$30.00	12	-	\$0.03
Appliances	Second Refrigerator	High Efficiency	152.34	\$500.00	12	-	\$0.39
Appliances	Second Refrigerator	AHAM (2014)	181.21	\$293.00	12	1.00	\$0.19
Appliances	Second Refrigerator	High Efficiency (2014)	206.11	\$770.00	12	0.03	\$0.44
Appliances	Freezer	Standard	-	-	11	-	-
Appliances	Freezer	Energy Star	46.69	\$35.00	11	-	\$0.09
Appliances	Freezer	High Efficiency	77.22	\$300.00	11	-	\$0.48
Appliances	Freezer	AHAM (2014)	80.81	\$356.27	11	1.00	\$0.55
Appliances	Freezer	High Efficiency (2014)	92.49	\$550.00	11	0.03	\$0.74
Appliances	Clothes Washer	Standard (1.26)	-	-	14	1.00	-
Appliances	Clothes Washer	ENERGY STAR(1.72)	11.94	\$141.66	14	-	\$1.27
Appliances	Clothes Washer	ENERGY STAR(MEF 2.0)	19.93	\$210.00	14	0.05	\$1.13
Appliances	Clothes Washer	Compact (MEF 2.79)	39.65	\$458.00	14	0.05	\$1.24
Appliances	Clothes Dryer	Baseline	-	-	13	1.00	-
Appliances	Clothes Dryer	High Efficiency	22.63	\$100.00	13	0.12	\$0.49
Appliances	Clothes Dryer	Baseline (2015+)	23.76	\$75.00	13	-	\$0.35
Appliances	Clothes Dryer	High Efficiency (2015+)	53.20	\$175.00	13	-	\$0.37
Appliances	Dishwasher	Standard (EF 0.63)	-	-	13	-	-
Appliances	Dishwasher	ENERGY STAR(EF 0.73)	42.83	\$50.00	13	-	\$0.13
Appliances	Dishwasher	AHAM (EF 0.73)	42.83	\$50.00	13	1.00	\$0.13
Appliances	Dishwasher	Ultra Efficient (EF 1.1)	185.59	\$425.00	13	0.20	\$0.26
Appliances	Stove	Standard	-	-	13	1.00	-
Appliances	Stove	Convection	1.24	\$121.00	13	0.01	\$10.90
Appliances	Stove	Halogen Burner	4.10	\$580.00	13	0.00	\$15.83
Appliances	Stove	Induction	23.02	\$898.00	13	0.02	\$4.36
Appliances	Microwave	Standard	-	-	9	1.00	-
Electronics	Personal Computers	Standard	-	-	5	1.00	-
Electronics	Personal Computers	Energy Star	91.86	\$0.01	5	1,685.07	\$0.00
Electronics	Monitor	Standard	-	-	5	1.00	-
Electronics	Monitor	Energy Star	12.50	\$0.01	5	229.37	\$0.00
Electronics	Laptops	Standard	-	-	4	1.00	-
Electronics	Laptops	Energy Star	42.32	\$0.01	4	603.36	\$0.00
Electronics	TVs	Standard	-	-	11	1.00	-
Electronics	TVs	ENERGY STAR(3.1)	46.21	\$0.01	11	-	\$0.00
Electronics	TVs	ENERGY STAR(4.1)	98.90	\$0.02	11	-	\$0.00
Electronics	TVs	ENERGY STAR(5.1)	111.37	\$0.03	11	1,573.15	\$0.00
Electronics	Printer/Fax/Copier	Standard	-	-	5	1.00	-
Electronics	Printer/Fax/Copier	Energy Star	11.70	\$0.01	5	214.57	\$0.00
Electronics	Set-top Boxes/DVR	Standard	-	-	5	1.00	-

Residential Energy Efficiency Equipment and Measure Data

End Use	Technology	Efficiency Definition	Savings (kWh/HH/yr)	Incremental Cost (\$/HH)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Electronics	Set-top Boxes/DVR	ENERGY STAR(2009)	38.03	\$0.01	5	-	\$0.00
Electronics	Set-top Boxes/DVR	ENERGY STAR(2011)	50.71	\$0.02	5	465.06	\$0.00
Electronics	Devices and Gadgets	Standard	-	-	5	1.00	-
Miscellaneous	Air Purifier/Cleaner	Standard	-	-	9	1.00	-
Miscellaneous	Air Purifier/Cleaner	Energy Star	498.75	\$70.00	9	2.55	\$0.02
Miscellaneous	Dehumidifier	Standard	-	-	12	1.00	-
Miscellaneous	Dehumidifier	Energy Star	434.15	\$45.00	12	4.64	\$0.01
Miscellaneous	Pool Pump	Standard	-	-	15	1.00	-
Miscellaneous	Pool Pump	High Efficiency	146.94	\$85.00	15	1.04	\$0.06
Miscellaneous	Pool Pump	Two-Speed	587.75	\$579.00	15	0.61	\$0.10
Miscellaneous	Pool Heater	Electric Resistance	-	-	15	1.00	-
Miscellaneous	Pool Heater	Heat Pump (COP = 5.0)	3,579.82	\$2,550.00	15	0.84	\$0.07
Miscellaneous	Hot Tub / Spa	Standard	-	-	15	1.00	-
Miscellaneous	Hot Tub / Spa	Efficient Pumps	135.38	\$300.00	15	0.27	\$0.23
Miscellaneous	Hot Tub / Spa	Improved Controls and Pumps	180.50	\$350.00	15	0.31	\$0.20
Miscellaneous	Well Pump	Standard	-	-	5	1.00	-
Miscellaneous	Furnace Fan	Standard	-	-	20	1.00	-
Miscellaneous	Furnace Fan	ECM	45.45	\$97.00	20	0.37	\$0.19
Miscellaneous	Bathroom Exhaust Fan	Standard	-	-	19	1.00	-
Miscellaneous	Bathroom Exhaust Fan	High Efficiency	84.55	\$43.50	19	1.46	\$0.05
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table B-6 Energy Efficiency Equipment Data, Electric Customer Only—Multi Family, New Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/HH/yr)	Incremental Cost (\$/HH)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Central AC	SEER 13	-	-	18	1.00	-
Cooling	Central AC	SEER 14.5 (Energy Star)	49.50	\$358.80	18	0.28	\$0.67
Cooling	Central AC	SEER 15 (CEE Tier 2)	97.01	\$717.59	18	0.28	\$0.69
Cooling	Central AC	SEER 16 (CEE Tier 3)	136.94	\$1,076.39	18	0.26	\$0.73
Cooling	Central AC	Ductless Minisplit	170.96	\$2,336.27	18	0.15	\$1.27
Cooling	Central AC	SEER 21	252.24	\$2,737.71	18	0.19	\$1.01
Cooling	Room AC	EER 9.8	-	-	12	-	-
Cooling	Room AC	EER 10.8 (Energy Star)	28.23	\$45.06	12	-	\$0.19
Cooling	Room AC	EER 11.0	33.28	\$90.12	12	1.00	\$0.32
Cooling	Room AC	EER 11.5	45.08	\$447.77	12	0.04	\$1.17
Cooling	Room AC	EER 12.0	55.91	\$805.42	12	0.04	\$1.70
Cooling	Air-Source Heat Pump	SEER 13, HSPF 7.7	-	-	18	1.00	-
Cooling	Air-Source Heat Pump	SEER 14, HSPF 8.0	41.15	\$41.97	18	2.13	\$0.09
Cooling	Air-Source Heat Pump	SEER 15, HSPF 8.2	59.91	\$83.95	18	1.55	\$0.13
Cooling	Air-Source Heat Pump	SEER 16, HSPF 8.5	75.67	\$125.92	18	1.30	\$0.15
Cooling	Air-Source Heat Pump	Ductless Minisplit	89.12	\$965.10	18	0.20	\$1.01
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	18	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	40.81	\$192.27	18	0.46	\$0.44
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	72.30	\$624.88	18	0.25	\$0.80
Cooling	Geothermal Heat Pump	EER 30, COP 5	301.34	\$1,922.71	18	0.34	\$0.59
Cooling	PTHP	EER 9.8	-	-	15	1.00	-
Cooling	PTHP	EER 10.2	12.96	\$17.14	15	1.30	\$0.14
Cooling	PTHP	EER 10.8	30.60	\$42.86	15	1.22	\$0.14
Cooling	PTHP	EER 11	36.06	\$51.43	15	1.20	\$0.15
Cooling	PTHP	EER 11.5	48.86	\$72.86	15	1.15	\$0.15
Heating	Furnace	Standard	-	-	15	1.00	-
Heating	Electric Room Heat	Standard	-	-	20	1.00	-
Heating	Air-Source Heat Pump	SEER 13, HSPF 7.7	-	-	18	1.00	-
Heating	Air-Source Heat Pump	SEER 14, HSPF 8.0	167.53	\$27.62	18	3.87	\$0.02
Heating	Air-Source Heat Pump	SEER 15, HSPF 8.2	302.68	\$55.24	18	3.49	\$0.02
Heating	Air-Source Heat Pump	SEER 16, HSPF 8.5	413.49	\$82.86	18	3.18	\$0.02
Heating	Air-Source Heat Pump	Ductless Minisplit	499.64	\$635.04	18	0.49	\$0.12
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	18	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	94.08	\$350.55	18	0.17	\$0.35
Heating	Geothermal Heat Pump	EER 18, COP 3.8	160.99	\$1,139.29	18	0.09	\$0.66
Heating	Geothermal Heat Pump	EER 30, COP 5	1,226.78	\$3,505.51	18	0.22	\$0.27
Heating	PTHP	EER 9.8	-	-	15	1.00	-
Heating	PTHP	EER 10.2	13.79	\$17.14	15	0.41	\$0.13
Heating	PTHP	EER 10.8	32.57	\$42.86	15	0.39	\$0.14
Heating	PTHP	EER 11	38.37	\$51.43	15	0.38	\$0.14
Heating	PTHP	EER 11.5	52.00	\$72.86	15	0.36	\$0.14
Water Heating	Water Heater <= 55 gal	EF 0.9	-	-	13	1.00	-
Water Heating	Water Heater <= 55 gal	EF 0.95	79.27	\$100.00	13	0.39	\$0.14
Water Heating	Water Heater <= 55 gal	EF 2.0 (HP)	828.29	\$1,575.00	13	0.28	\$0.21
Water Heating	Water Heater <= 55 gal	EF 2.3 (HP)	916.69	\$1,703.00	13	0.29	\$0.21
Water Heating	Water Heater > 55 gal	EF 0.9	-	-	13	1.00	-
Water Heating	Water Heater > 55 gal	EF 0.95	84.50	\$40.00	13	1.04	\$0.05
Water Heating	Water Heater > 55 gal	EF 2.0 (HP)	882.91	\$574.44	13	0.84	\$0.07
Water Heating	Water Heater > 55 gal	EF 2.3 (HP)	977.14	\$731.11	13	0.73	\$0.08
Interior Lighting	Screw-in	Incandescent	-	-	3	-	-
Interior Lighting	Screw-in	Infrared Halogen	189.64	\$50.94	4	1.00	\$0.07
Interior Lighting	Screw-in	Infrared Halogen (2020)	691.98	\$50.94	4	-	\$0.02
Interior Lighting	Screw-in	CFL	784.47	\$20.52	6	1.00	\$0.01
Interior Lighting	Screw-in	LED	823.08	\$1,681.07	15	0.19	\$0.21
Interior Lighting	Screw-in	LED (2020)	908.01	\$96.23	15	-	\$0.01
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Interior Lighting	Linear Fluorescent	T8	0.18	(\$0.05)	10	1.00	(\$0.04)

Residential Energy Efficiency Equipment and Measure Data

End Use	Technology	Efficiency Definition	Savings (kWh/HH/yr)	Incremental Cost (\$/HH)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Interior Lighting	Linear Fluorescent	LED (2011)	0.39	\$31.19	20	-	\$7.01
Interior Lighting	Linear Fluorescent	Super T8	0.54	\$0.40	10	0.31	\$0.10
Interior Lighting	Linear Fluorescent	T5	0.54	\$0.68	10	0.19	\$0.17
Interior Lighting	Linear Fluorescent	LED (2020)	1.07	\$1.37	20	-	\$0.11
Interior Lighting	Specialty	Incandescent	-	-	3	1.00	-
Interior Lighting	Specialty	Infrared Halogen	47.13	\$71.29	4	0.06	\$0.42
Interior Lighting	Specialty	CFL	194.95	\$28.72	6	1.33	\$0.03
Interior Lighting	Specialty	LED	204.55	\$781.82	15	0.11	\$0.39
Interior Lighting	Specialty	LED (2020)	225.65	\$42.48	15	-	\$0.02
Exterior Lighting	Screw-in	Incandescent	-	-	3	-	-
Exterior Lighting	Screw-in	Infrared Halogen	11.40	\$4.21	4	1.00	\$0.10
Exterior Lighting	Screw-in	Infrared Halogen (2020)	70.52	\$4.21	4	-	\$0.02
Exterior Lighting	Screw-in	CFL	81.41	\$2.17	5	1.00	\$0.01
Exterior Lighting	Screw-in	LED	88.41	\$139.44	10	0.23	\$0.21
Exterior Lighting	Screw-in	LED (2020)	95.95	\$7.97	15	-	\$0.01
Appliances	Refrigerator	Standard	-	-	12	-	-
Appliances	Refrigerator	Energy Star	97.45	\$30.00	12	-	\$0.04
Appliances	Refrigerator	High Efficiency	130.78	\$500.00	12	-	\$0.45
Appliances	Refrigerator	AHAM (2014)	155.57	\$293.00	12	1.00	\$0.22
Appliances	Refrigerator	High Efficiency (2014)	176.94	\$770.00	12	0.02	\$0.51
Appliances	Second Refrigerator	Standard	-	-	12	-	-
Appliances	Second Refrigerator	Energy Star	113.51	\$30.00	12	-	\$0.03
Appliances	Second Refrigerator	High Efficiency	152.34	\$500.00	12	-	\$0.39
Appliances	Second Refrigerator	AHAM (2014)	181.21	\$293.00	12	1.00	\$0.19
Appliances	Second Refrigerator	High Efficiency (2014)	206.11	\$770.00	12	0.03	\$0.44
Appliances	Freezer	Standard	-	-	11	-	-
Appliances	Freezer	Energy Star	46.69	\$35.00	11	-	\$0.09
Appliances	Freezer	High Efficiency	77.22	\$300.00	11	-	\$0.48
Appliances	Freezer	AHAM (2014)	80.81	\$356.27	11	1.00	\$0.55
Appliances	Freezer	High Efficiency (2014)	92.49	\$550.00	11	0.03	\$0.74
Appliances	Clothes Washer	Standard (1.26)	-	-	14	1.00	-
Appliances	Clothes Washer	ENERGY STAR(1.72)	11.94	\$141.66	14	-	\$1.27
Appliances	Clothes Washer	ENERGY STAR(MEF 2.0)	19.93	\$210.00	14	0.05	\$1.13
Appliances	Clothes Washer	Compact (MEF 2.79)	39.65	\$458.00	14	0.05	\$1.24
Appliances	Clothes Dryer	Baseline	-	-	13	1.00	-
Appliances	Clothes Dryer	High Efficiency	22.63	\$100.00	13	0.12	\$0.49
Appliances	Clothes Dryer	Baseline (2015+)	23.76	\$75.00	13	-	\$0.35
Appliances	Clothes Dryer	High Efficiency (2015+)	53.20	\$175.00	13	-	\$0.37
Appliances	Dishwasher	Standard (EF 0.63)	-	-	13	-	-
Appliances	Dishwasher	ENERGY STAR(EF 0.73)	42.83	\$50.00	13	-	\$0.13
Appliances	Dishwasher	AHAM (EF 0.73)	42.83	\$50.00	13	1.00	\$0.13
Appliances	Dishwasher	Ultra Efficient (EF 1.1)	185.59	\$425.00	13	0.20	\$0.26
Appliances	Stove	Standard	-	-	13	1.00	-
Appliances	Stove	Convection	1.24	\$121.00	13	0.01	\$10.90
Appliances	Stove	Halogen Burner	4.10	\$580.00	13	0.00	\$15.83
Appliances	Stove	Induction	23.02	\$898.00	13	0.02	\$4.36
Appliances	Microwave	Standard	-	-	9	1.00	-
Electronics	Personal Computers	Standard	-	-	5	1.00	-
Electronics	Personal Computers	Energy Star	91.86	\$0.01	5	1,685.07	\$0.00
Electronics	Monitor	Standard	-	-	5	1.00	-
Electronics	Monitor	Energy Star	12.50	\$0.01	5	229.37	\$0.00
Electronics	Laptops	Standard	-	-	4	1.00	-
Electronics	Laptops	Energy Star	42.32	\$0.01	4	603.36	\$0.00
Electronics	TVs	Standard	-	-	11	1.00	-
Electronics	TVs	ENERGY STAR(3.1)	46.21	\$0.01	11	-	\$0.00
Electronics	TVs	ENERGY STAR(4.1)	98.90	\$0.02	11	-	\$0.00
Electronics	TVs	ENERGY STAR(5.1)	111.37	\$0.03	11	1,573.15	\$0.00
Electronics	Printer/Fax/Copier	Standard	-	-	5	1.00	-
Electronics	Printer/Fax/Copier	Energy Star	11.70	\$0.01	5	214.57	\$0.00
Electronics	Set-top Boxes/DVR	Standard	-	-	5	1.00	-

Residential Energy Efficiency Equipment and Measure Data

End Use	Technology	Efficiency Definition	Savings (kWh/HH/yr)	Incremental Cost (\$/HH)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Electronics	Set-top Boxes/DVR	ENERGY STAR(2009)	38.03	\$0.01	5	-	\$0.00
Electronics	Set-top Boxes/DVR	ENERGY STAR(2011)	50.71	\$0.02	5	465.06	\$0.00
Electronics	Devices and Gadgets	Standard	-	-	5	1.00	-
Miscellaneous	Air Purifier/Cleaner	Standard	-	-	9	1.00	-
Miscellaneous	Air Purifier/Cleaner	Energy Star	498.75	\$70.00	9	2.55	\$0.02
Miscellaneous	Dehumidifier	Standard	-	-	12	1.00	-
Miscellaneous	Dehumidifier	Energy Star	434.15	\$45.00	12	4.64	\$0.01
Miscellaneous	Pool Pump	Standard	-	-	15	1.00	-
Miscellaneous	Pool Pump	High Efficiency	146.94	\$85.00	15	1.04	\$0.06
Miscellaneous	Pool Pump	Two-Speed	587.75	\$579.00	15	0.61	\$0.10
Miscellaneous	Pool Heater	Electric Resistance	-	-	15	1.00	-
Miscellaneous	Pool Heater	Heat Pump (COP = 5.0)	3,579.82	\$2,550.00	15	0.84	\$0.07
Miscellaneous	Hot Tub / Spa	Standard	-	-	15	1.00	-
Miscellaneous	Hot Tub / Spa	Efficient Pumps	135.38	\$300.00	15	0.27	\$0.23
Miscellaneous	Hot Tub / Spa	Improved Controls and Pumps	180.50	\$350.00	15	0.31	\$0.20
Miscellaneous	Well Pump	Standard	-	-	5	1.00	-
Miscellaneous	Furnace Fan	Standard	-	-	20	1.00	-
Miscellaneous	Furnace Fan	ECM	45.45	\$97.00	20	0.37	\$0.19
Miscellaneous	Bathroom Exhaust Fan	Standard	-	-	19	1.00	-
Miscellaneous	Bathroom Exhaust Fan	High Efficiency	84.55	\$43.50	19	1.46	\$0.05
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table B-7 Energy Efficiency Equipment Data, Single Family Electric/Gas Customer, (Electric) Existing Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/HH/yr)	Incremental Cost (\$/HH)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Central AC	SEER 13	-	-	18	1.00	-
Cooling	Central AC	SEER 14.5 (Energy Star)	179.05	\$381.89	18	1.01	\$0.20
Cooling	Central AC	SEER 15 (CEE Tier 2)	258.28	\$763.78	18	0.73	\$0.27
Cooling	Central AC	SEER 16 (CEE Tier 3)	325.36	\$1,145.66	18	0.61	\$0.33
Cooling	Central AC	Ductless Minisplit	382.40	\$2,486.63	18	0.33	\$0.60
Cooling	Central AC	SEER 21	721.14	\$2,913.90	18	0.53	\$0.38
Cooling	Room AC	EER 9.8	-	-	12	-	-
Cooling	Room AC	EER 10.8 (Energy Star)	88.42	\$37.13	12	-	\$0.05
Cooling	Room AC	EER 11.0	104.29	\$74.25	12	1.00	\$0.08
Cooling	Room AC	EER 11.5	141.29	\$368.94	12	0.20	\$0.31
Cooling	Room AC	EER 12.0	175.22	\$663.64	12	0.19	\$0.45
Cooling	Air-Source Heat Pump	SEER 13, HSPF 7.7	-	-	18	1.00	-
Cooling	Air-Source Heat Pump	SEER 14, HSPF 8.0	121.89	\$124.95	18	2.22	\$0.10
Cooling	Air-Source Heat Pump	SEER 15, HSPF 8.2	178.10	\$249.91	18	1.62	\$0.13
Cooling	Air-Source Heat Pump	SEER 16, HSPF 8.5	225.51	\$374.86	18	1.37	\$0.15
Cooling	Air-Source Heat Pump	Ductless Minisplit	265.80	\$2,873.01	18	0.21	\$1.00
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	18	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	91.64	\$612.21	18	0.34	\$0.62
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	162.28	\$1,989.70	18	0.19	\$1.14
Cooling	Geothermal Heat Pump	EER 30, COP 5	669.84	\$6,122.15	18	0.25	\$0.85
Cooling	PTHP	EER 9.8	-	-	15	1.00	-
Cooling	PTHP	EER 10.2	38.95	\$17.14	15	4.09	\$0.05
Cooling	PTHP	EER 10.8	91.97	\$42.86	15	3.86	\$0.05
Cooling	PTHP	EER 11	108.35	\$51.43	15	3.79	\$0.05
Cooling	PTHP	EER 11.5	146.83	\$72.86	15	3.63	\$0.05
Heating	Furnace	Standard	-	-	15	1.00	-
Heating	Electric Room Heat	Standard	-	-	20	1.00	-
Heating	Air-Source Heat Pump	SEER 13, HSPF 7.7	-	-	18	1.00	-
Heating	Air-Source Heat Pump	SEER 14, HSPF 8.0	479.24	\$70.74	18	4.32	\$0.01
Heating	Air-Source Heat Pump	SEER 15, HSPF 8.2	873.89	\$141.48	18	3.94	\$0.02
Heating	Air-Source Heat Pump	SEER 16, HSPF 8.5	1,198.44	\$212.21	18	3.60	\$0.02
Heating	Air-Source Heat Pump	Ductless Minisplit	1,458.95	\$1,626.46	18	0.56	\$0.10
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	18	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	248.98	\$684.74	18	0.23	\$0.26
Heating	Geothermal Heat Pump	EER 18, COP 3.8	432.32	\$2,225.42	18	0.12	\$0.48
Heating	Geothermal Heat Pump	EER 30, COP 5	2,515.43	\$6,847.44	18	0.23	\$0.25
Heating	PTHP	EER 9.8	-	-	15	1.00	-
Heating	PTHP	EER 10.2	39.11	\$17.14	15	1.16	\$0.05
Heating	PTHP	EER 10.8	92.34	\$42.86	15	1.09	\$0.05
Heating	PTHP	EER 11	108.80	\$51.43	15	1.07	\$0.05
Heating	PTHP	EER 11.5	147.43	\$72.86	15	1.03	\$0.05
Water Heating	Water Heater <= 55 gal	EF 0.9	-	-	13	1.00	-
Water Heating	Water Heater <= 55 gal	EF 0.95	137.26	\$100.00	13	0.68	\$0.08
Water Heating	Water Heater <= 55 gal	EF 2.0 (HP)	1,435.36	\$1,575.00	13	0.49	\$0.12
Water Heating	Water Heater <= 55 gal	EF 2.3 (HP)	1,588.55	\$1,703.00	13	0.50	\$0.12
Water Heating	Water Heater > 55 gal	EF 0.9	-	-	13	1.00	-
Water Heating	Water Heater > 55 gal	EF 0.95	146.31	\$40.00	13	1.81	\$0.03
Water Heating	Water Heater > 55 gal	EF 2.0 (HP)	1,530.02	\$574.44	13	1.47	\$0.04
Water Heating	Water Heater > 55 gal	EF 2.3 (HP)	1,693.30	\$731.11	13	1.26	\$0.05
Interior Lighting	Screw-in	Incandescent	-	-	3	-	-
Interior Lighting	Screw-in	Infrared Halogen	292.45	\$104.73	4	1.00	\$0.10
Interior Lighting	Screw-in	Infrared Halogen (2020)	1,067.12	\$104.73	4	-	\$0.03
Interior Lighting	Screw-in	CFL	1,209.75	\$42.19	6	1.00	\$0.01
Interior Lighting	Screw-in	LED	1,269.29	\$3,456.17	15	0.14	\$0.28
Interior Lighting	Screw-in	LED (2020)	1,400.27	\$197.85	15	-	\$0.01
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Interior Lighting	Linear Fluorescent	T8	13.07	(\$3.67)	10	1.00	(\$0.04)

End Use	Technology	Efficiency Definition	Savings (kWh/HH/yr)	Incremental Cost (\$/HH)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Interior Lighting	Linear Fluorescent	LED (2011)	28.70	\$2,311.08	20	-	\$7.11
Interior Lighting	Linear Fluorescent	Super T8	39.16	\$29.36	10	0.30	\$0.10
Interior Lighting	Linear Fluorescent	T5	39.72	\$50.36	10	0.19	\$0.17
Interior Lighting	Linear Fluorescent	LED (2020)	77.96	\$101.44	20	-	\$0.11
Interior Lighting	Specialty	Incandescent	-	-	3	1.00	-
Interior Lighting	Specialty	Infrared Halogen	66.18	\$131.72	4	0.05	\$0.55
Interior Lighting	Specialty	CFL	273.78	\$53.06	6	1.01	\$0.04
Interior Lighting	Specialty	LED	287.25	\$1,444.60	15	0.08	\$0.52
Interior Lighting	Specialty	LED (2020)	316.89	\$78.50	15	-	\$0.03
Exterior Lighting	Screw-in	Incandescent	-	-	3	-	-
Exterior Lighting	Screw-in	Infrared Halogen	27.69	\$6.55	4	1.00	\$0.07
Exterior Lighting	Screw-in	Infrared Halogen (2020)	171.32	\$6.55	4	-	\$0.01
Exterior Lighting	Screw-in	CFL	197.77	\$3.38	5	1.00	\$0.00
Exterior Lighting	Screw-in	LED	214.76	\$217.00	10	0.35	\$0.13
Exterior Lighting	Screw-in	LED (2020)	233.09	\$12.40	15	-	\$0.01
Appliances	Refrigerator	Standard	-	-	12	-	-
Appliances	Refrigerator	Energy Star	97.48	\$30.00	12	-	\$0.04
Appliances	Refrigerator	High Efficiency	130.83	\$500.00	12	-	\$0.45
Appliances	Refrigerator	AHAM (2014)	155.63	\$293.00	12	1.00	\$0.22
Appliances	Refrigerator	High Efficiency (2014)	177.01	\$770.00	12	0.02	\$0.51
Appliances	Second Refrigerator	Standard	-	-	12	-	-
Appliances	Second Refrigerator	Energy Star	113.55	\$30.00	12	-	\$0.03
Appliances	Second Refrigerator	High Efficiency	152.39	\$500.00	12	-	\$0.39
Appliances	Second Refrigerator	AHAM (2014)	181.28	\$293.00	12	1.00	\$0.19
Appliances	Second Refrigerator	High Efficiency (2014)	206.18	\$770.00	12	0.03	\$0.44
Appliances	Freezer	Standard	-	-	11	-	-
Appliances	Freezer	Energy Star	46.71	\$35.00	11	-	\$0.09
Appliances	Freezer	High Efficiency	77.26	\$300.00	11	-	\$0.48
Appliances	Freezer	AHAM (2014)	80.85	\$356.27	11	1.00	\$0.55
Appliances	Freezer	High Efficiency (2014)	92.53	\$550.00	11	0.03	\$0.74
Appliances	Clothes Washer	Standard (1.26)	-	-	14	1.00	-
Appliances	Clothes Washer	ENERGY STAR(1.72)	11.96	\$141.66	14	-	\$1.27
Appliances	Clothes Washer	ENERGY STAR(MEF 2.0)	19.95	\$210.00	14	0.05	\$1.13
Appliances	Clothes Washer	Compact (MEF 2.79)	39.70	\$458.00	14	0.05	\$1.23
Appliances	Clothes Dryer	Baseline	-	-	13	1.00	-
Appliances	Clothes Dryer	High Efficiency	25.46	\$100.00	13	0.13	\$0.44
Appliances	Clothes Dryer	Baseline (2015+)	26.73	\$75.00	13	-	\$0.31
Appliances	Clothes Dryer	High Efficiency (2015+)	59.86	\$175.00	13	-	\$0.33
Appliances	Dishwasher	Standard (EF 0.63)	-	-	13	-	-
Appliances	Dishwasher	ENERGY STAR(EF 0.73)	42.83	\$50.00	13	-	\$0.13
Appliances	Dishwasher	AHAM (EF 0.73)	42.83	\$50.00	13	1.00	\$0.13
Appliances	Dishwasher	Ultra Efficient (EF 1.1)	185.61	\$425.00	13	0.20	\$0.26
Appliances	Stove	Standard	-	-	13	1.00	-
Appliances	Stove	Convection	1.29	\$121.00	13	0.01	\$10.50
Appliances	Stove	Halogen Burner	4.25	\$580.00	13	0.00	\$15.26
Appliances	Stove	Induction	23.88	\$898.00	13	0.02	\$4.21
Appliances	Microwave	Standard	-	-	9	1.00	-
Electronics	Personal Computers	Standard	-	-	5	1.00	-
Electronics	Personal Computers	Energy Star	91.86	\$0.01	5	1,674.83	\$0.00
Electronics	Monitor	Standard	-	-	5	1.00	-
Electronics	Monitor	Energy Star	12.50	\$0.01	5	227.97	\$0.00
Electronics	Laptops	Standard	-	-	4	1.00	-
Electronics	Laptops	Energy Star	42.32	\$0.01	4	600.47	\$0.00
Electronics	TVs	Standard	-	-	11	1.00	-
Electronics	TVs	ENERGY STAR(3.1)	46.21	\$0.01	11	-	\$0.00
Electronics	TVs	ENERGY STAR(4.1)	98.90	\$0.02	11	-	\$0.00
Electronics	TVs	ENERGY STAR(5.1)	111.37	\$0.03	11	1,556.93	\$0.00
Electronics	Printer/Fax/Copier	Standard	-	-	5	1.00	-
Electronics	Printer/Fax/Copier	Energy Star	11.70	\$0.01	5	213.26	\$0.00
Electronics	Set-top Boxes/DVR	Standard	-	-	5	1.00	-

Residential Energy Efficiency Equipment and Measure Data

End Use	Technology	Efficiency Definition	Savings (kWh/HH/yr)	Incremental Cost (\$/HH)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Electronics	Set-top Boxes/DVR	ENERGY STAR(2009)	38.03	\$0.01	5	-	\$0.00
Electronics	Set-top Boxes/DVR	ENERGY STAR(2011)	50.71	\$0.02	5	462.23	\$0.00
Electronics	Devices and Gadgets	Standard	-	-	5	1.00	-
Miscellaneous	Air Purifier/Cleaner	Standard	-	-	9	1.00	-
Miscellaneous	Air Purifier/Cleaner	Energy Star	498.75	\$70.00	9	2.53	\$0.02
Miscellaneous	Dehumidifier	Standard	-	-	12	1.00	-
Miscellaneous	Dehumidifier	Energy Star	434.15	\$45.00	12	4.59	\$0.01
Miscellaneous	Pool Pump	Standard	-	-	15	1.00	-
Miscellaneous	Pool Pump	High Efficiency	146.94	\$85.00	15	1.03	\$0.06
Miscellaneous	Pool Pump	Two-Speed	587.75	\$579.00	15	0.60	\$0.10
Miscellaneous	Pool Heater	Electric Resistance	-	-	15	1.00	-
Miscellaneous	Pool Heater	Heat Pump (COP = 5.0)	3,579.82	\$2,550.00	15	0.84	\$0.07
Miscellaneous	Hot Tub / Spa	Standard	-	-	15	1.00	-
Miscellaneous	Hot Tub / Spa	Efficient Pumps	135.38	\$300.00	15	0.27	\$0.23
Miscellaneous	Hot Tub / Spa	Improved Controls and Pumps	180.50	\$350.00	15	0.31	\$0.20
Miscellaneous	Well Pump	Standard	-	-	5	1.00	-
Miscellaneous	Furnace Fan	Standard	-	-	20	1.00	-
Miscellaneous	Furnace Fan	ECM	87.65	\$97.00	20	0.70	\$0.10
Miscellaneous	Bathroom Exhaust Fan	Standard	-	-	19	1.00	-
Miscellaneous	Bathroom Exhaust Fan	High Efficiency	84.55	\$43.50	19	1.44	\$0.05
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table B-8 Energy Efficiency Equipment Data, Single Family Electric/Gas Customer, (Gas) - Existing Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/HH/yr)	Incremental Cost (\$/HH)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Heating	Furnace	AFUE 0.8	-	-	20	1.00	-
Heating	Furnace	AFUE 0.9	53.69	\$377.69	20	1.09	\$0.62
Heating	Furnace	AFUE 0.92	64.12	\$592.63	20	0.83	\$0.82
Heating	Furnace	AFUE 0.95	78.94	\$936.78	20	0.65	\$1.05
Heating	Furnace	AFUE 0.97	93.47	\$1,907.62	20	0.38	\$1.80
Heating	Boiler	EF 0.8	-	-	25	-	-
Heating	Boiler	EF 0.9	1.55	\$712.64	25	1.00	\$37.01
Heating	Boiler	EF 0.92	16.66	\$1,060.51	25	0.40	\$5.11
Heating	Boiler	EF 0.95	65.08	\$3,208.55	25	0.24	\$3.96
Heating	Other Heating	Gas Fireplace	-	-	5	1.00	-
Water Heating	Water Heater <= 55 gal	EF 0.59	-	-	13	1.00	-
Water Heating	Water Heater <= 55 gal	EF 0.67	21.21	\$400.00	13	0.27	\$2.11
Water Heating	Water Heater <= 55 gal	EF 0.74	35.97	\$495.67	13	0.36	\$1.54
Water Heating	Water Heater <= 55 gal	EF 0.76	39.92	\$523.00	13	0.38	\$1.47
Water Heating	Water Heater <= 55 gal	EF 0.82 (Tankless)	55.71	\$605.00	13	0.46	\$1.21
Water Heating	Water Heater <= 55 gal	EF 0.86 (Condensing)	55.78	\$685.00	13	0.41	\$1.37
Water Heating	Water Heater > 55 gal	EF 0.59	-	-	13	1.00	-
Water Heating	Water Heater > 55 gal	EF 0.67	22.49	\$400.00	13	0.28	\$1.99
Water Heating	Water Heater > 55 gal	EF 0.74	38.14	\$495.67	13	0.38	\$1.45
Water Heating	Water Heater > 55 gal	EF 0.76	42.32	\$523.00	13	0.40	\$1.38
Water Heating	Water Heater > 55 gal	EF 0.82 (Tankless)	59.06	\$605.00	13	0.49	\$1.15
Water Heating	Water Heater > 55 gal	EF 0.86 (Condensing)	59.13	\$685.00	13	0.43	\$1.30
Appliances	Clothes Dryer	Standard	-	-	13	1.00	-
Appliances	Clothes Dryer	Standard (AHAM)	0.78	-	13	-	-
Appliances	Clothes Dryer	Efficient	2.88	\$130.00	13	0.11	\$5.05
Appliances	Stove	Standard (EF .399)	-	-	13	1.00	-
Appliances	Stove	Efficient (EF .42)	2.62	\$115.00	13	0.11	\$4.90
Miscellaneous	Pool Heater	EF .78	-	-	15	-	-
Miscellaneous	Pool Heater	EF .82	7.43	\$103.37	15	1.00	\$1.43
Miscellaneous	Pool Heater	EF .90	21.99	\$1,791.56	15	0.05	\$8.37
Miscellaneous	Pool Heater	EF .95	28.93	\$2,071.10	15	0.06	\$7.35
Miscellaneous	Hot Tub / Spa	EF .78	-	-	15	-	-
Miscellaneous	Hot Tub / Spa	EF .82	2.51	\$103.37	15	1.00	\$4.23
Miscellaneous	Hot Tub / Spa	EF .90	7.42	\$1,791.56	15	0.02	\$24.78
Miscellaneous	Hot Tub / Spa	EF .95	9.77	\$2,071.10	15	0.02	\$21.76
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table B-9 Energy Efficiency Equipment Data, Single Family Electric/Gas Customer, (Electric) - New Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/HH/yr)	Incremental Cost (\$/HH)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Central AC	SEER 13	-	-	18	1.00	-
Cooling	Central AC	SEER 14.5 (Energy Star)	216.55	\$479.72	18	0.97	\$0.21
Cooling	Central AC	SEER 15 (CEE Tier 2)	315.32	\$959.44	18	0.71	\$0.28
Cooling	Central AC	SEER 16 (CEE Tier 3)	398.25	\$1,439.17	18	0.59	\$0.34
Cooling	Central AC	Ductless Minisplit	469.03	\$3,123.66	18	0.32	\$0.62
Cooling	Central AC	SEER 21	530.23	\$3,660.40	18	0.31	\$0.64
Cooling	Room AC	EER 9.8	-	-	12	-	-
Cooling	Room AC	EER 10.8 (Energy Star)	99.08	\$37.13	12	-	\$0.04
Cooling	Room AC	EER 11.0	116.68	\$74.25	12	1.00	\$0.07
Cooling	Room AC	EER 11.5	158.19	\$368.94	12	0.22	\$0.27
Cooling	Room AC	EER 12.0	196.19	\$663.64	12	0.21	\$0.40
Cooling	Air-Source Heat Pump	SEER 13, HSPF 7.7	-	-	18	1.00	-
Cooling	Air-Source Heat Pump	SEER 14, HSPF 8.0	138.82	\$141.62	18	2.23	\$0.09
Cooling	Air-Source Heat Pump	SEER 15, HSPF 8.2	202.14	\$283.24	18	1.63	\$0.13
Cooling	Air-Source Heat Pump	SEER 16, HSPF 8.5	255.30	\$424.86	18	1.37	\$0.15
Cooling	Air-Source Heat Pump	Ductless Minisplit	300.67	\$3,256.21	18	0.21	\$1.01
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	18	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	147.28	\$693.87	18	0.48	\$0.44
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	260.92	\$2,255.08	18	0.26	\$0.80
Cooling	Geothermal Heat Pump	EER 30, COP 5	1,087.50	\$6,938.71	18	0.36	\$0.59
Cooling	PTHP	EER 9.8	-	-	15	1.00	-
Cooling	PTHP	EER 10.2	38.95	\$17.14	15	4.09	\$0.05
Cooling	PTHP	EER 10.8	91.97	\$42.86	15	3.86	\$0.05
Cooling	PTHP	EER 11	108.35	\$51.43	15	3.79	\$0.05
Cooling	PTHP	EER 11.5	146.83	\$72.86	15	3.63	\$0.05
Heating	Furnace	Standard	-	-	15	1.00	-
Heating	Electric Room Heat	Standard	-	-	20	1.00	-
Heating	Air-Source Heat Pump	SEER 13, HSPF 7.7	-	-	18	1.00	-
Heating	Air-Source Heat Pump	SEER 14, HSPF 8.0	486.32	\$80.17	18	3.87	\$0.02
Heating	Air-Source Heat Pump	SEER 15, HSPF 8.2	878.61	\$160.35	18	3.49	\$0.02
Heating	Air-Source Heat Pump	SEER 16, HSPF 8.5	1,200.29	\$240.52	18	3.18	\$0.02
Heating	Air-Source Heat Pump	Ductless Minisplit	1,450.36	\$1,843.40	18	0.49	\$0.12
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	18	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	208.27	\$776.08	18	0.17	\$0.35
Heating	Geothermal Heat Pump	EER 18, COP 3.8	356.42	\$2,522.27	18	0.09	\$0.66
Heating	Geothermal Heat Pump	EER 30, COP 5	2,715.95	\$7,760.82	18	0.22	\$0.27
Heating	PTHP	EER 9.8	-	-	15	1.00	-
Heating	PTHP	EER 10.2	39.11	\$17.14	15	1.16	\$0.05
Heating	PTHP	EER 10.8	92.34	\$42.86	15	1.09	\$0.05
Heating	PTHP	EER 11	108.80	\$51.43	15	1.07	\$0.05
Heating	PTHP	EER 11.5	147.43	\$72.86	15	1.03	\$0.05
Water Heating	Water Heater <= 55 gal	EF 0.9	-	-	13	1.00	-
Water Heating	Water Heater <= 55 gal	EF 0.95	124.19	\$100.00	13	0.61	\$0.09
Water Heating	Water Heater <= 55 gal	EF 2.0 (HP)	1,298.66	\$1,575.00	13	0.44	\$0.14
Water Heating	Water Heater <= 55 gal	EF 2.3 (HP)	1,437.26	\$1,703.00	13	0.45	\$0.13
Water Heating	Water Heater > 55 gal	EF 0.9	-	-	13	1.00	-
Water Heating	Water Heater > 55 gal	EF 0.95	132.38	\$40.00	13	1.64	\$0.03
Water Heating	Water Heater > 55 gal	EF 2.0 (HP)	1,384.30	\$574.44	13	1.33	\$0.05
Water Heating	Water Heater > 55 gal	EF 2.3 (HP)	1,532.03	\$731.11	13	1.14	\$0.05
Interior Lighting	Screw-in	Incandescent	-	-	3	-	-
Interior Lighting	Screw-in	Infrared Halogen	262.31	\$93.93	4	1.00	\$0.10
Interior Lighting	Screw-in	Infrared Halogen (2020)	957.13	\$93.93	4	-	\$0.03
Interior Lighting	Screw-in	CFL	1,085.06	\$37.84	6	1.00	\$0.01
Interior Lighting	Screw-in	LED	1,138.47	\$3,099.94	15	0.14	\$0.28
Interior Lighting	Screw-in	LED (2020)	1,255.94	\$177.46	15	-	\$0.01
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-

Residential Energy Efficiency Equipment and Measure Data

End Use	Technology	Efficiency Definition	Savings (kWh/HH/yr)	Incremental Cost (\$/HH)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Interior Lighting	Linear Fluorescent	T8	1.11	(\$0.31)	10	1.00	(\$0.04)
Interior Lighting	Linear Fluorescent	LED (2011)	2.44	\$196.31	20	-	\$7.11
Interior Lighting	Linear Fluorescent	Super T8	3.33	\$2.49	10	0.30	\$0.10
Interior Lighting	Linear Fluorescent	T5	3.37	\$4.28	10	0.19	\$0.17
Interior Lighting	Linear Fluorescent	LED (2020)	6.62	\$8.62	20	-	\$0.11
Interior Lighting	Specialty	Incandescent	-	-	3	1.00	-
Interior Lighting	Specialty	Infrared Halogen	65.67	\$130.71	4	0.05	\$0.55
Interior Lighting	Specialty	CFL	271.67	\$52.66	6	1.01	\$0.04
Interior Lighting	Specialty	LED	285.04	\$1,433.48	15	0.08	\$0.52
Interior Lighting	Specialty	LED (2020)	314.45	\$77.89	15	-	\$0.03
Exterior Lighting	Screw-in	Incandescent	-	-	3	-	-
Exterior Lighting	Screw-in	Infrared Halogen	25.91	\$6.13	4	1.00	\$0.07
Exterior Lighting	Screw-in	Infrared Halogen (2020)	160.29	\$6.13	4	-	\$0.01
Exterior Lighting	Screw-in	CFL	185.03	\$3.16	5	1.00	\$0.00
Exterior Lighting	Screw-in	LED	200.94	\$203.03	10	0.35	\$0.13
Exterior Lighting	Screw-in	LED (2020)	218.08	\$11.60	15	-	\$0.01
Appliances	Refrigerator	Standard	-	-	12	-	-
Appliances	Refrigerator	Energy Star	97.48	\$30.00	12	-	\$0.04
Appliances	Refrigerator	High Efficiency	130.83	\$500.00	12	-	\$0.45
Appliances	Refrigerator	AHAM (2014)	155.63	\$293.00	12	1.00	\$0.22
Appliances	Refrigerator	High Efficiency (2014)	177.01	\$770.00	12	0.02	\$0.51
Appliances	Second Refrigerator	Standard	-	-	12	-	-
Appliances	Second Refrigerator	Energy Star	113.55	\$30.00	12	-	\$0.03
Appliances	Second Refrigerator	High Efficiency	152.39	\$500.00	12	-	\$0.39
Appliances	Second Refrigerator	AHAM (2014)	181.28	\$293.00	12	1.00	\$0.19
Appliances	Second Refrigerator	High Efficiency (2014)	206.18	\$770.00	12	0.03	\$0.44
Appliances	Freezer	Standard	-	-	11	-	-
Appliances	Freezer	Energy Star	46.71	\$35.00	11	-	\$0.09
Appliances	Freezer	High Efficiency	77.26	\$300.00	11	-	\$0.48
Appliances	Freezer	AHAM (2014)	80.85	\$356.27	11	1.00	\$0.55
Appliances	Freezer	High Efficiency (2014)	92.53	\$550.00	11	0.03	\$0.74
Appliances	Clothes Washer	Standard (1.26)	-	-	14	1.00	-
Appliances	Clothes Washer	ENERGY STAR(1.72)	11.96	\$141.66	14	-	\$1.27
Appliances	Clothes Washer	ENERGY STAR(MEF 2.0)	19.95	\$210.00	14	0.05	\$1.13
Appliances	Clothes Washer	Compact (MEF 2.79)	39.70	\$458.00	14	0.05	\$1.23
Appliances	Clothes Dryer	Baseline	-	-	13	1.00	-
Appliances	Clothes Dryer	High Efficiency	25.46	\$100.00	13	0.13	\$0.44
Appliances	Clothes Dryer	Baseline (2015+)	26.73	\$75.00	13	-	\$0.31
Appliances	Clothes Dryer	High Efficiency (2015+)	59.86	\$175.00	13	-	\$0.33
Appliances	Dishwasher	Standard (EF 0.63)	-	-	13	-	-
Appliances	Dishwasher	ENERGY STAR(EF 0.73)	42.83	\$50.00	13	-	\$0.13
Appliances	Dishwasher	AHAM (EF 0.73)	42.83	\$50.00	13	1.00	\$0.13
Appliances	Dishwasher	Ultra Efficient (EF 1.1)	185.61	\$425.00	13	0.20	\$0.26
Appliances	Stove	Standard	-	-	13	1.00	-
Appliances	Stove	Convection	1.29	\$121.00	13	0.01	\$10.50
Appliances	Stove	Halogen Burner	4.25	\$580.00	13	0.00	\$15.26
Appliances	Stove	Induction	23.88	\$898.00	13	0.02	\$4.21
Appliances	Microwave	Standard	-	-	9	1.00	-
Electronics	Personal Computers	Standard	-	-	5	1.00	-
Electronics	Personal Computers	Energy Star	91.86	\$0.01	5	1,674.83	\$0.00
Electronics	Monitor	Standard	-	-	5	1.00	-
Electronics	Monitor	Energy Star	12.50	\$0.01	5	227.97	\$0.00
Electronics	Laptops	Standard	-	-	4	1.00	-
Electronics	Laptops	Energy Star	42.32	\$0.01	4	600.47	\$0.00
Electronics	TVs	Standard	-	-	11	1.00	-
Electronics	TVs	ENERGY STAR(3.1)	46.21	\$0.01	11	-	\$0.00
Electronics	TVs	ENERGY STAR(4.1)	98.90	\$0.02	11	-	\$0.00
Electronics	TVs	ENERGY STAR(5.1)	111.37	\$0.03	11	1,556.93	\$0.00

Residential Energy Efficiency Equipment and Measure Data

End Use	Technology	Efficiency Definition	Savings (kWh/HH/yr)	Incremental Cost (\$/HH)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Electronics	Printer/Fax/Copier	Standard	-	-	5	1.00	-
Electronics	Printer/Fax/Copier	Energy Star	11.70	\$0.01	5	213.26	\$0.00
Electronics	Set-top Boxes/DVR	Standard	-	-	5	1.00	-
Electronics	Set-top Boxes/DVR	ENERGY STAR(2009)	38.03	\$0.01	5	-	\$0.00
Electronics	Set-top Boxes/DVR	ENERGY STAR(2011)	50.71	\$0.02	5	462.23	\$0.00
Electronics	Devices and Gadgets	Standard	-	-	5	1.00	-
Miscellaneous	Air Purifier/Cleaner	Standard	-	-	9	1.00	-
Miscellaneous	Air Purifier/Cleaner	Energy Star	498.75	\$70.00	9	2.53	\$0.02
Miscellaneous	Dehumidifier	Standard	-	-	12	1.00	-
Miscellaneous	Dehumidifier	Energy Star	434.15	\$45.00	12	4.59	\$0.01
Miscellaneous	Pool Pump	Standard	-	-	15	1.00	-
Miscellaneous	Pool Pump	High Efficiency	146.94	\$85.00	15	1.03	\$0.06
Miscellaneous	Pool Pump	Two-Speed	587.75	\$579.00	15	0.60	\$0.10
Miscellaneous	Pool Heater	Electric Resistance	-	-	15	1.00	-
Miscellaneous	Pool Heater	Heat Pump (COP = 5.0)	3,579.82	\$2,550.00	15	0.84	\$0.07
Miscellaneous	Hot Tub / Spa	Standard	-	-	15	1.00	-
Miscellaneous	Hot Tub / Spa	Efficient Pumps	135.38	\$300.00	15	0.27	\$0.23
Miscellaneous	Hot Tub / Spa	Improved Controls and Pumps	180.50	\$350.00	15	0.31	\$0.20
Miscellaneous	Well Pump	Standard	-	-	5	1.00	-
Miscellaneous	Furnace Fan	Standard	-	-	20	1.00	-
Miscellaneous	Furnace Fan	ECM	87.65	\$97.00	20	0.70	\$0.10
Miscellaneous	Bathroom Exhaust Fan	Standard	-	-	19	1.00	-
Miscellaneous	Bathroom Exhaust Fan	High Efficiency	84.55	\$43.50	19	1.44	\$0.05
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table B-10 Energy Efficiency Equipment Data, Single Family Electric/Gas Customer, (Gas) - New Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/HH/yr)	Incremental Cost (\$/HH)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Heating	Furnace	AFUE 0.8	-	-	20	1.00	-
Heating	Furnace	AFUE 0.9	54.32	\$430.38	20	0.97	\$0.70
Heating	Furnace	AFUE 0.92	64.83	\$675.30	20	0.74	\$0.92
Heating	Furnace	AFUE 0.95	79.77	\$1,067.46	20	0.58	\$1.18
Heating	Furnace	AFUE 0.97	94.25	\$2,173.74	20	0.33	\$2.04
Heating	Boiler	EF 0.8	-	-	25	-	-
Heating	Boiler	EF 0.9	2.58	\$812.05	25	1.00	\$25.30
Heating	Boiler	EF 0.92	28.05	\$1,208.45	25	0.60	\$3.46
Heating	Boiler	EF 0.95	109.33	\$3,656.14	25	0.35	\$2.68
Heating	Other Heating	Gas Fireplace	-	-	5	1.00	-
Water Heating	Water Heater <= 55 gal	EF 0.59	-	-	13	1.00	-
Water Heating	Water Heater <= 55 gal	EF 0.67	19.19	\$400.00	13	0.24	\$2.33
Water Heating	Water Heater <= 55 gal	EF 0.74	32.54	\$495.67	13	0.33	\$1.70
Water Heating	Water Heater <= 55 gal	EF 0.76	36.12	\$523.00	13	0.35	\$1.62
Water Heating	Water Heater <= 55 gal	EF 0.82 (Tankless)	50.40	\$605.00	13	0.42	\$1.34
Water Heating	Water Heater <= 55 gal	EF 0.86 (Condensing)	50.46	\$685.00	13	0.37	\$1.52
Water Heating	Water Heater > 55 gal	EF 0.59	-	-	13	1.00	-
Water Heating	Water Heater > 55 gal	EF 0.67	20.35	\$400.00	13	0.25	\$2.20
Water Heating	Water Heater > 55 gal	EF 0.74	34.50	\$495.67	13	0.35	\$1.61
Water Heating	Water Heater > 55 gal	EF 0.76	38.29	\$523.00	13	0.37	\$1.53
Water Heating	Water Heater > 55 gal	EF 0.82 (Tankless)	53.44	\$605.00	13	0.44	\$1.27
Water Heating	Water Heater > 55 gal	EF 0.86 (Condensing)	53.50	\$685.00	13	0.39	\$1.43
Appliances	Clothes Dryer	Standard	-	-	13	1.00	-
Appliances	Clothes Dryer	Standard (AHAM)	0.78	-	13	-	-
Appliances	Clothes Dryer	Efficient	2.88	\$130.00	13	0.11	\$5.05
Appliances	Stove	Standard (EF .399)	-	-	13	1.00	-
Appliances	Stove	Efficient (EF .42)	2.62	\$115.00	13	0.11	\$4.90
Miscellaneous	Pool Heater	EF .78	-	-	15	-	-
Miscellaneous	Pool Heater	EF .82	7.43	\$103.37	15	1.00	\$1.43
Miscellaneous	Pool Heater	EF .90	21.99	\$1,791.56	15	0.05	\$8.37
Miscellaneous	Pool Heater	EF .95	28.93	\$2,071.10	15	0.06	\$7.35
Miscellaneous	Hot Tub / Spa	EF .78	-	-	15	-	-
Miscellaneous	Hot Tub / Spa	EF .82	2.51	\$103.37	15	1.00	\$4.23
Miscellaneous	Hot Tub / Spa	EF .90	7.42	\$1,791.56	15	0.02	\$24.78
Miscellaneous	Hot Tub / Spa	EF .95	9.77	\$2,071.10	15	0.02	\$21.76
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table B-11 Energy Efficiency Equipment Data, Multi Family Electric/Gas Customer, (Electric) - Existing Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/HH/yr)	Incremental Cost (\$/HH)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Central AC	SEER 13	-	-	18	1.00	-
Cooling	Central AC	SEER 14.5 (Energy Star)	125.23	\$831.76	18	0.31	\$0.62
Cooling	Central AC	SEER 15 (CEE Tier 2)	245.82	\$1,663.51	18	0.30	\$0.63
Cooling	Central AC	SEER 16 (CEE Tier 3)	347.11	\$2,495.27	18	0.28	\$0.67
Cooling	Central AC	Ductless Minisplit	433.30	\$5,415.91	18	0.16	\$1.16
Cooling	Central AC	SEER 21	638.89	\$6,346.52	18	0.21	\$0.92
Cooling	Room AC	EER 9.8	-	-	12	-	-
Cooling	Room AC	EER 10.8 (Energy Star)	66.27	\$110.20	12	-	\$0.20
Cooling	Room AC	EER 11.0	78.08	\$220.39	12	1.00	\$0.33
Cooling	Room AC	EER 11.5	105.77	\$1,095.08	12	0.04	\$1.22
Cooling	Room AC	EER 12.0	131.18	\$1,969.77	12	0.04	\$1.77
Cooling	Air-Source Heat Pump	SEER 13, HSPF 7.7	-	-	18	1.00	-
Cooling	Air-Source Heat Pump	SEER 14, HSPF 8.0	81.29	\$83.33	18	2.12	\$0.10
Cooling	Air-Source Heat Pump	SEER 15, HSPF 8.2	118.77	\$166.66	18	1.55	\$0.13
Cooling	Air-Source Heat Pump	SEER 16, HSPF 8.5	150.38	\$249.98	18	1.31	\$0.15
Cooling	Air-Source Heat Pump	Ductless Minisplit	177.25	\$1,915.94	18	0.20	\$1.00
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	18	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	74.27	\$381.70	18	0.42	\$0.48
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	131.53	\$1,240.52	18	0.23	\$0.88
Cooling	Geothermal Heat Pump	EER 30, COP 5	542.92	\$3,817.00	18	0.31	\$0.65
Cooling	PTHP	EER 9.8	-	-	15	1.00	-
Cooling	PTHP	EER 10.2	29.16	\$17.14	15	2.92	\$0.06
Cooling	PTHP	EER 10.8	68.86	\$42.86	15	2.75	\$0.06
Cooling	PTHP	EER 11	81.12	\$51.43	15	2.70	\$0.07
Cooling	PTHP	EER 11.5	109.93	\$72.86	15	2.59	\$0.07
Heating	Furnace	Standard	-	-	15	1.00	-
Heating	Electric Room Heat	Standard	-	-	20	1.00	-
Heating	Air-Source Heat Pump	SEER 13, HSPF 7.7	-	-	18	1.00	-
Heating	Air-Source Heat Pump	SEER 14, HSPF 8.0	330.19	\$48.74	18	4.32	\$0.01
Heating	Air-Source Heat Pump	SEER 15, HSPF 8.2	602.10	\$97.48	18	3.94	\$0.02
Heating	Air-Source Heat Pump	SEER 16, HSPF 8.5	825.71	\$146.21	18	3.60	\$0.02
Heating	Air-Source Heat Pump	Ductless Minisplit	1,005.20	\$1,120.61	18	0.56	\$0.10
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	18	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	213.68	\$618.59	18	0.22	\$0.27
Heating	Geothermal Heat Pump	EER 18, COP 3.8	371.03	\$2,010.41	18	0.12	\$0.50
Heating	Geothermal Heat Pump	EER 30, COP 5	2,158.79	\$6,185.88	18	0.22	\$0.27
Heating	PTHP	EER 9.8	-	-	15	1.00	-
Heating	PTHP	EER 10.2	27.59	\$17.14	15	0.82	\$0.06
Heating	PTHP	EER 10.8	65.14	\$42.86	15	0.77	\$0.07
Heating	PTHP	EER 11	76.74	\$51.43	15	0.76	\$0.07
Heating	PTHP	EER 11.5	103.99	\$72.86	15	0.72	\$0.07
Water Heating	Water Heater <= 55 gal	EF 0.9	-	-	13	1.00	-
Water Heating	Water Heater <= 55 gal	EF 0.95	134.00	\$100.00	13	0.66	\$0.08
Water Heating	Water Heater <= 55 gal	EF 2.0 (HP)	1,400.15	\$1,575.00	13	0.47	\$0.13
Water Heating	Water Heater <= 55 gal	EF 2.3 (HP)	1,549.57	\$1,703.00	13	0.48	\$0.12
Water Heating	Water Heater > 55 gal	EF 0.9	-	-	13	1.00	-
Water Heating	Water Heater > 55 gal	EF 0.95	142.83	\$40.00	13	1.76	\$0.03
Water Heating	Water Heater > 55 gal	EF 2.0 (HP)	1,492.48	\$574.44	13	1.43	\$0.04
Water Heating	Water Heater > 55 gal	EF 2.3 (HP)	1,651.76	\$731.11	13	1.23	\$0.05
Interior Lighting	Screw-in	Incandescent	-	-	3	-	-
Interior Lighting	Screw-in	Infrared Halogen	236.88	\$68.18	4	1.00	\$0.08
Interior Lighting	Screw-in	Infrared Halogen (2020)	864.36	\$68.18	4	-	\$0.02
Interior Lighting	Screw-in	CFL	979.89	\$27.46	6	1.00	\$0.01
Interior Lighting	Screw-in	LED	1,028.12	\$2,249.92	15	0.18	\$0.22
Interior Lighting	Screw-in	LED (2020)	1,134.21	\$128.80	15	-	\$0.01
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-

End Use	Technology	Efficiency Definition	Savings (kWh/HH/yr)	Incremental Cost (\$/HH)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Interior Lighting	Linear Fluorescent	T8	5.99	(\$1.00)	10	1.00	(\$0.02)
Interior Lighting	Linear Fluorescent	LED (2011)	13.15	\$626.83	20	-	\$4.21
Interior Lighting	Linear Fluorescent	Super T8	17.95	\$7.96	10	0.51	\$0.06
Interior Lighting	Linear Fluorescent	T5	18.21	\$13.66	10	0.32	\$0.10
Interior Lighting	Linear Fluorescent	LED (2020)	35.73	\$27.51	20	-	\$0.07
Interior Lighting	Specialty	Incandescent	-	-	3	1.00	-
Interior Lighting	Specialty	Infrared Halogen	54.23	\$86.84	4	0.06	\$0.44
Interior Lighting	Specialty	CFL	224.35	\$34.98	6	1.26	\$0.03
Interior Lighting	Specialty	LED	235.39	\$952.40	15	0.10	\$0.42
Interior Lighting	Specialty	LED (2020)	259.68	\$51.75	15	-	\$0.02
Exterior Lighting	Screw-in	Incandescent	-	-	3	-	-
Exterior Lighting	Screw-in	Infrared Halogen	12.96	\$12.87	4	1.00	\$0.27
Exterior Lighting	Screw-in	Infrared Halogen (2020)	80.18	\$12.87	4	-	\$0.04
Exterior Lighting	Screw-in	CFL	92.56	\$6.64	5	1.00	\$0.02
Exterior Lighting	Screw-in	LED	100.52	\$426.37	10	0.08	\$0.56
Exterior Lighting	Screw-in	LED (2020)	109.09	\$24.36	15	-	\$0.02
Appliances	Refrigerator	Standard	-	-	12	-	-
Appliances	Refrigerator	Energy Star	97.45	\$30.00	12	-	\$0.04
Appliances	Refrigerator	High Efficiency	130.78	\$500.00	12	-	\$0.45
Appliances	Refrigerator	AHAM (2014)	155.57	\$293.00	12	1.00	\$0.22
Appliances	Refrigerator	High Efficiency (2014)	176.94	\$770.00	12	0.02	\$0.51
Appliances	Second Refrigerator	Standard	-	-	12	-	-
Appliances	Second Refrigerator	Energy Star	113.51	\$30.00	12	-	\$0.03
Appliances	Second Refrigerator	High Efficiency	152.34	\$500.00	12	-	\$0.39
Appliances	Second Refrigerator	AHAM (2014)	181.21	\$293.00	12	1.00	\$0.19
Appliances	Second Refrigerator	High Efficiency (2014)	206.11	\$770.00	12	0.03	\$0.44
Appliances	Freezer	Standard	-	-	11	-	-
Appliances	Freezer	Energy Star	46.69	\$35.00	11	-	\$0.09
Appliances	Freezer	High Efficiency	77.22	\$300.00	11	-	\$0.48
Appliances	Freezer	AHAM (2014)	80.81	\$356.27	11	1.00	\$0.55
Appliances	Freezer	High Efficiency (2014)	92.49	\$550.00	11	0.03	\$0.74
Appliances	Clothes Washer	Standard (1.26)	-	-	14	1.00	-
Appliances	Clothes Washer	ENERGY STAR(1.72)	11.94	\$141.66	14	-	\$1.27
Appliances	Clothes Washer	ENERGY STAR(MEF 2.0)	19.93	\$210.00	14	0.05	\$1.13
Appliances	Clothes Washer	Compact (MEF 2.79)	39.65	\$458.00	14	0.05	\$1.24
Appliances	Clothes Dryer	Baseline	-	-	13	1.00	-
Appliances	Clothes Dryer	High Efficiency	22.63	\$100.00	13	0.12	\$0.49
Appliances	Clothes Dryer	Baseline (2015+)	23.76	\$75.00	13	-	\$0.35
Appliances	Clothes Dryer	High Efficiency (2015+)	53.20	\$175.00	13	-	\$0.37
Appliances	Dishwasher	Standard (EF 0.63)	-	-	13	-	-
Appliances	Dishwasher	ENERGY STAR(EF 0.73)	42.83	\$50.00	13	-	\$0.13
Appliances	Dishwasher	AHAM (EF 0.73)	42.83	\$50.00	13	1.00	\$0.13
Appliances	Dishwasher	Ultra Efficient (EF 1.1)	185.59	\$425.00	13	0.20	\$0.26
Appliances	Stove	Standard	-	-	13	1.00	-
Appliances	Stove	Convection	1.24	\$121.00	13	0.01	\$10.90
Appliances	Stove	Halogen Burner	4.10	\$580.00	13	0.00	\$15.83
Appliances	Stove	Induction	23.02	\$898.00	13	0.02	\$4.36
Appliances	Microwave	Standard	-	-	9	1.00	-
Electronics	Personal Computers	Standard	-	-	5	1.00	-
Electronics	Personal Computers	Energy Star	91.86	\$0.01	5	1,685.07	\$0.00
Electronics	Monitor	Standard	-	-	5	1.00	-
Electronics	Monitor	Energy Star	12.50	\$0.01	5	229.37	\$0.00
Electronics	Laptops	Standard	-	-	4	1.00	-
Electronics	Laptops	Energy Star	42.32	\$0.01	4	603.36	\$0.00
Electronics	TVs	Standard	-	-	11	1.00	-
Electronics	TVs	ENERGY STAR(3.1)	46.21	\$0.01	11	-	\$0.00
Electronics	TVs	ENERGY STAR(4.1)	98.90	\$0.02	11	-	\$0.00
Electronics	TVs	ENERGY STAR(5.1)	111.37	\$0.03	11	1,573.15	\$0.00

Residential Energy Efficiency Equipment and Measure Data

End Use	Technology	Efficiency Definition	Savings (kWh/HH/yr)	Incremental Cost (\$/HH)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Electronics	Printer/Fax/Copier	Standard	-	-	5	1.00	-
Electronics	Printer/Fax/Copier	Energy Star	11.70	\$0.01	5	214.57	\$0.00
Electronics	Set-top Boxes/DVR	Standard	-	-	5	1.00	-
Electronics	Set-top Boxes/DVR	ENERGY STAR(2009)	38.03	\$0.01	5	-	\$0.00
Electronics	Set-top Boxes/DVR	ENERGY STAR(2011)	50.71	\$0.02	5	465.06	\$0.00
Electronics	Devices and Gadgets	Standard	-	-	5	1.00	-
Miscellaneous	Air Purifier/Cleaner	Standard	-	-	9	1.00	-
Miscellaneous	Air Purifier/Cleaner	Energy Star	498.75	\$70.00	9	2.55	\$0.02
Miscellaneous	Dehumidifier	Standard	-	-	12	1.00	-
Miscellaneous	Dehumidifier	Energy Star	434.15	\$45.00	12	4.64	\$0.01
Miscellaneous	Pool Pump	Standard	-	-	15	1.00	-
Miscellaneous	Pool Pump	High Efficiency	146.94	\$85.00	15	1.04	\$0.06
Miscellaneous	Pool Pump	Two-Speed	587.75	\$579.00	15	0.61	\$0.10
Miscellaneous	Pool Heater	Electric Resistance	-	-	15	1.00	-
Miscellaneous	Pool Heater	Heat Pump (COP = 5.0)	3,579.82	\$2,550.00	15	0.84	\$0.07
Miscellaneous	Hot Tub / Spa	Standard	-	-	15	1.00	-
Miscellaneous	Hot Tub / Spa	Efficient Pumps	135.38	\$300.00	15	0.27	\$0.23
Miscellaneous	Hot Tub / Spa	Improved Controls and Pumps	180.50	\$350.00	15	0.31	\$0.20
Miscellaneous	Well Pump	Standard	-	-	5	1.00	-
Miscellaneous	Furnace Fan	Standard	-	-	20	1.00	-
Miscellaneous	Furnace Fan	ECM	45.45	\$97.00	20	0.37	\$0.19
Miscellaneous	Bathroom Exhaust Fan	Standard	-	-	19	1.00	-
Miscellaneous	Bathroom Exhaust Fan	High Efficiency	84.55	\$43.50	19	1.46	\$0.05
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table B-12 Energy Efficiency Equipment Data, Multi Family Electric/Gas Customer, (Gas) Existing Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/HH/yr)	Incremental Cost (\$/HH)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Heating	Furnace	AFUE 0.8	-	-	20	1.00	-
Heating	Furnace	AFUE 0.9	41.00	\$374.93	20	0.84	\$0.81
Heating	Furnace	AFUE 0.92	48.93	\$588.30	20	0.64	\$1.06
Heating	Furnace	AFUE 0.95	60.20	\$929.93	20	0.50	\$1.36
Heating	Furnace	AFUE 0.97	71.13	\$1,893.68	20	0.29	\$2.35
Heating	Boiler	EF 0.8	-	-	25	-	-
Heating	Boiler	EF 0.9	1.21	\$724.80	25	1.00	\$48.26
Heating	Boiler	EF 0.92	12.99	\$1,078.61	25	0.31	\$6.66
Heating	Boiler	EF 0.95	50.76	\$3,263.30	25	0.18	\$5.16
Heating	Other Heating	Gas Fireplace	-	-	5	1.00	-
Water Heating	Water Heater <= 55 gal	EF 0.59	-	-	13	1.00	-
Water Heating	Water Heater <= 55 gal	EF 0.67	15.49	\$400.00	13	0.19	\$2.89
Water Heating	Water Heater <= 55 gal	EF 0.74	26.28	\$495.67	13	0.27	\$2.11
Water Heating	Water Heater <= 55 gal	EF 0.76	29.02	\$523.00	13	0.28	\$2.02
Water Heating	Water Heater <= 55 gal	EF 0.82 (Tankless)	40.73	\$605.00	13	0.34	\$1.66
Water Heating	Water Heater <= 55 gal	EF 0.86 (Condensing)	40.74	\$685.00	13	0.30	\$1.88
Water Heating	Water Heater > 55 gal	EF 0.59	-	-	13	1.00	-
Water Heating	Water Heater > 55 gal	EF 0.67	16.43	\$400.00	13	0.21	\$2.72
Water Heating	Water Heater > 55 gal	EF 0.74	27.86	\$495.67	13	0.28	\$1.99
Water Heating	Water Heater > 55 gal	EF 0.76	30.76	\$523.00	13	0.29	\$1.90
Water Heating	Water Heater > 55 gal	EF 0.82 (Tankless)	43.19	\$605.00	13	0.36	\$1.57
Water Heating	Water Heater > 55 gal	EF 0.86 (Condensing)	43.19	\$685.00	13	0.32	\$1.77
Appliances	Clothes Dryer	Standard	-	-	13	1.00	-
Appliances	Clothes Dryer	Standard (AHAM)	0.61	-	13	-	-
Appliances	Clothes Dryer	Efficient	2.25	\$130.00	13	0.09	\$6.47
Appliances	Stove	Standard (EF .399)	-	-	13	1.00	-
Appliances	Stove	Efficient (EF .42)	2.63	\$115.00	13	0.11	\$4.90
Miscellaneous	Pool Heater	EF .78	-	-	15	-	-
Miscellaneous	Pool Heater	EF .82	2.60	\$103.37	15	1.00	\$4.08
Miscellaneous	Pool Heater	EF .90	7.70	\$1,791.56	15	0.02	\$23.90
Miscellaneous	Pool Heater	EF .95	10.13	\$2,071.10	15	0.02	\$21.00
Miscellaneous	Hot Tub / Spa	EF .78	-	-	15	-	-
Miscellaneous	Hot Tub / Spa	EF .82	2.51	\$103.37	15	1.00	\$4.23
Miscellaneous	Hot Tub / Spa	EF .90	7.42	\$1,791.56	15	0.02	\$24.78
Miscellaneous	Hot Tub / Spa	EF .95	9.77	\$2,071.10	15	0.02	\$21.76
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table B-13 Energy Efficiency Equipment Data, Multi Family Electric/Gas Customer, (Electric) - New Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/HH/yr)	Incremental Cost (\$/HH)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Central AC	SEER 13	-	-	18	1.00	-
Cooling	Central AC	SEER 14.5 (Energy Star)	111.37	\$807.29	18	0.28	\$0.67
Cooling	Central AC	SEER 15 (CEE Tier 2)	218.27	\$1,614.59	18	0.28	\$0.69
Cooling	Central AC	SEER 16 (CEE Tier 3)	308.12	\$2,421.88	18	0.26	\$0.73
Cooling	Central AC	Ductless Minisplit	384.67	\$5,256.62	18	0.15	\$1.27
Cooling	Central AC	SEER 21	567.53	\$6,159.86	18	0.19	\$1.01
Cooling	Room AC	EER 9.8	-	-	12	-	-
Cooling	Room AC	EER 10.8 (Energy Star)	63.52	\$101.38	12	-	\$0.19
Cooling	Room AC	EER 11.0	74.87	\$202.76	12	1.00	\$0.32
Cooling	Room AC	EER 11.5	101.44	\$1,007.47	12	0.04	\$1.17
Cooling	Room AC	EER 12.0	125.80	\$1,812.18	12	0.04	\$1.70
Cooling	Air-Source Heat Pump	SEER 13, HSPF 7.7	-	-	18	1.00	-
Cooling	Air-Source Heat Pump	SEER 14, HSPF 8.0	92.58	\$94.44	18	2.13	\$0.09
Cooling	Air-Source Heat Pump	SEER 15, HSPF 8.2	134.80	\$188.88	18	1.55	\$0.13
Cooling	Air-Source Heat Pump	SEER 16, HSPF 8.5	170.25	\$283.33	18	1.30	\$0.15
Cooling	Air-Source Heat Pump	Ductless Minisplit	200.51	\$2,171.48	18	0.20	\$1.01
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	18	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	91.82	\$432.61	18	0.46	\$0.44
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	162.67	\$1,405.98	18	0.25	\$0.80
Cooling	Geothermal Heat Pump	EER 30, COP 5	678.02	\$4,326.10	18	0.34	\$0.59
Cooling	PTHP	EER 9.8	-	-	15	1.00	-
Cooling	PTHP	EER 10.2	29.16	\$17.14	15	2.92	\$0.06
Cooling	PTHP	EER 10.8	68.86	\$42.86	15	2.75	\$0.06
Cooling	PTHP	EER 11	81.12	\$51.43	15	2.70	\$0.07
Cooling	PTHP	EER 11.5	109.93	\$72.86	15	2.59	\$0.07
Heating	Furnace	Standard	-	-	15	1.00	-
Heating	Electric Room Heat	Standard	-	-	20	1.00	-
Heating	Air-Source Heat Pump	SEER 13, HSPF 7.7	-	-	18	1.00	-
Heating	Air-Source Heat Pump	SEER 14, HSPF 8.0	335.07	\$55.24	18	3.87	\$0.02
Heating	Air-Source Heat Pump	SEER 15, HSPF 8.2	605.35	\$110.48	18	3.49	\$0.02
Heating	Air-Source Heat Pump	SEER 16, HSPF 8.5	826.99	\$165.71	18	3.18	\$0.02
Heating	Air-Source Heat Pump	Ductless Minisplit	999.28	\$1,270.08	18	0.49	\$0.12
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	18	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	188.15	\$701.10	18	0.17	\$0.35
Heating	Geothermal Heat Pump	EER 18, COP 3.8	321.99	\$2,278.58	18	0.09	\$0.66
Heating	Geothermal Heat Pump	EER 30, COP 5	2,453.56	\$7,011.02	18	0.22	\$0.27
Heating	PTHP	EER 9.8	-	-	15	1.00	-
Heating	PTHP	EER 10.2	27.59	\$17.14	15	0.82	\$0.06
Heating	PTHP	EER 10.8	65.14	\$42.86	15	0.77	\$0.07
Heating	PTHP	EER 11	76.74	\$51.43	15	0.76	\$0.07
Heating	PTHP	EER 11.5	103.99	\$72.86	15	0.72	\$0.07
Water Heating	Water Heater <= 55 gal	EF 0.9	-	-	13	1.00	-
Water Heating	Water Heater <= 55 gal	EF 0.95	121.23	\$100.00	13	0.60	\$0.09
Water Heating	Water Heater <= 55 gal	EF 2.0 (HP)	1,266.80	\$1,575.00	13	0.43	\$0.14
Water Heating	Water Heater <= 55 gal	EF 2.3 (HP)	1,401.99	\$1,703.00	13	0.44	\$0.14
Water Heating	Water Heater > 55 gal	EF 0.9	-	-	13	1.00	-
Water Heating	Water Heater > 55 gal	EF 0.95	129.23	\$40.00	13	1.59	\$0.03
Water Heating	Water Heater > 55 gal	EF 2.0 (HP)	1,350.34	\$574.44	13	1.29	\$0.05
Water Heating	Water Heater > 55 gal	EF 2.3 (HP)	1,494.45	\$731.11	13	1.11	\$0.05
Interior Lighting	Screw-in	Incandescent	-	-	3	-	-
Interior Lighting	Screw-in	Infrared Halogen	225.40	\$64.87	4	1.00	\$0.08
Interior Lighting	Screw-in	Infrared Halogen (2020)	822.47	\$64.87	4	-	\$0.02
Interior Lighting	Screw-in	CFL	932.40	\$26.13	6	1.00	\$0.01
Interior Lighting	Screw-in	LED	978.30	\$2,140.88	15	0.18	\$0.22
Interior Lighting	Screw-in	LED (2020)	1,079.24	\$122.55	15	-	\$0.01
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Interior Lighting	Linear Fluorescent	T8	0.40	(\$0.07)	10	1.00	(\$0.02)

End Use	Technology	Efficiency Definition	Savings (kWh/HH/yr)	Incremental Cost (\$/HH)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Interior Lighting	Linear Fluorescent	LED (2011)	0.87	\$41.39	20	-	\$4.21
Interior Lighting	Linear Fluorescent	Super T8	1.19	\$0.53	10	0.51	\$0.06
Interior Lighting	Linear Fluorescent	T5	1.20	\$0.90	10	0.32	\$0.10
Interior Lighting	Linear Fluorescent	LED (2020)	2.36	\$1.82	20	-	\$0.07
Interior Lighting	Specialty	Incandescent	-	-	3	1.00	-
Interior Lighting	Specialty	Infrared Halogen	54.20	\$86.78	4	0.06	\$0.44
Interior Lighting	Specialty	CFL	224.19	\$34.96	6	1.26	\$0.03
Interior Lighting	Specialty	LED	235.22	\$951.72	15	0.10	\$0.42
Interior Lighting	Specialty	LED (2020)	259.49	\$51.71	15	-	\$0.02
Exterior Lighting	Screw-in	Incandescent	-	-	3	-	-
Exterior Lighting	Screw-in	Infrared Halogen	12.42	\$12.34	4	1.00	\$0.27
Exterior Lighting	Screw-in	Infrared Halogen (2020)	76.84	\$12.34	4	-	\$0.04
Exterior Lighting	Screw-in	CFL	88.70	\$6.36	5	1.00	\$0.02
Exterior Lighting	Screw-in	LED	96.33	\$408.60	10	0.08	\$0.56
Exterior Lighting	Screw-in	LED (2020)	104.55	\$23.35	15	-	\$0.02
Appliances	Refrigerator	Standard	-	-	12	-	-
Appliances	Refrigerator	Energy Star	97.45	\$30.00	12	-	\$0.04
Appliances	Refrigerator	High Efficiency	130.78	\$500.00	12	-	\$0.45
Appliances	Refrigerator	AHAM (2014)	155.57	\$293.00	12	1.00	\$0.22
Appliances	Refrigerator	High Efficiency (2014)	176.94	\$770.00	12	0.02	\$0.51
Appliances	Second Refrigerator	Standard	-	-	12	-	-
Appliances	Second Refrigerator	Energy Star	113.51	\$30.00	12	-	\$0.03
Appliances	Second Refrigerator	High Efficiency	152.34	\$500.00	12	-	\$0.39
Appliances	Second Refrigerator	AHAM (2014)	181.21	\$293.00	12	1.00	\$0.19
Appliances	Second Refrigerator	High Efficiency (2014)	206.11	\$770.00	12	0.03	\$0.44
Appliances	Freezer	Standard	-	-	11	-	-
Appliances	Freezer	Energy Star	46.69	\$35.00	11	-	\$0.09
Appliances	Freezer	High Efficiency	77.22	\$300.00	11	-	\$0.48
Appliances	Freezer	AHAM (2014)	80.81	\$356.27	11	1.00	\$0.55
Appliances	Freezer	High Efficiency (2014)	92.49	\$550.00	11	0.03	\$0.74
Appliances	Clothes Washer	Standard (1.26)	-	-	14	1.00	-
Appliances	Clothes Washer	ENERGY STAR(1.72)	11.94	\$141.66	14	-	\$1.27
Appliances	Clothes Washer	ENERGY STAR(MEF 2.0)	19.93	\$210.00	14	0.05	\$1.13
Appliances	Clothes Washer	Compact (MEF 2.79)	39.65	\$458.00	14	0.05	\$1.24
Appliances	Clothes Dryer	Baseline	-	-	13	1.00	-
Appliances	Clothes Dryer	High Efficiency	22.63	\$100.00	13	0.12	\$0.49
Appliances	Clothes Dryer	Baseline (2015+)	23.76	\$75.00	13	-	\$0.35
Appliances	Clothes Dryer	High Efficiency (2015+)	53.20	\$175.00	13	-	\$0.37
Appliances	Dishwasher	Standard (EF 0.63)	-	-	13	-	-
Appliances	Dishwasher	ENERGY STAR(EF 0.73)	42.83	\$50.00	13	-	\$0.13
Appliances	Dishwasher	AHAM (EF 0.73)	42.83	\$50.00	13	1.00	\$0.13
Appliances	Dishwasher	Ultra Efficient (EF 1.1)	185.59	\$425.00	13	0.20	\$0.26
Appliances	Stove	Standard	-	-	13	1.00	-
Appliances	Stove	Convection	1.24	\$121.00	13	0.01	\$10.90
Appliances	Stove	Halogen Burner	4.10	\$580.00	13	0.00	\$15.83
Appliances	Stove	Induction	23.02	\$898.00	13	0.02	\$4.36
Appliances	Microwave	Standard	-	-	9	1.00	-
Electronics	Personal Computers	Standard	-	-	5	1.00	-
Electronics	Personal Computers	Energy Star	91.86	\$0.01	5	1,685.07	\$0.00
Electronics	Monitor	Standard	-	-	5	1.00	-
Electronics	Monitor	Energy Star	12.50	\$0.01	5	229.37	\$0.00
Electronics	Laptops	Standard	-	-	4	1.00	-
Electronics	Laptops	Energy Star	42.32	\$0.01	4	603.36	\$0.00
Electronics	TVs	Standard	-	-	11	1.00	-
Electronics	TVs	ENERGY STAR(3.1)	46.21	\$0.01	11	-	\$0.00
Electronics	TVs	ENERGY STAR(4.1)	98.90	\$0.02	11	-	\$0.00
Electronics	TVs	ENERGY STAR(5.1)	111.37	\$0.03	11	1,573.15	\$0.00
Electronics	Printer/Fax/Copier	Standard	-	-	5	1.00	-
Electronics	Printer/Fax/Copier	Energy Star	11.70	\$0.01	5	214.57	\$0.00
Electronics	Set-top Boxes/DVR	Standard	-	-	5	1.00	-

Residential Energy Efficiency Equipment and Measure Data

End Use	Technology	Efficiency Definition	Savings (kWh/HH/yr)	Incremental Cost (\$/HH)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Electronics	Set-top Boxes/DVR	ENERGY STAR(2009)	38.03	\$0.01	5	-	\$0.00
Electronics	Set-top Boxes/DVR	ENERGY STAR(2011)	50.71	\$0.02	5	465.06	\$0.00
Electronics	Devices and Gadgets	Standard	-	-	5	1.00	-
Miscellaneous	Air Purifier/Cleaner	Standard	-	-	9	1.00	-
Miscellaneous	Air Purifier/Cleaner	Energy Star	498.75	\$70.00	9	2.55	\$0.02
Miscellaneous	Dehumidifier	Standard	-	-	12	1.00	-
Miscellaneous	Dehumidifier	Energy Star	434.15	\$45.00	12	4.64	\$0.01
Miscellaneous	Pool Pump	Standard	-	-	15	1.00	-
Miscellaneous	Pool Pump	High Efficiency	146.94	\$85.00	15	1.04	\$0.06
Miscellaneous	Pool Pump	Two-Speed	587.75	\$579.00	15	0.61	\$0.10
Miscellaneous	Pool Heater	Electric Resistance	-	-	15	1.00	-
Miscellaneous	Pool Heater	Heat Pump (COP = 5.0)	3,579.82	\$2,550.00	15	0.84	\$0.07
Miscellaneous	Hot Tub / Spa	Standard	-	-	15	1.00	-
Miscellaneous	Hot Tub / Spa	Efficient Pumps	135.38	\$300.00	15	0.27	\$0.23
Miscellaneous	Hot Tub / Spa	Improved Controls and Pumps	180.50	\$350.00	15	0.31	\$0.20
Miscellaneous	Well Pump	Standard	-	-	5	1.00	-
Miscellaneous	Furnace Fan	Standard	-	-	20	1.00	-
Miscellaneous	Furnace Fan	ECM	45.45	\$97.00	20	0.37	\$0.19
Miscellaneous	Bathroom Exhaust Fan	Standard	-	-	19	1.00	-
Miscellaneous	Bathroom Exhaust Fan	High Efficiency	84.55	\$43.50	19	1.46	\$0.05
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table B-14 Energy Efficiency Equipment Data, Multi Family Electric/Gas Customer, (Gas) - New Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/HH/yr)	Incremental Cost (\$/HH)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Heating	Furnace	AFUE 0.8	-	-	20	1.00	-
Heating	Furnace	AFUE 0.9	29.24	\$382.99	20	0.59	\$1.16
Heating	Furnace	AFUE 0.92	34.91	\$600.94	20	0.45	\$1.52
Heating	Furnace	AFUE 0.95	42.96	\$949.92	20	0.35	\$1.95
Heating	Furnace	AFUE 0.97	50.84	\$1,934.38	20	0.20	\$3.36
Heating	Boiler	EF 0.8	-	-	25	-	-
Heating	Boiler	EF 0.9	1.39	\$723.30	25	1.00	\$41.75
Heating	Boiler	EF 0.92	15.14	\$1,076.38	25	0.36	\$5.71
Heating	Boiler	EF 0.95	59.02	\$3,256.55	25	0.21	\$4.43
Heating	Other Heating	Gas Fireplace	-	-	5	1.00	-
Water Heating	Water Heater <= 55 gal	EF 0.59	-	-	13	1.00	-
Water Heating	Water Heater <= 55 gal	EF 0.67	14.56	\$400.00	13	0.18	\$3.07
Water Heating	Water Heater <= 55 gal	EF 0.74	24.70	\$495.67	13	0.25	\$2.25
Water Heating	Water Heater <= 55 gal	EF 0.76	27.26	\$523.00	13	0.26	\$2.15
Water Heating	Water Heater <= 55 gal	EF 0.82 (Tankless)	38.28	\$605.00	13	0.32	\$1.77
Water Heating	Water Heater <= 55 gal	EF 0.86 (Condensing)	38.28	\$685.00	13	0.28	\$2.00
Water Heating	Water Heater > 55 gal	EF 0.59	-	-	13	1.00	-
Water Heating	Water Heater > 55 gal	EF 0.67	15.44	\$400.00	13	0.19	\$2.90
Water Heating	Water Heater > 55 gal	EF 0.74	26.18	\$495.67	13	0.26	\$2.12
Water Heating	Water Heater > 55 gal	EF 0.76	28.90	\$523.00	13	0.28	\$2.02
Water Heating	Water Heater > 55 gal	EF 0.82 (Tankless)	40.58	\$605.00	13	0.34	\$1.67
Water Heating	Water Heater > 55 gal	EF 0.86 (Condensing)	40.58	\$685.00	13	0.30	\$1.89
Appliances	Clothes Dryer	Standard	-	-	13	1.00	-
Appliances	Clothes Dryer	Standard (AHAM)	0.61	-	13	-	-
Appliances	Clothes Dryer	Efficient	2.25	\$130.00	13	0.09	\$6.47
Appliances	Stove	Standard (EF .399)	-	-	13	1.00	-
Appliances	Stove	Efficient (EF .42)	2.63	\$115.00	13	0.11	\$4.90
Miscellaneous	Pool Heater	EF .78	-	-	15	-	-
Miscellaneous	Pool Heater	EF .82	2.60	\$103.37	15	1.00	\$4.08
Miscellaneous	Pool Heater	EF .90	7.70	\$1,791.56	15	0.02	\$23.90
Miscellaneous	Pool Heater	EF .95	10.13	\$2,071.10	15	0.02	\$21.00
Miscellaneous	Hot Tub / Spa	EF .78	-	-	15	-	-
Miscellaneous	Hot Tub / Spa	EF .82	2.51	\$103.37	15	1.00	\$4.23
Miscellaneous	Hot Tub / Spa	EF .90	7.42	\$1,791.56	15	0.02	\$24.78
Miscellaneous	Hot Tub / Spa	EF .95	9.77	\$2,071.10	15	0.02	\$21.76
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table B-15 Energy Efficiency Equipment Data, Single Family Gas Customer Only, Existing Vintage

End Use	Technology	Efficiency Definition	Savings (therms/HH/yr)	Incremental Cost (\$/HH)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/therm)
Heating	Furnace	AFUE 0.8	-	-	20	1.00	-
Heating	Furnace	AFUE 0.9	49.56	\$348.64	20	1.09	\$0.62
Heating	Furnace	AFUE 0.92	59.19	\$547.04	20	0.83	\$0.82
Heating	Furnace	AFUE 0.95	72.86	\$864.72	20	0.65	\$1.05
Heating	Furnace	AFUE 0.97	86.28	\$1,760.88	20	0.38	\$1.80
Heating	Boiler	EF 0.8	-	-	25	-	-
Heating	Boiler	EF 0.9	1.43	\$657.82	25	1.00	\$37.01
Heating	Boiler	EF 0.92	15.38	\$978.93	25	0.40	\$5.11
Heating	Boiler	EF 0.95	60.07	\$2,961.74	25	0.24	\$3.96
Heating	Other Heating	Gas Fireplace	-	-	5	1.00	-
Water Heating	Water Heater <= 55 gal	EF 0.59	-	-	13	1.00	-
Water Heating	Water Heater <= 55 gal	EF 0.67	19.58	\$400.00	13	0.24	\$2.29
Water Heating	Water Heater <= 55 gal	EF 0.74	33.20	\$495.67	13	0.33	\$1.67
Water Heating	Water Heater <= 55 gal	EF 0.76	36.85	\$523.00	13	0.35	\$1.59
Water Heating	Water Heater <= 55 gal	EF 0.82 (Tankless)	51.42	\$605.00	13	0.42	\$1.32
Water Heating	Water Heater <= 55 gal	EF 0.86 (Condensing)	51.49	\$685.00	13	0.38	\$1.49
Water Heating	Water Heater > 55 gal	EF 0.59	-	-	13	1.00	-
Water Heating	Water Heater > 55 gal	EF 0.67	20.76	\$400.00	13	0.26	\$2.16
Water Heating	Water Heater > 55 gal	EF 0.74	35.20	\$495.67	13	0.35	\$1.58
Water Heating	Water Heater > 55 gal	EF 0.76	39.07	\$523.00	13	0.37	\$1.50
Water Heating	Water Heater > 55 gal	EF 0.82 (Tankless)	54.52	\$605.00	13	0.45	\$1.24
Water Heating	Water Heater > 55 gal	EF 0.86 (Condensing)	54.58	\$685.00	13	0.40	\$1.40
Appliances	Clothes Dryer	Standard	-	-	13	1.00	-
Appliances	Clothes Dryer	Standard (AHAM)	0.78	-	13	-	-
Appliances	Clothes Dryer	Efficient	2.88	\$130.00	13	0.11	\$5.05
Appliances	Stove	Standard (EF .399)	-	-	13	1.00	-
Appliances	Stove	Efficient (EF .42)	2.62	\$115.00	13	0.11	\$4.90
Miscellaneous	Pool Heater	EF .78	-	-	15	-	-
Miscellaneous	Pool Heater	EF .82	7.43	\$103.37	15	1.00	\$1.43
Miscellaneous	Pool Heater	EF .90	21.99	\$1,791.56	15	0.05	\$8.37
Miscellaneous	Pool Heater	EF .95	28.93	\$2,071.10	15	0.06	\$7.35
Miscellaneous	Hot Tub / Spa	EF .78	-	-	15	-	-
Miscellaneous	Hot Tub / Spa	EF .82	2.51	\$103.37	15	1.00	\$4.23
Miscellaneous	Hot Tub / Spa	EF .90	7.42	\$1,791.56	15	0.02	\$24.78
Miscellaneous	Hot Tub / Spa	EF .95	9.77	\$2,071.10	15	0.02	\$21.76
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table B-16 Energy Efficiency Equipment Data, Single Family Gas Customer Only, New Vintage

End Use	Technology	Efficiency Definition	Savings (therms/HH/yr)	Incremental Cost (\$/HH)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/therm)
Heating	Furnace	AFUE 0.8	-	-	20	1.00	-
Heating	Furnace	AFUE 0.9	50.14	\$397.28	20	0.97	\$0.70
Heating	Furnace	AFUE 0.92	59.85	\$623.36	20	0.74	\$0.92
Heating	Furnace	AFUE 0.95	73.63	\$985.35	20	0.58	\$1.18
Heating	Furnace	AFUE 0.97	87.00	\$2,006.53	20	0.33	\$2.04
Heating	Boiler	EF 0.8	-	-	25	-	-
Heating	Boiler	EF 0.9	2.38	\$749.58	25	1.00	\$25.30
Heating	Boiler	EF 0.92	25.89	\$1,115.49	25	0.60	\$3.46
Heating	Boiler	EF 0.95	100.92	\$3,374.90	25	0.35	\$2.68
Heating	Other Heating	Gas Fireplace	-	-	5	1.00	-
Water Heating	Water Heater <= 55 gal	EF 0.59	-	-	13	1.00	-
Water Heating	Water Heater <= 55 gal	EF 0.67	17.72	\$400.00	13	0.22	\$2.53
Water Heating	Water Heater <= 55 gal	EF 0.74	30.04	\$495.67	13	0.30	\$1.85
Water Heating	Water Heater <= 55 gal	EF 0.76	33.34	\$523.00	13	0.32	\$1.76
Water Heating	Water Heater <= 55 gal	EF 0.82 (Tankless)	46.53	\$605.00	13	0.38	\$1.45
Water Heating	Water Heater <= 55 gal	EF 0.86 (Condensing)	46.58	\$685.00	13	0.34	\$1.65
Water Heating	Water Heater > 55 gal	EF 0.59	-	-	13	1.00	-
Water Heating	Water Heater > 55 gal	EF 0.67	18.78	\$400.00	13	0.23	\$2.38
Water Heating	Water Heater > 55 gal	EF 0.74	31.85	\$495.67	13	0.32	\$1.74
Water Heating	Water Heater > 55 gal	EF 0.76	35.34	\$523.00	13	0.34	\$1.66
Water Heating	Water Heater > 55 gal	EF 0.82 (Tankless)	49.33	\$605.00	13	0.41	\$1.37
Water Heating	Water Heater > 55 gal	EF 0.86 (Condensing)	49.39	\$685.00	13	0.36	\$1.55
Appliances	Clothes Dryer	Standard	-	-	13	1.00	-
Appliances	Clothes Dryer	Standard (AHAM)	0.78	-	13	-	-
Appliances	Clothes Dryer	Efficient	2.88	\$130.00	13	0.11	\$5.05
Appliances	Stove	Standard (EF .399)	-	-	13	1.00	-
Appliances	Stove	Efficient (EF .42)	2.62	\$115.00	13	0.11	\$4.90
Miscellaneous	Pool Heater	EF .78	-	-	15	-	-
Miscellaneous	Pool Heater	EF .82	7.43	\$103.37	15	1.00	\$1.43
Miscellaneous	Pool Heater	EF .90	21.99	\$1,791.56	15	0.05	\$8.37
Miscellaneous	Pool Heater	EF .95	28.93	\$2,071.10	15	0.06	\$7.35
Miscellaneous	Hot Tub / Spa	EF .78	-	-	15	-	-
Miscellaneous	Hot Tub / Spa	EF .82	2.51	\$103.37	15	1.00	\$4.23
Miscellaneous	Hot Tub / Spa	EF .90	7.42	\$1,791.56	15	0.02	\$24.78
Miscellaneous	Hot Tub / Spa	EF .95	9.77	\$2,071.10	15	0.02	\$21.76
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table B-17 Energy Efficiency Equipment Data, Multi Family Gas Customer Only, Existing Vintage

End Use	Technology	Efficiency Definition	Savings (therm/HH/yr)	Incremental Cost (\$/HH)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/therm)
Heating	Furnace	AFUE 0.8	-	-	20	1.00	-
Heating	Furnace	AFUE 0.9	34.65	\$316.84	20	0.84	\$0.81
Heating	Furnace	AFUE 0.92	41.35	\$497.15	20	0.64	\$1.06
Heating	Furnace	AFUE 0.95	50.87	\$785.86	20	0.50	\$1.36
Heating	Furnace	AFUE 0.97	60.11	\$1,600.29	20	0.29	\$2.35
Heating	Boiler	EF 0.8	-	-	25	-	-
Heating	Boiler	EF 0.9	1.02	\$612.50	25	1.00	\$48.26
Heating	Boiler	EF 0.92	10.98	\$911.50	25	0.31	\$6.66
Heating	Boiler	EF 0.95	42.90	\$2,757.72	25	0.18	\$5.16
Heating	Other Heating	Gas Fireplace	-	-	5	1.00	-
Water Heating	Water Heater <= 55 gal	EF 0.59	-	-	13	1.00	-
Water Heating	Water Heater <= 55 gal	EF 0.67	13.67	\$400.00	13	0.17	\$3.27
Water Heating	Water Heater <= 55 gal	EF 0.74	23.19	\$495.67	13	0.23	\$2.39
Water Heating	Water Heater <= 55 gal	EF 0.76	25.60	\$523.00	13	0.24	\$2.29
Water Heating	Water Heater <= 55 gal	EF 0.82 (Tankless)	35.94	\$605.00	13	0.30	\$1.88
Water Heating	Water Heater <= 55 gal	EF 0.86 (Condensing)	35.95	\$685.00	13	0.26	\$2.13
Water Heating	Water Heater > 55 gal	EF 0.59	-	-	13	1.00	-
Water Heating	Water Heater > 55 gal	EF 0.67	14.49	\$400.00	13	0.18	\$3.09
Water Heating	Water Heater > 55 gal	EF 0.74	24.59	\$495.67	13	0.25	\$2.26
Water Heating	Water Heater > 55 gal	EF 0.76	27.14	\$523.00	13	0.26	\$2.16
Water Heating	Water Heater > 55 gal	EF 0.82 (Tankless)	38.10	\$605.00	13	0.31	\$1.78
Water Heating	Water Heater > 55 gal	EF 0.86 (Condensing)	38.11	\$685.00	13	0.28	\$2.01
Appliances	Clothes Dryer	Standard	-	-	13	1.00	-
Appliances	Clothes Dryer	Standard (AHAM)	0.61	-	13	-	-
Appliances	Clothes Dryer	Efficient	2.25	\$130.00	13	0.09	\$6.47
Appliances	Stove	Standard (EF .399)	-	-	13	1.00	-
Appliances	Stove	Efficient (EF .42)	2.63	\$115.00	13	0.11	\$4.90
Miscellaneous	Pool Heater	EF .78	-	-	15	-	-
Miscellaneous	Pool Heater	EF .82	2.60	\$103.37	15	1.00	\$4.08
Miscellaneous	Pool Heater	EF .90	7.70	\$1,791.56	15	0.02	\$23.90
Miscellaneous	Pool Heater	EF .95	10.13	\$2,071.10	15	0.02	\$21.00
Miscellaneous	Hot Tub / Spa	EF .78	-	-	15	-	-
Miscellaneous	Hot Tub / Spa	EF .82	2.51	\$103.37	15	1.00	\$4.23
Miscellaneous	Hot Tub / Spa	EF .90	7.42	\$1,791.56	15	0.02	\$24.78
Miscellaneous	Hot Tub / Spa	EF .95	9.77	\$2,071.10	15	0.02	\$21.76
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table B-18 Energy Efficiency Equipment Data, Multi Family Gas Customer Only, New Vintage

End Use	Technology	Efficiency Definition	Savings (therms/HH/yr)	Incremental Cost (\$/HH)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/therm)
Heating	Furnace	AFUE 0.8	-	-	20	1.00	-
Heating	Furnace	AFUE 0.9	24.71	\$323.65	20	0.59	\$1.16
Heating	Furnace	AFUE 0.92	29.50	\$507.84	20	0.45	\$1.52
Heating	Furnace	AFUE 0.95	36.31	\$802.75	20	0.35	\$1.95
Heating	Furnace	AFUE 0.97	42.96	\$1,634.68	20	0.20	\$3.36
Heating	Boiler	EF 0.8	-	-	25	-	-
Heating	Boiler	EF 0.9	1.18	\$611.24	25	1.00	\$41.75
Heating	Boiler	EF 0.92	12.80	\$909.61	25	0.36	\$5.71
Heating	Boiler	EF 0.95	49.87	\$2,752.01	25	0.21	\$4.43
Heating	Other Heating	Gas Fireplace	-	-	5	1.00	-
Water Heating	Water Heater <= 55 gal	EF 0.59	-	-	13	1.00	-
Water Heating	Water Heater <= 55 gal	EF 0.67	12.85	\$400.00	13	0.16	\$3.48
Water Heating	Water Heater <= 55 gal	EF 0.74	21.79	\$495.67	13	0.22	\$2.54
Water Heating	Water Heater <= 55 gal	EF 0.76	24.06	\$523.00	13	0.23	\$2.43
Water Heating	Water Heater <= 55 gal	EF 0.82 (Tankless)	33.77	\$605.00	13	0.28	\$2.00
Water Heating	Water Heater <= 55 gal	EF 0.86 (Condensing)	33.78	\$685.00	13	0.25	\$2.27
Water Heating	Water Heater > 55 gal	EF 0.59	-	-	13	1.00	-
Water Heating	Water Heater > 55 gal	EF 0.67	13.62	\$400.00	13	0.17	\$3.29
Water Heating	Water Heater > 55 gal	EF 0.74	23.10	\$495.67	13	0.23	\$2.40
Water Heating	Water Heater > 55 gal	EF 0.76	25.50	\$523.00	13	0.24	\$2.29
Water Heating	Water Heater > 55 gal	EF 0.82 (Tankless)	35.80	\$605.00	13	0.30	\$1.89
Water Heating	Water Heater > 55 gal	EF 0.86 (Condensing)	35.81	\$685.00	13	0.26	\$2.14
Appliances	Clothes Dryer	Standard	-	-	13	1.00	-
Appliances	Clothes Dryer	Standard (AHAM)	0.61	-	13	-	-
Appliances	Clothes Dryer	Efficient	2.25	\$130.00	13	0.09	\$6.47
Appliances	Stove	Standard (EF .399)	-	-	13	1.00	-
Appliances	Stove	Efficient (EF .42)	2.63	\$115.00	13	0.11	\$4.90
Miscellaneous	Pool Heater	EF .78	-	-	15	-	-
Miscellaneous	Pool Heater	EF .82	2.60	\$103.37	15	1.00	\$4.08
Miscellaneous	Pool Heater	EF .90	7.70	\$1,791.56	15	0.02	\$23.90
Miscellaneous	Pool Heater	EF .95	10.13	\$2,071.10	15	0.02	\$21.00
Miscellaneous	Hot Tub / Spa	EF .78	-	-	15	-	-
Miscellaneous	Hot Tub / Spa	EF .82	2.51	\$103.37	15	1.00	\$4.23
Miscellaneous	Hot Tub / Spa	EF .90	7.42	\$1,791.56	15	0.02	\$24.78
Miscellaneous	Hot Tub / Spa	EF .95	9.77	\$2,071.10	15	0.02	\$21.76
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table B-19 Energy Efficiency Non-Equipment Data, Single Family Electric Customer Only, Existing Vintage

Measure	Base Saturation	Applicability	Lifetime (years)	Incremental Cost (\$/HH)	Energy Savings (kBtu/HH)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	33%	38%	20	\$363.42	2,152.72	1.29	\$0.055
Insulation - Ducting	15%	75%	20	\$95.00	2,546.31	11.81	\$0.020
Insulation - Foundation	33%	50%	20	\$582.88	-	-	\$-
Insulation - Infiltration Control	46%	90%	15	\$327.87	5,296.53	2.15	\$0.032
Insulation - Radiant Barrier	5%	90%	20	\$82.84	2,019.30	5.30	\$0.023
Insulation - Wall Cavity	33%	50%	20	\$6,048.96	4,408.00	0.15	\$0.088
Insulation - Wall Sheathing	33%	80%	20	\$4,435.90	9,810.49	0.48	\$0.074
Ducting - Repair and Sealing	16%	50%	18	\$497.62	17,220.63	10.78	\$0.018
Windows - High Efficiency/ENERGY STAR	47%	90%	20	\$7,134.01	8,580.43	0.48	\$0.087
Windows - Install Reflective Film	5%	45%	10	\$1,028.88	8,450.80	1.18	\$0.070
Doors - Storm and Thermal	38%	75%	25	\$133.00	1,252.77	2.99	\$0.041
Roofs - High Reflectivity	5%	10%	20	\$85.51	1,133.43	5.51	\$0.044
Attic Fan - Installation	12%	23%	20	\$120.48	-	-	\$-
Attic Fan - Photovoltaic - Installation	13%	45%	20	\$461.52	34.74	0.03	\$0.096
Whole-House Fan - Installation	4%	19%	20	\$546.45	-	-	\$-
Ceiling Fan - Installation	56%	75%	10	\$204.00	3,361.21	2.36	\$0.045
Thermostat - Clock/Programmable	51%	56%	5	\$30.00	6,055.91	5.81	\$0.003
Home Energy Management System	20%	38%	15	\$1,747.00	7,199.97	0.56	\$0.071
Central AC - Early Replacement	37%	100%	15	\$3,373.96	5,513.32	0.44	\$0.097
Central AC - Maintenance and Tune-Up	37%	100%	2	\$175.00	1,531.48	0.07	\$0.109
Central Heat Pump - Maintenance	3%	90%	2	\$175.00	10,040.61	0.34	\$0.018
Room AC - Removal of Second Unit	0%	38%	4	\$60.00	11,979.02	6.14	\$0.005
Boiler - Hot Water Reset	14%	56%	11	\$37.00	-	15.16	\$0.003
Boiler - Pipe Insulation	16%	38%	9	\$891.26	-	0.16	\$0.101
Boiler - Maintenance	32%	100%	10	\$215.00	2,725.25	0.74	\$0.053
Furnace - Maintenance	32%	100%	15	\$215.00	-	0.33	\$0.082
Water Heater - Drainwater Heat Recovery	1%	50%	15	\$899.00	8,501.83	4.98	\$0.016
Water Heater - Faucet Aerators	25%	90%	9	\$16.00	2,038.82	9.41	\$0.005
Water Heater - Low-Flow Showerheads	45%	85%	10	\$12.00	9,288.83	64.89	\$0.001
Water Heater - Pipe Insulation	18%	38%	15	\$512.22	3,022.81	0.87	\$0.055
Water Heater - Tank Blanket/Insulation	17%	75%	5	\$79.44	1,243.76	0.55	\$0.035
Water Heater - Thermostat Setback	17%	75%	2	\$5.00	1,969.32	2.43	\$0.003
Water Heater - Timer	17%	40%	5	\$115.00	1,903.66	0.58	\$0.033
Water Heater - Desuperheater	0%	75%	15	\$1,500.00	12,691.07	1.24	\$0.045
Water Heater - Solar System	0%	75%	20	\$5,400.00	52,127.88	1.32	\$0.050
Interior Lighting - Occupancy Sensors	18%	28%	15	\$750.00	1,128.26	0.08	\$0.098
Exterior Lighting - Photosensor Control	21%	45%	8	\$130.00	1,453.61	0.34	\$0.060
Exterior Lighting - Photovoltaic Installation	10%	45%	12	\$5,947.00	-	-	\$-
Exterior Lighting - Timeclock Installation	7%	45%	5	\$115.00	1,017.52	0.16	\$0.082
Refrigerator - Early Replacement	37%	100%	9	\$130.00	3,683.75	0.87	\$0.029
Refrigerator - Maintenance	37%	100%	4	\$50.00	886.07	0.20	\$0.049
Refrigerator - Remove Second Unit	0%	38%	8	\$120.00	9,535.23	2.08	\$0.012
Freezer - Remove Second Unit	0%	25%	8	\$120.00	6,521.31	1.74	\$0.017
Freezer - Early Replacement	37%	100%	6	\$130.00	3,651.93	0.62	\$0.031
Freezer - Maintenance	37%	100%	4	\$50.00	326.07	0.08	\$0.109
Electronics - Smart Power Strip	5%	90%	4	\$52.00	1,173.84	0.33	\$0.040
Pool Pump - Timer	25%	90%	5	\$115.00	4,638.79	0.83	\$0.023
Pool Heater - Solar System	0%	75%	20	\$5,400.00	8,120.04	0.42	\$0.075
ENERGY STAR Home Design	0%	0%	25	\$8,544.00	-	-	\$-
Information Based Energy Efficiency Programs	0%	0%	20	\$582.88	-	-	\$-
Combined Boiler & Water Htg. Unit	0%	75%	15	\$1,500.00	-	1.67	\$0.034
Pool/Spa cover	25%	90%	5	\$115.00	9,744.05	3.59	\$0.006

Table B-20 Energy Efficiency Non-Equipment Data, Single Family Electric Customer Only, New Vintage

Measure	Base Saturation	Applicability	Lifetime (years)	Incremental Cost (\$/HH)	Energy Savings (kBtu/HH)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	20%	48%	20	\$415.05	1,279.22	0.89	\$0.065
Insulation - Ducting	50%	75%	20	\$95.00	7,096.75	20.40	\$0.010
Insulation - Foundation	20%	90%	20	\$760.32	17,328.51	5.59	\$0.023
Insulation - Infiltration Control	46%	90%	15	\$427.68	2,782.18	1.13	\$0.050
Insulation - Radiant Barrier	25%	90%	20	\$94.61	457.31	1.36	\$0.055
Insulation - Wall Cavity	20%	90%	20	\$6,946.32	2,459.17	0.09	\$0.092
Insulation - Wall Sheathing	20%	90%	20	\$5,093.97	7,414.76	0.37	\$0.079
Ducting - Repair and Sealing	50%	50%	18	\$497.62	108,278.65	32.30	\$0.004
Windows - High Efficiency/ENERGY STAR	85%	90%	20	\$9,108.09	11,140.54	0.46	\$0.087
Windows - Install Reflective Film	2%	45%	10	\$1,313.59	7,689.25	0.99	\$0.083
Doors - Storm and Thermal	13%	75%	25	\$133.00	302.08	0.79	\$0.067
Roofs - High Reflectivity	5%	90%	20	\$97.66	818.78	4.18	\$0.055
Attic Fan - Installation	4%	23%	20	\$120.48	-	-	\$-
Attic Fan - Photovoltaic - Installation	4%	11%	20	\$461.52	57.40	0.06	\$0.096
Whole-House Fan - Installation	4%	19%	20	\$712.80	-	-	\$-
Ceiling Fan - Installation	57%	75%	10	\$204.00	2,731.27	2.26	\$0.052
Thermostat - Clock/Programmable	57%	75%	5	\$30.00	4,542.80	4.93	\$0.004
Home Energy Management System	20%	68%	15	\$1,747.00	4,922.10	0.43	\$0.080
Central AC - Early Replacement	24%	100%	15	\$3,373.96	5,658.94	0.54	\$0.097
Central AC - Maintenance and Tune-Up	24%	100%	2	\$175.00	1,571.93	0.08	\$0.106
Central Heat Pump - Maintenance	1%	90%	2	\$175.00	8,856.33	0.34	\$0.020
Room AC - Removal of Second Unit	0%	38%	4	\$60.00	11,966.74	6.50	\$0.005
Boiler - Hot Water Reset	17%	95%	11	\$37.00	-	20.13	\$0.003
Boiler - Pipe Insulation	7%	41%	9	\$891.26	-	0.21	\$0.101
Boiler - Maintenance	20%	100%	10	\$215.00	2,410.35	0.83	\$0.057
Furnace - Maintenance	20%	100%	15	\$215.00	-	0.33	\$0.082
Water Heater - Drainwater Heat Recovery	1%	90%	15	\$899.00	8,501.83	4.46	\$0.018
Water Heater - Faucet Aerators	16%	90%	9	\$16.00	1,772.74	8.17	\$0.005
Water Heater - Low-Flow Showerheads	28%	95%	10	\$12.00	8,076.60	56.49	\$0.001
Water Heater - Pipe Insulation	9%	41%	15	\$512.22	2,630.74	0.76	\$0.059
Water Heater - Tank Blanket/Insulation	54%	75%	5	\$79.44	1,084.92	0.47	\$0.040
Water Heater - Thermostat Setback	5%	75%	2	\$5.00	1,969.32	2.44	\$0.003
Water Heater - Timer	5%	40%	5	\$115.00	1,655.03	0.50	\$0.038
Water Heater - Desuperheater	0%	75%	15	\$1,500.00	11,033.52	1.09	\$0.049
Water Heater - Solar System	0%	75%	20	\$5,400.00	45,319.61	1.17	\$0.053
Interior Lighting - Occupancy Sensors	18%	28%	15	\$750.00	1,128.26	0.08	\$0.098
Exterior Lighting - Photosensor Control	40%	45%	8	\$130.00	1,407.83	0.32	\$0.060
Exterior Lighting - Photovoltaic Installation	10%	45%	12	\$5,947.00	-	-	\$-
Exterior Lighting - Timeclock Installation	25%	45%	5	\$115.00	985.48	0.15	\$0.082
Refrigerator - Early Replacement	24%	100%	9	\$130.00	2,376.61	0.71	\$0.041
Refrigerator - Maintenance	24%	100%	4	\$50.00	571.65	0.15	\$0.071
Refrigerator - Remove Second Unit	0%	38%	8	\$120.00	6,151.75	1.69	\$0.018
Freezer - Remove Second Unit	0%	25%	8	\$120.00	5,289.38	1.62	\$0.020
Freezer - Early Replacement	24%	100%	6	\$130.00	2,962.05	0.56	\$0.037
Freezer - Maintenance	24%	100%	4	\$50.00	264.47	0.08	\$0.126
Electronics - Smart Power Strip	5%	90%	4	\$52.00	1,173.84	0.34	\$0.040
Pool Pump - Timer	25%	90%	5	\$115.00	3,386.02	0.61	\$0.030
Pool Heater - Solar System	0%	75%	20	\$5,400.00	8,121.72	0.44	\$0.075
ENERGY STAR Home Design	14%	75%	25	\$8,544.00	21,977.04	0.89	\$0.067
Information Based Energy Efficiency Programs	0%	0%	20	\$760.32	-	-	\$-
Combined Boiler & Water Htg. Unit	0%	75%	15	\$1,500.00	-	1.96	\$0.036
Pool/Spa cover	25%	90%	5	\$115.00	9,746.06	3.73	\$0.006

Table B-21 Energy Efficiency Non-Equipment Data, Multi Family Electric Customer Only, Existing Vintage

Measure	Base Saturation	Applicability	Lifetime (years)	Incremental Cost (\$/HH)	Energy Savings (kBtu/HH)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	13%	19%	20	\$574.27	2,430.21	1.74	\$0.048
Insulation - Ducting	13%	75%	20	\$95.00	467.68	5.09	\$0.047
Insulation - Foundation	13%	30%	20	\$270.24	-	-	\$-
Insulation - Infiltration Control	19%	90%	15	\$152.01	4,895.20	7.44	\$0.011
Insulation - Radiant Barrier	5%	90%	20	\$130.90	2,286.80	7.22	\$0.018
Insulation - Wall Cavity	13%	15%	20	\$696.64	2,947.66	1.53	\$0.047
Insulation - Wall Sheathing	13%	80%	20	\$510.87	4,551.29	3.75	\$0.028
Ducting - Repair and Sealing	8%	50%	18	\$497.62	907.99	1.61	\$0.072
Windows - High Efficiency/ENERGY STAR	68%	90%	20	\$1,669.20	1,975.83	1.01	\$0.076
Windows - Install Reflective Film	5%	45%	10	\$240.74	1,666.81	2.19	\$0.045
Doors - Storm and Thermal	17%	75%	25	\$133.00	-	-	\$-
Roofs - High Reflectivity	3%	10%	20	\$135.12	524.03	3.55	\$0.052
Attic Fan - Installation	1%	23%	20	\$120.48	-	-	\$-
Attic Fan - Photovoltaic - Installation	2%	11%	20	\$461.52	9.73	0.02	\$0.096
Whole-House Fan - Installation	4%	19%	20	\$253.35	-	-	\$-
Ceiling Fan - Installation	56%	75%	10	\$204.00	1,692.50	2.62	\$0.040
Thermostat - Clock/Programmable	27%	68%	5	\$30.00	2,065.36	3.54	\$0.005
Home Energy Management System	5%	13%	15	\$1,747.00	11,203.87	1.45	\$0.044
Central AC - Early Replacement	27%	100%	15	\$3,373.96	1,621.14	0.28	\$0.102
Central AC - Maintenance and Tune-Up	27%	100%	2	\$175.00	450.32	0.05	\$0.149
Central Heat Pump - Maintenance	0%	90%	2	\$175.00	3,556.11	0.28	\$0.024
Room AC - Removal of Second Unit	0%	38%	4	\$60.00	3,766.64	4.07	\$0.007
Boiler - Hot Water Reset	8%	68%	11	\$37.00	-	12.05	\$0.004
Boiler - Pipe Insulation	9%	38%	9	\$891.26	-	0.13	\$0.111
Boiler - Maintenance	22%	100%	10	\$215.00	968.50	0.64	\$0.064
Furnace - Maintenance	22%	100%	15	\$215.00	-	0.25	\$0.088
Water Heater - Drainwater Heat Recovery	1%	50%	15	\$899.00	8,501.83	3.84	\$0.020
Water Heater - Faucet Aerators	12%	90%	9	\$16.00	1,819.19	11.32	\$0.004
Water Heater - Low-Flow Showerheads	27%	75%	10	\$12.00	8,299.20	78.87	\$0.001
Water Heater - Pipe Insulation	9%	38%	15	\$512.22	1,927.06	0.75	\$0.058
Water Heater - Tank Blanket/Insulation	54%	75%	5	\$79.44	793.22	0.47	\$0.039
Water Heater - Thermostat Setback	17%	75%	2	\$5.00	1,969.32	2.42	\$0.003
Water Heater - Timer	5%	40%	5	\$115.00	1,214.15	0.50	\$0.037
Water Heater - Desuperheater	0%	75%	15	\$1,500.00	8,094.36	1.08	\$0.048
Water Heater - Solar System	0%	75%	20	\$5,400.00	33,247.15	1.27	\$0.051
Interior Lighting - Occupancy Sensors	5%	28%	15	\$750.00	1,128.26	0.08	\$0.098
Exterior Lighting - Photosensor Control	18%	45%	8	\$130.00	613.02	0.16	\$0.092
Exterior Lighting - Photovoltaic Installation	10%	45%	12	\$5,947.00	-	-	\$-
Exterior Lighting - Timeclock Installation	8%	45%	5	\$115.00	429.11	0.07	\$0.130
Refrigerator - Early Replacement	27%	100%	9	\$130.00	3,682.40	0.86	\$0.029
Refrigerator - Maintenance	27%	100%	4	\$50.00	885.74	0.20	\$0.049
Refrigerator - Remove Second Unit	0%	38%	8	\$120.00	9,531.76	1.95	\$0.012
Freezer - Remove Second Unit	0%	25%	8	\$120.00	6,518.35	1.80	\$0.017
Freezer - Early Replacement	27%	100%	6	\$130.00	3,650.28	0.65	\$0.031
Freezer - Maintenance	27%	100%	4	\$50.00	325.92	0.09	\$0.109
Electronics - Smart Power Strip	5%	90%	4	\$52.00	1,173.84	0.33	\$0.040
Pool Pump - Timer	25%	90%	5	\$115.00	4,638.79	0.84	\$0.023
Pool Heater - Solar System	0%	75%	20	\$5,400.00	8,120.04	0.28	\$0.081
ENERGY STAR Home Design	0%	0%	25	\$8,544.00	-	-	\$-
Information Based Energy Efficiency Programs	0%	0%	20	\$270.24	-	-	\$-
Combined Boiler & Water Htg. Unit	0%	75%	15	\$1,500.00	-	1.28	\$0.041
Pool/Spa cover	25%	90%	5	\$115.00	9,744.05	2.31	\$0.009

Table B-22 Energy Efficiency Non-Equipment Data, Multi Family Electric Customer Only, New Vintage

Measure	Base Saturation	Applicability	Lifetime (years)	Incremental Cost (\$/HH)	Energy Savings (kBtu/HH)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	4%	48%	20	\$534.21	1,124.17	1.13	\$0.060
Insulation - Ducting	50%	75%	20	\$95.00	263.63	3.13	\$0.060
Insulation - Foundation	4%	90%	20	\$251.39	5,766.57	10.33	\$0.014
Insulation - Infiltration Control	19%	90%	15	\$141.40	1,946.84	4.29	\$0.019
Insulation - Radiant Barrier	5%	90%	20	\$121.77	386.50	1.71	\$0.050
Insulation - Wall Cavity	4%	90%	20	\$624.58	1,176.56	0.88	\$0.061
Insulation - Wall Sheathing	4%	90%	20	\$458.02	3,430.78	3.66	\$0.030
Ducting - Repair and Sealing	50%	50%	18	\$497.62	513.24	0.99	\$0.083
Windows - High Efficiency/ENERGY STAR	78%	90%	20	\$2,270.12	2,063.71	1.02	\$0.078
Windows - Install Reflective Film	2%	45%	10	\$327.40	1,834.77	2.14	\$0.052
Doors - Storm and Thermal	19%	75%	25	\$133.00	-	-	\$-
Roofs - High Reflectivity	0%	90%	20	\$125.70	232.26	2.08	\$0.069
Attic Fan - Installation	15%	23%	20	\$120.48	-	-	\$-
Attic Fan - Photovoltaic - Installation	5%	11%	20	\$461.52	16.09	0.04	\$0.096
Whole-House Fan - Installation	4%	19%	20	\$235.67	-	-	\$-
Ceiling Fan - Installation	33%	75%	10	\$204.00	1,274.63	2.39	\$0.049
Thermostat - Clock/Programmable	19%	25%	5	\$30.00	1,548.87	2.93	\$0.007
Home Energy Management System	5%	68%	15	\$1,747.00	8,728.25	1.27	\$0.050
Central AC - Early Replacement	9%	100%	15	\$3,373.96	1,214.05	0.26	\$0.105
Central AC - Maintenance and Tune-Up	9%	100%	2	\$175.00	337.24	0.04	\$0.190
Central Heat Pump - Maintenance	0%	90%	2	\$175.00	1,531.17	0.12	\$0.053
Room AC - Removal of Second Unit	0%	38%	4	\$60.00	3,224.62	3.67	\$0.008
Boiler - Hot Water Reset	15%	85%	11	\$37.00	-	-	\$-
Boiler - Pipe Insulation	20%	41%	9	\$891.26	-	-	\$-
Boiler - Maintenance	14%	100%	10	\$215.00	431.51	0.29	\$0.094
Furnace - Maintenance	14%	100%	15	\$215.00	-	0.19	\$0.094
Water Heater - Drainwater Heat Recovery	1%	90%	15	\$899.00	8,501.83	3.62	\$0.022
Water Heater - Faucet Aerators	0%	90%	9	\$16.00	1,583.80	10.09	\$0.004
Water Heater - Low-Flow Showerheads	26%	75%	10	\$12.00	7,225.16	70.54	\$0.001
Water Heater - Pipe Insulation	13%	41%	15	\$512.22	1,677.39	0.68	\$0.062
Water Heater - Tank Blanket/Insulation	54%	75%	5	\$79.44	690.63	0.42	\$0.044
Water Heater - Thermostat Setback	5%	75%	2	\$5.00	1,969.32	2.44	\$0.003
Water Heater - Timer	5%	40%	5	\$115.00	1,056.96	0.44	\$0.042
Water Heater - Desuperheater	0%	75%	15	\$1,500.00	7,046.42	0.97	\$0.052
Water Heater - Solar System	0%	75%	20	\$5,400.00	28,942.78	1.14	\$0.054
Interior Lighting - Occupancy Sensors	13%	28%	15	\$750.00	1,128.26	0.08	\$0.098
Exterior Lighting - Photosensor Control	31%	45%	8	\$130.00	627.99	0.15	\$0.094
Exterior Lighting - Photovoltaic Installation	10%	45%	12	\$5,947.00	-	-	\$-
Exterior Lighting - Timeclock Installation	22%	45%	5	\$115.00	439.59	0.07	\$0.133
Refrigerator - Early Replacement	9%	100%	9	\$130.00	2,375.78	0.73	\$0.041
Refrigerator - Maintenance	9%	100%	4	\$50.00	571.46	0.16	\$0.071
Refrigerator - Remove Second Unit	0%	38%	8	\$120.00	6,149.60	1.74	\$0.018
Freezer - Remove Second Unit	0%	25%	8	\$120.00	5,288.41	1.64	\$0.020
Freezer - Early Replacement	9%	100%	6	\$130.00	2,961.51	0.57	\$0.037
Freezer - Maintenance	9%	100%	4	\$50.00	264.42	0.08	\$0.126
Electronics - Smart Power Strip	5%	90%	4	\$52.00	1,173.84	0.34	\$0.040
Pool Pump - Timer	25%	90%	5	\$115.00	3,386.02	0.61	\$0.030
Pool Heater - Solar System	0%	75%	20	\$5,400.00	8,121.72	0.31	\$0.081
ENERGY STAR Home Design	14%	75%	25	\$8,544.00	8,212.79	0.55	\$0.073
Information Based Energy Efficiency Programs	0%	0%	20	\$251.39	-	-	\$-
Combined Boiler & Water Htg. Unit	0%	75%	15	\$1,500.00	-	0.45	\$0.076
Pool/Spa cover	25%	90%	5	\$115.00	9,746.06	2.47	\$0.009

Table B-23 Energy Efficiency Non-Equipment Data, Single Family Electric/Gas Customer, Existing Vintage

Measure	Base Saturation	Applicability	Lifetime (years)	Incremental Cost (\$/HH)	Energy Savings (kBtu/HH)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	33%	38%	20	\$363.42	2,912.27	1.29	\$0.055
Insulation - Ducting	15%	75%	20	\$95.00	3,741.49	11.81	\$0.020
Insulation - Foundation	33%	50%	20	\$582.88	-	-	\$-
Insulation - Infiltration Control	46%	90%	15	\$327.87	7,442.70	2.15	\$0.032
Insulation - Radiant Barrier	5%	90%	20	\$82.84	2,731.28	5.30	\$0.023
Insulation - Wall Cavity	33%	50%	20	\$6,048.96	6,184.68	0.15	\$0.088
Insulation - Wall Sheathing	33%	80%	20	\$4,435.90	13,933.45	0.48	\$0.074
Ducting - Repair and Sealing	16%	50%	18	\$497.62	22,902.15	10.78	\$0.018
Windows - High Efficiency/ENERGY STAR	47%	90%	20	\$7,134.01	8,313.25	0.48	\$0.087
Windows - Install Reflective Film	5%	45%	10	\$1,028.88	7,985.62	1.18	\$0.070
Doors - Storm and Thermal	38%	75%	25	\$133.00	1,711.93	2.99	\$0.041
Roofs - High Reflectivity	5%	10%	20	\$85.51	1,071.04	5.51	\$0.044
Attic Fan - Installation	12%	23%	20	\$120.48	-	-	\$-
Attic Fan - Photovoltaic - Installation	13%	45%	20	\$461.52	32.83	0.03	\$0.096
Whole-House Fan - Installation	4%	19%	20	\$546.45	-	-	\$-
Ceiling Fan - Installation	56%	75%	10	\$204.00	3,176.19	2.36	\$0.045
Thermostat - Clock/Programmable	51%	56%	5	\$30.00	8,643.56	5.81	\$0.003
Home Energy Management System	20%	38%	15	\$1,747.00	9,214.32	0.56	\$0.071
Central AC - Early Replacement	37%	100%	15	\$3,373.96	5,209.84	0.44	\$0.097
Central AC - Maintenance and Tune-Up	37%	100%	2	\$175.00	1,447.18	0.07	\$0.109
Central Heat Pump - Maintenance	3%	90%	2	\$175.00	9,833.66	0.34	\$0.018
Room AC - Removal of Second Unit	0%	38%	4	\$60.00	11,319.62	6.14	\$0.005
Boiler - Hot Water Reset	14%	56%	11	\$37.00	11,071.35	15.16	\$0.003
Boiler - Pipe Insulation	16%	38%	9	\$891.26	3,537.69	0.16	\$0.101
Boiler - Maintenance	32%	100%	10	\$215.00	2,669.08	0.74	\$0.053
Furnace - Maintenance	32%	100%	15	\$215.00	736.95	0.33	\$0.082
Water Heater - Drainwater Heat Recovery	1%	50%	15	\$899.00	48,007.46	4.98	\$0.016
Water Heater - Faucet Aerators	25%	90%	9	\$16.00	3,329.85	9.41	\$0.005
Water Heater - Low-Flow Showerheads	45%	85%	10	\$12.00	15,055.45	64.89	\$0.001
Water Heater - Pipe Insulation	18%	38%	15	\$512.22	4,916.32	0.87	\$0.055
Water Heater - Tank Blanket/Insulation	17%	75%	5	\$79.44	2,018.38	0.55	\$0.035
Water Heater - Thermostat Setback	17%	75%	2	\$5.00	1,969.32	2.43	\$0.003
Water Heater - Timer	17%	40%	5	\$115.00	3,088.83	0.58	\$0.033
Water Heater - Desuperheater	0%	75%	15	\$1,500.00	20,592.19	1.24	\$0.045
Water Heater - Solar System	0%	75%	20	\$5,400.00	52,127.88	1.32	\$0.050
Interior Lighting - Occupancy Sensors	18%	28%	15	\$750.00	1,128.26	0.08	\$0.098
Exterior Lighting - Photosensor Control	21%	45%	8	\$130.00	1,453.61	0.34	\$0.060
Exterior Lighting - Photovoltaic Installation	10%	45%	12	\$5,947.00	-	-	\$-
Exterior Lighting - Timeclock Installation	7%	45%	5	\$115.00	1,017.52	0.16	\$0.082
Refrigerator - Early Replacement	37%	100%	9	\$130.00	3,683.75	0.87	\$0.029
Refrigerator - Maintenance	37%	100%	4	\$50.00	886.07	0.20	\$0.049
Refrigerator - Remove Second Unit	0%	38%	8	\$120.00	9,535.23	2.08	\$0.012
Freezer - Remove Second Unit	0%	25%	8	\$120.00	6,521.31	1.74	\$0.017
Freezer - Early Replacement	37%	100%	6	\$130.00	3,651.93	0.62	\$0.031
Freezer - Maintenance	37%	100%	4	\$50.00	326.07	0.08	\$0.109
Electronics - Smart Power Strip	5%	90%	4	\$52.00	1,173.84	0.33	\$0.040
Pool Pump - Timer	25%	90%	5	\$115.00	4,638.79	0.83	\$0.023
Pool Heater - Solar System	0%	75%	20	\$5,400.00	15,820.04	0.42	\$0.075
ENERGY STAR Home Design	0%	0%	25	\$8,544.00	-	-	\$-
Information Based Energy Efficiency Programs	0%	0%	20	\$582.88	-	-	\$-
Combined Boiler & Water Htg. Unit	0%	75%	15	\$1,500.00	30,594.95	1.67	\$0.034
Pool/Spa cover	25%	90%	5	\$115.00	18,984.05	3.59	\$0.006

Table B-24 Energy Efficiency Non-Equipment Data, Single Family Electric/Gas Customer, New Vintage

Measure	Base Saturation	Applicability	Lifetime (years)	Incremental Cost (\$/HH)	Energy Savings (kBtu/HH)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	20%	48%	20	\$415.05	2,137.20	0.89	\$0.065
Insulation - Ducting	50%	75%	20	\$95.00	8,343.12	20.40	\$0.010
Insulation - Foundation	20%	90%	20	\$760.32	25,270.59	5.59	\$0.023
Insulation - Infiltration Control	46%	90%	15	\$427.68	4,767.75	1.13	\$0.050
Insulation - Radiant Barrier	25%	90%	20	\$94.61	748.40	1.36	\$0.055
Insulation - Wall Cavity	20%	90%	20	\$6,946.32	3,921.18	0.09	\$0.092
Insulation - Wall Sheathing	20%	90%	20	\$5,093.97	11,570.89	0.37	\$0.079
Ducting - Repair and Sealing	50%	50%	18	\$497.62	113,116.16	32.30	\$0.004
Windows - High Efficiency/ENERGY STAR	85%	90%	20	\$9,108.09	10,879.73	0.46	\$0.087
Windows - Install Reflective Film	2%	45%	10	\$1,313.59	7,265.98	0.99	\$0.083
Doors - Storm and Thermal	13%	75%	25	\$133.00	463.77	0.79	\$0.067
Roofs - High Reflectivity	5%	90%	20	\$97.66	773.71	4.18	\$0.055
Attic Fan - Installation	4%	23%	20	\$120.48	-	-	\$-
Attic Fan - Photovoltaic - Installation	4%	11%	20	\$461.52	54.25	0.06	\$0.096
Whole-House Fan - Installation	4%	19%	20	\$712.80	-	-	\$-
Ceiling Fan - Installation	57%	75%	10	\$204.00	2,580.92	2.26	\$0.052
Thermostat - Clock/Programmable	57%	75%	5	\$30.00	7,145.58	4.93	\$0.004
Home Energy Management System	20%	68%	15	\$1,747.00	6,705.23	0.43	\$0.080
Central AC - Early Replacement	24%	100%	15	\$3,373.96	5,347.44	0.54	\$0.097
Central AC - Maintenance and Tune-Up	24%	100%	2	\$175.00	1,485.40	0.08	\$0.106
Central Heat Pump - Maintenance	1%	90%	2	\$175.00	8,666.71	0.34	\$0.020
Room AC - Removal of Second Unit	0%	38%	4	\$60.00	11,308.02	6.50	\$0.005
Boiler - Hot Water Reset	17%	95%	11	\$37.00	10,897.18	20.13	\$0.003
Boiler - Pipe Insulation	7%	41%	9	\$891.26	3,482.03	0.21	\$0.101
Boiler - Maintenance	20%	100%	10	\$215.00	2,358.75	0.83	\$0.057
Furnace - Maintenance	20%	100%	15	\$215.00	731.41	0.33	\$0.082
Water Heater - Drainwater Heat Recovery	1%	90%	15	\$899.00	41,065.39	4.46	\$0.018
Water Heater - Faucet Aerators	16%	90%	9	\$16.00	2,836.91	8.17	\$0.005
Water Heater - Low-Flow Showerheads	28%	95%	10	\$12.00	12,829.88	56.49	\$0.001
Water Heater - Pipe Insulation	9%	41%	15	\$512.22	4,191.52	0.76	\$0.059
Water Heater - Tank Blanket/Insulation	54%	75%	5	\$79.44	1,723.42	0.47	\$0.040
Water Heater - Thermostat Setback	5%	75%	2	\$5.00	1,969.32	2.44	\$0.003
Water Heater - Timer	5%	40%	5	\$115.00	2,631.94	0.50	\$0.038
Water Heater - Desuperheater	0%	75%	15	\$1,500.00	17,546.24	1.09	\$0.049
Water Heater - Solar System	0%	75%	20	\$5,400.00	45,319.61	1.17	\$0.053
Interior Lighting - Occupancy Sensors	18%	28%	15	\$750.00	1,128.26	0.08	\$0.098
Exterior Lighting - Photosensor Control	40%	45%	8	\$130.00	1,455.59	0.32	\$0.060
Exterior Lighting - Photovoltaic Installation	10%	45%	12	\$5,947.00	-	-	\$-
Exterior Lighting - Timeclock Installation	25%	45%	5	\$115.00	1,018.92	0.15	\$0.082
Refrigerator - Early Replacement	24%	100%	9	\$130.00	2,376.61	0.71	\$0.041
Refrigerator - Maintenance	24%	100%	4	\$50.00	571.65	0.15	\$0.071
Refrigerator - Remove Second Unit	0%	38%	8	\$120.00	6,151.75	1.69	\$0.018
Freezer - Remove Second Unit	0%	25%	8	\$120.00	5,289.38	1.62	\$0.020
Freezer - Early Replacement	24%	100%	6	\$130.00	2,962.05	0.56	\$0.037
Freezer - Maintenance	24%	100%	4	\$50.00	264.47	0.08	\$0.126
Electronics - Smart Power Strip	5%	90%	4	\$52.00	1,173.84	0.34	\$0.040
Pool Pump - Timer	25%	90%	5	\$115.00	3,386.02	0.61	\$0.030
Pool Heater - Solar System	0%	75%	20	\$5,400.00	15,821.72	0.44	\$0.075
ENERGY STAR Home Design	14%	75%	25	\$8,544.00	30,123.55	0.89	\$0.067
Information Based Energy Efficiency Programs	0%	0%	20	\$760.32	-	-	\$-
Combined Boiler & Water Htg. Unit	0%	75%	15	\$1,500.00	28,407.08	1.96	\$0.036
Pool/Spa cover	25%	90%	5	\$115.00	18,986.06	3.73	\$0.006

Table B-25 Energy Efficiency Non-Equipment Data, Multi Family Electric/Gas Customer, Existing Vintage

Measure	Base Saturation	Applicability	Lifetime (years)	Incremental Cost (\$/HH)	Energy Savings (kBtu/HH)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	13%	19%	20	\$574.27	6,135.46	1.74	\$0.048
Insulation - Ducting	13%	75%	20	\$95.00	1,051.62	5.09	\$0.047
Insulation - Foundation	13%	30%	20	\$270.24	-	-	\$-
Insulation - Infiltration Control	19%	90%	15	\$152.01	12,215.37	7.44	\$0.011
Insulation - Radiant Barrier	5%	90%	20	\$130.90	5,768.97	7.22	\$0.018
Insulation - Wall Cavity	13%	15%	20	\$696.64	7,474.70	1.53	\$0.047
Insulation - Wall Sheathing	13%	80%	20	\$510.87	13,036.57	3.75	\$0.028
Ducting - Repair and Sealing	8%	50%	18	\$497.62	2,042.31	1.61	\$0.072
Windows - High Efficiency/ENERGY STAR	68%	90%	20	\$1,669.20	4,858.78	1.01	\$0.076
Windows - Install Reflective Film	5%	45%	10	\$240.74	3,750.32	2.19	\$0.045
Doors - Storm and Thermal	17%	75%	25	\$133.00	-	-	\$-
Roofs - High Reflectivity	3%	10%	20	\$135.12	1,179.06	3.55	\$0.052
Attic Fan - Installation	1%	23%	20	\$120.48	-	-	\$-
Attic Fan - Photovoltaic - Installation	2%	11%	20	\$461.52	21.89	0.02	\$0.096
Whole-House Fan - Installation	4%	19%	20	\$253.35	-	-	\$-
Ceiling Fan - Installation	56%	75%	10	\$204.00	3,808.12	2.62	\$0.040
Thermostat - Clock/Programmable	27%	68%	5	\$30.00	5,359.54	3.54	\$0.005
Home Energy Management System	5%	13%	15	\$1,747.00	24,561.26	1.45	\$0.044
Central AC - Early Replacement	27%	100%	15	\$3,373.96	3,647.57	0.28	\$0.102
Central AC - Maintenance and Tune-Up	27%	100%	2	\$175.00	1,013.21	0.05	\$0.149
Central Heat Pump - Maintenance	0%	90%	2	\$175.00	7,272.76	0.28	\$0.024
Room AC - Removal of Second Unit	0%	38%	4	\$60.00	8,474.95	4.07	\$0.007
Boiler - Hot Water Reset	8%	68%	11	\$37.00	8,635.28	12.05	\$0.004
Boiler - Pipe Insulation	9%	38%	9	\$891.26	2,737.29	0.13	\$0.111
Boiler - Maintenance	22%	100%	10	\$215.00	1,980.73	0.64	\$0.064
Furnace - Maintenance	22%	100%	15	\$215.00	562.72	0.25	\$0.088
Water Heater - Drainwater Heat Recovery	1%	50%	15	\$899.00	37,392.62	3.84	\$0.020
Water Heater - Faucet Aerators	12%	90%	9	\$16.00	4,082.49	11.32	\$0.004
Water Heater - Low-Flow Showerheads	27%	75%	10	\$12.00	18,620.90	78.87	\$0.001
Water Heater - Pipe Insulation	9%	38%	15	\$512.22	4,320.97	0.75	\$0.058
Water Heater - Tank Blanket/Insulation	54%	75%	5	\$79.44	1,778.72	0.47	\$0.039
Water Heater - Thermostat Setback	17%	75%	2	\$5.00	1,969.32	2.42	\$0.003
Water Heater - Timer	5%	40%	5	\$115.00	2,723.67	0.50	\$0.037
Water Heater - Desuperheater	0%	75%	15	\$1,500.00	18,157.77	1.08	\$0.048
Water Heater - Solar System	0%	75%	20	\$5,400.00	50,848.58	1.27	\$0.051
Interior Lighting - Occupancy Sensors	5%	28%	15	\$750.00	1,128.26	0.08	\$0.098
Exterior Lighting - Photosensor Control	18%	45%	8	\$130.00	709.81	0.16	\$0.092
Exterior Lighting - Photovoltaic Installation	10%	45%	12	\$5,947.00	-	-	\$-
Exterior Lighting - Timeclock Installation	8%	45%	5	\$115.00	496.87	0.07	\$0.130
Refrigerator - Early Replacement	27%	100%	9	\$130.00	3,682.40	0.86	\$0.029
Refrigerator - Maintenance	27%	100%	4	\$50.00	885.74	0.20	\$0.049
Refrigerator - Remove Second Unit	0%	38%	8	\$120.00	9,531.76	1.95	\$0.012
Freezer - Remove Second Unit	0%	25%	8	\$120.00	6,518.35	1.80	\$0.017
Freezer - Early Replacement	27%	100%	6	\$130.00	3,650.28	0.65	\$0.031
Freezer - Maintenance	27%	100%	4	\$50.00	325.92	0.09	\$0.109
Electronics - Smart Power Strip	5%	90%	4	\$52.00	1,173.84	0.33	\$0.040
Pool Pump - Timer	25%	90%	5	\$115.00	4,638.79	0.84	\$0.023
Pool Heater - Solar System	0%	75%	20	\$5,400.00	10,815.04	0.28	\$0.081
ENERGY STAR Home Design	0%	0%	25	\$8,544.00	-	-	\$-
Information Based Energy Efficiency Programs	0%	0%	20	\$270.24	-	-	\$-
Combined Boiler & Water Htg. Unit	0%	75%	15	\$1,500.00	23,344.02	1.28	\$0.041
Pool/Spa cover	25%	90%	5	\$115.00	12,978.05	2.31	\$0.009

Table B-26 Energy Efficiency Non-Equipment Data, Multi Family Electric/Gas Customer, New Vintage

Measure	Base Saturation	Applicability	Lifetime (years)	Incremental Cost (\$/HH)	Energy Savings (kBtu/HH)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	4%	48%	20	\$534.21	3,424.65	1.13	\$0.060
Insulation - Ducting	50%	75%	20	\$95.00	593.18	3.13	\$0.060
Insulation - Foundation	4%	90%	20	\$251.39	15,510.99	10.33	\$0.014
Insulation - Infiltration Control	19%	90%	15	\$141.40	6,057.59	4.29	\$0.019
Insulation - Radiant Barrier	5%	90%	20	\$121.77	1,186.25	1.71	\$0.050
Insulation - Wall Cavity	4%	90%	20	\$624.58	3,739.70	0.88	\$0.061
Insulation - Wall Sheathing	4%	90%	20	\$458.02	10,779.51	3.66	\$0.030
Ducting - Repair and Sealing	50%	50%	18	\$497.62	1,154.80	0.99	\$0.083
Windows - High Efficiency/ENERGY STAR	78%	90%	20	\$2,270.12	5,801.41	1.02	\$0.078
Windows - Install Reflective Film	2%	45%	10	\$327.40	4,128.24	2.14	\$0.052
Doors - Storm and Thermal	19%	75%	25	\$133.00	-	-	\$-
Roofs - High Reflectivity	0%	90%	20	\$125.70	522.59	2.08	\$0.069
Attic Fan - Installation	15%	23%	20	\$120.48	-	-	\$-
Attic Fan - Photovoltaic - Installation	5%	11%	20	\$461.52	36.20	0.04	\$0.096
Whole-House Fan - Installation	4%	19%	20	\$235.67	-	-	\$-
Ceiling Fan - Installation	33%	75%	10	\$204.00	2,867.91	2.39	\$0.049
Thermostat - Clock/Programmable	19%	25%	5	\$30.00	4,326.55	2.93	\$0.007
Home Energy Management System	5%	68%	15	\$1,747.00	19,831.93	1.27	\$0.050
Central AC - Early Replacement	9%	100%	15	\$3,373.96	2,731.61	0.26	\$0.105
Central AC - Maintenance and Tune-Up	9%	100%	2	\$175.00	758.78	0.04	\$0.190
Central Heat Pump - Maintenance	0%	90%	2	\$175.00	3,132.87	0.12	\$0.053
Room AC - Removal of Second Unit	0%	38%	4	\$60.00	7,255.40	3.67	\$0.008
Boiler - Hot Water Reset	15%	85%	11	\$37.00	-	-	\$-
Boiler - Pipe Insulation	20%	41%	9	\$891.26	-	-	\$-
Boiler - Maintenance	14%	100%	10	\$215.00	882.89	0.29	\$0.094
Furnace - Maintenance	14%	100%	15	\$215.00	407.05	0.19	\$0.094
Water Heater - Drainwater Heat Recovery	1%	90%	15	\$899.00	33,477.72	3.62	\$0.022
Water Heater - Faucet Aerators	0%	90%	9	\$16.00	3,543.56	10.09	\$0.004
Water Heater - Low-Flow Showerheads	26%	75%	10	\$12.00	16,168.18	70.54	\$0.001
Water Heater - Pipe Insulation	13%	41%	15	\$512.22	3,752.55	0.68	\$0.062
Water Heater - Tank Blanket/Insulation	54%	75%	5	\$79.44	1,544.41	0.42	\$0.044
Water Heater - Thermostat Setback	5%	75%	2	\$5.00	1,969.32	2.44	\$0.003
Water Heater - Timer	5%	40%	5	\$115.00	2,365.81	0.44	\$0.042
Water Heater - Desuperheater	0%	75%	15	\$1,500.00	15,772.05	0.97	\$0.052
Water Heater - Solar System	0%	75%	20	\$5,400.00	44,265.42	1.14	\$0.054
Interior Lighting - Occupancy Sensors	13%	28%	15	\$750.00	1,128.26	0.08	\$0.098
Exterior Lighting - Photosensor Control	31%	45%	8	\$130.00	677.78	0.15	\$0.094
Exterior Lighting - Photovoltaic Installation	10%	45%	12	\$5,947.00	-	-	\$-
Exterior Lighting - Timeclock Installation	22%	45%	5	\$115.00	474.45	0.07	\$0.133
Refrigerator - Early Replacement	9%	100%	9	\$130.00	2,375.78	0.73	\$0.041
Refrigerator - Maintenance	9%	100%	4	\$50.00	571.46	0.16	\$0.071
Refrigerator - Remove Second Unit	0%	38%	8	\$120.00	6,149.60	1.74	\$0.018
Freezer - Remove Second Unit	0%	25%	8	\$120.00	5,288.41	1.64	\$0.020
Freezer - Early Replacement	9%	100%	6	\$130.00	2,961.51	0.57	\$0.037
Freezer - Maintenance	9%	100%	4	\$50.00	264.42	0.08	\$0.126
Electronics - Smart Power Strip	5%	90%	4	\$52.00	1,173.84	0.34	\$0.040
Pool Pump - Timer	25%	90%	5	\$115.00	3,386.02	0.61	\$0.030
Pool Heater - Solar System	0%	75%	20	\$5,400.00	10,816.72	0.31	\$0.081
ENERGY STAR Home Design	14%	75%	25	\$8,544.00	18,960.36	0.55	\$0.073
Information Based Energy Efficiency Programs	0%	0%	20	\$251.39	-	-	\$-
Combined Boiler & Water Htg. Unit	0%	75%	15	\$1,500.00	6,743.49	0.45	\$0.076
Pool/Spa cover	25%	90%	5	\$115.00	12,980.06	2.47	\$0.009

Table B-27 Energy Efficiency Non-Equipment Data, Single Family Gas Only Customer, Existing Vintage

Measure	Base Saturation	Applicability	Lifetime (years)	Incremental Cost (\$/HH)	Energy Savings (kBtu/HH)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	33%	38%	20	\$363.42	932.93	1.29	\$0.055
Insulation - Ducting	15%	75%	20	\$95.00	1,224.47	11.81	\$0.020
Insulation - Foundation	33%	50%	20	\$582.88	-	-	\$-
Insulation - Infiltration Control	46%	90%	15	\$327.87	2,604.43	2.15	\$0.032
Insulation - Radiant Barrier	5%	90%	20	\$82.84	874.62	5.30	\$0.023
Insulation - Wall Cavity	33%	50%	20	\$6,048.96	2,157.40	0.15	\$0.088
Insulation - Wall Sheathing	33%	80%	20	\$4,435.90	5,008.65	0.48	\$0.074
Ducting - Repair and Sealing	16%	50%	18	\$497.62	5,927.99	10.78	\$0.018
Windows - High Efficiency/ENERGY STAR	47%	90%	20	\$7,134.01	214.38	0.48	\$0.087
Windows - Install Reflective Film	5%	45%	10	\$1,028.88	-	1.18	\$0.070
Doors - Storm and Thermal	38%	75%	25	\$133.00	563.64	2.99	\$0.041
Roofs - High Reflectivity	5%	10%	20	\$85.51	-	5.51	\$0.044
Attic Fan - Installation	12%	23%	20	\$120.48	-	-	\$-
Attic Fan - Photovoltaic - Installation	13%	45%	20	\$461.52	-	0.03	\$0.096
Whole-House Fan - Installation	4%	19%	20	\$546.45	-	-	\$-
Ceiling Fan - Installation	56%	75%	10	\$204.00	-	2.36	\$0.045
Thermostat - Clock/Programmable	51%	56%	5	\$30.00	3,107.78	5.81	\$0.003
Home Energy Management System	20%	38%	15	\$1,747.00	2,501.93	0.56	\$0.071
Central AC - Early Replacement	37%	100%	15	\$3,373.96	-	0.44	\$0.097
Central AC - Maintenance and Tune-Up	37%	100%	2	\$175.00	-	0.07	\$0.109
Central Heat Pump - Maintenance	3%	90%	2	\$175.00	-	0.34	\$0.018
Room AC - Removal of Second Unit	0%	38%	4	\$60.00	-	6.14	\$0.005
Boiler - Hot Water Reset	14%	56%	11	\$37.00	10,219.71	15.16	\$0.003
Boiler - Pipe Insulation	16%	38%	9	\$891.26	3,265.56	0.16	\$0.101
Boiler - Maintenance	32%	100%	10	\$215.00	-	0.74	\$0.053
Furnace - Maintenance	32%	100%	15	\$215.00	680.26	0.33	\$0.082
Water Heater - Drainwater Heat Recovery	1%	50%	15	\$899.00	36,466.73	4.98	\$0.016
Water Heater - Faucet Aerators	25%	90%	9	\$16.00	1,191.72	9.41	\$0.005
Water Heater - Low-Flow Showerheads	45%	85%	10	\$12.00	5,323.03	64.89	\$0.001
Water Heater - Pipe Insulation	18%	38%	15	\$512.22	1,747.86	0.87	\$0.055
Water Heater - Tank Blanket/Insulation	17%	75%	5	\$79.44	715.03	0.55	\$0.035
Water Heater - Thermostat Setback	17%	75%	2	\$5.00	-	2.43	\$0.003
Water Heater - Timer	17%	40%	5	\$115.00	1,094.00	0.58	\$0.033
Water Heater - Desuperheater	0%	75%	15	\$1,500.00	7,293.35	1.24	\$0.045
Water Heater - Solar System	0%	75%	20	\$5,400.00	-	1.32	\$0.050
Interior Lighting - Occupancy Sensors	18%	28%	15	\$750.00	-	0.08	\$0.098
Exterior Lighting - Photosensor Control	21%	45%	8	\$130.00	-	0.34	\$0.060
Exterior Lighting - Photovoltaic Installation	10%	45%	12	\$5,947.00	-	-	\$-
Exterior Lighting - Timeclock Installation	7%	45%	5	\$115.00	-	0.16	\$0.082
Refrigerator - Early Replacement	37%	100%	9	\$130.00	-	0.87	\$0.029
Refrigerator - Maintenance	37%	100%	4	\$50.00	-	0.20	\$0.049
Refrigerator - Remove Second Unit	0%	38%	8	\$120.00	-	2.08	\$0.012
Freezer - Remove Second Unit	0%	25%	8	\$120.00	-	1.74	\$0.017
Freezer - Early Replacement	37%	100%	6	\$130.00	-	0.62	\$0.031
Freezer - Maintenance	37%	100%	4	\$50.00	-	0.08	\$0.109
Electronics - Smart Power Strip	5%	90%	4	\$52.00	-	0.33	\$0.040
Pool Pump - Timer	25%	90%	5	\$115.00	-	0.83	\$0.023
Pool Heater - Solar System	0%	75%	20	\$5,400.00	7,700.00	0.42	\$0.075
ENERGY STAR Home Design	0%	0%	25	\$8,544.00	-	-	\$-
Information Based Energy Efficiency Programs	0%	0%	20	\$582.88	-	-	\$-
Combined Boiler & Water Htg. Unit	0%	75%	15	\$1,500.00	28,241.49	1.67	\$0.034
Pool/Spa cover	25%	90%	5	\$115.00	9,240.00	3.59	\$0.006

Table B-28 Energy Efficiency Non-Equipment Data, Single Family Gas Only Customer, New Vintage

Measure	Base Saturation	Applicability	Lifetime (years)	Incremental Cost (\$/HH)	Energy Savings (kBtu/HH)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	20%	48%	20	\$415.05	1,022.36	0.89	\$0.065
Insulation - Ducting	50%	75%	20	\$95.00	1,311.71	20.40	\$0.010
Insulation - Foundation	20%	90%	20	\$760.32	9,548.49	5.59	\$0.023
Insulation - Infiltration Control	46%	90%	15	\$427.68	2,353.37	1.13	\$0.050
Insulation - Radiant Barrier	25%	90%	20	\$94.61	347.22	1.36	\$0.055
Insulation - Wall Cavity	20%	90%	20	\$6,946.32	1,736.09	0.09	\$0.092
Insulation - Wall Sheathing	20%	90%	20	\$5,093.97	4,957.50	0.37	\$0.079
Ducting - Repair and Sealing	50%	50%	18	\$497.62	5,999.15	32.30	\$0.004
Windows - High Efficiency/ENERGY STAR	85%	90%	20	\$9,108.09	212.19	0.46	\$0.087
Windows - Install Reflective Film	2%	45%	10	\$1,313.59	-	0.99	\$0.083
Doors - Storm and Thermal	13%	75%	25	\$133.00	192.90	0.79	\$0.067
Roofs - High Reflectivity	5%	90%	20	\$97.66	-	4.18	\$0.055
Attic Fan - Installation	4%	23%	20	\$120.48	-	-	\$-
Attic Fan - Photovoltaic - Installation	4%	11%	20	\$461.52	-	0.06	\$0.096
Whole-House Fan - Installation	4%	19%	20	\$712.80	-	-	\$-
Ceiling Fan - Installation	57%	75%	10	\$204.00	-	2.26	\$0.052
Thermostat - Clock/Programmable	57%	75%	5	\$30.00	3,076.04	4.93	\$0.004
Home Energy Management System	20%	68%	15	\$1,747.00	2,166.82	0.43	\$0.080
Central AC - Early Replacement	24%	100%	15	\$3,373.96	-	0.54	\$0.097
Central AC - Maintenance and Tune-Up	24%	100%	2	\$175.00	-	0.08	\$0.106
Central Heat Pump - Maintenance	1%	90%	2	\$175.00	-	0.34	\$0.020
Room AC - Removal of Second Unit	0%	38%	4	\$60.00	-	6.50	\$0.005
Boiler - Hot Water Reset	17%	95%	11	\$37.00	10,058.93	20.13	\$0.003
Boiler - Pipe Insulation	7%	41%	9	\$891.26	3,214.18	0.21	\$0.101
Boiler - Maintenance	20%	100%	10	\$215.00	-	0.83	\$0.057
Furnace - Maintenance	20%	100%	15	\$215.00	675.15	0.33	\$0.082
Water Heater - Drainwater Heat Recovery	1%	90%	15	\$899.00	30,058.67	4.46	\$0.018
Water Heater - Faucet Aerators	16%	90%	9	\$16.00	982.31	8.17	\$0.005
Water Heater - Low-Flow Showerheads	28%	95%	10	\$12.00	4,387.65	56.49	\$0.001
Water Heater - Pipe Insulation	9%	41%	15	\$512.22	1,440.72	0.76	\$0.059
Water Heater - Tank Blanket/Insulation	54%	75%	5	\$79.44	589.39	0.47	\$0.040
Water Heater - Thermostat Setback	5%	75%	2	\$5.00	-	2.44	\$0.003
Water Heater - Timer	5%	40%	5	\$115.00	901.76	0.50	\$0.038
Water Heater - Desuperheater	0%	75%	15	\$1,500.00	6,011.73	1.09	\$0.049
Water Heater - Solar System	0%	75%	20	\$5,400.00	-	1.17	\$0.053
Interior Lighting - Occupancy Sensors	18%	28%	15	\$750.00	-	0.08	\$0.098
Exterior Lighting - Photosensor Control	40%	45%	8	\$130.00	-	0.32	\$0.060
Exterior Lighting - Photovoltaic Installation	10%	45%	12	\$5,947.00	-	-	\$-
Exterior Lighting - Timeclock Installation	25%	45%	5	\$115.00	-	0.15	\$0.082
Refrigerator - Early Replacement	24%	100%	9	\$130.00	-	0.71	\$0.041
Refrigerator - Maintenance	24%	100%	4	\$50.00	-	0.15	\$0.071
Refrigerator - Remove Second Unit	0%	38%	8	\$120.00	-	1.69	\$0.018
Freezer - Remove Second Unit	0%	25%	8	\$120.00	-	1.62	\$0.020
Freezer - Early Replacement	24%	100%	6	\$130.00	-	0.56	\$0.037
Freezer - Maintenance	24%	100%	4	\$50.00	-	0.08	\$0.126
Electronics - Smart Power Strip	5%	90%	4	\$52.00	-	0.34	\$0.040
Pool Pump - Timer	25%	90%	5	\$115.00	-	0.61	\$0.030
Pool Heater - Solar System	0%	75%	20	\$5,400.00	7,700.00	0.44	\$0.075
ENERGY STAR Home Design	14%	75%	25	\$8,544.00	9,922.71	0.89	\$0.067
Information Based Energy Efficiency Programs	0%	0%	20	\$760.32	-	-	\$-
Combined Boiler & Water Htg. Unit	0%	75%	15	\$1,500.00	26,221.92	1.96	\$0.036
Pool/Spa cover	25%	90%	5	\$115.00	9,240.00	3.73	\$0.006

Table B-29 Energy Efficiency Non-Equipment Data, Multi Family Gas Only Customer, Existing Vintage

Measure	Base Saturation	Applicability	Lifetime (years)	Incremental Cost (\$/HH)	Energy Savings (kBtu/HH)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	13%	19%	20	\$574.27	2,101.34	1.74	\$0.048
Insulation - Ducting	13%	75%	20	\$95.00	-	5.09	\$0.047
Insulation - Foundation	13%	30%	20	\$270.24	-	-	\$-
Insulation - Infiltration Control	19%	90%	15	\$152.01	4,138.79	7.44	\$0.011
Insulation - Radiant Barrier	5%	90%	20	\$130.90	1,966.40	7.22	\$0.018
Insulation - Wall Cavity	13%	15%	20	\$696.64	2,711.83	1.53	\$0.047
Insulation - Wall Sheathing	13%	80%	20	\$510.87	6,787.57	3.75	\$0.028
Ducting - Repair and Sealing	8%	50%	18	\$497.62	-	1.61	\$0.072
Windows - High Efficiency/ENERGY STAR	68%	90%	20	\$1,669.20	858.90	1.01	\$0.076
Windows - Install Reflective Film	5%	45%	10	\$240.74	-	2.19	\$0.045
Doors - Storm and Thermal	17%	75%	25	\$133.00	-	-	\$-
Roofs - High Reflectivity	3%	10%	20	\$135.12	-	3.55	\$0.052
Attic Fan - Installation	1%	23%	20	\$120.48	-	-	\$-
Attic Fan - Photovoltaic - Installation	2%	11%	20	\$461.52	-	0.02	\$0.096
Whole-House Fan - Installation	4%	19%	20	\$253.35	-	-	\$-
Ceiling Fan - Installation	56%	75%	10	\$204.00	-	2.62	\$0.040
Thermostat - Clock/Programmable	27%	68%	5	\$30.00	2,165.13	3.54	\$0.005
Home Energy Management System	5%	13%	15	\$1,747.00	7,311.38	1.45	\$0.044
Central AC - Early Replacement	27%	100%	15	\$3,373.96	-	0.28	\$0.102
Central AC - Maintenance and Tune-Up	27%	100%	2	\$175.00	-	0.05	\$0.149
Central Heat Pump - Maintenance	0%	90%	2	\$175.00	-	0.28	\$0.024
Room AC - Removal of Second Unit	0%	38%	4	\$60.00	-	4.07	\$0.007
Boiler - Hot Water Reset	8%	68%	11	\$37.00	7,297.42	12.05	\$0.004
Boiler - Pipe Insulation	9%	38%	9	\$891.26	2,313.21	0.13	\$0.111
Boiler - Maintenance	22%	100%	10	\$215.00	-	0.64	\$0.064
Furnace - Maintenance	22%	100%	15	\$215.00	475.54	0.25	\$0.088
Water Heater - Drainwater Heat Recovery	1%	50%	15	\$899.00	25,491.87	3.84	\$0.020
Water Heater - Faucet Aerators	12%	90%	9	\$16.00	1,147.23	11.32	\$0.004
Water Heater - Low-Flow Showerheads	27%	75%	10	\$12.00	5,230.60	78.87	\$0.001
Water Heater - Pipe Insulation	9%	38%	15	\$512.22	1,212.10	0.75	\$0.058
Water Heater - Tank Blanket/Insulation	54%	75%	5	\$79.44	499.03	0.47	\$0.039
Water Heater - Thermostat Setback	17%	75%	2	\$5.00	-	2.42	\$0.003
Water Heater - Timer	5%	40%	5	\$115.00	764.76	0.50	\$0.037
Water Heater - Desuperheater	0%	75%	15	\$1,500.00	5,098.37	1.08	\$0.048
Water Heater - Solar System	0%	75%	20	\$5,400.00	-	1.27	\$0.051
Interior Lighting - Occupancy Sensors	5%	28%	15	\$750.00	-	0.08	\$0.098
Exterior Lighting - Photosensor Control	18%	45%	8	\$130.00	-	0.16	\$0.092
Exterior Lighting - Photovoltaic Installation	10%	45%	12	\$5,947.00	-	-	\$-
Exterior Lighting - Timeclock Installation	8%	45%	5	\$115.00	-	0.07	\$0.130
Refrigerator - Early Replacement	27%	100%	9	\$130.00	-	0.86	\$0.029
Refrigerator - Maintenance	27%	100%	4	\$50.00	-	0.20	\$0.049
Refrigerator - Remove Second Unit	0%	38%	8	\$120.00	-	1.95	\$0.012
Freezer - Remove Second Unit	0%	25%	8	\$120.00	-	1.80	\$0.017
Freezer - Early Replacement	27%	100%	6	\$130.00	-	0.65	\$0.031
Freezer - Maintenance	27%	100%	4	\$50.00	-	0.09	\$0.109
Electronics - Smart Power Strip	5%	90%	4	\$52.00	-	0.33	\$0.040
Pool Pump - Timer	25%	90%	5	\$115.00	-	0.84	\$0.023
Pool Heater - Solar System	0%	75%	20	\$5,400.00	2,695.00	0.28	\$0.081
ENERGY STAR Home Design	0%	0%	25	\$8,544.00	-	-	\$-
Information Based Energy Efficiency Programs	0%	0%	20	\$270.24	-	-	\$-
Combined Boiler & Water Htg. Unit	0%	75%	15	\$1,500.00	20,018.16	1.28	\$0.041
Pool/Spa cover	25%	90%	5	\$115.00	3,234.00	2.31	\$0.009

Table B-30 Energy Efficiency Non-Equipment Data, Multi Family Gas Only Customer, New Vintage

Measure	Base Saturation	Applicability	Lifetime (years)	Incremental Cost (\$/HH)	Energy Savings (kBtu/HH)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	4%	48%	20	\$534.21	1,396.84	1.13	\$0.060
Insulation - Ducting	50%	75%	20	\$95.00	-	3.13	\$0.060
Insulation - Foundation	4%	90%	20	\$251.39	4,698.29	10.33	\$0.014
Insulation - Infiltration Control	19%	90%	15	\$141.40	2,618.14	4.29	\$0.019
Insulation - Radiant Barrier	5%	90%	20	\$121.77	491.39	1.71	\$0.050
Insulation - Wall Cavity	4%	90%	20	\$624.58	1,691.63	0.88	\$0.061
Insulation - Wall Sheathing	4%	90%	20	\$458.02	4,744.90	3.66	\$0.030
Ducting - Repair and Sealing	50%	50%	18	\$497.62	-	0.99	\$0.083
Windows - High Efficiency/ENERGY STAR	78%	90%	20	\$2,270.12	1,495.05	1.02	\$0.078
Windows - Install Reflective Film	2%	45%	10	\$327.40	-	2.14	\$0.052
Doors - Storm and Thermal	19%	75%	25	\$133.00	-	-	\$-
Roofs - High Reflectivity	0%	90%	20	\$125.70	-	2.08	\$0.069
Attic Fan - Installation	15%	23%	20	\$120.48	-	-	\$-
Attic Fan - Photovoltaic - Installation	5%	11%	20	\$461.52	-	0.04	\$0.096
Whole-House Fan - Installation	4%	19%	20	\$235.67	-	-	\$-
Ceiling Fan - Installation	33%	75%	10	\$204.00	-	2.39	\$0.049
Thermostat - Clock/Programmable	19%	25%	5	\$30.00	1,513.55	2.93	\$0.007
Home Energy Management System	5%	68%	15	\$1,747.00	5,034.87	1.27	\$0.050
Central AC - Early Replacement	9%	100%	15	\$3,373.96	-	0.26	\$0.105
Central AC - Maintenance and Tune-Up	9%	100%	2	\$175.00	-	0.04	\$0.190
Central Heat Pump - Maintenance	0%	90%	2	\$175.00	-	0.12	\$0.053
Room AC - Removal of Second Unit	0%	38%	4	\$60.00	-	3.67	\$0.008
Boiler - Hot Water Reset	15%	85%	11	\$37.00	-	-	\$-
Boiler - Pipe Insulation	20%	41%	9	\$891.26	-	-	\$-
Boiler - Maintenance	14%	100%	10	\$215.00	-	0.29	\$0.094
Furnace - Maintenance	14%	100%	15	\$215.00	343.99	0.19	\$0.094
Water Heater - Drainwater Heat Recovery	1%	90%	15	\$899.00	22,037.55	3.62	\$0.022
Water Heater - Faucet Aerators	0%	90%	9	\$16.00	989.37	10.09	\$0.004
Water Heater - Low-Flow Showerheads	26%	75%	10	\$12.00	4,515.83	70.54	\$0.001
Water Heater - Pipe Insulation	13%	41%	15	\$512.22	1,047.47	0.68	\$0.062
Water Heater - Tank Blanket/Insulation	54%	75%	5	\$79.44	430.72	0.42	\$0.044
Water Heater - Thermostat Setback	5%	75%	2	\$5.00	-	2.44	\$0.003
Water Heater - Timer	5%	40%	5	\$115.00	661.13	0.44	\$0.042
Water Heater - Desuperheater	0%	75%	15	\$1,500.00	4,407.51	0.97	\$0.052
Water Heater - Solar System	0%	75%	20	\$5,400.00	-	1.14	\$0.054
Interior Lighting - Occupancy Sensors	13%	28%	15	\$750.00	-	0.08	\$0.098
Exterior Lighting - Photosensor Control	31%	45%	8	\$130.00	-	0.15	\$0.094
Exterior Lighting - Photovoltaic Installation	10%	45%	12	\$5,947.00	-	-	\$-
Exterior Lighting - Timeclock Installation	22%	45%	5	\$115.00	-	0.07	\$0.133
Refrigerator - Early Replacement	9%	100%	9	\$130.00	-	0.73	\$0.041
Refrigerator - Maintenance	9%	100%	4	\$50.00	-	0.16	\$0.071
Refrigerator - Remove Second Unit	0%	38%	8	\$120.00	-	1.74	\$0.018
Freezer - Remove Second Unit	0%	25%	8	\$120.00	-	1.64	\$0.020
Freezer - Early Replacement	9%	100%	6	\$130.00	-	0.57	\$0.037
Freezer - Maintenance	9%	100%	4	\$50.00	-	0.08	\$0.126
Electronics - Smart Power Strip	5%	90%	4	\$52.00	-	0.34	\$0.040
Pool Pump - Timer	25%	90%	5	\$115.00	-	0.61	\$0.030
Pool Heater - Solar System	0%	75%	20	\$5,400.00	2,695.00	0.31	\$0.081
ENERGY STAR Home Design	14%	75%	25	\$8,544.00	4,882.43	0.55	\$0.073
Information Based Energy Efficiency Programs	0%	0%	20	\$251.39	-	-	\$-
Combined Boiler & Water Htg. Unit	0%	75%	15	\$1,500.00	5,950.14	0.45	\$0.076
Pool/Spa cover	25%	90%	5	\$115.00	3,234.00	2.47	\$0.009

COMMERCIAL ENERGY EFFICIENCY EQUIPMENT AND MEASURE DATA

This appendix presents detailed information for all commercial energy-efficiency measures (*equipment* and *non-equipment* measures per the LoadMAP taxonomy) that were evaluated in this study.

Table C-1 and Table C-2 provide brief narrative descriptions for all equipment and non-equipment measures that were assessed for potential.

Table C-3 through Table C-42 list the detailed unit-level data (including economic screen results) for commercial equipment measures in existing and new buildings. The column headings and units are the same as described for the corresponding residential sector tables above.

Table C-43 through Table C-82 list the detailed unit-level data (including economic screen results) for commercial non-equipment measures in existing and new construction. The column headings and units are the same as described for the corresponding residential sector tables above.

Table C-1 Commercial Energy Efficiency Equipment Measure Descriptions

Cooling	Air-Cooled Chiller	A central chiller plant creates chilled water for distribution throughout the facility. Because of the wide variety of system types and sizes, savings and cost values for efficiency improvements represent an average over screw, reciprocating, and centrifugal technologies. Under this simplified approach, each central system is characterized by an aggregate efficiency value (inclusive of chiller, pumps, and motors), in kW/ton with a further efficiency upgrade through the application of variable refrigerant flow technology.
Cooling	Water-Cooled Chiller	A central chiller plant creates chilled water for distribution throughout the facility. Water source chillers include heat rejection via a condenser loop and cooling tower. Because of the wide variety of system types and sizes, savings and cost values for efficiency improvements represent an average over screw, reciprocating, and centrifugal technologies. Under this simplified approach, each central system is characterized by an aggregate efficiency value (inclusive of chiller, pumps, motors, and condenser loop equipment), in kW/ton with a further efficiency upgrade through the application of variable refrigerant flow technology.
Cooling	Roof Top AC	Packaged cooling systems, such as rooftop units (RTUs), are simple to install and maintain, and are commonly used in small and medium-sized commercial buildings. Applications range from a single supply system with air intake filters, supply fan, and cooling coil, or can become more complex with the addition of a return air duct, return air fan, and various controls to optimize performance. For packaged RTUs, varying Energy Efficiency Ratios (EER) are modeled, as well as a ductless mini-split system.
Cooling	Evaporative AC	An evaporative cooler (or swamp cooler) cools air through the evaporation of water. A significant amount of heat energy must be drawn from the air to drive the phase transition of liquid water to water vapor. Direct evaporative cooling passes supply air directly through a wetted media or area, thereby delivering air to a space that is both cooler and more humid. This technology is cheaper than conventional air conditioning, but is best suited for hot, dry climates. Indirect evaporative cooling passes outside air through a wetted media or area, but then uses a closed-loop heat exchanger to deliver a second stream of air that is cooler, but with unaffected humidity. Evaporative cooling technology must continually consume water to operate.
Cooling/ Heating	PTAC/PTHP	This measure includes efficiency upgrades to other small cooling systems in commercial buildings including room AC units, packaged terminal air conditioning (PTAC) units, and packaged terminal heat pumps (PTHP).
Cooling / Heating	Air-Source Heat Pump	For heat pumps, units with increasing EER and COP levels are evaluated, as well as a ductless mini-split system.
Cooling / Heating	Geothermal Heat Pump	For heat pumps, units with increasing EER and COP levels are evaluated.
Heating	Electric Furnace	Resistive heating elements are used to convert electricity directly to heat. The heat is then delivered by a supply fan and duct system to the regions that require heating.
Heating	Electric Room Heat	Resistive heating elements are used to convert electricity directly to heat. Conductive fins surrounding the element or another mechanism is used to deliver the heat directly to the surrounding room or area. These are typically either baseboard or wall-mounted units.
Ventilation	Ventilation	A variable air volume ventilation system modulates the air flow rate as needed based on the interior conditions of the building to reduce fan load, improve dehumidification, and reduce energy usage.
Water Heating	Water Heater	Efficient electric water heaters are characterized by a high recovery or thermal efficiency (percentage of delivered electric energy which is transferred to the water) and low standby losses (the ratio of heat lost per hour to the content of the stored water). Included in the savings associated with high-efficiency electric water heaters are timers that allow temperature setpoints to change

		with hot water demand patterns. For example, the heating element could be shut off throughout the night, increasing the overall energy factor of the unit. In addition, tank and pipe insulation reduces standby losses and therefore reduces the demands on the water heater. This analysis considers conventional electric water heaters and heat pump water heaters. For natural gas hot water heating, the most common type is a storage heater, which incorporates a burner, storage tank, outer jacket, insulation, and controls in a single unit. Efficient units are characterized by a high recovery or thermal efficiency and low standby losses (the ratio of heat lost per hour to the content of the stored water). A further efficiency gain is available in condensing units, which condense the water vapor produced in the combustion process and also use the heat from this condensation.
Interior Lighting	Screw-in	This measure evaluates higher-efficiency alternatives for screw-in interior lamps including halogen, CFL, and LED.
Interior Lighting	High-Bay Fixtures	With the exception of screw-in lighting, commercial lighting efficiency changes typically require more than the simple purchase and installation of an alternative lamp. Restrictions regarding ballasts, fixtures, and circuitry limit the potential for direct substitution of one lamp type for another. Also, during the buildout for a leased office space, management could decide to replace all lamps, ballasts, and fixtures with different configurations. This type of decision-making is modeled on a stock turnover basis because of the time between opportunities for upgrades. For High-Bay fixtures, alternatives include mercury vapor, metal halides, T5 fluorescent high output, and high-pressure sodium.
Interior Lighting	Linear Fluorescent	With the exception of screw-in lighting, commercial lighting efficiency changes typically require more than the simple purchase and installation of an alternative lamp restriction regarding ballasts, fixtures, and circuitry limit the potential for direct substitution of one lamp type for another. Also, during the buildout for a leased office space, management could decide to replace all lamps, ballasts, and fixtures with different configurations. This type of decision-making is modeled on a stock turnover basis because of the time between opportunities for upgrades. For linear fluorescent fixtures, alternatives include T12, T8, Super T8, T5, and LED.
Exterior Lighting	Screw-in	This measure evaluates higher-efficiency alternatives for screw-in interior lamps including halogen, CFL, and LED.
Exterior Lighting	HID	Alternatives modeled include metal halides, T8 and T5 high output, high pressure sodium, and LEDs
Exterior Lighting	Linear Fluorescent	For linear fluorescent fixtures, alternatives include T12, T8, Super T8, T5, and LED.
Refrigeration	Walk-in Refrigerator	These refrigerators can be designed to perform at higher efficiency through a combination of compressor equipment upgrades, default temperature settings, and defrost patterns. Standard refrigeration compressors typically operate at approximately 65% efficiency. High-efficiency models are available that can improve compressor efficiency by 15%. Analysis assumes unit with: 140 square feet, Cooling capacity of 26,230 BTU/hr.
Refrigeration	Reach-in Refrigerator	A significant amount of energy in the commercial sector can be attributed to "reach-in" units. These stand-alone appliances can range from a residential-style refrigerator/freezer unit in an office kitchen or the breakroom of a retail store, to the larger reach-in units in foodservice applications. As in the case of residential units, these refrigerators can be designed to perform at higher efficiency through a combination of compressor equipment upgrades, default temperature settings, and defrost patterns. Analysis assumes unit with: 48 cubic feet, Cooling capacity of 3000 BTU/hr.
Refrigeration	Glass Door Display, Open Display Case	These refrigerators can be designed to perform at higher efficiency through a combination of compressor equipment upgrades, default temperature settings, and defrost patterns. Standard refrigeration compressors typically operate at approximately 65% efficiency. High-efficiency models are available that can improve compressor efficiency by 15%. Analysis assumes unit with: Cooling

		capacity of 20,000 BTU/hr
Refrigeration	Icemaker	By optimizing the timing of ice production and the type of output to the specific application, icemakers are assumed to deliver electricity savings.
Refrigeration	Vending Machine	High-efficiency vending machines incorporate more efficient compressors and lighting.
Food Preparation	Ovens, Fryers, Hot Food Containers, Dishwashers	This set of measures includes high-efficiency fryers, ovens, dishwashers, and hot food containers. Less common equipment, such as broilers and steamers, and assumed to be modeled with the other more common equipment types.
Office Equipment	Desktop Computer, Laptop, Monitors	ENERGY STAR labeled computers automatically power down to 15 watts or less when not in use and may actually last longer than conventional products because they spend a large portion of time in a low-power sleep mode. ENERGY STAR labeled computers also generate less heat than conventional models.
Office Equipment	Server	In addition to the "sleep" mode a reductions, servers have additional energy-saving opportunities through "virtualization" and other architecture solutions that involve optimal matching of computation tasks to hardware requirements
Office Equipment	Printer/Copier/Fax	ENERGY STAR labeled office equipment saves energy by powering down and "going to sleep" when not in use. ENERGY STAR labeled copiers are equipped with a feature that allows them to automatically turn off after a period of inactivity.
Office Equipment	POS Terminal	Point-of-sale terminals in retail and supermarket facilities are always on. Efficient models incorporate a high-efficiency power supply to reduce energy use.
Miscellaneous	Non-HVAC Motors	Includes motors for a variety of non-HVAC uses including vertical transportation. Premium efficiency motors can provide savings of 0.5% to 3% over standard motors. The savings results from the fact that energy efficient motors run cooler than their standard counterparts, resulting in an increase in the life of the motor insulation and bearing. In general, an efficient motor is a more reliable motor because there are fewer winding failures, longer periods between needed maintenance, and fewer forced outages. For example, using copper instead of aluminum in the windings, and increasing conductor cross-sectional area, lowers a motor's I ² R losses.
Miscellaneous	Pool Pump	High-efficiency motors and two-speed pumps provide improved energy efficiency for this load.
Miscellaneous	Pool Heater	Efficient pool heaters can make use of heat pump technology to achieve significantly higher coefficients of performance in the COP=5.0 range. Gas pool heaters have a burner to heat water in a loop. Efficiency improvements can include: exhaust fan controls, electronic ignition (no pilot light), compact size and lighter weight to reduce cycling losses, and sealed combustion. Very high efficiency units, or condensing units, condense the water vapor produced in the combustion process and also use the heat from this condensation.
Miscellaneous	Miscellaneous	Improvement of miscellaneous electricity uses
Heating	Boiler	To qualify for this measure the installed equipment must be replacement of an irreparable existing boiler with a high efficiency, gas-fired steam or hot water boiler. High efficiency boilers achieve gas savings through the utilization of a sealed combustion chamber and multiple heat exchangers that remove a significant portion of the waste heat from flue gasses. Because multiple heat exchangers are used to remove waste heat from the escaping flue gasses, some of the flue gasses condense and must be drained. To qualify for this measure the installed equipment must be a boiler used 80% or more for space heating, not process, and Boiler AFUE rating must be rated greater than or equal to 85%.
Heating	Furnace	This measure covers the installation of a high efficiency gas furnace in lieu of a standard efficiency gas furnace. High efficiency gas furnaces achieve

		savings through the utilization of a sealed, super insulated combustion chamber, more efficient burners, and multiple heat exchangers that remove a significant portion of the waste heat from the flue gasses. Because multiple heat exchangers are used to remove waste heat from the escaping flue gasses, most of the flue gasses condense and must be drained. Furnaces equipped with ECM fan motors can save additional electric energy. To qualify for this measure the installed equipment must be a natural gas fired furnace with a minimum Annual Fuel Utilization Efficiency (AFUE) rating of 92% and input rating of less than 300,000 Btu/hr.
Heating	Unit Heater	In order for this characterization to apply, the efficient equipment is assumed to be a condensing unit heater up to 300 MBH with a Thermal Efficiency > 90% and the heater must be vented, and condensate drained per manufacturer specifications. The unit must be replacing existing natural gas equipment. In order for this characterization to apply, the baseline condition is assumed to be a non-condensing natural gas unit heater.
Food Preparation	Broiler, Griddle, Range, Steamer	This set of measures includes high-efficiency cooking equipment, with improved design, additional insulation, tighter-fitting door gaskets and hinges, and electronic ignition (no pilot light) where applicable.
Water Heating	Water Heater	This measure applies to installing a 67% EF gas-fired water heaters in a non-residential application that already had a gas fired water heater. Primary applications would include (but not limited to) hotels/motels, small commercial spaces, offices and restaurants. In order for this characterization to apply, the efficient equipment is assumed to be gas-fired storage water heaters with 0.67 EF installed in a non-residential application.

Table C-2 Commercial Energy Efficiency Non-Equipment Measure Descriptions

HVAC (All)	Insulation - Ceiling	Thermal insulation is material or combinations of materials that are used to inhibit the flow of heat energy by conductive, convective, and radiative transfer modes. Thus, thermal insulation can conserve energy by reducing the heat loss or gain of a building. The type of building construction defines insulating possibilities. Typical insulating materials include: loose-fill (blown) cellulose; loose-fill (blown) fiberglass; and rigid polystyrene.
HVAC (All)	Insulation - Ducting	Air distribution ducts can be insulated to reduce heating or cooling losses. Best results can be achieved by covering the entire surface area with insulation. Insulation material inhibits the transfer of heat through the air-supply duct. Several types of ducts and duct insulation are available, including flexible duct, pre-insulated duct, duct board, duct wrap, tacked, or glued rigid insulation, and waterproof hard shell materials for exterior ducts.
HVAC (All)	Insulation - Radiant Barrier	Radiant barriers are materials installed to reduce the heat gain in buildings. Radiant barriers are made from materials that are highly reflective and have low emissivity like aluminum. The closer the emissivity is to 0 the better they will perform. Radiant barriers can be placed above the insulation or on the roof rafters.
HVAC (All)	Insulation-Foundation	Below Grade Insulation to R6
HVAC (All)	Insulation - Wall Cavity	Thermal insulation is material or combinations of materials that are used to inhibit the flow of heat energy by conductive, convective, and radiative transfer modes. Thus, thermal insulation can conserve energy by reducing the heat loss or gain of a building. The type of building construction defines insulating possibilities. Typical insulating materials include: loose-fill (blown) cellulose; loose-fill (blown) fiberglass; and rigid polystyrene.
HVAC (All)	HVAC - Duct Repair and Sealing	Leakage in unsealed ducts varies considerably because of the differences in fabricating machinery used, the methods for assembly, installation workmanship, and age of the ductwork. Air leaks from the system to the outdoors result in a direct loss proportional to the amount of leakage and the difference in enthalpy between the outdoor air and the conditioned air. To seal ducts, a wide variety of sealing methods and products exist. Each has a relatively short shelf life, and no documented research has identified the aging characteristics of sealant applications.
HVAC (All)	Doors - High Efficiency	Like other components of the shell, doors are subject to several types of heat loss: conduction, infiltration, and radiant losses. High efficiency doors have exceptional thermal insulation properties and tight-fitting, weather-stripping on the doorframe to reduce air leakage.
HVAC (All)	Windows - High Efficiency	High-efficiency windows, such as those labeled under the ENERGY STAR Program, are designed to reduce a building's energy bill while increasing comfort for the occupants at the same time. High-efficiency windows have reducing properties that reduce the amount of heat transfer through the glazing surface. For example, some windows have a low-E coating, which is a thin film of metallic oxide coating on the glass surface that allows passage of short-wave solar energy through glass and prevents long-wave energy from escaping. Another example is double-pane glass that reduces conductive and convective heat transfer. There are also double-pane glasses that are gas-filled (usually argon) to further increase the insulating properties of the window.
HVAC (All)	Roof - High Reflectivity	The color and material of a building structure surface will determine the amount of solar radiation absorbed by that surface and subsequently transferred into a building. This is called solar absorptance. By using a living roof or a roofing material with a light color (and a lower solar absorptance), the roof will absorb less solar radiation and consequently reduce the cooling load. Living roofs also reduce stormwater runoff.
Cooling	Air-Cooled Chiller -	Resetting the condenser water temperature to the lowest possible setting

	Condenser Water Temperature Reset	allows the cooling tower to generate cooler water whenever possible and decreases the temperature lift between the condenser and the evaporator. This will generally increase chiller part-load efficiency, though it may require increased tower fan energy use.
Cooling	Air-Cooled Chiller - Economizer	Economizers allow outside air (when it is cool and dry enough) to be brought into the building space to meet cooling loads instead of using mechanically cooled interior air. A dual enthalpy economizer consists of indoor and outdoor temperature and humidity sensors, dampers, motors, and motor controls. Economizers are most applicable to temperate climates and savings will be smaller in extremely hot or humid areas.
Cooling	Air-Cooled Chiller - VSD on Fans	Variable speed drives, which reduce chiller energy use under part load, are modeled for both air-cooled and water-cooled chillers.
Cooling	Air-Cooled Chiller - Chilled Water Reset	Chilled water reset controls save energy by improving chiller performance through increasing the supply chilled water temperature, which allows increased suction pressure during low load periods. Raising the chilled water temperature also reduces chilled water piping losses. However, the primary savings from the chilled water reset measure results from chiller efficiency improvement. This is due partly to the smaller temperature difference between chilled water and ambient air, and partly due to the sensitivity of chiller performance to suction temperature.
Cooling	Air-Cooled Chiller - Chilled Water Variable-Flow System	The part-load efficiency of chilled water loops can be improved substantially by varying the flow speed of the delivered water with the building demand for cooling.
Cooling	Air-Cooled Chiller - High Efficiency Cooling Tower Fans	High-efficiency cooling fans utilize efficient components and variable frequency drives that improve fan performance by adjusting fan speed and rotation as conditions change.
Cooling	Air-Cooled Chiller - Maintenance	Filters, coils, and fins require regular cleaning and maintenance for the heat pump or roof top unit to function effectively and efficiently throughout its years of service. Neglecting necessary maintenance leads to a steady decline in performance while energy use increases.
Water- Cooled Chiller	Water Cooled Chiller Condenser Water Temperature Reset	Resetting the condenser water temperature to the lowest possible setting allows the cooling tower to generate cooler water whenever possible and decreases the temperature lift between the condenser and the evaporator. This will generally increase chiller part-load efficiency, though it may require increased tower fan energy use.
Water- Cooled Chiller	Water Cooled Chiller Economizer	Economizers allow outside air (when it is cool and dry enough) to be brought into the building space to meet cooling loads instead of using mechanically cooled interior air. A dual enthalpy economizer consists of indoor and outdoor temperature and humidity sensors, dampers, motors, and motor controls. Economizers are most applicable to temperate climates and savings will be smaller in extremely hot or humid areas.
Water- Cooled Chiller	Water-Cooled Chiller VSD on Fans	Variable speed drives, which reduce chiller energy use under part load, are modeled for both air-cooled and water-cooled chillers.
Water- Cooled Chiller	Water-Cooled Chiller-Chiller Water reset	Chilled water reset controls save energy by improving chiller performance through increasing the supply chilled water temperature, which allows increased suction pressure during low load periods. Raising the chilled water temperature also reduces chilled water piping losses. However, the primary savings from the chilled water reset measure results from chiller efficiency improvement. This is due partly to the smaller temperature difference between chilled water and ambient air, and partly due to the sensitivity of chiller performance to suction temperature.
Water- Cooled Chiller	Water- Cooled Chiller Variable Flow System	The part-load efficiency of chilled water loops can be improved substantially by varying the flow speed of the delivered water with the building demand for cooling.
Water- Cooled	Water-Cooled Chiller	High-efficiency cooling fans utilize efficient components and variable

Chiller Water Cooled Chiller	High Efficiency Cooling Tower Fans	frequency drives that improve fan performance by adjusting fan speed and rotation as conditions change.
Water- Cooled Chiller	Water-Cooled Chiller Maintenance	Filters, coils, and fins require regular cleaning and maintenance for the heat pump or roof top unit to function effectively and efficiently throughout its years of service. Neglecting necessary maintenance leads to a steady decline in performance while energy use increases.
Cooling	RTU - Evaporative Precooler	Evaporative precooling can improve the performance of air conditioning systems, most commonly RTUs. These systems typically use indirect evaporative cooling as a first stage to pre-cool outside air. If the evaporative system cannot meet the full cooling load, the air stream is further cooled with conventional refrigerative air conditioning technology.
Cooling	RTU - Maintenance	Regular cleaning and maintenance enables a roof top unit to function effectively and efficiently throughout its years of service. Neglecting necessary maintenance leads to a steady decline in performance while energy use increases. Maintenance can increase the efficiency of poorly performing equipment by as much as 10%.
Heating	Gas Boiler –High Efficiency Hot Water Circulation	Efficiency improvements to the circulation system of a boiler's hot water loop.
Heating	Gas Boiler- Hot Water Reset	This measure relates to improving combustion efficiency by adding controls to non-residential building heating boilers to vary the boiler water supply temperature relative to heating load as a function of the outdoor air temperature to save energy. Energy is saved by increasing the temperature difference between the supply water temperature in the boiler's heat exchanger and the boiler's burner flame temperature. The flame temperature remains the same while the heating supply water temperature decreases with the decrease in heating load due to an increase in outside air temperature. A lockout temperature is also set to prevent the boiler from turning on when it is above a certain temperature outdoors.
Heating	Gas Boiler - Maintenance	Regular cleaning and maintenance enables a natural gas boiler to function effectively and efficiently throughout its years of service. Neglecting necessary maintenance leads to a steady decline in performance while energy use increases. Maintenance can increase the efficiency of poorly performing equipment by as much as 10%.
Heating	Gas Furnace- Maintenance	Regular cleaning and maintenance enables a natural gas furnace to function effectively and efficiently throughout its years of service. Neglecting necessary maintenance leads to a steady decline in performance while energy use increases. Maintenance can increase the efficiency of poorly performing equipment by as much as 10%.
Heating	Space Heating - Heat Recovery Ventilator	Heat recovery ventilation uses a counter-flow, air-to-air heat exchanger between inbound and outbound air flow to selectively transfer heat and reduce space heating loads.
Heating	Boiler O2 Trim Controls	An electronic sensor inserted into the boiler flue, connected to a control panel to measure oxygen and transmit signals to a control damper on the burner air supply
Heating	Insulate Steam Lines/Condensate Tank	Insulation to prevent heat loss from steam lines
Heating	Repair Malfunctioning Steam Traps	Under normal operating conditions, the valve and seat area is subjected to hot high-pressure water flow. Water is corrosive and causes surface erosion. With no maintenance, eventually the valve will fail to close properly and the trap will fail to seal and will waste steam.
Heating	Boiler Blow Down Heat Exchanger (steam)	Recovery of heat from the periodic/continuous flow of outlet waste water (to prevent sludge buildup) to preheat make-up water

Heating	Boiler Parallel Positioning Control	Modern electronic parallel positioning controls (PPC) incorporate end-device positioning signals to ensure accurate placement of fuel and air positioners for specific firing rates
Cooling / Heating	Heat Pump - Maintenance	Regular cleaning and maintenance enables a heat pump to function effectively and efficiently throughout its years of service. Neglecting necessary maintenance leads to a steady decline in performance while energy use increases. Maintenance can increase the efficiency of poorly performing equipment by as much as 10%.
Ventilation	Ventilation - ECM on VAV Boxes	ECM motors are well suited to the variable flow rates of VAV boxes. ECMs are a higher efficiency option for the air blowers and maintain efficiency better over a wide range of loads.
Ventilation	Ventilation - Variable Speed Control	Variable speed controls adjust ventilation fans for part-load conditions to reduce energy use.
Ventilation	Ventilation- CO2 Controlled	Carbon dioxide (CO2) levels indicate the level of occupancy in a space. This measure uses sensors to monitor CO2 levels and controls on the air handling system to adjust the amount of outside air accordingly. Ventilation rates are thereby controlled based on occupancy, rather than a fixed rate, thus saving HVAC energy use.
Water Heating	Water Heater - Drainwater Heat Recovery	Drainwater Heat Recovery is a system in which drain water is used to preheat cold water entering the water heater. While these systems themselves are relatively inexpensive, upgrading an existing system could be unreasonable because of demolition costs. Thus they are modeled for new vintage only.
Water Heating	Water Heater - Faucet Aerators/Low Flow Nozzles	A faucet aerator or low flow nozzle spreads the stream from a faucet helping to reduce water usage. The amount of water passing through the aerator is measured in gallons per minute (GPM) and the lower the GPM the more water the aerator conserves.
Water Heating	Water Heater - High Efficiency Circulation Pump	A high efficiency circulation pump uses an electronically commutated motor (ECM) to improve motor efficiency over a larger range of partial loads. In addition, an ECM allows for improved low RPM performance with greater torque and smaller pump dimensions.
Water Heating	Water Heater - Desuperheater	A desuperheater can be added to an existing geothermal heat pump system (typically installed with the primary function of space heating and cooling) in order to draw off a portion of the geothermal heat for water heating purposes. The system can either supplement the building's water heater, or be a full-demand water heater that meets all of the building's hot water needs.
Water Heating	Water Heater - Solar System	Solar water heating systems can be used in residential buildings that have an appropriate near-south-facing roof or nearby unshaded grounds for installing a collector. Although system types vary, in general these systems use a solar absorber surface within a solar collector or an actual storage tank. Either a heat-transfer fluid or the actual potable water flows through tubes attached to the absorber and transfers heat from it. (Systems with a separate heat-transfer-fluid loop include a heat exchanger that then heats the potable water.) The heated water is stored in a separate preheat tank or a conventional water heater tank. If additional heat is needed, it is provided by a conventional water-heating system.
Water Heating	Water Heater - Install Timer	These measures use either a programmable thermostat or a timer to adjust the water heater setpoint at times of low usage, typically when a home is unoccupied.
Water Heating	Water Heater - Pipe Insulation	Insulating hot water pipes decreases the amount of energy lost during distribution of hot water throughout the building. Insulating pipes will result in quicker delivery of hot water and allows lowering the water heating set point. There are several different types of insulation, the most common being polyethylene and neoprene.
Water Heating	Water Heater - Tank Blanket/Insulation	Insulation levels on hot water heaters can be increased by installing a fiberglass blanket on the outside of the tank. This increase in insulation

		reduces standby losses and thus saves energy. Water heater insulation is available either by the blanket or by square foot of fiberglass insulation with R-values ranging from 5 to 14.
Water Heating	Water Heater- Pre-Rinse Spray Valve	Pre-rinse valves use a spray of water to remove food waste from dishes prior to cleaning in a dishwasher. More efficient spray valves use less water thereby reducing water consumption, water heating cost, and waste water (sewer) charges. Pre-rinse spray valves include a nozzle, squeeze lever, and dish guard bumper. The primary impacts of this measure are water savings. Reduced hot water consumption saves either natural gas or electricity, depending on the type of energy the hot water heater uses. This measure applies to time of sale, retrofit and direct install and appropriate lookup tables are included to support these delivery methods.
Water Heating	Combines Boiler & Water Heating Unit	This measure applies to natural gas boilers that supply hot water for space heat and domestic hot water through on-demand supply. In order for this characterization to apply, the efficient equipment must be a condensing boiler for space heating with on-demand domestic hot water and a AFUE great than or equal to 90%. It is assumed to be installed in a non-residential space and replace existing natural gas equipment used for the same purpose.
Water Heating	Water Heater- Booster Water Heater	Gas booster heaters are used to supply sanitizing water to a dishwashing machine.
Interior Lighting	Interior Lighting - Daylighting Controls	Daylighting controls use a photosensor to detect ambient light and adjust or turn off electric lights accordingly.
Interior Lighting	Interior Lighting - LED Exit Lighting	The lamps inside exit signs represent a significant energy end-use, since they usually operate 24 hours per day. Many old exit signs use incandescent lamps, which consume approximately 40 watts per sign. The incandescent lamps can be replaced with LED lamps that are specially designed for this specific purpose. In comparison, the LED lamps consume approximately 2-5 watts.
Interior Lighting	Interior Lighting - Occupancy Sensors	The installation of occupancy sensors allows lights to be turned off during periods when a space is unoccupied, virtually eliminating the wasted energy due to lights being left on. There are several types of occupancy sensors in the market.
Interior Lighting	Interior Lighting - Timeclocks and Timers	In many cases lighting remains on at night and during weekends. A simple timer can set a schedule for turning lights off to reduce operating hours.
Interior Lighting	Interior Lighting - Task Lighting	Individual work areas can use task lighting instead of brightly lighting the entire area. Significant energy savings can be realized by focusing light directly where it is needed and lowering the general lighting level. An example of task lighting is the common desk lamp. A 25W desk lamp can be installed in place of a typical lamp in a fixture.
Interior Lighting	Interior Fluorescent - Bi-Level Fixture	Bi-level fixtures have the ability to reduce light output to a lower level, given a control strategy that is based on a timer, occupancy sensor, motion sensor, or manual switch.
Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	While sometimes included in lighting retrofit projects, delamping is often performed as a separate energy efficiency measure in which a lighting engineer analyzes the lighting provided by current systems compared to the requirements of building occupants. This often leads to the removal of unnecessary lamps corresponding to an overall reduction in energy usage. In addition, installing a reflector in each fixture can improve light distribution from the remaining lamps.
Exterior Lighting	Exterior Lighting - Bi-Level Fixture	Bi-level fixtures have the ability to reduce light output to a lower level, given a control strategy that is based on a timer, occupancy sensor, motion sensor, or manual switch.
Exterior Lighting	Exterior Lighting - Daylighting Controls	Daylighting controls use a photosensor to detect ambient light and adjust or turn off electric lights accordingly.

Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Solar photovoltaic generation may be used to power exterior lighting and thus eliminate all or part of the electrical energy use.
Refrigeration	Refrigerator - Anti-Sweat Heater	Anti-sweat heaters are used in virtually all low-temperature display cases and many medium-temperature cases to control humidity and prevent the condensation of water vapor on the sides and doors and on the products contained in the cases. Typically, these heaters stay on all the time, even though they only need to be on about half the time. Anti-sweat heater controls can come in the form of humidity sensors or time clocks.
Refrigeration	Refrigerator- Auto Door Closer	Anti-sweat heaters are used in virtually all low-temperature display cases and many medium-temperature cases to control humidity and prevent the condensation of water vapor on the sides and doors and on the products contained in the cases. Typically, these heaters stay on all the time, even though they only need to be on about half the time. Anti-sweat heater controls can come in the form of humidity sensors or time clocks.
Refrigeration	Refrigerator - Decommissioning	Early retirement, removal, and recycling or older, little used refrigerators and freezers removes the energy use of these inefficient, aging units.
Refrigeration	Refrigerator - Demand Defrost	Units can be designed to perform at higher efficiency with a sensing and control system that runs defrost cycles based on demand/only when necessary.
Refrigeration	Refrigerator - Door Gasket Replacement	This measure involves replacing aging door gaskets that no longer adequately seal reach-in refrigerators or glass door display cases.
Refrigeration	Refrigerator- Economizer	Economizers save energy in walk-in coolers by bringing in outside air when it is sufficiently cool, rather than operating the compressor. In addition there is a control installed to cycle evaporator fans on and off as opposed to constantly running while economizer is running. In order for this characterization to apply, the efficient equipment is assumed to be a walk-in cooler with a refrigeration economizer
Refrigeration	Refrigerator - Evaporator Fan Controls	Evaporator fan motor controls allow for part load use or demand scheduling based on variable refrigeration load requirements, reducing energy consumption.
Refrigeration	Refrigeration- High Efficiency Evaporator Fan Motors	Electronically commutated motors (ECM) operate at variable speeds.
Refrigeration	Refrigerator - Floating Head Pressure	Floating head pressure control allows the pressure in the condenser to "float" with ambient temperatures. This method reduces refrigeration compression ratios, improves system efficiency and extends the compressor life. The greatest savings with a floating head pressure approach occurs when the ambient temperatures are low, such as in the winter season. Floating head pressure control is most practical for new installations. However, retrofits installation can be completed with some existing refrigeration systems. Installing floating head pressure control increases the capacity of the compressor when temperatures are low, which may lead to short cycling.
Refrigeration	Refrigerator - Strip Curtain	Strip curtains at the entrances to large walk-in coolers or freezers, such as those used in supermarkets; reduce air transfer between the refrigerated space and the surrounding space.
Refrigeration	Refrigerator - High Efficiency Compressor	Standard compressors typically operate at approximately 65% efficiency. High-efficiency models are available that can improve compressor efficiency by 15%.
Refrigeration	Refrigerator - Variable Speed Compressor	The part-load efficiency of drive systems can be improved by varying the speed of the motor drive. An additional benefit of variable-speed controls is the ability to start and stop the motor and process gradually, thus extending the life of the motor and associated machinery.
Refrigeration	Vending Machine- Controller	Cold beverage vending machines usually operate 24 hours a day regardless of whether the surrounding area is occupied or not. The result is that the

		vending machine consumes energy unnecessarily, because it will operate all night to keep the beverage cold even when there would be no customers until the next morning. A vending machine controller can reduce energy consumption without compromising the temperature of the vended product. The controller uses an infrared sensor to monitor the surrounding area's occupancy and will power down the vending machine when the area is unoccupied. It will also monitor the room's temperature and will re-power the machine at one to three hour intervals independent of occupancy to ensure that the product stays cold.
Refrigeration	Refrigerator - eCube	The eCube consists of a solid, waxy food simulant that is fitted around a thermostat sensor that would otherwise measure air temperature. The refrigeration controls therefore attempt to regulate the temperature of food, which changes more slowly and gradually than air, thereby reducing the frequency of refrigeration cycles.
Refrigeration	Vending Machine - Controller	Cold beverage vending machines usually operate 24 hours a day regardless of whether the surrounding area is occupied or not. The result is that the vending machine consumes energy unnecessarily, because it will operate all night to keep the beverage cold even when there would be no customers until the next morning. A vending machine controller can reduce energy consumption without compromising the temperature of the vended product. The controller uses an infrared sensor to monitor the surrounding area's occupancy and will power down the vending machine when the area is unoccupied. It will also monitor the room's temperature and will re-power the machine at one to three hour intervals independent of occupancy to ensure that the product stays cold.
Refrigeration	Grocery- Display Case- LED Lighting	High-efficiency LED display case lighting not only reduces direct lighting energy use, but also reduce internal heat gains to the case from lights that must be removed by the refrigeration system.
Refrigeration	Grocery- Display Case Motion Sensors	Motion sensors reduce lighting load when area around display case is unoccupied to save energy on lighting.
Refrigeration	Grocery- ECM's for Display Cases	Replacement of shaded-pole evaporator fan motors with ECM motors in display cases allows for variable refrigeration loads to be handled. Reductions come from increased motor efficiency and the reduction of heating load.
Refrigeration	Grocery- Open Display Case- Night Covers	Night covers can be used on open refrigeration cases when a facility is closed or few customers are in the store.
Refrigeration	Refrigerator- eCube	The eCube consists of a food simulant that mimics food temperature. The thermostat regulates refrigeration temperature based upon the food temperature and not the air temperature. It is fitted to the thermostat sensor, which controls the compressor, thereby reducing the frequency of refrigeration cycles.
Food Preparation	Cooking Exhaust Hoods with Sensor Control	Improved exhaust hoods involve installing variable-speed controls on commercial kitchen hoods. These controls provide ventilation based on actual cooking loads. When grills, broilers, stoves, fryers or other kitchen appliances are not being used, the controls automatically sense the reduced load and decrease the fan speed accordingly. This results in lower energy consumption because the system is only running as needed rather than at 100% capacity at all times.
Office Equipment	Office Equipment - ENERGY STAR Power Supplies	Power supplies with an efficient ac-dc or ac-ac conversion process can obtain the ENERGY STAR label. These devices can be used to power computers, phones, and other office equipment.
Office Equipment	Office Equipment - Plug Load Occupancy Sensors	Occupancy sensors can control power strips and thus turn off energy used by plug loads, such as task lights, when an office is unoccupied.
HVAC (All)	Energy Management System	An energy management system (EMS) allows managers/owners to monitor and control the major energy-consuming systems within a commercial

		building. At the minimum, the EMS can be used to monitor and record energy consumption of the different end-uses in a building, and can control operation schedules of the HVAC and lighting systems. The monitoring function helps building managers/owners to identify systems that are operating inefficiently so that actions can be taken to correct the problem. The EMS can also provide preventive maintenance scheduling that will reduce the cost of operations and maintenance in the long run. The control functionality of the EMS allows the building manager/owner to operate building systems from one central location. The operation schedules set via the EMS help to prevent building systems from operating during unwanted or unoccupied periods. This analysis assumes that this measure is limited to buildings with a central HVAC system.
HVAC (All)	Thermostat - Clock/Programmable	A programmable thermostat can be added to most heating/cooling systems. They are typically used during winter to lower temperatures at night and in summer to increase temperatures during the afternoon. There are two-setting models, and well as models that allow separate programming for each day of the week. The energy savings from this type of thermostat are identical to those of a "setback" strategy with standard thermostats, but the convenience of a programmable thermostat makes it a much more attractive option. In this analysis, the baseline is assumed to have no thermostat setback.
Miscellaneous	Lodging- Guest Room Controls	Hotel guestrooms can be fitted with occupancy controls that turn off energy-using equipment when the guest is not using the room. The occupancy controls comes in several forms, but this analysis assumes the simplest kind, which is a simple switch near the room's entry where the guest can deposit their room key or card. If the key or card is present, then lights, TV, and air conditioning can receive power and operate. When the guest leaves and takes the key, all equipment shuts off.
HVAC, Lighting	HVAC - Occupancy Sensors	Occupancy sensors turn off or adjust HVAC settings when a space is unoccupied.
HVAC, Lighting	Commissioning - HVAC, Lighting	For new construction and major renovations, commissioning ensures that building systems are properly designed, specified, and installed to meet the design intent and provide high-efficiency performance. Commissioning begins during the design process.
HVAC, Lighting	Retrocommissioning - HVAC, Lighting	In existing buildings, the retrocommissioning process identifies low-cost or no cost measures, including controls adjustments, to improve building performance and reduce operating costs. Retrocommissioning addresses HVAC, lighting, DHW, and other major building systems.
HVAC (All)	Advanced New Construction Designs	Advanced new construction designs use an integrated approach to the design of new buildings to account for the interaction of building systems. Designs may specify the building orientation, building shell, proper sizing of equipment and systems, and controls strategies with the goal of optimizing building energy efficiency and comfort. Options that may be evaluated and incorporated include passive solar strategies, increased thermal mass, natural ventilation, energy recovery ventilation, daylighting strategies, and shading strategies. This measure is modeled for new vintage only.
HVAC, Lighting	Custom Measures	Custom measures may be included in the analysis to serve as a "catch all" for measures for which costs and savings are not easily quantified and that could be part of a custom program. Typical costs and energy savings are assumed such that the measures pass the economic screen.
Electronics	Electronics- Smart Power Strip	This measure relates to Controlled Power Strips (or Smart Strips) which are multi-plug power strips with the ability to automatically disconnect specific connected loads depending upon the power draw of a control load, also plugged into the strip. Power is disconnected from the switched (controlled) outlets when the control load power draw is reduced below a certain adjustable threshold, thus turning off the appliances plugged into the switched outlets. By disconnecting, the standby load of the controlled

		devices, the overall load of a centralized group of equipment (i.e. entertainment centers and home office) can be reduced. Uncontrolled outlets are also provided that are not affected by the control device and so are always providing power to any device plugged into it.
Electronics	Electronics- Monitor Power Management	EZ Save Monitor Power Management Software
Miscellaneous	Pool Heater - Solar	This measure replaces a conventional pool heater with a solar system.
Miscellaneous	Pool Pump - Timer	A pool pump timer allows the pump to turn off automatically, eliminating the wasted energy associated with unnecessary pumping.
Miscellaneous	Non-HVAC Motors - Variable Speed Control	The part-load efficiency of motors can be improved by varying the speed of the motor drive. There are two major types of variable speed controls: mechanical and electronic. An additional benefit of variable-speed controls is the ability to start and stop the motor gradually, thus extending the life of the motor and associated machinery. This analysis assumes that electronic variable speed controls are installed.
Miscellaneous	Destratification Fans (HVLS)	High volume low-speed (HVLS) ceiling fans are large (8-ft. to 20-ft. in diameter). They will effectively mix and circulate air within a given space to equalize temperature between ceiling and floor levels.
Miscellaneous	Exhaust Hood Makeup Air	Install dedicated make-up air supply for exhaust hoods. Exhaust hoods remove heat and vapor associated with cooking processes. An equal volume of makeup air must replace the air removed through the kitchen exhaust hood.
Miscellaneous	Optimizing Kitchen Ventilation	Customized optimization strategies that are site specific - very difficult to quantify typical savings. Optimizing the kitchen ventilation system in new construction or major renovation to achieve optimum performance and energy efficiency.

Table C-3 Energy Efficiency Equipment Data, Electric-Office, Existing Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Air-Cooled Chiller	1.5 kw/ton, COP 2.3	-	-	20	1.00	-
Cooling	Air-Cooled Chiller	1.3 kw/ton, COP 2.7	0.45	\$0.24	20	2.59	\$0.05
Cooling	Air-Cooled Chiller	1.26 kw/ton, COP 2.8	0.54	\$0.27	20	2.75	\$0.04
Cooling	Air-Cooled Chiller	1.0 kw/ton, COP 3.5	1.13	\$0.30	20	5.13	\$0.02
Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	1.20	\$0.34	20	4.93	\$0.02
Cooling	Water-Cooled Chiller	0.75 kw/ton, COP 4.7	-	-	20	1.00	-
Cooling	Water-Cooled Chiller	0.60 kw/ton, COP 5.9	0.52	\$0.10	20	7.08	\$0.02
Cooling	Water-Cooled Chiller	0.58 kw/ton, COP 6.1	0.59	\$0.11	20	7.49	\$0.02
Cooling	Water-Cooled Chiller	0.55 kw/Ton, COP 6.4	0.69	\$0.13	20	7.34	\$0.02
Cooling	Water-Cooled Chiller	0.51 kw/ton, COP 6.9	0.83	\$0.20	20	5.66	\$0.02
Cooling	Water-Cooled Chiller	0.50 kw/Ton, COP 7.0	0.86	\$0.22	20	5.33	\$0.02
Cooling	Water-Cooled Chiller	0.48 kw/ton, COP 7.3	0.93	\$0.25	20	5.25	\$0.02
Cooling	Roof top AC	EER 9.2	-	-	15	-	-
Cooling	Roof top AC	EER 10.1	0.30	\$0.02	15	-	\$0.01
Cooling	Roof top AC	EER 11.2	0.61	\$0.02	15	1.00	\$0.00
Cooling	Roof top AC	EER 12.0	0.80	\$0.07	15	4.09	\$0.01
Cooling	Roof top AC	Ductless Minisplit	1.00	\$0.23	15	1.97	\$0.02
Cooling	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Cooling	Air Source Heat Pump	EER 10.3, COP 3.2	0.33	\$0.02	15	-	\$0.01
Cooling	Air Source Heat Pump	EER 11.0, COP 3.3	0.53	\$0.00	15	1.00	\$0.00
Cooling	Air Source Heat Pump	EER 11.7, COP 3.4	0.70	\$0.09	15	2.29	\$0.01
Cooling	Air Source Heat Pump	EER 12.0, COP 3.4	0.77	\$0.13	15	2.13	\$0.02
Cooling	Air Source Heat Pump	Ductless Minisplit	0.97	\$0.22	15	2.31	\$0.02
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	0.18	\$0.05	15	4.29	\$0.03
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	0.34	\$0.10	15	3.81	\$0.03
Cooling	Geothermal Heat Pump	EER 30, COP 5.0	0.82	\$0.14	15	6.85	\$0.02
Cooling	PTAC	EER 9.8	-	-	15	1.00	-
Cooling	PTAC	EER 10.2	0.10	\$0.00	15	> 10	\$0.00
Cooling	PTAC	EER 10.8	0.23	\$0.01	15	> 10	\$0.00
Cooling	PTAC	EER 11	0.26	\$0.01	15	> 10	\$0.00
Cooling	PTAC	EER 11.5	0.34	\$0.01	15	> 10	\$0.00
Cooling	PTHP	EER 9.8	-	-	15	1.00	-
Cooling	PTHP	EER 10.2	0.10	\$0.00	15	> 10	\$0.00
Cooling	PTHP	EER 10.8	0.23	\$0.01	15	> 10	\$0.00
Cooling	PTHP	EER 11	0.26	\$0.01	15	> 10	\$0.00
Cooling	PTHP	EER 11.5	0.34	\$0.01	15	> 10	\$0.00
Cooling	Evaporative AC	Direct	-	-	15	1.00	-
Cooling	Evaporative AC	Indirect	0.28	-	15	-	-
Cooling	Evaporative AC	Direct/Indirect	0.72	-	15	-	-
Heating	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Heating	Air Source Heat Pump	EER 10.3, COP 3.2	0.01	\$0.01	15	-	\$0.08
Heating	Air Source Heat Pump	EER 11.0, COP 3.3	0.02	\$0.00	15	1.00	\$0.01
Heating	Air Source Heat Pump	EER 11.7, COP 3.4	0.03	\$0.03	15	0.13	\$0.11
Heating	Air Source Heat Pump	EER 12.0, COP 3.4	0.03	\$0.05	15	0.09	\$0.17
Heating	Air Source Heat Pump	Ductless Minisplit	0.03	\$0.08	15	0.09	\$0.23
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	0.07	\$0.02	15	1.94	\$0.03
Heating	Geothermal Heat Pump	EER 18, COP 3.8	0.17	\$0.04	15	2.17	\$0.02
Heating	Geothermal Heat Pump	EER 30, COP 5.0	0.43	\$0.05	15	4.12	\$0.01

Commercial Energy Efficiency Equipment and Measure Data

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Heating	Electric Room Heat	Standard	-	-	20	1.00	-
Heating	Electric Furnace	Standard	-	-	20	1.00	-
Heating	PTAC	EER 9.8	-	-	15	1.00	-
Heating	PTAC	EER 10.2	-	\$0.00	15	-	-
Heating	PTAC	EER 10.8	-	\$0.01	15	-	-
Heating	PTAC	EER 11	-	\$0.01	15	-	-
Heating	PTAC	EER 11.5	-	\$0.01	15	-	-
Heating	PTHP	EER 9.8	-	-	15	1.00	-
Heating	PTHP	EER 10.2	0.05	\$0.00	15	> 10	\$0.00
Heating	PTHP	EER 10.8	0.13	\$0.01	15	9.98	\$0.01
Heating	PTHP	EER 11	0.15	\$0.01	15	> 10	\$0.00
Heating	PTHP	EER 11.5	0.20	\$0.01	15	> 10	\$0.00
Ventilation	Ventilation	Constant Volume	-	-	10	1.00	-
Ventilation	Ventilation	Variable Air Volume	1.15	(\$0.07)	10	1.00	(\$0.01)
Water Heating	Water Heating	EF .97	-	-	15	1.00	-
Water Heating	Water Heating	EF .98	0.01	\$0.00	15	2.16	\$0.03
Water Heating	Water Heating	EF 2.0	0.33	\$0.00	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.3	0.37	\$0.01	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.4	0.38	\$0.01	15	> 10	\$0.00
Interior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Interior Lighting	Screw-in	90W Halogen PAR-38	0.38	\$0.01	3	1.64	\$0.01
Interior Lighting	Screw-in	70W HIR PAR-38	0.58	\$0.02	3	2.29	\$0.01
Interior Lighting	Screw-in	CFL	1.09	\$0.01	2	> 10	\$0.00
Interior Lighting	Screw-in	LED (2010)	1.18	\$0.12	20	4.85	\$0.01
Interior Lighting	Screw-in	LED (2020)	1.36	\$0.03	20	-	\$0.00
Interior Lighting	High-Bay Fixtures	Metal Halides	-	-	3	1.00	-
Interior Lighting	High-Bay Fixtures	LED (2010)	0.12	\$0.06	15	-	\$0.05
Interior Lighting	High-Bay Fixtures	T8	0.12	(\$0.00)	10	1.00	(\$0.00)
Interior Lighting	High-Bay Fixtures	High Pressure Sodium	0.12	\$0.00	6	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	Light Emitting Plasma	0.15	\$0.00	15	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	T5	0.15	\$0.00	10	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	LED (2020)	0.22	\$0.01	15	-	\$0.01
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Interior Lighting	Linear Fluorescent	LED (2010)	0.79	\$2.18	15	1.00	\$0.28
Interior Lighting	Linear Fluorescent	T8	0.82	(\$0.00)	10	1.00	(\$0.00)
Interior Lighting	Linear Fluorescent	Super T8	1.14	\$0.32	10	1.00	\$0.04
Interior Lighting	Linear Fluorescent	T5	1.32	\$0.24	10	1.00	\$0.02
Interior Lighting	Linear Fluorescent	LED (2020)	2.46	\$0.60	15	-	\$0.02
Exterior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Exterior Lighting	Screw-in	90W Halogen PAR-38	0.06	\$0.00	3	1.82	\$0.01
Exterior Lighting	Screw-in	70W HIR PAR-38	0.10	\$0.00	3	2.32	\$0.01
Exterior Lighting	Screw-in	CFL	0.18	\$0.00	6	> 10	\$0.00
Exterior Lighting	Screw-in	LED (2010)	0.20	\$0.05	20	2.04	\$0.02
Exterior Lighting	Screw-in	LED (2020)	0.23	\$0.01	20	-	\$0.01
Exterior Lighting	HID	Metal Halides	-	-	3	1.00	-
Exterior Lighting	HID	LED (2010)	0.16	\$0.21	15	0.19	\$0.13
Exterior Lighting	HID	T8	0.17	(\$0.01)	10	1.00	(\$0.00)
Exterior Lighting	HID	High Pressure Sodium	0.18	\$0.00	6	1.00	\$0.00
Exterior Lighting	HID	Light Emitting Plasma	0.21	\$0.01	15	1.00	\$0.00
Exterior Lighting	HID	T5	0.21	\$0.01	10	1.00	\$0.00
Exterior Lighting	HID	LED (2020)	0.31	\$0.05	15	-	\$0.02

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incre- mental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Exterior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Exterior Lighting	Linear Fluorescent	LED (2010)	0.01	\$0.02	15	1.00	\$0.28
Exterior Lighting	Linear Fluorescent	T8	0.01	(\$0.00)	10	1.00	(\$0.00)
Exterior Lighting	Linear Fluorescent	Super T8	0.01	\$0.00	10	1.00	\$0.04
Exterior Lighting	Linear Fluorescent	T5	0.01	\$0.00	10	1.00	\$0.02
Exterior Lighting	Linear Fluorescent	LED (2020)	0.02	\$0.00	15	-	\$0.02
Refrigeration	Walk-in Refrigerator	14600 kWh/yr	-	-	12	1.00	-
Refrigeration	Walk-in Refrigerator	10800 kWh/yr	-	-	12	-	-
Refrigeration	Walk-in Refrigerator	10000 kWh/yr	-	-	12	-	-
Refrigeration	Walk-in Refrigerator	9000 kWh/yr	-	-	12	-	-
Refrigeration	Reach-in Refrigerator	3800 kWh/yr	-	-	12	1.00	-
Refrigeration	Reach-in Refrigerator	3100 kWh/yr	0.01	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	2500 kWh/yr	0.02	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	2400 kWh/yr	0.02	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	1500 kWh/yr	0.02	\$0.00	12	> 10	\$0.00
Refrigeration	Glass Door Display	14480 kWh/yr	-	-	12	-	-
Refrigeration	Glass Door Display	11700 kWh/yr	0.02	\$0.00	12	-	\$0.01
Refrigeration	Glass Door Display	8400 kWh/yr	0.06	-	12	1.00	-
Refrigeration	Glass Door Display	6800 kWh/yr	0.07	\$0.00	12	3.09	\$0.00
Refrigeration	Open Display Case	6500 kWh/yr	-	-	12	-	-
Refrigeration	Open Display Case	5350 kWh/yr	0.01	-	12	1.00	-
Refrigeration	Open Display Case	5300 kWh/yr	0.01	\$0.00	12	-	\$0.04
Refrigeration	Open Display Case	4330 kWh/yr	0.02	\$0.00	12	1.26	\$0.02
Refrigeration	Icemaker	7.0 kWh/100 lbs	-	-	10	1.00	-
Refrigeration	Icemaker	6.3 kWh/100 lbs	0.00	\$0.00	10	0.51	\$0.10
Refrigeration	Icemaker	6.0 kWh/100 lbs	0.01	\$0.00	10	0.51	\$0.10
Refrigeration	Icemaker	5.5 kWh/100 lbs	0.01	\$0.01	10	0.51	\$0.10
Refrigeration	Vending Machine	3400 kWh/year	-	-	12	1.00	-
Refrigeration	Vending Machine	3000 kWh/year	0.01	\$0.00	12	2.80	\$0.02
Refrigeration	Vending Machine	2400 kWh/year	0.02	\$0.00	12	2.80	\$0.02
Refrigeration	Vending Machine	1700 kWh/year	0.03	\$0.00	12	6.05	\$0.01
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.23	-	12	-	-
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.15	-	12	-	-
Food Preparation	Dishwasher	Standard	-	-	12	1.00	-
Food Preparation	Dishwasher	Energy Star	1.21	\$0.00	12	> 10	\$0.00
Food Preparation	Hot Food Container	Standard	-	-	12	1.00	-
Food Preparation	Hot Food Container	Energy Star	0.78	-	12	-	-
Food Preparation	Other	Standard	-	-	12	1.00	-
Office Equipment	Desktop Computer	Standard	-	-	5	1.00	-
Office Equipment	Desktop Computer	Energy Star	0.69	\$0.00	5	> 10	\$0.00
Office Equipment	Laptop	Standard	-	-	4	1.00	-
Office Equipment	Laptop	Energy Star	0.11	\$0.00	4	> 10	\$0.00
Office Equipment	Server	Standard	-	-	3	1.00	-
Office Equipment	Server	Energy Star	0.05	\$0.00	3	> 10	\$0.00
Office Equipment	Monitor	Standard	-	-	4	1.00	-
Office Equipment	Monitor	Energy Star	0.08	\$0.00	4	> 10	\$0.00
Office Equipment	Printer/Copier/Fax	Standard	-	-	6	1.00	-
Office Equipment	Printer/Copier/Fax	Energy Star	0.08	\$0.00	6	> 10	\$0.00
Office Equipment	POS Terminal	Standard	-	-	4	1.00	-

Commercial Energy Efficiency Equipment and Measure Data

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Office Equipment	POS Terminal	Energy Star	0.01	\$0.00	4	0.73	\$0.06
Miscellaneous	Non-HVAC Motors	Standard (EPAAct)	-	-	15	1.00	-
Miscellaneous	Non-HVAC Motors	Standard (EPAAct 2015)	0.00	-	15	-	-
Miscellaneous	Non-HVAC Motors	High Efficiency	0.00	\$0.00	15	6.63	\$0.01
Miscellaneous	Non-HVAC Motors	High Efficiency (2015)	0.00	\$0.00	15	-	\$0.01
Miscellaneous	Non-HVAC Motors	Premium (NEMA)	0.00	\$0.00	15	6.63	\$0.01
Miscellaneous	Non-HVAC Motors	Premium (NEMA 2015)	0.00	\$0.00	15	-	\$0.01
Miscellaneous	Pool Pump	Standard	-	-	15	1.00	-
Miscellaneous	Pool Pump	High Efficiency	0.00	-	15	-	-
Miscellaneous	Pool Pump	High Efficiency, Multi-Speed	0.01	-	15	-	-
Miscellaneous	Pool Heater	Standard	-	-	15	1.00	-
Miscellaneous	Pool Heater	Heat Pump	-	-	15	-	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-4 Energy Efficiency Equipment Data, Natural Gas-Office, Existing Vintage

End Use	Technology	Efficiency Definition	Savings (Therms/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/Therm)
Heating	Furnace	EF .76	-	-	16	1.00	-
Heating	Furnace	EF .80	0.01	\$0.04	16	1.57	\$0.37
Heating	Furnace	EF .82	0.02	\$0.12	16	0.85	\$0.69
Heating	Furnace	EF .90	0.04	\$0.10	16	2.07	\$0.28
Heating	Furnace	EF .96	0.05	\$0.15	16	1.91	\$0.31
Heating	Boiler	EF .76	-	-	20	-	-
Heating	Boiler	EF .80	0.04	\$0.00	20	1.00	\$0.00
Heating	Boiler	EF .83	0.06	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .90	0.09	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .96	0.13	\$0.00	20	> 10	\$0.00
Heating	Unit Heater	Standard	-	-	15	1.00	-
Heating	Unit Heater	Condensing	0.03	\$0.00	15	> 10	\$0.00
Water Heating	Water Heating	EF 0.77	-	-	12	1.00	-
Water Heating	Water Heating	EF 0.80	0.00	\$0.01	12	2.57	\$0.21
Water Heating	Water Heating	Tankless	0.01	\$0.02	12	1.93	\$0.28
Water Heating	Water Heating	Indirect Fired	0.01	\$0.01	12	5.04	\$0.11
Water Heating	Water Heating	EF 0.94	0.02	(\$0.00)	12	1.00	(\$0.02)
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.09	\$0.00	12	> 10	\$0.00
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.16	\$0.01	12	> 10	\$0.00
Food Preparation	Broiler	Standard	-	-	12	1.00	-
Food Preparation	Broiler	High Efficiency	0.13	-	12	-	-
Food Preparation	Griddle	Standard	-	-	12	1.00	-
Food Preparation	Griddle	High Efficiency	0.02	\$0.00	12	> 10	\$0.00
Food Preparation	Range	Standard	-	-	12	1.00	-
Food Preparation	Range	High Efficiency	0.08	\$0.00	12	> 10	\$0.00
Food Preparation	Steamer	Standard	-	-	12	1.00	-
Food Preparation	Steamer	Energy Star	0.39	-	12	-	-
Food Preparation	Other	Standard	-	-	12	1.00	-
Food Preparation	Other	Energy Star	0.05	-	12	-	-
Miscellaneous	Pool Heater	EF .78	-	-	5	-	-
Miscellaneous	Pool Heater	EF .82	-	-	5	1.00	-
Miscellaneous	Pool Heater	EF .90	-	-	5	-	-
Miscellaneous	Pool Heater	EF .95	-	-	5	-	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-5 Energy Efficiency Equipment Data Electric-Office, New Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Air-Cooled Chiller	1.5 kw/ton, COP 2.3	-	-	20	1.00	-
Cooling	Air-Cooled Chiller	1.3 kw/ton, COP 2.7	0.38	\$0.26	20	2.03	\$0.06
Cooling	Air-Cooled Chiller	1.26 kw/ton, COP 2.8	0.46	\$0.30	20	2.15	\$0.06
Cooling	Air-Cooled Chiller	1.0 kw/ton, COP 3.5	0.96	\$0.33	20	4.03	\$0.03
Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	1.02	\$0.36	20	3.87	\$0.03
Cooling	Water-Cooled Chiller	0.75 kw/ton, COP 4.7	-	-	20	1.00	-
Cooling	Water-Cooled Chiller	0.60 kw/ton, COP 5.9	0.39	\$0.10	20	5.29	\$0.02
Cooling	Water-Cooled Chiller	0.58 kw/ton, COP 6.1	0.44	\$0.11	20	5.59	\$0.02
Cooling	Water-Cooled Chiller	0.55 kw/Ton, COP 6.4	0.52	\$0.13	20	5.49	\$0.02
Cooling	Water-Cooled Chiller	0.51 kw/ton, COP 6.9	0.62	\$0.20	20	4.23	\$0.03
Cooling	Water-Cooled Chiller	0.50 kw/Ton, COP 7.0	0.64	\$0.22	20	3.98	\$0.03
Cooling	Water-Cooled Chiller	0.48 kw/ton, COP 7.3	0.70	\$0.25	20	3.92	\$0.03
Cooling	Roof top AC	EER 9.2	-	-	15	-	-
Cooling	Roof top AC	EER 10.1	0.25	\$0.02	15	-	\$0.01
Cooling	Roof top AC	EER 11.2	0.50	\$0.02	15	1.00	\$0.00
Cooling	Roof top AC	EER 12.0	0.65	\$0.06	15	3.86	\$0.01
Cooling	Roof top AC	Ductless Minisplit	0.81	\$0.20	15	1.86	\$0.03
Cooling	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Cooling	Air Source Heat Pump	EER 10.3, COP 3.2	0.27	\$0.02	15	-	\$0.01
Cooling	Air Source Heat Pump	EER 11.0, COP 3.3	0.43	\$0.00	15	1.00	\$0.00
Cooling	Air Source Heat Pump	EER 11.7, COP 3.4	0.57	\$0.08	15	2.17	\$0.01
Cooling	Air Source Heat Pump	EER 12.0, COP 3.4	0.63	\$0.11	15	2.01	\$0.02
Cooling	Air Source Heat Pump	Ductless Minisplit	0.79	\$0.19	15	2.18	\$0.02
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	0.19	\$0.05	15	4.04	\$0.03
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	0.35	\$0.11	15	3.59	\$0.03
Cooling	Geothermal Heat Pump	EER 30, COP 5.0	0.86	\$0.15	15	6.45	\$0.02
Cooling	PTAC	EER 9.8	-	-	15	1.00	-
Cooling	PTAC	EER 10.2	0.09	\$0.00	15	> 10	\$0.00
Cooling	PTAC	EER 10.8	0.21	\$0.01	15	> 10	\$0.00
Cooling	PTAC	EER 11	0.24	\$0.01	15	> 10	\$0.00
Cooling	PTAC	EER 11.5	0.31	\$0.01	15	> 10	\$0.00
Cooling	PTHP	EER 9.8	-	-	15	1.00	-
Cooling	PTHP	EER 10.2	0.09	\$0.00	15	> 10	\$0.00
Cooling	PTHP	EER 10.8	0.21	\$0.01	15	> 10	\$0.00
Cooling	PTHP	EER 11	0.24	\$0.01	15	> 10	\$0.00
Cooling	PTHP	EER 11.5	0.31	\$0.01	15	> 10	\$0.00
Cooling	Evaporative AC	Direct	-	-	15	1.00	-
Cooling	Evaporative AC	Indirect	0.28	-	15	-	-
Cooling	Evaporative AC	Direct/Indirect	0.72	-	15	-	-
Heating	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Heating	Air Source Heat Pump	EER 10.3, COP 3.2	0.03	\$0.01	15	-	\$0.03
Heating	Air Source Heat Pump	EER 11.0, COP 3.3	0.07	\$0.00	15	1.00	\$0.00
Heating	Air Source Heat Pump	EER 11.7, COP 3.4	0.10	\$0.04	15	0.46	\$0.04
Heating	Air Source Heat Pump	EER 12.0, COP 3.4	0.10	\$0.06	15	0.31	\$0.06
Heating	Air Source Heat Pump	Ductless Minisplit	0.13	\$0.09	15	0.36	\$0.07
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	0.08	\$0.02	15	2.06	\$0.03
Heating	Geothermal Heat Pump	EER 18, COP 3.8	0.19	\$0.04	15	2.31	\$0.02
Heating	Geothermal Heat Pump	EER 30, COP 5.0	0.49	\$0.06	15	4.38	\$0.01

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incre- mental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Heating	Electric Room Heat	Standard	-	-	20	1.00	-
Heating	Electric Furnace	Standard	-	-	20	1.00	-
Heating	PTAC	EER 9.8	-	-	15	1.00	-
Heating	PTAC	EER 10.2	0.00	\$0.00	15	0.31	\$0.17
Heating	PTAC	EER 10.8	0.00	\$0.00	15	0.10	\$0.53
Heating	PTAC	EER 11	0.00	\$0.00	15	0.09	\$0.57
Heating	PTAC	EER 11.5	0.00	\$0.00	15	0.08	\$0.67
Heating	PTHP	EER 9.8	-	-	15	1.00	-
Heating	PTHP	EER 10.2	0.05	\$0.00	15	> 10	\$0.00
Heating	PTHP	EER 10.8	0.11	\$0.00	15	> 10	\$0.00
Heating	PTHP	EER 11	0.13	\$0.00	15	> 10	\$0.00
Heating	PTHP	EER 11.5	0.18	\$0.00	15	> 10	\$0.00
Ventilation	Ventilation	Constant Volume	-	-	10	1.00	-
Ventilation	Ventilation	Variable Air Volume	1.59	(\$0.12)	10	1.00	(\$0.01)
Water Heating	Water Heating	EF .97	-	-	15	1.00	-
Water Heating	Water Heating	EF .98	0.01	\$0.00	15	2.37	\$0.03
Water Heating	Water Heating	EF 2.0	0.31	\$0.00	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.3	0.35	\$0.00	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.4	0.36	\$0.00	15	> 10	\$0.00
Interior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Interior Lighting	Screw-in	90W Halogen PAR-38	0.38	\$0.01	3	1.64	\$0.01
Interior Lighting	Screw-in	70W HIR PAR-38	0.58	\$0.02	3	2.29	\$0.01
Interior Lighting	Screw-in	CFL	1.09	\$0.01	2.2	> 10	\$0.00
Interior Lighting	Screw-in	LED (2010)	1.18	\$0.12	20	4.85	\$0.01
Interior Lighting	Screw-in	LED (2020)	1.36	\$0.03	20	-	\$0.00
Interior Lighting	High-Bay Fixtures	Metal Halides	-	-	3	1.00	-
Interior Lighting	High-Bay Fixtures	LED (2010)	0.12	\$0.06	15	-	\$0.05
Interior Lighting	High-Bay Fixtures	T8	0.12	(\$0.00)	10	1.00	(\$0.00)
Interior Lighting	High-Bay Fixtures	High Pressure Sodium	0.12	\$0.00	6	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	Light Emitting Plasma	0.15	\$0.00	15	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	T5	0.15	\$0.00	10	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	LED (2020)	0.22	\$0.01	15	-	\$0.01
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Interior Lighting	Linear Fluorescent	LED (2010)	0.79	\$2.18	15	1.00	\$0.28
Interior Lighting	Linear Fluorescent	T8	0.82	(\$0.00)	10	1.00	(\$0.00)
Interior Lighting	Linear Fluorescent	Super T8	1.14	\$0.32	10	1.00	\$0.04
Interior Lighting	Linear Fluorescent	T5	1.32	\$0.24	10	1.00	\$0.02
Interior Lighting	Linear Fluorescent	LED (2020)	2.46	\$0.60	15	-	\$0.02
Exterior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Exterior Lighting	Screw-in	90W Halogen PAR-38	0.06	\$0.00	3	1.82	\$0.01
Exterior Lighting	Screw-in	70W HIR PAR-38	0.10	\$0.00	3	2.32	\$0.01
Exterior Lighting	Screw-in	CFL	0.18	\$0.00	6	> 10	\$0.00
Exterior Lighting	Screw-in	LED (2010)	0.20	\$0.05	20	2.04	\$0.02
Exterior Lighting	Screw-in	LED (2020)	0.23	\$0.01	20	-	\$0.01
Exterior Lighting	HID	Metal Halides	-	-	3	1.00	-
Exterior Lighting	HID	LED (2010)	0.16	\$0.21	15	0.19	\$0.13
Exterior Lighting	HID	T8	0.17	(\$0.01)	10	1.00	(\$0.00)
Exterior Lighting	HID	High Pressure Sodium	0.18	\$0.00	6	1.00	\$0.00
Exterior Lighting	HID	Light Emitting Plasma	0.21	\$0.01	15	1.00	\$0.00
Exterior Lighting	HID	T5	0.21	\$0.01	10	1.00	\$0.00
Exterior Lighting	HID	LED (2020)	0.31	\$0.05	15	-	\$0.02

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Exterior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Exterior Lighting	Linear Fluorescent	LED (2010)	0.01	\$0.02	15	1.00	\$0.28
Exterior Lighting	Linear Fluorescent	T8	0.01	(\$0.00)	10	1.00	(\$0.00)
Exterior Lighting	Linear Fluorescent	Super T8	0.01	\$0.00	10	1.00	\$0.04
Exterior Lighting	Linear Fluorescent	T5	0.01	\$0.00	10	1.00	\$0.02
Exterior Lighting	Linear Fluorescent	LED (2020)	0.02	\$0.00	15	-	\$0.02
Refrigeration	Walk-in Refrigerator	14600 kWh/yr	-	-	12	1.00	-
Refrigeration	Walk-in Refrigerator	10800 kWh/yr	-	-	12	-	-
Refrigeration	Walk-in Refrigerator	10000 kWh/yr	-	-	12	-	-
Refrigeration	Walk-in Refrigerator	9000 kWh/yr	-	-	12	-	-
Refrigeration	Reach-in Refrigerator	3800 kWh/yr	-	-	12	1.00	-
Refrigeration	Reach-in Refrigerator	3100 kWh/yr	0.01	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	2500 kWh/yr	0.02	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	2400 kWh/yr	0.02	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	1500 kWh/yr	0.02	\$0.00	12	> 10	\$0.00
Refrigeration	Glass Door Display	14480 kWh/yr	-	-	12	-	-
Refrigeration	Glass Door Display	11700 kWh/yr	0.02	\$0.00	12	-	\$0.01
Refrigeration	Glass Door Display	8400 kWh/yr	0.06	-	12	1.00	-
Refrigeration	Glass Door Display	6800 kWh/yr	0.07	\$0.00	12	3.09	\$0.00
Refrigeration	Open Display Case	6500 kWh/yr	-	-	12	-	-
Refrigeration	Open Display Case	5350 kWh/yr	0.01	-	12	1.00	-
Refrigeration	Open Display Case	5300 kWh/yr	0.01	\$0.00	12	-	\$0.04
Refrigeration	Open Display Case	4330 kWh/yr	0.02	\$0.00	12	1.26	\$0.02
Refrigeration	Icemaker	7.0 kWh/100 lbs	-	-	10	1.00	-
Refrigeration	Icemaker	6.3 kWh/100 lbs	0.00	\$0.00	10	0.51	\$0.10
Refrigeration	Icemaker	6.0 kWh/100 lbs	0.01	\$0.00	10	0.51	\$0.10
Refrigeration	Icemaker	5.5 kWh/100 lbs	0.01	\$0.01	10	0.51	\$0.10
Refrigeration	Vending Machine	3400 kWh/year	-	-	12	1.00	-
Refrigeration	Vending Machine	3000 kWh/year	0.01	\$0.00	12	2.80	\$0.02
Refrigeration	Vending Machine	2400 kWh/year	0.02	\$0.00	12	2.80	\$0.02
Refrigeration	Vending Machine	1700 kWh/year	0.03	\$0.00	12	6.05	\$0.01
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.23	-	12	-	-
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.15	-	12	-	-
Food Preparation	Dishwasher	Standard	-	-	12	1.00	-
Food Preparation	Dishwasher	Energy Star	1.21	\$0.00	12	> 10	\$0.00
Food Preparation	Hot Food Container	Standard	-	-	12	1.00	-
Food Preparation	Hot Food Container	Energy Star	0.78	-	12	-	-
Food Preparation	Other	Standard	-	-	12	1.00	-
Office Equipment	Desktop Computer	Standard	-	-	5	1.00	-
Office Equipment	Desktop Computer	Energy Star	0.69	\$0.00	5	> 10	\$0.00
Office Equipment	Laptop	Standard	-	-	4	1.00	-
Office Equipment	Laptop	Energy Star	0.11	\$0.00	4	> 10	\$0.00
Office Equipment	Server	Standard	-	-	3	1.00	-
Office Equipment	Server	Energy Star	0.05	\$0.00	3	> 10	\$0.00
Office Equipment	Monitor	Standard	-	-	4	1.00	-
Office Equipment	Monitor	Energy Star	0.08	\$0.00	4	> 10	\$0.00
Office Equipment	Printer/Copier/Fax	Standard	-	-	6	1.00	-
Office Equipment	Printer/Copier/Fax	Energy Star	0.08	\$0.00	6	> 10	\$0.00
Office Equipment	POS Terminal	Standard	-	-	4	1.00	-

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incre- mental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Office Equipment	POS Terminal	Energy Star	0.01	\$0.00	4	0.73	\$0.06
Miscellaneous	Non-HVAC Motors	Standard (EPAct)	-	-	15	1.00	-
Miscellaneous	Non-HVAC Motors	Standard (EPAct 2015)	0.00	-	15	-	-
Miscellaneous	Non-HVAC Motors	High Efficiency	0.00	\$0.00	15	6.63	\$0.01
Miscellaneous	Non-HVAC Motors	High Efficiency (2015)	0.00	\$0.00	15	-	\$0.01
Miscellaneous	Non-HVAC Motors	Premium (NEMA)	0.00	\$0.00	15	6.63	\$0.01
Miscellaneous	Non-HVAC Motors	Premium (NEMA 2015)	0.00	\$0.00	15	-	\$0.01
Miscellaneous	Pool Pump	Standard	-	-	15	1.00	-
Miscellaneous	Pool Pump	High Efficiency	0.00	-	15	-	-
Miscellaneous	Pool Pump	High Efficiency, Multi-Speed	0.01	-	15	-	-
Miscellaneous	Pool Heater	Standard	-	-	15	1.00	-
Miscellaneous	Pool Heater	Heat Pump	-	-	15	-	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-6 Energy Efficiency Equipment Data, Natural Gas-Office, New Vintage

End Use	Technology	Efficiency Definition	Savings (Therms/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/Therm)
Heating	Furnace	EF .76	-	-	16	1.00	-
Heating	Furnace	EF .80	0.01	\$0.04	16	2.01	\$0.29
Heating	Furnace	EF .82	0.02	\$0.11	16	1.09	\$0.54
Heating	Furnace	EF .90	0.04	\$0.10	16	2.64	\$0.22
Heating	Furnace	EF .96	0.06	\$0.14	16	2.44	\$0.24
Heating	Boiler	EF .76	-	-	20	-	-
Heating	Boiler	EF .80	0.04	\$0.00	20	1.00	\$0.00
Heating	Boiler	EF .83	0.06	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .90	0.09	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .96	0.13	\$0.00	20	> 10	\$0.00
Heating	Unit Heater	Standard	-	-	15	1.00	-
Heating	Unit Heater	Condensing	0.03	\$0.00	15	> 10	\$0.00
Water Heating	Water Heating	EF 0.77	-	-	12	1.00	-
Water Heating	Water Heating	EF 0.80	0.00	\$0.01	12	2.35	\$0.23
Water Heating	Water Heating	Tankless	0.01	\$0.02	12	1.77	\$0.30
Water Heating	Water Heating	Indirect Fired	0.01	\$0.01	12	4.61	\$0.12
Water Heating	Water Heating	EF 0.94	0.02	(\$0.00)	12	1.00	(\$0.02)
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.09	\$0.00	12	> 10	\$0.00
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.16	\$0.01	12	> 10	\$0.00
Food Preparation	Broiler	Standard	-	-	12	1.00	-
Food Preparation	Broiler	High Efficiency	0.13	-	12	-	-
Food Preparation	Griddle	Standard	-	-	12	1.00	-
Food Preparation	Griddle	High Efficiency	0.02	\$0.00	12	> 10	\$0.00
Food Preparation	Range	Standard	-	-	12	1.00	-
Food Preparation	Range	High Efficiency	0.08	\$0.00	12	> 10	\$0.00
Food Preparation	Steamer	Standard	-	-	12	1.00	-
Food Preparation	Steamer	Energy Star	0.39	-	12	-	-
Food Preparation	Other	Standard	-	-	12	1.00	-
Food Preparation	Other	Energy Star	0.05	-	12	-	-
Miscellaneous	Pool Heater	EF .78	-	-	5	-	-
Miscellaneous	Pool Heater	EF .82	-	-	5	1.00	-
Miscellaneous	Pool Heater	EF .90	-	-	5	-	-
Miscellaneous	Pool Heater	EF .95	-	-	5	-	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-7 Energy Efficiency Equipment Data, Electric-Restaurant, Existing Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Air-Cooled Chiller	1.5 kw/ton, COP 2.3	-	-	20	1.00	-
Cooling	Air-Cooled Chiller	1.3 kw/ton, COP 2.7	0.97	\$0.38	20	3.06	\$0.03
Cooling	Air-Cooled Chiller	1.26 kw/ton, COP 2.8	1.17	\$0.43	20	3.25	\$0.03
Cooling	Air-Cooled Chiller	1.0 kw/ton, COP 3.5	2.43	\$0.48	20	6.07	\$0.02
Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	2.58	\$0.53	20	5.84	\$0.02
Cooling	Water-Cooled Chiller	0.75 kw/ton, COP 4.7	-	-	20	1.00	-
Cooling	Water-Cooled Chiller	0.60 kw/ton, COP 5.9	1.58	\$0.24	20	7.97	\$0.01
Cooling	Water-Cooled Chiller	0.58 kw/ton, COP 6.1	1.79	\$0.26	20	8.44	\$0.01
Cooling	Water-Cooled Chiller	0.55 kw/Ton, COP 6.4	2.11	\$0.31	20	8.27	\$0.01
Cooling	Water-Cooled Chiller	0.51 kw/ton, COP 6.9	2.53	\$0.48	20	6.39	\$0.02
Cooling	Water-Cooled Chiller	0.50 kw/Ton, COP 7.0	2.64	\$0.53	20	6.01	\$0.02
Cooling	Water-Cooled Chiller	0.48 kw/ton, COP 7.3	2.85	\$0.58	20	5.92	\$0.02
Cooling	Roof top AC	EER 9.2	-	-	15	-	-
Cooling	Roof top AC	EER 10.1	0.55	\$0.02	15	-	\$0.00
Cooling	Roof top AC	EER 11.2	1.09	\$0.02	15	1.00	\$0.00
Cooling	Roof top AC	EER 12.0	1.43	\$0.07	15	6.56	\$0.00
Cooling	Roof top AC	Ductless Minisplit	1.79	\$0.22	15	3.16	\$0.01
Cooling	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Cooling	Air Source Heat Pump	EER 10.3, COP 3.2	0.76	\$0.03	15	-	\$0.00
Cooling	Air Source Heat Pump	EER 11.0, COP 3.3	1.22	\$0.00	15	1.00	\$0.00
Cooling	Air Source Heat Pump	EER 11.7, COP 3.4	1.61	\$0.11	15	3.68	\$0.01
Cooling	Air Source Heat Pump	EER 12.0, COP 3.4	1.77	\$0.16	15	3.42	\$0.01
Cooling	Air Source Heat Pump	Ductless Minisplit	2.24	\$0.27	15	3.71	\$0.01
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	0.43	\$0.06	15	6.89	\$0.01
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	0.78	\$0.12	15	6.13	\$0.02
Cooling	Geothermal Heat Pump	EER 30, COP 5.0	1.90	\$0.17	15	> 10	\$0.01
Cooling	PTAC	EER 9.8	-	-	15	1.00	-
Cooling	PTAC	EER 10.2	0.17	\$0.00	15	> 10	\$0.00
Cooling	PTAC	EER 10.8	0.41	\$0.02	15	> 10	\$0.00
Cooling	PTAC	EER 11	0.47	\$0.02	15	> 10	\$0.00
Cooling	PTAC	EER 11.5	0.62	\$0.02	15	> 10	\$0.00
Cooling	PTHP	EER 9.8	-	-	15	1.00	-
Cooling	PTHP	EER 10.2	0.17	\$0.00	15	> 10	\$0.00
Cooling	PTHP	EER 10.8	0.41	\$0.02	15	> 10	\$0.00
Cooling	PTHP	EER 11	0.47	\$0.02	15	> 10	\$0.00
Cooling	PTHP	EER 11.5	0.62	\$0.02	15	> 10	\$0.00
Cooling	Evaporative AC	Direct	-	-	15	1.00	-
Cooling	Evaporative AC	Indirect	0.51	-	15	-	-
Cooling	Evaporative AC	Direct/Indirect	1.30	-	15	-	-
Heating	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Heating	Air Source Heat Pump	EER 10.3, COP 3.2	0.06	\$0.02	15	-	\$0.03
Heating	Air Source Heat Pump	EER 11.0, COP 3.3	0.12	\$0.00	15	1.00	\$0.00
Heating	Air Source Heat Pump	EER 11.7, COP 3.4	0.18	\$0.07	15	0.44	\$0.04
Heating	Air Source Heat Pump	EER 12.0, COP 3.4	0.18	\$0.10	15	0.30	\$0.06
Heating	Air Source Heat Pump	Ductless Minisplit	0.23	\$0.16	15	0.33	\$0.07
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	0.15	\$0.05	15	1.70	\$0.03
Heating	Geothermal Heat Pump	EER 18, COP 3.8	0.35	\$0.09	15	1.91	\$0.03
Heating	Geothermal Heat Pump	EER 30, COP 5.0	0.89	\$0.13	15	3.62	\$0.01

Commercial Energy Efficiency Equipment and Measure Data

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Heating	Electric Room Heat	Standard	-	-	20	1.00	-
Heating	Electric Furnace	Standard	-	-	20	1.00	-
Heating	PTAC	EER 9.8	-	-	15	1.00	-
Heating	PTAC	EER 10.2	-	\$0.00	15	-	-
Heating	PTAC	EER 10.8	-	\$0.01	15	-	-
Heating	PTAC	EER 11	-	\$0.02	15	-	-
Heating	PTAC	EER 11.5	-	\$0.02	15	-	-
Heating	PTHP	EER 9.8	-	-	15	1.00	-
Heating	PTHP	EER 10.2	0.09	\$0.00	15	> 10	\$0.00
Heating	PTHP	EER 10.8	0.22	\$0.01	15	9.98	\$0.01
Heating	PTHP	EER 11	0.26	\$0.01	15	> 10	\$0.00
Heating	PTHP	EER 11.5	0.35	\$0.01	15	> 10	\$0.00
Ventilation	Ventilation	Constant Volume	-	-	10	1.00	-
Ventilation	Ventilation	Variable Air Volume	1.78	(\$0.52)	10	1.00	(\$0.04)
Water Heating	Water Heating	EF .97	-	-	15	1.00	-
Water Heating	Water Heating	EF .98	0.07	\$0.01	15	4.55	\$0.01
Water Heating	Water Heating	EF 2.0	3.56	\$0.02	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.3	4.00	\$0.03	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.4	4.12	\$0.03	15	> 10	\$0.00
Interior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Interior Lighting	Screw-in	90W Halogen PAR-38	1.48	\$0.05	3	2.07	\$0.01
Interior Lighting	Screw-in	70W HIR PAR-38	2.27	\$0.06	3	2.79	\$0.01
Interior Lighting	Screw-in	CFL	4.26	\$0.02	2	> 10	\$0.00
Interior Lighting	Screw-in	LED (2010)	4.61	\$0.39	20	6.07	\$0.01
Interior Lighting	Screw-in	LED (2020)	5.32	\$0.11	20	-	\$0.00
Interior Lighting	High-Bay Fixtures	Metal Halides	-	-	3	1.00	-
Interior Lighting	High-Bay Fixtures	LED (2010)	0.66	\$0.26	15	0.22	\$0.04
Interior Lighting	High-Bay Fixtures	T8	0.67	(\$0.02)	10	1.00	(\$0.00)
Interior Lighting	High-Bay Fixtures	High Pressure Sodium	0.71	\$0.01	6	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	Light Emitting Plasma	0.83	\$0.02	15	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	T5	0.85	\$0.02	10	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	LED (2020)	1.27	\$0.06	15	-	\$0.00
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Interior Lighting	Linear Fluorescent	LED (2010)	0.78	\$1.78	15	1.00	\$0.23
Interior Lighting	Linear Fluorescent	T8	0.81	(\$0.00)	10	1.00	(\$0.00)
Interior Lighting	Linear Fluorescent	Super T8	1.13	\$0.26	10	1.00	\$0.03
Interior Lighting	Linear Fluorescent	T5	1.31	\$0.20	10	1.00	\$0.02
Interior Lighting	Linear Fluorescent	LED (2020)	2.44	\$0.49	15	-	\$0.02
Exterior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Exterior Lighting	Screw-in	90W Halogen PAR-38	0.13	\$0.00	3	2.20	\$0.01
Exterior Lighting	Screw-in	70W HIR PAR-38	0.20	\$0.01	3	2.81	\$0.01
Exterior Lighting	Screw-in	CFL	0.37	\$0.00	6	> 10	\$0.00
Exterior Lighting	Screw-in	LED (2010)	0.41	\$0.09	20	2.47	\$0.02
Exterior Lighting	Screw-in	LED (2020)	0.47	\$0.02	20	-	\$0.00
Exterior Lighting	HID	Metal Halides	-	-	3	1.00	-
Exterior Lighting	HID	LED (2010)	1.09	\$1.17	15	0.24	\$0.11
Exterior Lighting	HID	T8	1.12	(\$0.03)	10	1.00	(\$0.00)
Exterior Lighting	HID	High Pressure Sodium	1.19	\$0.01	6	1.00	\$0.00
Exterior Lighting	HID	Light Emitting Plasma	1.39	\$0.03	15	1.00	\$0.00
Exterior Lighting	HID	T5	1.42	\$0.03	10	1.00	\$0.00
Exterior Lighting	HID	LED (2020)	2.09	\$0.30	15	-	\$0.01

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incre- mental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Exterior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Exterior Lighting	Linear Fluorescent	LED (2010)	0.00	\$0.00	15	1.00	\$0.23
Exterior Lighting	Linear Fluorescent	T8	0.00	(\$0.00)	10	1.00	(\$0.00)
Exterior Lighting	Linear Fluorescent	Super T8	0.00	\$0.00	10	1.00	\$0.03
Exterior Lighting	Linear Fluorescent	T5	0.00	\$0.00	10	1.00	\$0.02
Exterior Lighting	Linear Fluorescent	LED (2020)	0.00	\$0.00	15	-	\$0.02
Refrigeration	Walk-in Refrigerator	14600 kWh/yr	-	-	12	1.00	-
Refrigeration	Walk-in Refrigerator	10800 kWh/yr	1.19	\$0.03	12	> 10	\$0.00
Refrigeration	Walk-in Refrigerator	10000 kWh/yr	1.32	\$0.10	12	6.53	\$0.01
Refrigeration	Walk-in Refrigerator	9000 kWh/yr	1.50	\$0.17	12	4.12	\$0.01
Refrigeration	Reach-in Refrigerator	3800 kWh/yr	-	-	12	1.00	-
Refrigeration	Reach-in Refrigerator	3100 kWh/yr	0.29	\$0.01	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	2500 kWh/yr	0.39	\$0.02	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	2400 kWh/yr	0.41	\$0.02	12	> 10	\$0.01
Refrigeration	Reach-in Refrigerator	1500 kWh/yr	0.55	\$0.02	12	> 10	\$0.00
Refrigeration	Glass Door Display	14480 kWh/yr	-	-	12	-	-
Refrigeration	Glass Door Display	11700 kWh/yr	0.51	\$0.11	12	-	\$0.03
Refrigeration	Glass Door Display	8400 kWh/yr	1.27	-	12	1.00	-
Refrigeration	Glass Door Display	6800 kWh/yr	1.60	\$0.11	12	1.42	\$0.01
Refrigeration	Open Display Case	6500 kWh/yr	-	-	12	-	-
Refrigeration	Open Display Case	5350 kWh/yr	0.25	-	12	1.00	-
Refrigeration	Open Display Case	5300 kWh/yr	0.26	\$0.17	12	-	\$0.08
Refrigeration	Open Display Case	4330 kWh/yr	0.46	\$0.17	12	0.58	\$0.04
Refrigeration	Icemaker	7.0 kWh/100 lbs	-	-	10	1.00	-
Refrigeration	Icemaker	6.3 kWh/100 lbs	0.08	\$0.14	10	0.23	\$0.23
Refrigeration	Icemaker	6.0 kWh/100 lbs	0.14	\$0.23	10	0.23	\$0.23
Refrigeration	Icemaker	5.5 kWh/100 lbs	0.20	\$0.34	10	0.23	\$0.23
Refrigeration	Vending Machine	3400 kWh/year	-	-	12	1.00	-
Refrigeration	Vending Machine	3000 kWh/year	0.08	\$0.03	12	1.28	\$0.04
Refrigeration	Vending Machine	2400 kWh/year	0.27	\$0.10	12	1.28	\$0.04
Refrigeration	Vending Machine	1700 kWh/year	0.35	\$0.06	12	2.78	\$0.02
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.97	\$0.00	12	> 10	\$0.00
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.61	\$0.02	12	> 10	\$0.00
Food Preparation	Dishwasher	Standard	-	-	12	1.00	-
Food Preparation	Dishwasher	Energy Star	2.53	\$0.05	12	> 10	\$0.00
Food Preparation	Hot Food Container	Standard	-	-	12	1.00	-
Food Preparation	Hot Food Container	Energy Star	1.62	\$0.07	12	> 10	\$0.01
Food Preparation	Other	Standard	-	-	12	1.00	-
Office Equipment	Desktop Computer	Standard	-	-	5	1.00	-
Office Equipment	Desktop Computer	Energy Star	0.11	\$0.00	5	> 10	\$0.00
Office Equipment	Laptop	Standard	-	-	4	1.00	-
Office Equipment	Laptop	Energy Star	0.01	\$0.00	4	> 10	\$0.00
Office Equipment	Server	Standard	-	-	3	1.00	-
Office Equipment	Server	Energy Star	0.10	\$0.00	3	> 10	\$0.00
Office Equipment	Monitor	Standard	-	-	4	1.00	-
Office Equipment	Monitor	Energy Star	0.01	\$0.00	4	> 10	\$0.00
Office Equipment	Printer/Copier/Fax	Standard	-	-	6	1.00	-
Office Equipment	Printer/Copier/Fax	Energy Star	0.03	\$0.00	6	> 10	\$0.00
Office Equipment	POS Terminal	Standard	-	-	4	1.00	-

Commercial Energy Efficiency Equipment and Measure Data

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Office Equipment	POS Terminal	Energy Star	0.06	\$0.03	4	0.31	\$0.13
Miscellaneous	Non-HVAC Motors	Standard (EPAAct)	-	-	15	1.00	-
Miscellaneous	Non-HVAC Motors	Standard (EPAAct 2015)	0.00	-	15	-	-
Miscellaneous	Non-HVAC Motors	High Efficiency	0.00	\$0.00	15	> 10	\$0.00
Miscellaneous	Non-HVAC Motors	High Efficiency (2015)	0.00	\$0.00	15	-	\$0.00
Miscellaneous	Non-HVAC Motors	Premium (NEMA)	0.01	\$0.00	15	> 10	\$0.00
Miscellaneous	Non-HVAC Motors	Premium (NEMA 2015)	0.01	\$0.00	15	-	\$0.00
Miscellaneous	Pool Pump	Standard	-	-	15	1.00	-
Miscellaneous	Pool Pump	High Efficiency	-	-	15	-	-
Miscellaneous	Pool Pump	High Efficiency, Multi-Speed	-	-	15	-	-
Miscellaneous	Pool Heater	Standard	-	-	15	1.00	-
Miscellaneous	Pool Heater	Heat Pump	-	-	15	-	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-8 Energy Efficiency Equipment Data, Natural Gas- Restaurant, Existing Vintage

End Use	Technology	Efficiency Definition	Savings (Therms/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/Therm)
Heating	Furnace	EF .76	-	-	16	1.00	-
Heating	Furnace	EF .80	0.01	\$0.03	16	2.29	\$0.25
Heating	Furnace	EF .82	0.02	\$0.09	16	1.24	\$0.47
Heating	Furnace	EF .90	0.04	\$0.08	16	3.01	\$0.19
Heating	Furnace	EF .96	0.05	\$0.11	16	2.78	\$0.21
Heating	Boiler	EF .76	-	-	20	-	-
Heating	Boiler	EF .80	0.03	\$0.00	20	1.00	\$0.00
Heating	Boiler	EF .83	0.06	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .90	0.08	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .96	0.12	\$0.00	20	> 10	\$0.00
Heating	Unit Heater	Standard	-	-	15	1.00	-
Heating	Unit Heater	Condensing	0.03	\$0.00	15	> 10	\$0.00
Water Heating	Water Heating	EF 0.77	-	-	12	1.00	-
Water Heating	Water Heating	EF 0.80	0.01	\$0.02	12	3.56	\$0.15
Water Heating	Water Heating	Tankless	0.02	\$0.04	12	2.67	\$0.20
Water Heating	Water Heating	Indirect Fired	0.04	\$0.03	12	7.05	\$0.08
Water Heating	Water Heating	EF 0.94	0.07	(\$0.01)	12	1.00	(\$0.01)
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.05	\$0.00	12	> 10	\$0.00
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.08	\$0.18	12	2.15	\$0.25
Food Preparation	Broiler	Standard	-	-	12	1.00	-
Food Preparation	Broiler	High Efficiency	0.07	\$0.05	12	6.33	\$0.09
Food Preparation	Griddle	Standard	-	-	12	1.00	-
Food Preparation	Griddle	High Efficiency	0.01	\$0.00	12	> 10	\$0.04
Food Preparation	Range	Standard	-	-	12	1.00	-
Food Preparation	Range	High Efficiency	0.04	\$0.01	12	> 10	\$0.02
Food Preparation	Steamer	Standard	-	-	12	1.00	-
Food Preparation	Steamer	Energy Star	0.20	\$0.01	12	> 10	\$0.00
Food Preparation	Other	Standard	-	-	12	1.00	-
Food Preparation	Other	Energy Star	0.01	\$0.00	12	> 10	\$0.00
Miscellaneous	Pool Heater	EF .78	-	-	5	-	-
Miscellaneous	Pool Heater	EF .82	-	-	5	1.00	-
Miscellaneous	Pool Heater	EF .90	-	-	5	-	-
Miscellaneous	Pool Heater	EF .95	-	-	5	-	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-9 Energy Efficiency Equipment Data, Electric—Restaurant, New Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incre- mental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Air-Cooled Chiller	1.5 kw/ton, COP 2.3	-	-	20	1.00	-
Cooling	Air-Cooled Chiller	1.3 kw/ton, COP 2.7	0.79	\$0.55	20	1.71	\$0.06
Cooling	Air-Cooled Chiller	1.26 kw/ton, COP 2.8	0.95	\$0.63	20	1.82	\$0.06
Cooling	Air-Cooled Chiller	1.0 kw/ton, COP 3.5	1.97	\$0.70	20	3.39	\$0.03
Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	2.09	\$0.77	20	3.26	\$0.03
Cooling	Water-Cooled Chiller	0.75 kw/ton, COP 4.7	-	-	20	1.00	-
Cooling	Water-Cooled Chiller	0.60 kw/ton, COP 5.9	1.26	\$0.34	20	4.52	\$0.02
Cooling	Water-Cooled Chiller	0.58 kw/ton, COP 6.1	1.43	\$0.36	20	4.78	\$0.02
Cooling	Water-Cooled Chiller	0.55 kw/Ton, COP 6.4	1.69	\$0.43	20	4.69	\$0.02
Cooling	Water-Cooled Chiller	0.51 kw/ton, COP 6.9	2.02	\$0.67	20	3.61	\$0.03
Cooling	Water-Cooled Chiller	0.50 kw/Ton, COP 7.0	2.11	\$0.74	20	3.40	\$0.03
Cooling	Water-Cooled Chiller	0.48 kw/ton, COP 7.3	2.28	\$0.82	20	3.35	\$0.03
Cooling	Roof top AC	EER 9.2	-	-	15	-	-
Cooling	Roof top AC	EER 10.1	0.40	\$0.02	15	-	\$0.01
Cooling	Roof top AC	EER 11.2	0.80	\$0.03	15	1.00	\$0.00
Cooling	Roof top AC	EER 12.0	1.05	\$0.08	15	4.02	\$0.01
Cooling	Roof top AC	Ductless Minisplit	1.31	\$0.27	15	1.93	\$0.02
Cooling	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Cooling	Air Source Heat Pump	EER 10.3, COP 3.2	0.56	\$0.04	15	-	\$0.01
Cooling	Air Source Heat Pump	EER 11.0, COP 3.3	0.89	\$0.00	15	1.00	\$0.00
Cooling	Air Source Heat Pump	EER 11.7, COP 3.4	1.19	\$0.13	15	2.26	\$0.01
Cooling	Air Source Heat Pump	EER 12.0, COP 3.4	1.30	\$0.19	15	2.09	\$0.02
Cooling	Air Source Heat Pump	Ductless Minisplit	1.64	\$0.33	15	2.27	\$0.02
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	0.33	\$0.08	15	4.22	\$0.02
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	0.60	\$0.16	15	3.75	\$0.03
Cooling	Geothermal Heat Pump	EER 30, COP 5.0	1.46	\$0.21	15	6.73	\$0.01
Cooling	PTAC	EER 9.8	-	-	15	1.00	-
Cooling	PTAC	EER 10.2	0.16	\$0.00	15	> 10	\$0.00
Cooling	PTAC	EER 10.8	0.37	\$0.02	15	> 10	\$0.00
Cooling	PTAC	EER 11	0.43	\$0.02	15	> 10	\$0.00
Cooling	PTAC	EER 11.5	0.57	\$0.02	15	> 10	\$0.00
Cooling	PTHP	EER 9.8	-	-	15	1.00	-
Cooling	PTHP	EER 10.2	0.16	\$0.00	15	> 10	\$0.00
Cooling	PTHP	EER 10.8	0.37	\$0.02	15	> 10	\$0.00
Cooling	PTHP	EER 11	0.43	\$0.02	15	> 10	\$0.00
Cooling	PTHP	EER 11.5	0.57	\$0.02	15	> 10	\$0.00
Cooling	Evaporative AC	Direct	-	-	15	1.00	-
Cooling	Evaporative AC	Indirect	0.51	-	15	-	-
Cooling	Evaporative AC	Direct/Indirect	1.30	-	15	-	-
Heating	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Heating	Air Source Heat Pump	EER 10.3, COP 3.2	0.06	\$0.02	15	-	\$0.04
Heating	Air Source Heat Pump	EER 11.0, COP 3.3	0.11	\$0.00	15	1.00	\$0.00
Heating	Air Source Heat Pump	EER 11.7, COP 3.4	0.16	\$0.07	15	0.37	\$0.05
Heating	Air Source Heat Pump	EER 12.0, COP 3.4	0.16	\$0.11	15	0.25	\$0.07
Heating	Air Source Heat Pump	Ductless Minisplit	0.20	\$0.18	15	0.28	\$0.09
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	0.14	\$0.06	15	1.32	\$0.04
Heating	Geothermal Heat Pump	EER 18, COP 3.8	0.33	\$0.12	15	1.48	\$0.04
Heating	Geothermal Heat Pump	EER 30, COP 5.0	0.85	\$0.16	15	2.80	\$0.02

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Heating	Electric Room Heat	Standard	-	-	20	1.00	-
Heating	Electric Furnace	Standard	-	-	20	1.00	-
Heating	PTAC	EER 9.8	-	-	15	1.00	-
Heating	PTAC	EER 10.2	0.00	\$0.00	15	0.31	\$0.17
Heating	PTAC	EER 10.8	0.00	\$0.01	15	0.10	\$0.53
Heating	PTAC	EER 11	0.00	\$0.01	15	0.09	\$0.57
Heating	PTAC	EER 11.5	0.00	\$0.01	15	0.08	\$0.67
Heating	PTHP	EER 9.8	-	-	15	1.00	-
Heating	PTHP	EER 10.2	0.08	\$0.00	15	> 10	\$0.00
Heating	PTHP	EER 10.8	0.20	\$0.01	15	> 10	\$0.00
Heating	PTHP	EER 11	0.23	\$0.01	15	> 10	\$0.00
Heating	PTHP	EER 11.5	0.31	\$0.01	15	> 10	\$0.00
Ventilation	Ventilation	Constant Volume	-	-	10	1.00	-
Ventilation	Ventilation	Variable Air Volume	2.20	(\$0.89)	10	1.00	(\$0.05)
Water Heating	Water Heating	EF .97	-	-	15	1.00	-
Water Heating	Water Heating	EF .98	0.07	\$0.01	15	4.55	\$0.01
Water Heating	Water Heating	EF 2.0	3.38	\$0.02	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.3	3.80	\$0.02	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.4	3.91	\$0.03	15	> 10	\$0.00
Interior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Interior Lighting	Screw-in	90W Halogen PAR-38	1.48	\$0.05	3	2.07	\$0.01
Interior Lighting	Screw-in	70W HIR PAR-38	2.27	\$0.06	3	2.79	\$0.01
Interior Lighting	Screw-in	CFL	4.26	\$0.02	2.2	> 10	\$0.00
Interior Lighting	Screw-in	LED (2010)	4.61	\$0.39	20	6.07	\$0.01
Interior Lighting	Screw-in	LED (2020)	5.32	\$0.11	20	-	\$0.00
Interior Lighting	High-Bay Fixtures	Metal Halides	-	-	3	1.00	-
Interior Lighting	High-Bay Fixtures	LED (2010)	0.66	\$0.26	15	0.22	\$0.04
Interior Lighting	High-Bay Fixtures	T8	0.67	(\$0.02)	10	1.00	(\$0.00)
Interior Lighting	High-Bay Fixtures	High Pressure Sodium	0.71	\$0.01	6	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	Light Emitting Plasma	0.83	\$0.02	15	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	T5	0.85	\$0.02	10	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	LED (2020)	1.27	\$0.06	15	-	\$0.00
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Interior Lighting	Linear Fluorescent	LED (2010)	0.78	\$1.78	15	1.00	\$0.23
Interior Lighting	Linear Fluorescent	T8	0.81	(\$0.00)	10	1.00	(\$0.00)
Interior Lighting	Linear Fluorescent	Super T8	1.13	\$0.26	10	1.00	\$0.03
Interior Lighting	Linear Fluorescent	T5	1.31	\$0.20	10	1.00	\$0.02
Interior Lighting	Linear Fluorescent	LED (2020)	2.44	\$0.49	15	-	\$0.02
Exterior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Exterior Lighting	Screw-in	90W Halogen PAR-38	0.13	\$0.00	3	2.20	\$0.01
Exterior Lighting	Screw-in	70W HIR PAR-38	0.20	\$0.01	3	2.81	\$0.01
Exterior Lighting	Screw-in	CFL	0.37	\$0.00	6	> 10	\$0.00
Exterior Lighting	Screw-in	LED (2010)	0.41	\$0.09	20	2.47	\$0.02
Exterior Lighting	Screw-in	LED (2020)	0.47	\$0.02	20	-	\$0.00
Exterior Lighting	HID	Metal Halides	-	-	3	1.00	-
Exterior Lighting	HID	LED (2010)	1.09	\$1.17	15	0.24	\$0.11
Exterior Lighting	HID	T8	1.12	(\$0.03)	10	1.00	(\$0.00)
Exterior Lighting	HID	High Pressure Sodium	1.19	\$0.01	6	1.00	\$0.00
Exterior Lighting	HID	Light Emitting Plasma	1.39	\$0.03	15	1.00	\$0.00
Exterior Lighting	HID	T5	1.42	\$0.03	10	1.00	\$0.00
Exterior Lighting	HID	LED (2020)	2.09	\$0.30	15	-	\$0.01

Commercial Energy Efficiency Equipment and Measure Data

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incre- mental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Exterior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Exterior Lighting	Linear Fluorescent	LED (2010)	0.00	\$0.00	15	1.00	\$0.23
Exterior Lighting	Linear Fluorescent	T8	0.00	(\$0.00)	10	1.00	(\$0.00)
Exterior Lighting	Linear Fluorescent	Super T8	0.00	\$0.00	10	1.00	\$0.03
Exterior Lighting	Linear Fluorescent	T5	0.00	\$0.00	10	1.00	\$0.02
Exterior Lighting	Linear Fluorescent	LED (2020)	0.00	\$0.00	15	-	\$0.02
Refrigeration	Walk-in Refrigerator	14600 kWh/yr	-	-	12	1.00	-
Refrigeration	Walk-in Refrigerator	10800 kWh/yr	1.19	\$0.03	12	> 10	\$0.00
Refrigeration	Walk-in Refrigerator	10000 kWh/yr	1.32	\$0.10	12	6.53	\$0.01
Refrigeration	Walk-in Refrigerator	9000 kWh/yr	1.50	\$0.17	12	4.12	\$0.01
Refrigeration	Reach-in Refrigerator	3800 kWh/yr	-	-	12	1.00	-
Refrigeration	Reach-in Refrigerator	3100 kWh/yr	0.29	\$0.01	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	2500 kWh/yr	0.39	\$0.02	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	2400 kWh/yr	0.41	\$0.02	12	> 10	\$0.01
Refrigeration	Reach-in Refrigerator	1500 kWh/yr	0.55	\$0.02	12	> 10	\$0.00
Refrigeration	Glass Door Display	14480 kWh/yr	-	-	12	-	-
Refrigeration	Glass Door Display	11700 kWh/yr	0.51	\$0.11	12	-	\$0.03
Refrigeration	Glass Door Display	8400 kWh/yr	1.27	-	12	1.00	-
Refrigeration	Glass Door Display	6800 kWh/yr	1.60	\$0.11	12	1.42	\$0.01
Refrigeration	Open Display Case	6500 kWh/yr	-	-	12	-	-
Refrigeration	Open Display Case	5350 kWh/yr	0.25	-	12	1.00	-
Refrigeration	Open Display Case	5300 kWh/yr	0.26	\$0.17	12	-	\$0.08
Refrigeration	Open Display Case	4330 kWh/yr	0.46	\$0.17	12	0.58	\$0.04
Refrigeration	Icemaker	7.0 kWh/100 lbs	-	-	10	1.00	-
Refrigeration	Icemaker	6.3 kWh/100 lbs	0.08	\$0.14	10	0.23	\$0.23
Refrigeration	Icemaker	6.0 kWh/100 lbs	0.14	\$0.23	10	0.23	\$0.23
Refrigeration	Icemaker	5.5 kWh/100 lbs	0.20	\$0.34	10	0.23	\$0.23
Refrigeration	Vending Machine	3400 kWh/year	-	-	12	1.00	-
Refrigeration	Vending Machine	3000 kWh/year	0.08	\$0.03	12	1.28	\$0.04
Refrigeration	Vending Machine	2400 kWh/year	0.27	\$0.10	12	1.28	\$0.04
Refrigeration	Vending Machine	1700 kWh/year	0.35	\$0.06	12	2.78	\$0.02
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.97	\$0.00	12	> 10	\$0.00
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.61	\$0.02	12	> 10	\$0.00
Food Preparation	Dishwasher	Standard	-	-	12	1.00	-
Food Preparation	Dishwasher	Energy Star	2.53	\$0.05	12	> 10	\$0.00
Food Preparation	Hot Food Container	Standard	-	-	12	1.00	-
Food Preparation	Hot Food Container	Energy Star	1.62	\$0.07	12	> 10	\$0.01
Food Preparation	Other	Standard	-	-	12	1.00	-
Office Equipment	Desktop Computer	Standard	-	-	5	1.00	-
Office Equipment	Desktop Computer	Energy Star	0.11	\$0.00	5	> 10	\$0.00
Office Equipment	Laptop	Standard	-	-	4	1.00	-
Office Equipment	Laptop	Energy Star	0.01	\$0.00	4	> 10	\$0.00
Office Equipment	Server	Standard	-	-	3	1.00	-
Office Equipment	Server	Energy Star	0.10	\$0.00	3	> 10	\$0.00
Office Equipment	Monitor	Standard	-	-	4	1.00	-
Office Equipment	Monitor	Energy Star	0.01	\$0.00	4	> 10	\$0.00
Office Equipment	Printer/Copier/Fax	Standard	-	-	6	1.00	-
Office Equipment	Printer/Copier/Fax	Energy Star	0.03	\$0.00	6	> 10	\$0.00
Office Equipment	POS Terminal	Standard	-	-	4	1.00	-

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incre- mental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Office Equipment	POS Terminal	Energy Star	0.06	\$0.03	4	0.31	\$0.13
Miscellaneous	Non-HVAC Motors	Standard (EPAAct)	-	-	15	1.00	-
Miscellaneous	Non-HVAC Motors	Standard (EPAAct 2015)	0.00	-	15	-	-
Miscellaneous	Non-HVAC Motors	High Efficiency	0.00	\$0.00	15	> 10	\$0.00
Miscellaneous	Non-HVAC Motors	High Efficiency (2015)	0.00	\$0.00	15	-	\$0.00
Miscellaneous	Non-HVAC Motors	Premium (NEMA)	0.01	\$0.00	15	> 10	\$0.00
Miscellaneous	Non-HVAC Motors	Premium (NEMA 2015)	0.01	\$0.00	15	-	\$0.00
Miscellaneous	Pool Pump	Standard	-	-	15	1.00	-
Miscellaneous	Pool Pump	High Efficiency	-	-	15	-	-
Miscellaneous	Pool Pump	High Efficiency, Multi-Speed	-	-	15	-	-
Miscellaneous	Pool Heater	Standard	-	-	15	1.00	-
Miscellaneous	Pool Heater	Heat Pump	-	-	15	-	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-10 Energy Efficiency Equipment Data, Natural Gas-Restaurant, New Vintage

End Use	Technology	Efficiency Definition	Savings (Therms/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/Therm)
Heating	Furnace	EF .76	-	-	16	1.00	-
Heating	Furnace	EF .80	0.01	\$0.03	16	2.36	\$0.25
Heating	Furnace	EF .82	0.02	\$0.08	16	1.28	\$0.46
Heating	Furnace	EF .90	0.04	\$0.07	16	3.10	\$0.19
Heating	Furnace	EF .96	0.05	\$0.10	16	2.87	\$0.20
Heating	Boiler	EF .76	-	-	20	-	-
Heating	Boiler	EF .80	0.02	\$0.00	20	1.00	\$0.00
Heating	Boiler	EF .83	0.03	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .90	0.05	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .96	0.07	\$0.00	20	> 10	\$0.00
Heating	Unit Heater	Standard	-	-	15	1.00	-
Heating	Unit Heater	Condensing	0.03	\$0.00	15	> 10	\$0.00
Water Heating	Water Heating	EF 0.77	-	-	12	1.00	-
Water Heating	Water Heating	EF 0.80	0.01	\$0.02	12	3.82	\$0.14
Water Heating	Water Heating	Tankless	0.02	\$0.03	12	2.87	\$0.19
Water Heating	Water Heating	Indirect Fired	0.04	\$0.03	12	7.51	\$0.07
Water Heating	Water Heating	EF 0.94	0.06	(\$0.01)	12	1.00	(\$0.01)
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.05	\$0.00	12	> 10	\$0.00
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.08	\$0.18	12	2.15	\$0.25
Food Preparation	Broiler	Standard	-	-	12	1.00	-
Food Preparation	Broiler	High Efficiency	0.07	\$0.05	12	6.33	\$0.09
Food Preparation	Griddle	Standard	-	-	12	1.00	-
Food Preparation	Griddle	High Efficiency	0.01	\$0.00	12	> 10	\$0.04
Food Preparation	Range	Standard	-	-	12	1.00	-
Food Preparation	Range	High Efficiency	0.04	\$0.01	12	> 10	\$0.02
Food Preparation	Steamer	Standard	-	-	12	1.00	-
Food Preparation	Steamer	Energy Star	0.20	\$0.01	12	> 10	\$0.00
Food Preparation	Other	Standard	-	-	12	1.00	-
Food Preparation	Other	Energy Star	0.01	\$0.00	12	> 10	\$0.00
Miscellaneous	Pool Heater	EF .78	-	-	5	-	-
Miscellaneous	Pool Heater	EF .82	-	-	5	1.00	-
Miscellaneous	Pool Heater	EF .90	-	-	5	-	-
Miscellaneous	Pool Heater	EF .95	-	-	5	-	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-11 Energy Efficiency Equipment Data, Electric-Retail, Existing Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Air-Cooled Chiller	1.5 kw/ton, COP 2.3	-	-	20	1.00	-
Cooling	Air-Cooled Chiller	1.3 kw/ton, COP 2.7	0.33	\$0.13	20	3.52	\$0.04
Cooling	Air-Cooled Chiller	1.26 kw/ton, COP 2.8	0.40	\$0.15	20	3.74	\$0.03
Cooling	Air-Cooled Chiller	1.0 kw/ton, COP 3.5	0.83	\$0.17	20	6.99	\$0.02
Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	0.88	\$0.18	20	6.72	\$0.02
Cooling	Water-Cooled Chiller	0.75 kw/ton, COP 4.7	-	-	20	1.00	-
Cooling	Water-Cooled Chiller	0.60 kw/ton, COP 5.9	0.48	\$0.07	20	9.25	\$0.01
Cooling	Water-Cooled Chiller	0.58 kw/ton, COP 6.1	0.55	\$0.08	20	9.79	\$0.01
Cooling	Water-Cooled Chiller	0.55 kw/Ton, COP 6.4	0.64	\$0.10	20	9.60	\$0.01
Cooling	Water-Cooled Chiller	0.51 kw/ton, COP 6.9	0.77	\$0.15	20	7.41	\$0.02
Cooling	Water-Cooled Chiller	0.50 kw/Ton, COP 7.0	0.81	\$0.16	20	6.97	\$0.02
Cooling	Water-Cooled Chiller	0.48 kw/ton, COP 7.3	0.87	\$0.18	20	6.87	\$0.02
Cooling	Roof top AC	EER 9.2	-	-	15	-	-
Cooling	Roof top AC	EER 10.1	0.35	\$0.01	15	-	\$0.00
Cooling	Roof top AC	EER 11.2	0.71	\$0.01	15	1.00	\$0.00
Cooling	Roof top AC	EER 12.0	0.93	\$0.04	15	8.68	\$0.00
Cooling	Roof top AC	Ductless Minisplit	1.16	\$0.13	15	4.17	\$0.01
Cooling	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Cooling	Air Source Heat Pump	EER 10.3, COP 3.2	0.39	\$0.01	15	-	\$0.00
Cooling	Air Source Heat Pump	EER 11.0, COP 3.3	0.62	\$0.00	15	1.00	\$0.00
Cooling	Air Source Heat Pump	EER 11.7, COP 3.4	0.82	\$0.05	15	4.87	\$0.01
Cooling	Air Source Heat Pump	EER 12.0, COP 3.4	0.90	\$0.07	15	4.52	\$0.01
Cooling	Air Source Heat Pump	Ductless Minisplit	1.13	\$0.12	15	4.91	\$0.01
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	0.22	\$0.03	15	9.11	\$0.01
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	0.39	\$0.06	15	8.10	\$0.01
Cooling	Geothermal Heat Pump	EER 30, COP 5.0	0.96	\$0.08	15	> 10	\$0.01
Cooling	PTAC	EER 9.8	-	-	15	1.00	-
Cooling	PTAC	EER 10.2	0.11	\$0.00	15	> 10	\$0.00
Cooling	PTAC	EER 10.8	0.26	\$0.01	15	> 10	\$0.00
Cooling	PTAC	EER 11	0.30	\$0.01	15	> 10	\$0.00
Cooling	PTAC	EER 11.5	0.40	\$0.01	15	> 10	\$0.00
Cooling	PTHP	EER 9.8	-	-	15	1.00	-
Cooling	PTHP	EER 10.2	0.11	\$0.00	15	> 10	\$0.00
Cooling	PTHP	EER 10.8	0.26	\$0.01	15	> 10	\$0.00
Cooling	PTHP	EER 11	0.30	\$0.01	15	> 10	\$0.00
Cooling	PTHP	EER 11.5	0.40	\$0.01	15	> 10	\$0.00
Cooling	Evaporative AC	Direct	-	-	15	1.00	-
Cooling	Evaporative AC	Indirect	0.33	-	15	-	-
Cooling	Evaporative AC	Direct/Indirect	0.84	-	15	-	-
Heating	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Heating	Air Source Heat Pump	EER 10.3, COP 3.2	0.00	\$0.08	15	-	\$2.82
Heating	Air Source Heat Pump	EER 11.0, COP 3.3	0.01	\$0.01	15	1.00	\$0.21
Heating	Air Source Heat Pump	EER 11.7, COP 3.4	0.01	\$0.31	15	0.00	\$5.12
Heating	Air Source Heat Pump	EER 12.0, COP 3.4	0.01	\$0.45	15	0.00	\$7.59
Heating	Air Source Heat Pump	Ductless Minisplit	0.01	\$0.77	15	0.00	\$12.39
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	0.13	\$0.16	15	0.42	\$0.13
Heating	Geothermal Heat Pump	EER 18, COP 3.8	0.30	\$0.32	15	0.47	\$0.11
Heating	Geothermal Heat Pump	EER 30, COP 5.0	0.76	\$0.44	15	0.90	\$0.06

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Heating	Electric Room Heat	Standard	-	-	20	1.00	-
Heating	Electric Furnace	Standard	-	-	20	1.00	-
Heating	PTAC	EER 9.8	-	-	15	1.00	-
Heating	PTAC	EER 10.2	-	\$0.00	15	-	-
Heating	PTAC	EER 10.8	-	\$0.01	15	-	-
Heating	PTAC	EER 11	-	\$0.01	15	-	-
Heating	PTAC	EER 11.5	-	\$0.02	15	-	-
Heating	PTHP	EER 9.8	-	-	15	1.00	-
Heating	PTHP	EER 10.2	0.09	\$0.00	15	> 10	\$0.00
Heating	PTHP	EER 10.8	0.21	\$0.01	15	9.98	\$0.01
Heating	PTHP	EER 11	0.25	\$0.01	15	> 10	\$0.00
Heating	PTHP	EER 11.5	0.34	\$0.01	15	> 10	\$0.00
Ventilation	Ventilation	Constant Volume	-	-	10	1.00	-
Ventilation	Ventilation	Variable Air Volume	0.64	(\$0.24)	10	1.00	(\$0.05)
Water Heating	Water Heating	EF .97	-	-	15	1.00	-
Water Heating	Water Heating	EF .98	0.01	\$0.00	15	3.03	\$0.02
Water Heating	Water Heating	EF 2.0	0.39	\$0.00	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.3	0.43	\$0.00	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.4	0.45	\$0.00	15	> 10	\$0.00
Interior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Interior Lighting	Screw-in	90W Halogen PAR-38	0.18	\$0.01	3	1.53	\$0.02
Interior Lighting	Screw-in	70W HIR PAR-38	0.28	\$0.01	3	2.06	\$0.01
Interior Lighting	Screw-in	CFL	0.52	\$0.00	2.2	9.72	\$0.00
Interior Lighting	Screw-in	LED (2010)	0.57	\$0.06	20	4.48	\$0.01
Interior Lighting	Screw-in	LED (2020)	0.65	\$0.02	20	-	\$0.00
Interior Lighting	High-Bay Fixtures	Metal Halides	-	-	3	1.00	-
Interior Lighting	High-Bay Fixtures	LED (2010)	0.11	\$0.06	15	0.17	\$0.06
Interior Lighting	High-Bay Fixtures	T8	0.11	(\$0.00)	10	1.00	(\$0.00)
Interior Lighting	High-Bay Fixtures	High Pressure Sodium	0.12	\$0.00	6	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	Light Emitting Plasma	0.14	\$0.00	15	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	T5	0.14	\$0.00	10	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	LED (2020)	0.21	\$0.01	15	-	\$0.01
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Interior Lighting	Linear Fluorescent	LED (2010)	1.24	\$3.84	15	1.00	\$0.32
Interior Lighting	Linear Fluorescent	T8	1.29	(\$0.00)	10	1.00	(\$0.00)
Interior Lighting	Linear Fluorescent	Super T8	1.79	\$0.56	10	1.00	\$0.04
Interior Lighting	Linear Fluorescent	T5	2.08	\$0.43	10	1.00	\$0.03
Interior Lighting	Linear Fluorescent	LED (2020)	3.88	\$1.06	15	-	\$0.03
Exterior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Exterior Lighting	Screw-in	90W Halogen PAR-38	0.21	\$0.01	3	1.63	\$0.02
Exterior Lighting	Screw-in	70W HIR PAR-38	0.32	\$0.01	3	2.07	\$0.01
Exterior Lighting	Screw-in	CFL	0.61	\$0.00	6	> 10	\$0.00
Exterior Lighting	Screw-in	LED (2010)	0.66	\$0.19	20	1.82	\$0.03
Exterior Lighting	Screw-in	LED (2020)	0.76	\$0.05	20	-	\$0.01
Exterior Lighting	HID	Metal Halides	-	-	3	1.00	-
Exterior Lighting	HID	LED (2010)	0.18	\$0.26	15	0.17	\$0.15
Exterior Lighting	HID	T8	0.18	(\$0.01)	10	1.00	(\$0.00)
Exterior Lighting	HID	High Pressure Sodium	0.20	\$0.00	6	1.00	\$0.00
Exterior Lighting	HID	Light Emitting Plasma	0.23	\$0.01	15	1.00	\$0.00
Exterior Lighting	HID	T5	0.23	\$0.01	10	1.00	\$0.00
Exterior Lighting	HID	LED (2020)	0.35	\$0.07	15	-	\$0.02

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Exterior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Exterior Lighting	Linear Fluorescent	LED (2010)	0.00	\$0.00	15	1.00	\$0.32
Exterior Lighting	Linear Fluorescent	T8	0.00	(\$0.00)	10	1.00	(\$0.00)
Exterior Lighting	Linear Fluorescent	Super T8	0.00	\$0.00	10	1.00	\$0.04
Exterior Lighting	Linear Fluorescent	T5	0.00	\$0.00	10	1.00	\$0.03
Exterior Lighting	Linear Fluorescent	LED (2020)	0.00	\$0.00	15	-	\$0.03
Refrigeration	Walk-in Refrigerator	14600 kWh/yr	-	-	12	1.00	-
Refrigeration	Walk-in Refrigerator	10800 kWh/yr	0.15	-	12	-	-
Refrigeration	Walk-in Refrigerator	10000 kWh/yr	0.17	-	12	-	-
Refrigeration	Walk-in Refrigerator	9000 kWh/yr	0.20	-	12	-	-
Refrigeration	Reach-in Refrigerator	3800 kWh/yr	-	-	12	1.00	-
Refrigeration	Reach-in Refrigerator	3100 kWh/yr	0.04	\$0.00	12	9.17	\$0.01
Refrigeration	Reach-in Refrigerator	2500 kWh/yr	0.05	\$0.00	12	6.37	\$0.01
Refrigeration	Reach-in Refrigerator	2400 kWh/yr	0.05	\$0.00	12	5.72	\$0.01
Refrigeration	Reach-in Refrigerator	1500 kWh/yr	0.07	\$0.01	12	6.82	\$0.01
Refrigeration	Glass Door Display	14480 kWh/yr	-	-	12	-	-
Refrigeration	Glass Door Display	11700 kWh/yr	0.07	\$0.01	12	-	\$0.01
Refrigeration	Glass Door Display	8400 kWh/yr	0.17	-	12	1.00	-
Refrigeration	Glass Door Display	6800 kWh/yr	0.21	\$0.01	12	2.63	\$0.00
Refrigeration	Open Display Case	6500 kWh/yr	-	-	12	-	-
Refrigeration	Open Display Case	5350 kWh/yr	0.03	-	12	1.00	-
Refrigeration	Open Display Case	5300 kWh/yr	0.03	\$0.01	12	-	\$0.04
Refrigeration	Open Display Case	4330 kWh/yr	0.06	\$0.01	12	1.08	\$0.02
Refrigeration	Icemaker	7.0 kWh/100 lbs	-	-	10	1.00	-
Refrigeration	Icemaker	6.3 kWh/100 lbs	0.02	\$0.02	10	0.43	\$0.12
Refrigeration	Icemaker	6.0 kWh/100 lbs	0.04	\$0.03	10	0.43	\$0.12
Refrigeration	Icemaker	5.5 kWh/100 lbs	0.05	\$0.05	10	0.43	\$0.12
Refrigeration	Vending Machine	3400 kWh/year	-	-	12	1.00	-
Refrigeration	Vending Machine	3000 kWh/year	0.02	\$0.00	12	2.36	\$0.02
Refrigeration	Vending Machine	2400 kWh/year	0.07	\$0.01	12	2.36	\$0.02
Refrigeration	Vending Machine	1700 kWh/year	0.09	\$0.01	12	5.10	\$0.01
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.10	\$0.00	12	> 10	\$0.00
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.06	\$0.00	12	> 10	\$0.00
Food Preparation	Dishwasher	Standard	-	-	12	1.00	-
Food Preparation	Dishwasher	Energy Star	0.54	\$0.00	12	> 10	\$0.00
Food Preparation	Hot Food Container	Standard	-	-	12	1.00	-
Food Preparation	Hot Food Container	Energy Star	0.34	-	12	-	-
Food Preparation	Other	Standard	-	-	12	1.00	-
Office Equipment	Desktop Computer	Standard	-	-	5	1.00	-
Office Equipment	Desktop Computer	Energy Star	0.06	\$0.00	5	> 10	\$0.00
Office Equipment	Laptop	Standard	-	-	4	1.00	-
Office Equipment	Laptop	Energy Star	0.01	\$0.00	4	> 10	\$0.00
Office Equipment	Server	Standard	-	-	3	1.00	-
Office Equipment	Server	Energy Star	0.06	\$0.00	3	> 10	\$0.00
Office Equipment	Monitor	Standard	-	-	4	1.00	-
Office Equipment	Monitor	Energy Star	0.01	\$0.00	4	> 10	\$0.00
Office Equipment	Printer/Copier/Fax	Standard	-	-	6	1.00	-
Office Equipment	Printer/Copier/Fax	Energy Star	0.01	\$0.00	6	> 10	\$0.00
Office Equipment	POS Terminal	Standard	-	-	4	1.00	-

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Office Equipment	POS Terminal	Energy Star	0.03	\$0.02	4	0.31	\$0.13
Miscellaneous	Non-HVAC Motors	Standard (EPAAct)	-	-	15	1.00	-
Miscellaneous	Non-HVAC Motors	Standard (EPAAct 2015)	0.00	-	15	-	-
Miscellaneous	Non-HVAC Motors	High Efficiency	0.00	\$0.00	15	> 10	\$0.00
Miscellaneous	Non-HVAC Motors	High Efficiency (2015)	0.01	\$0.00	15	-	\$0.00
Miscellaneous	Non-HVAC Motors	Premium (NEMA)	0.01	\$0.00	15	> 10	\$0.00
Miscellaneous	Non-HVAC Motors	Premium (NEMA 2015)	0.01	\$0.00	15	-	\$0.00
Miscellaneous	Pool Pump	Standard	-	-	15	1.00	-
Miscellaneous	Pool Pump	High Efficiency	-	-	15	-	-
Miscellaneous	Pool Pump	High Efficiency, Multi-Speed	-	-	15	-	-
Miscellaneous	Pool Heater	Standard	-	-	15	1.00	-
Miscellaneous	Pool Heater	Heat Pump	-	-	15	-	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-12 Energy Efficiency Equipment Data, Natural Gas-Retail, Existing Vintage

End Use	Technology	Efficiency Definition	Savings (Therms/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/Therm)
Heating	Furnace	EF .76	-	-	16	1.00	-
Heating	Furnace	EF .80	0.02	\$0.37	16	0.25	\$2.33
Heating	Furnace	EF .82	0.02	\$1.01	16	0.14	\$4.30
Heating	Furnace	EF .90	0.05	\$0.88	16	0.33	\$1.77
Heating	Furnace	EF .96	0.07	\$1.28	16	0.30	\$1.92
Heating	Boiler	EF .76	-	-	20	-	-
Heating	Boiler	EF .80	0.03	\$0.00	20	1.00	\$0.00
Heating	Boiler	EF .83	0.05	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .90	0.07	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .96	0.11	\$0.00	20	> 10	\$0.00
Heating	Unit Heater	Standard	-	-	15	1.00	-
Heating	Unit Heater	Condensing	0.04	\$0.01	15	> 10	\$0.02
Water Heating	Water Heating	EF 0.77	-	-	12	1.00	-
Water Heating	Water Heating	EF 0.80	0.01	\$0.01	12	3.18	\$0.17
Water Heating	Water Heating	Tankless	0.01	\$0.02	12	2.39	\$0.23
Water Heating	Water Heating	Indirect Fired	0.02	\$0.01	12	6.26	\$0.09
Water Heating	Water Heating	EF 0.94	0.03	(\$0.00)	12	1.00	(\$0.02)
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.28	\$0.00	12	> 10	\$0.00
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.47	\$0.00	12	> 10	\$0.00
Food Preparation	Broiler	Standard	-	-	12	1.00	-
Food Preparation	Broiler	High Efficiency	0.40	-	12	-	-
Food Preparation	Griddle	Standard	-	-	12	1.00	-
Food Preparation	Griddle	High Efficiency	0.07	-	12	-	-
Food Preparation	Range	Standard	-	-	12	1.00	-
Food Preparation	Range	High Efficiency	0.24	-	12	-	-
Food Preparation	Steamer	Standard	-	-	12	1.00	-
Food Preparation	Steamer	Energy Star	1.17	-	12	-	-
Food Preparation	Other	Standard	-	-	12	1.00	-
Food Preparation	Other	Energy Star	0.14	-	12	-	-
Miscellaneous	Pool Heater	EF .78	-	-	5	-	-
Miscellaneous	Pool Heater	EF .82	-	-	5	1.00	-
Miscellaneous	Pool Heater	EF .90	-	-	5	-	-
Miscellaneous	Pool Heater	EF .95	-	-	5	-	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-13 Energy Efficiency Equipment Data, Electric-Retail, New Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incre- mental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Air-Cooled Chiller	1.5 kw/ton, COP 2.3	-	-	20	1.00	-
Cooling	Air-Cooled Chiller	1.3 kw/ton, COP 2.7	0.30	\$0.18	20	2.40	\$0.05
Cooling	Air-Cooled Chiller	1.26 kw/ton, COP 2.8	0.36	\$0.20	20	2.55	\$0.05
Cooling	Air-Cooled Chiller	1.0 kw/ton, COP 3.5	0.75	\$0.22	20	4.76	\$0.03
Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	0.79	\$0.25	20	4.57	\$0.03
Cooling	Water-Cooled Chiller	0.75 kw/ton, COP 4.7	-	-	20	1.00	-
Cooling	Water-Cooled Chiller	0.60 kw/ton, COP 5.9	0.39	\$0.09	20	6.03	\$0.02
Cooling	Water-Cooled Chiller	0.58 kw/ton, COP 6.1	0.45	\$0.10	20	6.38	\$0.02
Cooling	Water-Cooled Chiller	0.55 kw/Ton, COP 6.4	0.52	\$0.12	20	6.25	\$0.02
Cooling	Water-Cooled Chiller	0.51 kw/ton, COP 6.9	0.63	\$0.18	20	4.82	\$0.03
Cooling	Water-Cooled Chiller	0.50 kw/Ton, COP 7.0	0.66	\$0.20	20	4.54	\$0.03
Cooling	Water-Cooled Chiller	0.48 kw/ton, COP 7.3	0.71	\$0.22	20	4.47	\$0.03
Cooling	Roof top AC	EER 9.2	-	-	15	-	-
Cooling	Roof top AC	EER 10.1	0.27	\$0.01	15	-	\$0.00
Cooling	Roof top AC	EER 11.2	0.54	\$0.01	15	1.00	\$0.00
Cooling	Roof top AC	EER 12.0	0.71	\$0.03	15	7.75	\$0.00
Cooling	Roof top AC	Ductless Minisplit	0.88	\$0.11	15	3.73	\$0.01
Cooling	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Cooling	Air Source Heat Pump	EER 10.3, COP 3.2	0.32	\$0.01	15	-	\$0.00
Cooling	Air Source Heat Pump	EER 11.0, COP 3.3	0.51	\$0.00	15	1.00	\$0.00
Cooling	Air Source Heat Pump	EER 11.7, COP 3.4	0.68	\$0.05	15	4.35	\$0.01
Cooling	Air Source Heat Pump	EER 12.0, COP 3.4	0.75	\$0.07	15	4.04	\$0.01
Cooling	Air Source Heat Pump	Ductless Minisplit	0.95	\$0.12	15	4.38	\$0.01
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	0.21	\$0.03	15	8.14	\$0.01
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	0.38	\$0.06	15	7.23	\$0.02
Cooling	Geothermal Heat Pump	EER 30, COP 5.0	0.93	\$0.08	15	> 10	\$0.01
Cooling	PTAC	EER 9.8	-	-	15	1.00	-
Cooling	PTAC	EER 10.2	0.10	\$0.00	15	> 10	\$0.00
Cooling	PTAC	EER 10.8	0.24	\$0.01	15	> 10	\$0.00
Cooling	PTAC	EER 11	0.28	\$0.01	15	> 10	\$0.00
Cooling	PTAC	EER 11.5	0.37	\$0.01	15	> 10	\$0.00
Cooling	PTHP	EER 9.8	-	-	15	1.00	-
Cooling	PTHP	EER 10.2	0.10	\$0.00	15	> 10	\$0.00
Cooling	PTHP	EER 10.8	0.24	\$0.01	15	> 10	\$0.00
Cooling	PTHP	EER 11	0.28	\$0.01	15	> 10	\$0.00
Cooling	PTHP	EER 11.5	0.37	\$0.01	15	> 10	\$0.00
Cooling	Evaporative AC	Direct	-	-	15	1.00	-
Cooling	Evaporative AC	Indirect	0.33	-	15	-	-
Cooling	Evaporative AC	Direct/Indirect	0.84	-	15	-	-
Heating	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Heating	Air Source Heat Pump	EER 10.3, COP 3.2	0.03	\$0.04	15	-	\$0.17
Heating	Air Source Heat Pump	EER 11.0, COP 3.3	0.05	\$0.01	15	1.00	\$0.01
Heating	Air Source Heat Pump	EER 11.7, COP 3.4	0.08	\$0.16	15	0.09	\$0.21
Heating	Air Source Heat Pump	EER 12.0, COP 3.4	0.08	\$0.24	15	0.06	\$0.31
Heating	Air Source Heat Pump	Ductless Minisplit	0.11	\$0.40	15	0.07	\$0.39
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	0.14	\$0.09	15	0.79	\$0.07
Heating	Geothermal Heat Pump	EER 18, COP 3.8	0.33	\$0.19	15	0.89	\$0.06
Heating	Geothermal Heat Pump	EER 30, COP 5.0	0.84	\$0.26	15	1.69	\$0.03

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incre- mental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Heating	Electric Room Heat	Standard	-	-	20	1.00	-
Heating	Electric Furnace	Standard	-	-	20	1.00	-
Heating	PTAC	EER 9.8	-	-	15	1.00	-
Heating	PTAC	EER 10.2	0.00	\$0.00	15	0.31	\$0.17
Heating	PTAC	EER 10.8	0.00	\$0.01	15	0.10	\$0.53
Heating	PTAC	EER 11	0.00	\$0.01	15	0.09	\$0.57
Heating	PTAC	EER 11.5	0.00	\$0.01	15	0.08	\$0.67
Heating	PTHP	EER 9.8	-	-	15	1.00	-
Heating	PTHP	EER 10.2	0.08	\$0.00	15	> 10	\$0.00
Heating	PTHP	EER 10.8	0.19	\$0.01	15	> 10	\$0.00
Heating	PTHP	EER 11	0.23	\$0.01	15	> 10	\$0.00
Heating	PTHP	EER 11.5	0.31	\$0.01	15	> 10	\$0.00
Ventilation	Ventilation	Constant Volume	-	-	10	1.00	-
Ventilation	Ventilation	Variable Air Volume	0.07	(\$0.41)	10	1.00	(\$0.74)
Water Heating	Water Heating	EF .97	-	-	15	1.00	-
Water Heating	Water Heating	EF .98	0.01	\$0.00	15	3.13	\$0.02
Water Heating	Water Heating	EF 2.0	0.37	\$0.00	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.3	0.41	\$0.00	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.4	0.43	\$0.00	15	> 10	\$0.00
Interior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Interior Lighting	Screw-in	90W Halogen PAR-38	0.18	\$0.01	3	1.53	\$0.02
Interior Lighting	Screw-in	70W HIR PAR-38	0.28	\$0.01	3	2.06	\$0.01
Interior Lighting	Screw-in	CFL	0.52	\$0.00	2.2	9.72	\$0.00
Interior Lighting	Screw-in	LED (2010)	0.57	\$0.06	20	4.48	\$0.01
Interior Lighting	Screw-in	LED (2020)	0.65	\$0.02	20	-	\$0.00
Interior Lighting	High-Bay Fixtures	Metal Halides	-	-	3	1.00	-
Interior Lighting	High-Bay Fixtures	LED (2010)	0.11	\$0.06	15	0.17	\$0.06
Interior Lighting	High-Bay Fixtures	T8	0.11	(\$0.00)	10	1.00	(\$0.00)
Interior Lighting	High-Bay Fixtures	High Pressure Sodium	0.12	\$0.00	6	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	Light Emitting Plasma	0.14	\$0.00	15	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	T5	0.14	\$0.00	10	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	LED (2020)	0.21	\$0.01	15	-	\$0.01
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Interior Lighting	Linear Fluorescent	LED (2010)	1.24	\$3.84	15	1.00	\$0.32
Interior Lighting	Linear Fluorescent	T8	1.29	(\$0.00)	10	1.00	(\$0.00)
Interior Lighting	Linear Fluorescent	Super T8	1.79	\$0.56	10	1.00	\$0.04
Interior Lighting	Linear Fluorescent	T5	2.08	\$0.43	10	1.00	\$0.03
Interior Lighting	Linear Fluorescent	LED (2020)	3.88	\$1.06	15	-	\$0.03
Exterior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Exterior Lighting	Screw-in	90W Halogen PAR-38	0.21	\$0.01	3	1.63	\$0.02
Exterior Lighting	Screw-in	70W HIR PAR-38	0.32	\$0.01	3	2.07	\$0.01
Exterior Lighting	Screw-in	CFL	0.61	\$0.00	6	> 10	\$0.00
Exterior Lighting	Screw-in	LED (2010)	0.66	\$0.19	20	1.82	\$0.03
Exterior Lighting	Screw-in	LED (2020)	0.76	\$0.05	20	-	\$0.01
Exterior Lighting	HID	Metal Halides	-	-	3	1.00	-
Exterior Lighting	HID	LED (2010)	0.18	\$0.26	15	0.17	\$0.15
Exterior Lighting	HID	T8	0.18	(\$0.01)	10	1.00	(\$0.00)
Exterior Lighting	HID	High Pressure Sodium	0.20	\$0.00	6	1.00	\$0.00
Exterior Lighting	HID	Light Emitting Plasma	0.23	\$0.01	15	1.00	\$0.00
Exterior Lighting	HID	T5	0.23	\$0.01	10	1.00	\$0.00
Exterior Lighting	HID	LED (2020)	0.35	\$0.07	15	-	\$0.02

Commercial Energy Efficiency Equipment and Measure Data

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Exterior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Exterior Lighting	Linear Fluorescent	LED (2010)	0.00	\$0.00	15	1.00	\$0.32
Exterior Lighting	Linear Fluorescent	T8	0.00	(\$0.00)	10	1.00	(\$0.00)
Exterior Lighting	Linear Fluorescent	Super T8	0.00	\$0.00	10	1.00	\$0.04
Exterior Lighting	Linear Fluorescent	T5	0.00	\$0.00	10	1.00	\$0.03
Exterior Lighting	Linear Fluorescent	LED (2020)	0.00	\$0.00	15	-	\$0.03
Refrigeration	Walk-in Refrigerator	14600 kWh/yr	-	-	12	1.00	-
Refrigeration	Walk-in Refrigerator	10800 kWh/yr	0.15	-	12	-	-
Refrigeration	Walk-in Refrigerator	10000 kWh/yr	0.17	-	12	-	-
Refrigeration	Walk-in Refrigerator	9000 kWh/yr	0.20	-	12	-	-
Refrigeration	Reach-in Refrigerator	3800 kWh/yr	-	-	12	1.00	-
Refrigeration	Reach-in Refrigerator	3100 kWh/yr	0.04	\$0.00	12	9.17	\$0.01
Refrigeration	Reach-in Refrigerator	2500 kWh/yr	0.05	\$0.00	12	6.37	\$0.01
Refrigeration	Reach-in Refrigerator	2400 kWh/yr	0.05	\$0.00	12	5.72	\$0.01
Refrigeration	Reach-in Refrigerator	1500 kWh/yr	0.07	\$0.01	12	6.82	\$0.01
Refrigeration	Glass Door Display	14480 kWh/yr	-	-	12	-	-
Refrigeration	Glass Door Display	11700 kWh/yr	0.07	\$0.01	12	-	\$0.01
Refrigeration	Glass Door Display	8400 kWh/yr	0.17	-	12	1.00	-
Refrigeration	Glass Door Display	6800 kWh/yr	0.21	\$0.01	12	2.63	\$0.00
Refrigeration	Open Display Case	6500 kWh/yr	-	-	12	-	-
Refrigeration	Open Display Case	5350 kWh/yr	0.03	-	12	1.00	-
Refrigeration	Open Display Case	5300 kWh/yr	0.03	\$0.01	12	-	\$0.04
Refrigeration	Open Display Case	4330 kWh/yr	0.06	\$0.01	12	1.08	\$0.02
Refrigeration	Icemaker	7.0 kWh/100 lbs	-	-	10	1.00	-
Refrigeration	Icemaker	6.3 kWh/100 lbs	0.02	\$0.02	10	0.43	\$0.12
Refrigeration	Icemaker	6.0 kWh/100 lbs	0.04	\$0.03	10	0.43	\$0.12
Refrigeration	Icemaker	5.5 kWh/100 lbs	0.05	\$0.05	10	0.43	\$0.12
Refrigeration	Vending Machine	3400 kWh/year	-	-	12	1.00	-
Refrigeration	Vending Machine	3000 kWh/year	0.02	\$0.00	12	2.20	\$0.03
Refrigeration	Vending Machine	2400 kWh/year	0.07	\$0.01	12	2.20	\$0.03
Refrigeration	Vending Machine	1700 kWh/year	0.09	\$0.01	12	4.77	\$0.01
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.10	\$0.00	12	> 10	\$0.00
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.06	\$0.00	12	> 10	\$0.00
Food Preparation	Dishwasher	Standard	-	-	12	1.00	-
Food Preparation	Dishwasher	Energy Star	0.54	\$0.00	12	> 10	\$0.00
Food Preparation	Hot Food Container	Standard	-	-	12	1.00	-
Food Preparation	Hot Food Container	Energy Star	0.34	-	12	-	-
Food Preparation	Other	Standard	-	-	12	1.00	-
Office Equipment	Desktop Computer	Standard	-	-	5	1.00	-
Office Equipment	Desktop Computer	Energy Star	0.06	\$0.00	5	> 10	\$0.00
Office Equipment	Laptop	Standard	-	-	4	1.00	-
Office Equipment	Laptop	Energy Star	0.01	\$0.00	4	> 10	\$0.00
Office Equipment	Server	Standard	-	-	3	1.00	-
Office Equipment	Server	Energy Star	0.06	\$0.00	3	> 10	\$0.00
Office Equipment	Monitor	Standard	-	-	4	1.00	-
Office Equipment	Monitor	Energy Star	0.01	\$0.00	4	> 10	\$0.00
Office Equipment	Printer/Copier/Fax	Standard	-	-	6	1.00	-
Office Equipment	Printer/Copier/Fax	Energy Star	0.01	\$0.00	6	> 10	\$0.00
Office Equipment	POS Terminal	Standard	-	-	4	1.00	-

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incre- mental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Office Equipment	POS Terminal	Energy Star	0.03	\$0.02	4	0.31	\$0.13
Miscellaneous	Non-HVAC Motors	Standard (EPAAct)	-	-	15	1.00	-
Miscellaneous	Non-HVAC Motors	Standard (EPAAct 2015)	0.00	-	15	-	-
Miscellaneous	Non-HVAC Motors	High Efficiency	0.00	\$0.00	15	> 10	\$0.00
Miscellaneous	Non-HVAC Motors	High Efficiency (2015)	0.01	\$0.00	15	-	\$0.00
Miscellaneous	Non-HVAC Motors	Premium (NEMA)	0.01	\$0.00	15	> 10	\$0.00
Miscellaneous	Non-HVAC Motors	Premium (NEMA 2015)	0.01	\$0.00	15	-	\$0.00
Miscellaneous	Pool Pump	Standard	-	-	15	1.00	-
Miscellaneous	Pool Pump	High Efficiency	-	-	15	-	-
Miscellaneous	Pool Pump	High Efficiency, Multi-Speed	-	-	15	-	-
Miscellaneous	Pool Heater	Standard	-	-	15	1.00	-
Miscellaneous	Pool Heater	Heat Pump	-	-	15	-	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-14 Energy Efficiency Equipment Data, Natural Gas-Retail, New Vintage

End Use	Technology	Efficiency Definition	Savings (Therms/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/Therm)
Heating	Furnace	EF .76	-	-	16	1.00	-
Heating	Furnace	EF .80	0.02	\$0.17	16	0.54	\$1.08
Heating	Furnace	EF .82	0.02	\$0.47	16	0.29	\$1.99
Heating	Furnace	EF .90	0.05	\$0.41	16	0.71	\$0.82
Heating	Furnace	EF .96	0.07	\$0.59	16	0.66	\$0.89
Heating	Boiler	EF .76	-	-	20	-	-
Heating	Boiler	EF .80	0.02	\$0.00	20	1.00	\$0.00
Heating	Boiler	EF .83	0.04	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .90	0.06	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .96	0.08	\$0.00	20	> 10	\$0.00
Heating	Unit Heater	Standard	-	-	15	1.00	-
Heating	Unit Heater	Condensing	0.04	\$0.01	15	> 10	\$0.02
Water Heating	Water Heating	EF 0.77	-	-	12	1.00	-
Water Heating	Water Heating	EF 0.80	0.01	\$0.01	12	3.29	\$0.16
Water Heating	Water Heating	Tankless	0.01	\$0.02	12	2.47	\$0.22
Water Heating	Water Heating	Indirect Fired	0.02	\$0.01	12	6.44	\$0.08
Water Heating	Water Heating	EF 0.94	0.02	(\$0.00)	12	1.00	(\$0.02)
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.28	\$0.00	12	> 10	\$0.00
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.47	\$0.00	12	> 10	\$0.00
Food Preparation	Broiler	Standard	-	-	12	1.00	-
Food Preparation	Broiler	High Efficiency	0.40	-	12	-	-
Food Preparation	Griddle	Standard	-	-	12	1.00	-
Food Preparation	Griddle	High Efficiency	0.07	-	12	-	-
Food Preparation	Range	Standard	-	-	12	1.00	-
Food Preparation	Range	High Efficiency	0.24	-	12	-	-
Food Preparation	Steamer	Standard	-	-	12	1.00	-
Food Preparation	Steamer	Energy Star	1.17	-	12	-	-
Food Preparation	Other	Standard	-	-	12	1.00	-
Food Preparation	Other	Energy Star	0.14	-	12	-	-
Miscellaneous	Pool Heater	EF .78	-	-	5	-	-
Miscellaneous	Pool Heater	EF .82	-	-	5	1.00	-
Miscellaneous	Pool Heater	EF .90	-	-	5	-	-
Miscellaneous	Pool Heater	EF .95	-	-	5	-	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-15 Energy Efficiency Equipment Data, Electric-Grocery, Existing Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Air-Cooled Chiller	1.5 kw/ton, COP 2.3	-	-	20	1.00	-
Cooling	Air-Cooled Chiller	1.3 kw/ton, COP 2.7	0.68	\$0.27	20	7.43	\$0.03
Cooling	Air-Cooled Chiller	1.26 kw/ton, COP 2.8	0.82	\$0.30	20	7.89	\$0.03
Cooling	Air-Cooled Chiller	1.0 kw/ton, COP 3.5	1.71	\$0.34	20	> 10	\$0.02
Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	1.81	\$0.37	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.75 kw/ton, COP 4.7	-	-	20	1.00	-
Cooling	Water-Cooled Chiller	0.60 kw/ton, COP 5.9	1.02	\$0.15	20	> 10	\$0.01
Cooling	Water-Cooled Chiller	0.58 kw/ton, COP 6.1	1.16	\$0.16	20	> 10	\$0.01
Cooling	Water-Cooled Chiller	0.55 kw/Ton, COP 6.4	1.36	\$0.20	20	> 10	\$0.01
Cooling	Water-Cooled Chiller	0.51 kw/ton, COP 6.9	1.63	\$0.31	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.50 kw/Ton, COP 7.0	1.70	\$0.34	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.48 kw/ton, COP 7.3	1.84	\$0.37	20	> 10	\$0.02
Cooling	Roof top AC	EER 9.2	-	-	15	-	-
Cooling	Roof top AC	EER 10.1	0.75	\$0.17	15	-	\$0.02
Cooling	Roof top AC	EER 11.2	1.50	\$0.20	15	1.00	\$0.01
Cooling	Roof top AC	EER 12.0	1.96	\$0.63	15	2.36	\$0.03
Cooling	Roof top AC	Ductless Minisplit	2.46	\$2.08	15	1.13	\$0.09
Cooling	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Cooling	Air Source Heat Pump	EER 10.3, COP 3.2	0.82	\$0.21	15	-	\$0.03
Cooling	Air Source Heat Pump	EER 11.0, COP 3.3	1.30	\$0.03	15	1.00	\$0.00
Cooling	Air Source Heat Pump	EER 11.7, COP 3.4	1.72	\$0.78	15	1.32	\$0.05
Cooling	Air Source Heat Pump	EER 12.0, COP 3.4	1.89	\$1.16	15	1.23	\$0.06
Cooling	Air Source Heat Pump	Ductless Minisplit	2.39	\$1.96	15	1.34	\$0.08
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	0.45	\$0.43	15	2.47	\$0.10
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	0.82	\$0.89	15	2.19	\$0.11
Cooling	Geothermal Heat Pump	EER 30, COP 5.0	2.02	\$1.21	15	3.94	\$0.06
Cooling	PTAC	EER 9.8	-	-	15	1.00	-
Cooling	PTAC	EER 10.2	0.24	\$0.00	15	> 10	\$0.00
Cooling	PTAC	EER 10.8	0.56	\$0.02	15	> 10	\$0.00
Cooling	PTAC	EER 11	0.64	\$0.03	15	> 10	\$0.00
Cooling	PTAC	EER 11.5	0.85	\$0.03	15	> 10	\$0.00
Cooling	PTHP	EER 9.8	-	-	15	1.00	-
Cooling	PTHP	EER 10.2	0.24	\$0.00	15	> 10	\$0.00
Cooling	PTHP	EER 10.8	0.56	\$0.02	15	> 10	\$0.00
Cooling	PTHP	EER 11	0.64	\$0.03	15	> 10	\$0.00
Cooling	PTHP	EER 11.5	0.85	\$0.03	15	> 10	\$0.00
Cooling	Evaporative AC	Direct	-	-	15	1.00	-
Cooling	Evaporative AC	Indirect	0.70	-	15	-	-
Cooling	Evaporative AC	Direct/Indirect	1.78	-	15	-	-
Heating	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Heating	Air Source Heat Pump	EER 10.3, COP 3.2	0.02	\$0.10	15	-	\$0.41
Heating	Air Source Heat Pump	EER 11.0, COP 3.3	0.04	\$0.01	15	1.00	\$0.03
Heating	Air Source Heat Pump	EER 11.7, COP 3.4	0.06	\$0.35	15	0.03	\$0.59
Heating	Air Source Heat Pump	EER 12.0, COP 3.4	0.06	\$0.52	15	0.02	\$0.87
Heating	Air Source Heat Pump	Ductless Minisplit	0.08	\$0.88	15	0.02	\$1.20
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	0.21	\$0.18	15	0.59	\$0.09
Heating	Geothermal Heat Pump	EER 18, COP 3.8	0.48	\$0.38	15	0.67	\$0.08
Heating	Geothermal Heat Pump	EER 30, COP 5.0	1.25	\$0.51	15	1.26	\$0.04

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incre- mental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Heating	Electric Room Heat	Standard	-	-	20	1.00	-
Heating	Electric Furnace	Standard	-	-	20	1.00	-
Heating	PTAC	EER 9.8	-	-	15	1.00	-
Heating	PTAC	EER 10.2	-	\$0.00	15	-	-
Heating	PTAC	EER 10.8	-	\$0.02	15	-	-
Heating	PTAC	EER 11	-	\$0.02	15	-	-
Heating	PTAC	EER 11.5	-	\$0.02	15	-	-
Heating	PTHP	EER 9.8	-	-	15	1.00	-
Heating	PTHP	EER 10.2	0.11	\$0.00	15	> 10	\$0.00
Heating	PTHP	EER 10.8	0.25	\$0.01	15	9.98	\$0.01
Heating	PTHP	EER 11	0.29	\$0.01	15	> 10	\$0.00
Heating	PTHP	EER 11.5	0.40	\$0.02	15	> 10	\$0.00
Ventilation	Ventilation	Constant Volume	-	-	10	1.00	-
Ventilation	Ventilation	Variable Air Volume	2.17	(\$0.29)	10	1.00	(\$0.02)
Water Heating	Water Heating	EF .97	-	-	15	1.00	-
Water Heating	Water Heating	EF .98	0.02	\$0.00	15	3.07	\$0.02
Water Heating	Water Heating	EF 2.0	1.25	\$0.01	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.3	1.40	\$0.01	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.4	1.45	\$0.02	15	> 10	\$0.00
Interior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Interior Lighting	Screw-in	90W Halogen PAR-38	0.40	\$0.01	3	2.21	\$0.01
Interior Lighting	Screw-in	70W HIR PAR-38	0.61	\$0.02	3	3.08	\$0.01
Interior Lighting	Screw-in	CFL	1.14	\$0.01	2	> 10	\$0.00
Interior Lighting	Screw-in	LED (2010)	1.24	\$0.09	20	6.54	\$0.01
Interior Lighting	Screw-in	LED (2020)	1.43	\$0.03	20	-	\$0.00
Interior Lighting	High-Bay Fixtures	Metal Halides	-	-	3	1.00	-
Interior Lighting	High-Bay Fixtures	LED (2010)	0.08	\$0.03	15	-	\$0.04
Interior Lighting	High-Bay Fixtures	T8	0.08	(\$0.00)	10	1.00	(\$0.00)
Interior Lighting	High-Bay Fixtures	High Pressure Sodium	0.08	\$0.00	6	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	Light Emitting Plasma	0.10	\$0.00	15	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	T5	0.10	\$0.00	10	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	LED (2020)	0.15	\$0.01	15	-	\$0.00
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Interior Lighting	Linear Fluorescent	LED (2010)	2.69	\$5.53	15	1.00	\$0.21
Interior Lighting	Linear Fluorescent	T8	2.80	(\$0.00)	10	1.00	(\$0.00)
Interior Lighting	Linear Fluorescent	Super T8	3.89	\$0.81	10	1.00	\$0.03
Interior Lighting	Linear Fluorescent	T5	4.51	\$0.62	10	1.00	\$0.02
Interior Lighting	Linear Fluorescent	LED (2020)	8.40	\$1.52	15	-	\$0.02
Exterior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Exterior Lighting	Screw-in	90W Halogen PAR-38	0.10	\$0.00	3	2.45	\$0.01
Exterior Lighting	Screw-in	70W HIR PAR-38	0.15	\$0.00	3	3.12	\$0.01
Exterior Lighting	Screw-in	CFL	0.29	\$0.00	6	> 10	\$0.00
Exterior Lighting	Screw-in	LED (2010)	0.31	\$0.06	20	2.74	\$0.02
Exterior Lighting	Screw-in	LED (2020)	0.36	\$0.02	20	-	\$0.00
Exterior Lighting	HID	Metal Halides	-	-	3	1.00	-
Exterior Lighting	HID	LED (2010)	0.46	\$0.44	15	0.26	\$0.10
Exterior Lighting	HID	T8	0.47	(\$0.01)	10	1.00	(\$0.00)
Exterior Lighting	HID	High Pressure Sodium	0.50	\$0.01	6	1.00	\$0.00
Exterior Lighting	HID	Light Emitting Plasma	0.59	\$0.01	15	1.00	\$0.00
Exterior Lighting	HID	T5	0.60	\$0.01	10	1.00	\$0.00
Exterior Lighting	HID	LED (2020)	0.88	\$0.11	15	-	\$0.01

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Exterior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Exterior Lighting	Linear Fluorescent	LED (2010)	0.01	\$0.02	15	1.00	\$0.21
Exterior Lighting	Linear Fluorescent	T8	0.01	(\$0.00)	10	1.00	(\$0.00)
Exterior Lighting	Linear Fluorescent	Super T8	0.02	\$0.00	10	1.00	\$0.03
Exterior Lighting	Linear Fluorescent	T5	0.02	\$0.00	10	1.00	\$0.02
Exterior Lighting	Linear Fluorescent	LED (2020)	0.04	\$0.01	15	-	\$0.02
Refrigeration	Walk-in Refrigerator	14600 kWh/yr	-	-	12	1.00	-
Refrigeration	Walk-in Refrigerator	10800 kWh/yr	2.08	\$0.04	12	> 10	\$0.00
Refrigeration	Walk-in Refrigerator	10000 kWh/yr	2.33	\$0.12	12	9.75	\$0.01
Refrigeration	Walk-in Refrigerator	9000 kWh/yr	2.63	\$0.21	12	6.16	\$0.01
Refrigeration	Reach-in Refrigerator	3800 kWh/yr	-	-	12	1.00	-
Refrigeration	Reach-in Refrigerator	3100 kWh/yr	0.15	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	2500 kWh/yr	0.20	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	2400 kWh/yr	0.20	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	1500 kWh/yr	0.28	\$0.00	12	> 10	\$0.00
Refrigeration	Glass Door Display	14480 kWh/yr	-	-	12	-	-
Refrigeration	Glass Door Display	11700 kWh/yr	2.57	\$0.57	12	-	\$0.03
Refrigeration	Glass Door Display	8400 kWh/yr	6.36	-	12	1.00	-
Refrigeration	Glass Door Display	6800 kWh/yr	8.03	\$0.57	12	1.42	\$0.01
Refrigeration	Open Display Case	6500 kWh/yr	-	-	12	-	-
Refrigeration	Open Display Case	5350 kWh/yr	1.24	-	12	1.00	-
Refrigeration	Open Display Case	5300 kWh/yr	1.29	\$0.87	12	-	\$0.08
Refrigeration	Open Display Case	4330 kWh/yr	2.28	\$0.87	12	0.58	\$0.05
Refrigeration	Icemaker	7.0 kWh/100 lbs	-	-	10	1.00	-
Refrigeration	Icemaker	6.3 kWh/100 lbs	0.02	\$0.04	10	0.23	\$0.23
Refrigeration	Icemaker	6.0 kWh/100 lbs	0.03	\$0.06	10	0.23	\$0.23
Refrigeration	Icemaker	5.5 kWh/100 lbs	0.05	\$0.09	10	0.23	\$0.23
Refrigeration	Vending Machine	3400 kWh/year	-	-	12	1.00	-
Refrigeration	Vending Machine	3000 kWh/year	0.04	\$0.02	12	1.28	\$0.04
Refrigeration	Vending Machine	2400 kWh/year	0.14	\$0.05	12	1.28	\$0.04
Refrigeration	Vending Machine	1700 kWh/year	0.18	\$0.03	12	2.76	\$0.02
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.11	\$0.00	12	> 10	\$0.00
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.07	\$0.00	12	9.36	\$0.01
Food Preparation	Dishwasher	Standard	-	-	12	1.00	-
Food Preparation	Dishwasher	Energy Star	0.56	\$0.01	12	> 10	\$0.00
Food Preparation	Hot Food Container	Standard	-	-	12	1.00	-
Food Preparation	Hot Food Container	Energy Star	0.36	\$0.06	12	3.76	\$0.02
Food Preparation	Other	Standard	-	-	12	1.00	-
Office Equipment	Desktop Computer	Standard	-	-	5	1.00	-
Office Equipment	Desktop Computer	Energy Star	0.07	\$0.00	5	> 10	\$0.00
Office Equipment	Laptop	Standard	-	-	4	1.00	-
Office Equipment	Laptop	Energy Star	0.01	\$0.00	4	> 10	\$0.00
Office Equipment	Server	Standard	-	-	3	1.00	-
Office Equipment	Server	Energy Star	0.03	\$0.00	3	> 10	\$0.00
Office Equipment	Monitor	Standard	-	-	4	1.00	-
Office Equipment	Monitor	Energy Star	0.01	\$0.00	4	> 10	\$0.00
Office Equipment	Printer/Copier/Fax	Standard	-	-	6	1.00	-
Office Equipment	Printer/Copier/Fax	Energy Star	0.01	\$0.00	6	> 10	\$0.00
Office Equipment	POS Terminal	Standard	-	-	4	1.00	-

Commercial Energy Efficiency Equipment and Measure Data

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Office Equipment	POS Terminal	Energy Star	0.05	\$0.03	4	0.26	\$0.16
Miscellaneous	Non-HVAC Motors	Standard (EPAAct)	-	-	15	1.00	-
Miscellaneous	Non-HVAC Motors	Standard (EPAAct 2015)	0.00	-	15	-	-
Miscellaneous	Non-HVAC Motors	High Efficiency	0.01	\$0.00	15	> 10	\$0.00
Miscellaneous	Non-HVAC Motors	High Efficiency (2015)	0.01	\$0.00	15	-	\$0.00
Miscellaneous	Non-HVAC Motors	Premium (NEMA)	0.01	\$0.00	15	> 10	\$0.00
Miscellaneous	Non-HVAC Motors	Premium (NEMA 2015)	0.01	\$0.00	15	-	\$0.00
Miscellaneous	Pool Pump	Standard	-	-	15	1.00	-
Miscellaneous	Pool Pump	High Efficiency	-	-	15	-	-
Miscellaneous	Pool Pump	High Efficiency, Multi-Speed	-	-	15	-	-
Miscellaneous	Pool Heater	Standard	-	-	15	1.00	-
Miscellaneous	Pool Heater	Heat Pump	-	-	15	-	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-16 Energy Efficiency Equipment Data, Natural Gas-Grocery, Existing Vintage

End Use	Technology	Efficiency Definition	Savings (Therms/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/Therm)
Heating	Furnace	EF .76	-	-	16	1.00	-
Heating	Furnace	EF .80	0.01	\$0.04	16	2.29	\$0.25
Heating	Furnace	EF .82	0.02	\$0.10	16	1.24	\$0.47
Heating	Furnace	EF .90	0.04	\$0.09	16	3.01	\$0.19
Heating	Furnace	EF .96	0.06	\$0.13	16	2.78	\$0.21
Heating	Boiler	EF .76	-	-	20	-	-
Heating	Boiler	EF .80	0.03	\$0.00	20	1.00	\$0.00
Heating	Boiler	EF .83	0.05	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .90	0.07	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .96	0.10	\$0.00	20	> 10	\$0.00
Heating	Unit Heater	Standard	-	-	15	1.00	-
Heating	Unit Heater	Condensing	0.03	-	15	-	-
Water Heating	Water Heating	EF 0.77	-	-	12	1.00	-
Water Heating	Water Heating	EF 0.80	0.00	\$0.01	12	3.22	\$0.17
Water Heating	Water Heating	Tankless	0.01	\$0.02	12	2.41	\$0.22
Water Heating	Water Heating	Indirect Fired	0.02	\$0.01	12	6.30	\$0.09
Water Heating	Water Heating	EF 0.94	0.02	(\$0.00)	12	1.00	(\$0.02)
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.01	\$0.00	12	> 10	\$0.01
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.02	\$0.01	12	6.76	\$0.08
Food Preparation	Broiler	Standard	-	-	12	1.00	-
Food Preparation	Broiler	High Efficiency	0.01	-	12	-	-
Food Preparation	Griddle	Standard	-	-	12	1.00	-
Food Preparation	Griddle	High Efficiency	0.00	\$0.00	12	> 10	\$0.01
Food Preparation	Range	Standard	-	-	12	1.00	-
Food Preparation	Range	High Efficiency	0.01	\$0.00	12	> 10	\$0.01
Food Preparation	Steamer	Standard	-	-	12	1.00	-
Food Preparation	Steamer	Energy Star	0.04	-	12	-	-
Food Preparation	Other	Standard	-	-	12	1.00	-
Food Preparation	Other	Energy Star	0.01	-	12	-	-
Miscellaneous	Pool Heater	EF .78	-	-	5	-	-
Miscellaneous	Pool Heater	EF .82	-	-	5	1.00	-
Miscellaneous	Pool Heater	EF .90	-	-	5	-	-
Miscellaneous	Pool Heater	EF .95	-	-	5	-	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-17 Energy Efficiency Equipment Data, Electric-Grocery, New Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incre- mental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Air-Cooled Chiller	1.5 kw/ton, COP 2.3	-	-	20	1.00	-
Cooling	Air-Cooled Chiller	1.3 kw/ton, COP 2.7	0.55	\$0.39	20	4.15	\$0.06
Cooling	Air-Cooled Chiller	1.26 kw/ton, COP 2.8	0.66	\$0.44	20	4.41	\$0.06
Cooling	Air-Cooled Chiller	1.0 kw/ton, COP 3.5	1.38	\$0.49	20	8.24	\$0.03
Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	1.47	\$0.54	20	7.92	\$0.03
Cooling	Water-Cooled Chiller	0.75 kw/ton, COP 4.7	-	-	20	1.00	-
Cooling	Water-Cooled Chiller	0.60 kw/ton, COP 5.9	0.82	\$0.22	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.58 kw/ton, COP 6.1	0.92	\$0.23	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.55 kw/Ton, COP 6.4	1.09	\$0.28	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.51 kw/ton, COP 6.9	1.31	\$0.43	20	8.78	\$0.03
Cooling	Water-Cooled Chiller	0.50 kw/Ton, COP 7.0	1.36	\$0.48	20	8.26	\$0.03
Cooling	Water-Cooled Chiller	0.48 kw/ton, COP 7.3	1.47	\$0.53	20	8.13	\$0.03
Cooling	Roof top AC	EER 9.2	-	-	15	-	-
Cooling	Roof top AC	EER 10.1	0.54	\$0.16	15	-	\$0.03
Cooling	Roof top AC	EER 11.2	1.09	\$0.18	15	1.00	\$0.02
Cooling	Roof top AC	EER 12.0	1.43	\$0.59	15	1.85	\$0.04
Cooling	Roof top AC	Ductless Minisplit	1.79	\$1.92	15	0.89	\$0.11
Cooling	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Cooling	Air Source Heat Pump	EER 10.3, COP 3.2	0.65	\$0.22	15	-	\$0.03
Cooling	Air Source Heat Pump	EER 11.0, COP 3.3	1.04	\$0.03	15	1.00	\$0.00
Cooling	Air Source Heat Pump	EER 11.7, COP 3.4	1.38	\$0.80	15	1.04	\$0.06
Cooling	Air Source Heat Pump	EER 12.0, COP 3.4	1.51	\$1.18	15	0.97	\$0.08
Cooling	Air Source Heat Pump	Ductless Minisplit	1.91	\$1.99	15	1.05	\$0.11
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	0.42	\$0.51	15	1.94	\$0.13
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	0.77	\$1.05	15	1.72	\$0.14
Cooling	Geothermal Heat Pump	EER 30, COP 5.0	1.87	\$1.43	15	3.09	\$0.08
Cooling	PTAC	EER 9.8	-	-	15	1.00	-
Cooling	PTAC	EER 10.2	0.22	\$0.00	15	> 10	\$0.00
Cooling	PTAC	EER 10.8	0.51	\$0.02	15	> 10	\$0.00
Cooling	PTAC	EER 11	0.59	\$0.02	15	> 10	\$0.00
Cooling	PTAC	EER 11.5	0.78	\$0.03	15	> 10	\$0.00
Cooling	PTHP	EER 9.8	-	-	15	1.00	-
Cooling	PTHP	EER 10.2	0.22	\$0.00	15	> 10	\$0.00
Cooling	PTHP	EER 10.8	0.51	\$0.02	15	> 10	\$0.00
Cooling	PTHP	EER 11	0.59	\$0.02	15	> 10	\$0.00
Cooling	PTHP	EER 11.5	0.78	\$0.03	15	> 10	\$0.00
Cooling	Evaporative AC	Direct	-	-	15	1.00	-
Cooling	Evaporative AC	Indirect	0.70	-	15	-	-
Cooling	Evaporative AC	Direct/Indirect	1.78	-	15	-	-
Heating	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Heating	Air Source Heat Pump	EER 10.3, COP 3.2	0.02	\$0.12	15	-	\$0.56
Heating	Air Source Heat Pump	EER 11.0, COP 3.3	0.04	\$0.02	15	1.00	\$0.04
Heating	Air Source Heat Pump	EER 11.7, COP 3.4	0.06	\$0.46	15	0.02	\$0.78
Heating	Air Source Heat Pump	EER 12.0, COP 3.4	0.06	\$0.68	15	0.01	\$1.15
Heating	Air Source Heat Pump	Ductless Minisplit	0.08	\$1.15	15	0.01	\$1.57
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	0.17	\$0.25	15	0.35	\$0.15
Heating	Geothermal Heat Pump	EER 18, COP 3.8	0.39	\$0.51	15	0.39	\$0.14
Heating	Geothermal Heat Pump	EER 30, COP 5.0	.00	\$0.70	15	0.74	\$0.07

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Heating	Electric Room Heat	Standard	-	-	20	1.00	-
Heating	Electric Furnace	Standard	-	-	20	1.00	-
Heating	PTAC	EER 9.8	-	-	15	1.00	-
Heating	PTAC	EER 10.2	0.00	\$0.00	15	0.31	\$0.17
Heating	PTAC	EER 10.8	0.00	\$0.01	15	0.10	\$0.53
Heating	PTAC	EER 11	0.00	\$0.01	15	0.09	\$0.57
Heating	PTAC	EER 11.5	0.00	\$0.01	15	0.08	\$0.67
Heating	PTHP	EER 9.8	-	-	15	1.00	-
Heating	PTHP	EER 10.2	0.09	\$0.00	15	> 10	\$0.00
Heating	PTHP	EER 10.8	0.22	\$0.01	15	> 10	\$0.00
Heating	PTHP	EER 11	0.26	\$0.01	15	> 10	\$0.00
Heating	PTHP	EER 11.5	0.36	\$0.01	15	> 10	\$0.00
Ventilation	Ventilation	Constant Volume	-	-	10	1.00	-
Ventilation	Ventilation	Variable Air Volume	3.88	(\$0.50)	10	1.00	(\$0.02)
Water Heating	Water Heating	EF .97	-	-	15	1.00	-
Water Heating	Water Heating	EF .98	0.02	\$0.00	15	3.07	\$0.02
Water Heating	Water Heating	EF 2.0	1.19	\$0.01	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.3	1.33	\$0.01	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.4	1.37	\$0.01	15	> 10	\$0.00
Interior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Interior Lighting	Screw-in	90W Halogen PAR-38	0.40	\$0.01	3	2.21	\$0.01
Interior Lighting	Screw-in	70W HIR PAR-38	0.61	\$0.02	3	3.08	\$0.01
Interior Lighting	Screw-in	CFL	1.14	\$0.01	2.2	> 10	\$0.00
Interior Lighting	Screw-in	LED (2010)	1.24	\$0.09	20	6.54	\$0.01
Interior Lighting	Screw-in	LED (2020)	1.43	\$0.03	20	-	\$0.00
Interior Lighting	High-Bay Fixtures	Metal Halides	-	-	3	1.00	-
Interior Lighting	High-Bay Fixtures	LED (2010)	0.08	\$0.03	15	-	\$0.04
Interior Lighting	High-Bay Fixtures	T8	0.08	(\$0.00)	10	1.00	(\$0.00)
Interior Lighting	High-Bay Fixtures	High Pressure Sodium	0.08	\$0.00	6	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	Light Emitting Plasma	0.10	\$0.00	15	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	T5	0.10	\$0.00	10	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	LED (2020)	0.15	\$0.01	15	-	\$0.00
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Interior Lighting	Linear Fluorescent	LED (2010)	2.69	\$5.53	15	1.00	\$0.21
Interior Lighting	Linear Fluorescent	T8	2.80	(\$0.00)	10	1.00	(\$0.00)
Interior Lighting	Linear Fluorescent	Super T8	3.89	\$0.81	10	1.00	\$0.03
Interior Lighting	Linear Fluorescent	T5	4.51	\$0.62	10	1.00	\$0.02
Interior Lighting	Linear Fluorescent	LED (2020)	8.40	\$1.52	15	-	\$0.02
Exterior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Exterior Lighting	Screw-in	90W Halogen PAR-38	0.10	\$0.00	3	2.45	\$0.01
Exterior Lighting	Screw-in	70W HIR PAR-38	0.15	\$0.00	3	3.12	\$0.01
Exterior Lighting	Screw-in	CFL	0.29	\$0.00	6	> 10	\$0.00
Exterior Lighting	Screw-in	LED (2010)	0.31	\$0.06	20	2.74	\$0.02
Exterior Lighting	Screw-in	LED (2020)	0.36	\$0.02	20	-	\$0.00
Exterior Lighting	HID	Metal Halides	-	-	3	1.00	-
Exterior Lighting	HID	LED (2010)	0.46	\$0.44	15	0.26	\$0.10
Exterior Lighting	HID	T8	0.47	(\$0.01)	10	1.00	(\$0.00)
Exterior Lighting	HID	High Pressure Sodium	0.50	\$0.01	6	1.00	\$0.00
Exterior Lighting	HID	Light Emitting Plasma	0.59	\$0.01	15	1.00	\$0.00
Exterior Lighting	HID	T5	0.60	\$0.01	10	1.00	\$0.00
Exterior Lighting	HID	LED (2020)	0.88	\$0.11	15	-	\$0.01

Commercial Energy Efficiency Equipment and Measure Data

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incre- mental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Exterior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Exterior Lighting	Linear Fluorescent	LED (2010)	0.01	\$0.02	15	1.00	\$0.21
Exterior Lighting	Linear Fluorescent	T8	0.01	(\$0.00)	10	1.00	(\$0.00)
Exterior Lighting	Linear Fluorescent	Super T8	0.02	\$0.00	10	1.00	\$0.03
Exterior Lighting	Linear Fluorescent	T5	0.02	\$0.00	10	1.00	\$0.02
Exterior Lighting	Linear Fluorescent	LED (2020)	0.04	\$0.01	15	-	\$0.02
Refrigeration	Walk-in Refrigerator	14600 kWh/yr	-	-	12	1.00	-
Refrigeration	Walk-in Refrigerator	10800 kWh/yr	2.08	\$0.04	12	> 10	\$0.00
Refrigeration	Walk-in Refrigerator	10000 kWh/yr	2.33	\$0.12	12	9.75	\$0.01
Refrigeration	Walk-in Refrigerator	9000 kWh/yr	2.63	\$0.21	12	6.16	\$0.01
Refrigeration	Reach-in Refrigerator	3800 kWh/yr	-	-	12	1.00	-
Refrigeration	Reach-in Refrigerator	3100 kWh/yr	0.15	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	2500 kWh/yr	0.20	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	2400 kWh/yr	0.21	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	1500 kWh/yr	0.28	\$0.00	12	> 10	\$0.00
Refrigeration	Glass Door Display	14480 kWh/yr	-	-	12	-	-
Refrigeration	Glass Door Display	11700 kWh/yr	2.57	\$0.57	12	-	\$0.03
Refrigeration	Glass Door Display	8400 kWh/yr	6.36	-	12	1.00	-
Refrigeration	Glass Door Display	6800 kWh/yr	8.03	\$0.57	12	1.42	\$0.01
Refrigeration	Open Display Case	6500 kWh/yr	-	-	12	-	-
Refrigeration	Open Display Case	5350 kWh/yr	1.24	-	12	1.00	-
Refrigeration	Open Display Case	5300 kWh/yr	1.29	\$0.87	12	-	\$0.08
Refrigeration	Open Display Case	4330 kWh/yr	2.28	\$0.87	12	0.58	\$0.05
Refrigeration	Icemaker	7.0 kWh/100 lbs	-	-	10	1.00	-
Refrigeration	Icemaker	6.3 kWh/100 lbs	0.02	\$0.04	10	0.23	\$0.23
Refrigeration	Icemaker	6.0 kWh/100 lbs	0.03	\$0.06	10	0.23	\$0.23
Refrigeration	Icemaker	5.5 kWh/100 lbs	0.05	\$0.09	10	0.23	\$0.23
Refrigeration	Vending Machine	3400 kWh/year	-	-	12	1.00	-
Refrigeration	Vending Machine	3000 kWh/year	0.04	\$0.02	12	1.28	\$0.04
Refrigeration	Vending Machine	2400 kWh/year	0.14	\$0.05	12	1.28	\$0.04
Refrigeration	Vending Machine	1700 kWh/year	0.18	\$0.03	12	2.77	\$0.02
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.11	\$0.00	12	> 10	\$0.00
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.07	\$0.00	12	9.36	\$0.01
Food Preparation	Dishwasher	Standard	-	-	12	1.00	-
Food Preparation	Dishwasher	Energy Star	0.56	\$0.01	12	> 10	\$0.00
Food Preparation	Hot Food Container	Standard	-	-	12	1.00	-
Food Preparation	Hot Food Container	Energy Star	0.36	\$0.06	12	3.76	\$0.02
Food Preparation	Other	Standard	-	-	12	1.00	-
Office Equipment	Desktop Computer	Standard	-	-	5	1.00	-
Office Equipment	Desktop Computer	Energy Star	0.07	\$0.00	5	> 10	\$0.00
Office Equipment	Laptop	Standard	-	-	4	1.00	-
Office Equipment	Laptop	Energy Star	0.01	\$0.00	4	> 10	\$0.00
Office Equipment	Server	Standard	-	-	3	1.00	-
Office Equipment	Server	Energy Star	0.03	\$0.00	3	> 10	\$0.00
Office Equipment	Monitor	Standard	-	-	4	1.00	-
Office Equipment	Monitor	Energy Star	0.01	\$0.00	4	> 10	\$0.00
Office Equipment	Printer/Copier/Fax	Standard	-	-	6	1.00	-
Office Equipment	Printer/Copier/Fax	Energy Star	0.01	\$0.00	6	> 10	\$0.00
Office Equipment	POS Terminal	Standard	-	-	4	1.00	-

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incre- mental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Office Equipment	POS Terminal	Energy Star	0.05	\$0.03	4	0.26	\$0.16
Miscellaneous	Non-HVAC Motors	Standard (EPAct)	-	-	15	1.00	-
Miscellaneous	Non-HVAC Motors	Standard (EPAct 2015)	0.00	-	15	-	-
Miscellaneous	Non-HVAC Motors	High Efficiency	0.01	\$0.00	15	> 10	\$0.00
Miscellaneous	Non-HVAC Motors	High Efficiency (2015)	0.01	\$0.00	15	-	\$0.00
Miscellaneous	Non-HVAC Motors	Premium (NEMA)	0.01	\$0.00	15	> 10	\$0.00
Miscellaneous	Non-HVAC Motors	Premium (NEMA 2015)	0.01	\$0.00	15	-	\$0.00
Miscellaneous	Pool Pump	Standard	-	-	15	1.00	-
Miscellaneous	Pool Pump	High Efficiency	-	-	15	-	-
Miscellaneous	Pool Pump	High Efficiency, Multi-Speed	-	-	15	-	-
Miscellaneous	Pool Heater	Standard	-	-	15	1.00	-
Miscellaneous	Pool Heater	Heat Pump	-	-	15	-	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-18 Energy Efficiency Equipment Data, Natural Gas-Grocery, New Vintage

End Use	Technology	Efficiency Definition	Savings (Therms/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/Therm)
Heating	Furnace	EF .76	-	-	16	1.00	-
Heating	Furnace	EF .80	0.01	\$0.03	16	2.36	\$0.25
Heating	Furnace	EF .82	0.02	\$0.09	16	1.28	\$0.46
Heating	Furnace	EF .90	0.04	\$0.08	16	3.10	\$0.19
Heating	Furnace	EF .96	0.06	\$0.12	16	2.87	\$0.20
Heating	Boiler	EF .76	-	-	20	-	-
Heating	Boiler	EF .80	0.02	\$0.00	20	1.00	\$0.00
Heating	Boiler	EF .83	0.03	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .90	0.04	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .96	0.06	\$0.00	20	> 10	\$0.00
Heating	Unit Heater	Standard	-	-	15	1.00	-
Heating	Unit Heater	Condensing	0.03	-	15	-	-
Water Heating	Water Heating	EF 0.77	-	-	12	1.00	-
Water Heating	Water Heating	EF 0.80	0.00	\$0.01	12	3.14	\$0.17
Water Heating	Water Heating	Tankless	0.01	\$0.01	12	2.36	\$0.23
Water Heating	Water Heating	Indirect Fired	0.01	\$0.01	12	6.16	\$0.09
Water Heating	Water Heating	EF 0.94	0.02	(\$0.00)	12	1.00	(\$0.02)
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.01	\$0.00	12	> 10	\$0.01
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.02	\$0.01	12	6.76	\$0.08
Food Preparation	Broiler	Standard	-	-	12	1.00	-
Food Preparation	Broiler	High Efficiency	0.01	-	12	-	-
Food Preparation	Griddle	Standard	-	-	12	1.00	-
Food Preparation	Griddle	High Efficiency	0.00	\$0.00	12	> 10	\$0.01
Food Preparation	Range	Standard	-	-	12	1.00	-
Food Preparation	Range	High Efficiency	0.01	\$0.00	12	> 10	\$0.01
Food Preparation	Steamer	Standard	-	-	12	1.00	-
Food Preparation	Steamer	Energy Star	0.04	-	12	-	-
Food Preparation	Other	Standard	-	-	12	1.00	-
Food Preparation	Other	Energy Star	0.01	-	12	-	-
Miscellaneous	Pool Heater	EF .78	-	-	5	-	-
Miscellaneous	Pool Heater	EF .82	-	-	5	1.00	-
Miscellaneous	Pool Heater	EF .90	-	-	5	-	-
Miscellaneous	Pool Heater	EF .95	-	-	5	-	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-19 Energy Efficiency Equipment Data, Electric-College, Existing Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Air-Cooled Chiller	1.5 kw/ton, COP 2.3	-	-	20	1.00	-
Cooling	Air-Cooled Chiller	1.3 kw/ton, COP 2.7	0.54	\$0.51	20	1.53	\$0.08
Cooling	Air-Cooled Chiller	1.26 kw/ton, COP 2.8	0.65	\$0.57	20	1.63	\$0.08
Cooling	Air-Cooled Chiller	1.0 kw/ton, COP 3.5	1.35	\$0.64	20	3.04	\$0.04
Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	1.43	\$0.70	20	2.92	\$0.04
Cooling	Water-Cooled Chiller	0.75 kw/ton, COP 4.7	-	-	20	1.00	-
Cooling	Water-Cooled Chiller	0.60 kw/ton, COP 5.9	0.80	\$0.28	20	4.06	\$0.03
Cooling	Water-Cooled Chiller	0.58 kw/ton, COP 6.1	0.91	\$0.30	20	4.29	\$0.03
Cooling	Water-Cooled Chiller	0.55 kw/Ton, COP 6.4	1.07	\$0.36	20	4.21	\$0.03
Cooling	Water-Cooled Chiller	0.51 kw/ton, COP 6.9	1.28	\$0.57	20	3.25	\$0.04
Cooling	Water-Cooled Chiller	0.50 kw/Ton, COP 7.0	1.33	\$0.63	20	3.06	\$0.04
Cooling	Water-Cooled Chiller	0.48 kw/ton, COP 7.3	1.44	\$0.69	20	3.01	\$0.04
Cooling	Roof top AC	EER 9.2	-	-	15	-	-
Cooling	Roof top AC	EER 10.1	0.27	\$0.03	15	-	\$0.01
Cooling	Roof top AC	EER 11.2	0.55	\$0.04	15	1.00	\$0.01
Cooling	Roof top AC	EER 12.0	0.72	\$0.12	15	2.20	\$0.02
Cooling	Roof top AC	Ductless Minisplit	0.90	\$0.40	15	1.06	\$0.05
Cooling	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Cooling	Air Source Heat Pump	EER 10.3, COP 3.2	0.25	\$0.03	15	-	\$0.01
Cooling	Air Source Heat Pump	EER 11.0, COP 3.3	0.40	\$0.00	15	1.00	\$0.00
Cooling	Air Source Heat Pump	EER 11.7, COP 3.4	0.53	\$0.13	15	1.24	\$0.02
Cooling	Air Source Heat Pump	EER 12.0, COP 3.4	0.58	\$0.19	15	1.15	\$0.03
Cooling	Air Source Heat Pump	Ductless Minisplit	0.74	\$0.32	15	1.25	\$0.04
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	0.14	\$0.07	15	2.31	\$0.05
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	0.26	\$0.15	15	2.05	\$0.06
Cooling	Geothermal Heat Pump	EER 30, COP 5.0	0.63	\$0.20	15	3.69	\$0.03
Cooling	PTAC	EER 9.8	-	-	15	1.00	-
Cooling	PTAC	EER 10.2	0.09	\$0.00	15	> 10	\$0.00
Cooling	PTAC	EER 10.8	0.20	\$0.03	15	9.22	\$0.01
Cooling	PTAC	EER 11	0.23	\$0.03	15	9.85	\$0.01
Cooling	PTAC	EER 11.5	0.31	\$0.03	15	> 10	\$0.01
Cooling	PTHP	EER 9.8	-	-	15	1.00	-
Cooling	PTHP	EER 10.2	0.09	\$0.00	15	> 10	\$0.00
Cooling	PTHP	EER 10.8	0.20	\$0.03	15	9.22	\$0.01
Cooling	PTHP	EER 11	0.23	\$0.03	15	9.85	\$0.01
Cooling	PTHP	EER 11.5	0.31	\$0.03	15	> 10	\$0.01
Cooling	Evaporative AC	Direct	-	-	15	1.00	-
Cooling	Evaporative AC	Indirect	0.25	-	15	-	-
Cooling	Evaporative AC	Direct/Indirect	0.65	-	15	-	-
Heating	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Heating	Air Source Heat Pump	EER 10.3, COP 3.2	0.15	\$0.02	15	-	\$0.01
Heating	Air Source Heat Pump	EER 11.0, COP 3.3	0.30	\$0.00	15	1.00	\$0.00
Heating	Air Source Heat Pump	EER 11.7, COP 3.4	0.43	\$0.06	15	1.22	\$0.01
Heating	Air Source Heat Pump	EER 12.0, COP 3.4	0.43	\$0.09	15	0.81	\$0.02
Heating	Air Source Heat Pump	Ductless Minisplit	0.56	\$0.15	15	0.93	\$0.03
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	0.33	\$0.04	15	3.86	\$0.01
Heating	Geothermal Heat Pump	EER 18, COP 3.8	0.76	\$0.09	15	4.33	\$0.01
Heating	Geothermal Heat Pump	EER 30, COP 5.0	1.97	\$0.12	15	8.21	\$0.01

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Heating	Electric Room Heat	Standard	-	-	20	1.00	-
Heating	Electric Furnace	Standard	-	-	20	1.00	-
Heating	PTAC	EER 9.8	-	-	15	1.00	-
Heating	PTAC	EER 10.2	-	\$0.00	15	-	-
Heating	PTAC	EER 10.8	-	\$0.02	15	-	-
Heating	PTAC	EER 11	-	\$0.02	15	-	-
Heating	PTAC	EER 11.5	-	\$0.03	15	-	-
Heating	PTHP	EER 9.8	-	-	15	1.00	-
Heating	PTHP	EER 10.2	0.24	\$0.00	15	> 10	\$0.00
Heating	PTHP	EER 10.8	0.56	\$0.02	15	> 10	\$0.00
Heating	PTHP	EER 11	0.66	\$0.02	15	> 10	\$0.00
Heating	PTHP	EER 11.5	0.89	\$0.02	15	> 10	\$0.00
Ventilation	Ventilation	Constant Volume	-	-	10	1.00	-
Ventilation	Ventilation	Variable Air Volume	1.00	(\$0.27)	10	1.00	(\$0.04)
Water Heating	Water Heating	EF .97	-	-	15	1.00	-
Water Heating	Water Heating	EF .98	0.02	\$0.00	15	2.45	\$0.03
Water Heating	Water Heating	EF 2.0	0.83	\$0.01	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.3	0.94	\$0.01	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.4	0.96	\$0.01	15	> 10	\$0.00
Interior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Interior Lighting	Screw-in	90W Halogen PAR-38	0.26	\$0.01	3	2.46	\$0.01
Interior Lighting	Screw-in	70W HIR PAR-38	0.40	\$0.01	3	3.36	\$0.01
Interior Lighting	Screw-in	CFL	0.74	\$0.00	2.2	> 10	\$0.00
Interior Lighting	Screw-in	LED (2010)	0.81	\$0.06	20	7.25	\$0.01
Interior Lighting	Screw-in	LED (2020)	0.93	\$0.02	20	-	\$0.00
Interior Lighting	High-Bay Fixtures	Metal Halides	-	-	3	1.00	-
Interior Lighting	High-Bay Fixtures	LED (2010)	0.20	\$0.07	15	0.08	\$0.03
Interior Lighting	High-Bay Fixtures	T8	0.20	(\$0.00)	10	1.00	(\$0.00)
Interior Lighting	High-Bay Fixtures	High Pressure Sodium	0.21	\$0.00	6	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	Light Emitting Plasma	0.25	\$0.00	15	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	T5	0.26	\$0.00	10	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	LED (2020)	0.38	\$0.01	15	-	\$0.00
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Interior Lighting	Linear Fluorescent	LED (2010)	1.20	\$2.28	15	1.00	\$0.19
Interior Lighting	Linear Fluorescent	T8	1.25	(\$0.00)	10	1.00	(\$0.00)
Interior Lighting	Linear Fluorescent	Super T8	1.74	\$0.33	10	1.00	\$0.03
Interior Lighting	Linear Fluorescent	T5	2.01	\$0.25	10	1.00	\$0.02
Interior Lighting	Linear Fluorescent	LED (2020)	3.76	\$0.63	15	-	\$0.02
Exterior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Exterior Lighting	Screw-in	90W Halogen PAR-38	0.14	\$0.00	3	2.66	\$0.01
Exterior Lighting	Screw-in	70W HIR PAR-38	0.21	\$0.01	3	3.39	\$0.01
Exterior Lighting	Screw-in	CFL	0.40	\$0.00	6	> 10	\$0.00
Exterior Lighting	Screw-in	LED (2010)	0.43	\$0.08	20	2.98	\$0.02
Exterior Lighting	Screw-in	LED (2020)	0.50	\$0.02	20	-	\$0.00
Exterior Lighting	HID	Metal Halides	-	-	3	1.00	-
Exterior Lighting	HID	LED (2010)	0.33	\$0.29	15	0.28	\$0.09
Exterior Lighting	HID	T8	0.34	(\$0.01)	10	1.00	(\$0.00)
Exterior Lighting	HID	High Pressure Sodium	0.36	\$0.00	6	1.00	\$0.00
Exterior Lighting	HID	Light Emitting Plasma	0.42	\$0.01	15	1.00	\$0.00
Exterior Lighting	HID	T5	0.43	\$0.01	10	1.00	\$0.00
Exterior Lighting	HID	LED (2020)	0.63	\$0.08	15	-	\$0.01

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Exterior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Exterior Lighting	Linear Fluorescent	LED (2010)	0.00	\$0.00	15	1.00	\$0.19
Exterior Lighting	Linear Fluorescent	T8	0.00	(\$0.00)	10	1.00	(\$0.00)
Exterior Lighting	Linear Fluorescent	Super T8	0.00	\$0.00	10	1.00	\$0.03
Exterior Lighting	Linear Fluorescent	T5	0.00	\$0.00	10	1.00	\$0.02
Exterior Lighting	Linear Fluorescent	LED (2020)	0.00	\$0.00	15	-	\$0.02
Refrigeration	Walk-in Refrigerator	14600 kWh/yr	-	-	12	1.00	-
Refrigeration	Walk-in Refrigerator	10800 kWh/yr	0.06	\$0.00	12	> 10	\$0.00
Refrigeration	Walk-in Refrigerator	10000 kWh/yr	0.07	\$0.00	12	> 10	\$0.00
Refrigeration	Walk-in Refrigerator	9000 kWh/yr	0.07	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	3800 kWh/yr	-	-	12	1.00	-
Refrigeration	Reach-in Refrigerator	3100 kWh/yr	0.03	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	2500 kWh/yr	0.04	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	2400 kWh/yr	0.04	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	1500 kWh/yr	0.05	\$0.00	12	> 10	\$0.00
Refrigeration	Glass Door Display	14480 kWh/yr	-	-	12	-	-
Refrigeration	Glass Door Display	11700 kWh/yr	0.03	\$0.00	12	-	\$0.01
Refrigeration	Glass Door Display	8400 kWh/yr	0.06	-	12	1.00	-
Refrigeration	Glass Door Display	6800 kWh/yr	0.08	\$0.00	12	5.25	\$0.00
Refrigeration	Open Display Case	6500 kWh/yr	-	-	12	-	-
Refrigeration	Open Display Case	5350 kWh/yr	0.01	-	12	1.00	-
Refrigeration	Open Display Case	5300 kWh/yr	0.01	\$0.00	12	-	\$0.02
Refrigeration	Open Display Case	4330 kWh/yr	0.02	\$0.00	12	2.14	\$0.01
Refrigeration	Icemaker	7.0 kWh/100 lbs	-	-	10	1.00	-
Refrigeration	Icemaker	6.3 kWh/100 lbs	0.01	\$0.00	10	0.86	\$0.06
Refrigeration	Icemaker	6.0 kWh/100 lbs	0.01	\$0.01	10	0.86	\$0.06
Refrigeration	Icemaker	5.5 kWh/100 lbs	0.02	\$0.01	10	0.86	\$0.06
Refrigeration	Vending Machine	3400 kWh/year	-	-	12	1.00	-
Refrigeration	Vending Machine	3000 kWh/year	0.01	\$0.00	12	4.75	\$0.01
Refrigeration	Vending Machine	2400 kWh/year	0.03	\$0.00	12	4.75	\$0.01
Refrigeration	Vending Machine	1700 kWh/year	0.03	\$0.00	12	> 10	\$0.01
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.01	\$0.00	12	> 10	\$0.00
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.01	\$0.00	12	4.94	\$0.01
Food Preparation	Dishwasher	Standard	-	-	12	1.00	-
Food Preparation	Dishwasher	Energy Star	0.04	\$0.00	12	> 10	\$0.00
Food Preparation	Hot Food Container	Standard	-	-	12	1.00	-
Food Preparation	Hot Food Container	Energy Star	0.03	\$0.00	12	4.33	\$0.01
Food Preparation	Other	Standard	-	-	12	1.00	-
Office Equipment	Desktop Computer	Standard	-	-	5	1.00	-
Office Equipment	Desktop Computer	Energy Star	0.18	\$0.00	5	> 10	\$0.00
Office Equipment	Laptop	Standard	-	-	4	1.00	-
Office Equipment	Laptop	Energy Star	0.03	\$0.00	4	> 10	\$0.00
Office Equipment	Server	Standard	-	-	3	1.00	-
Office Equipment	Server	Energy Star	0.06	\$0.00	3	> 10	\$0.00
Office Equipment	Monitor	Standard	-	-	4	1.00	-
Office Equipment	Monitor	Energy Star	0.02	\$0.00	4	> 10	\$0.00
Office Equipment	Printer/Copier/Fax	Standard	-	-	6	1.00	-
Office Equipment	Printer/Copier/Fax	Energy Star	0.04	\$0.00	6	> 10	\$0.00
Office Equipment	POS Terminal	Standard	-	-	4	1.00	-

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incre-mental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Office Equipment	POS Terminal	Energy Star	0.04	\$0.01	4	0.78	\$0.05
Miscellaneous	Non-HVAC Motors	Standard (EPAct)	-	-	15	1.00	-
Miscellaneous	Non-HVAC Motors	Standard (EPAct 2015)	0.00	-	15	-	-
Miscellaneous	Non-HVAC Motors	High Efficiency	0.00	\$0.00	15	6.49	\$0.01
Miscellaneous	Non-HVAC Motors	High Efficiency (2015)	0.00	\$0.00	15	-	\$0.01
Miscellaneous	Non-HVAC Motors	Premium (NEMA)	0.00	\$0.00	15	6.49	\$0.01
Miscellaneous	Non-HVAC Motors	Premium (NEMA 2015)	0.00	\$0.00	15	-	\$0.01
Miscellaneous	Pool Pump	Standard	-	-	15	1.00	-
Miscellaneous	Pool Pump	High Efficiency	0.00	\$0.00	15	2.12	\$0.03
Miscellaneous	Pool Pump	High Efficiency, Multi-Speed	0.00	\$0.00	15	1.24	\$0.05
Miscellaneous	Pool Heater	Standard	-	-	15	1.00	-
Miscellaneous	Pool Heater	Heat Pump	0.00	\$0.00	15	2.70	\$0.02
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-20 Energy Efficiency Equipment Data, Natural Gas-College, Existing Vintage

End Use	Technology	Efficiency Definition	Savings (Therms/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/Therm)
Heating	Furnace	EF .76	-	-	16	1.00	-
Heating	Furnace	EF .80	0.02	\$0.04	16	3.00	\$0.19
Heating	Furnace	EF .82	0.03	\$0.10	16	1.62	\$0.36
Heating	Furnace	EF .90	0.06	\$0.08	16	3.94	\$0.15
Heating	Furnace	EF .96	0.07	\$0.12	16	3.64	\$0.16
Heating	Boiler	EF .76	-	-	20	-	-
Heating	Boiler	EF .80	0.03	\$0.00	20	1.00	\$0.00
Heating	Boiler	EF .83	0.05	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .90	0.07	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .96	0.10	\$0.00	20	> 10	\$0.00
Heating	Unit Heater	Standard	-	-	15	1.00	-
Heating	Unit Heater	Condensing	0.04	-	15	-	-
Water Heating	Water Heating	EF 0.77	-	-	12	1.00	-
Water Heating	Water Heating	EF 0.80	0.01	\$0.01	12	2.49	\$0.22
Water Heating	Water Heating	Tankless	0.01	\$0.03	12	1.86	\$0.29
Water Heating	Water Heating	Indirect Fired	0.02	\$0.02	12	4.87	\$0.11
Water Heating	Water Heating	EF 0.94	0.03	(\$0.01)	12	1.00	(\$0.02)
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.01	\$0.00	12	> 10	\$0.00
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.02	\$0.01	12	> 10	\$0.03
Food Preparation	Broiler	Standard	-	-	12	1.00	-
Food Preparation	Broiler	High Efficiency	0.02	\$0.00	12	> 10	\$0.02
Food Preparation	Griddle	Standard	-	-	12	1.00	-
Food Preparation	Griddle	High Efficiency	0.00	\$0.00	12	> 10	\$0.01
Food Preparation	Range	Standard	-	-	12	1.00	-
Food Preparation	Range	High Efficiency	0.01	\$0.00	12	> 10	\$0.01
Food Preparation	Steamer	Standard	-	-	12	1.00	-
Food Preparation	Steamer	Energy Star	0.06	\$0.00	12	> 10	\$0.01
Food Preparation	Other	Standard	-	-	12	1.00	-
Food Preparation	Other	Energy Star	0.01	\$0.00	12	> 10	\$0.00
Miscellaneous	Pool Heater	EF .78	-	-	5	-	-
Miscellaneous	Pool Heater	EF .82	0.00	-	5	1.00	-
Miscellaneous	Pool Heater	EF .90	0.00	-	5	-	-
Miscellaneous	Pool Heater	EF .95	0.00	-	5	-	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-21 Energy Efficiency Equipment Data, Electric-College, New Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incre- mental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Air-Cooled Chiller	1.5 kw/ton, COP 2.3	-	-	20	1.00	-
Cooling	Air-Cooled Chiller	1.3 kw/ton, COP 2.7	0.48	\$0.55	20	1.26	\$0.10
Cooling	Air-Cooled Chiller	1.26 kw/ton, COP 2.8	0.57	\$0.62	20	1.34	\$0.09
Cooling	Air-Cooled Chiller	1.0 kw/ton, COP 3.5	1.20	\$0.69	20	2.50	\$0.05
Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	1.27	\$0.76	20	2.41	\$0.05
Cooling	Water-Cooled Chiller	0.75 kw/ton, COP 4.7	-	-	20	1.00	-
Cooling	Water-Cooled Chiller	0.60 kw/ton, COP 5.9	0.68	\$0.28	20	3.56	\$0.04
Cooling	Water-Cooled Chiller	0.58 kw/ton, COP 6.1	0.77	\$0.30	20	3.77	\$0.03
Cooling	Water-Cooled Chiller	0.55 kw/Ton, COP 6.4	0.91	\$0.35	20	3.70	\$0.03
Cooling	Water-Cooled Chiller	0.51 kw/ton, COP 6.9	1.09	\$0.55	20	2.85	\$0.04
Cooling	Water-Cooled Chiller	0.50 kw/Ton, COP 7.0	1.14	\$0.61	20	2.68	\$0.05
Cooling	Water-Cooled Chiller	0.48 kw/ton, COP 7.3	1.23	\$0.67	20	2.64	\$0.05
Cooling	Roof top AC	EER 9.2	-	-	15	-	-
Cooling	Roof top AC	EER 10.1	0.24	\$0.03	15	-	\$0.01
Cooling	Roof top AC	EER 11.2	0.49	\$0.04	15	1.00	\$0.01
Cooling	Roof top AC	EER 12.0	0.63	\$0.12	15	2.00	\$0.02
Cooling	Roof top AC	Ductless Minisplit	0.80	\$0.39	15	0.96	\$0.05
Cooling	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Cooling	Air Source Heat Pump	EER 10.3, COP 3.2	0.22	\$0.03	15	-	\$0.02
Cooling	Air Source Heat Pump	EER 11.0, COP 3.3	0.35	\$0.00	15	1.00	\$0.00
Cooling	Air Source Heat Pump	EER 11.7, COP 3.4	0.47	\$0.12	15	1.13	\$0.03
Cooling	Air Source Heat Pump	EER 12.0, COP 3.4	0.52	\$0.19	15	1.04	\$0.04
Cooling	Air Source Heat Pump	Ductless Minisplit	0.65	\$0.31	15	1.13	\$0.05
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	0.16	\$0.09	15	2.10	\$0.06
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	0.29	\$0.18	15	1.87	\$0.06
Cooling	Geothermal Heat Pump	EER 30, COP 5.0	0.71	\$0.25	15	3.36	\$0.04
Cooling	PTAC	EER 9.8	-	-	15	1.00	-
Cooling	PTAC	EER 10.2	0.08	\$0.00	15	> 10	\$0.00
Cooling	PTAC	EER 10.8	0.18	\$0.03	15	8.42	\$0.01
Cooling	PTAC	EER 11	0.21	\$0.03	15	9.00	\$0.01
Cooling	PTAC	EER 11.5	0.28	\$0.03	15	9.98	\$0.01
Cooling	PTHP	EER 9.8	-	-	15	1.00	-
Cooling	PTHP	EER 10.2	0.08	\$0.00	15	> 10	\$0.00
Cooling	PTHP	EER 10.8	0.18	\$0.03	15	8.42	\$0.01
Cooling	PTHP	EER 11	0.21	\$0.03	15	9.00	\$0.01
Cooling	PTHP	EER 11.5	0.28	\$0.03	15	9.98	\$0.01
Cooling	Evaporative AC	Direct	-	-	15	1.00	-
Cooling	Evaporative AC	Indirect	0.25	-	15	-	-
Cooling	Evaporative AC	Direct/Indirect	0.65	-	15	-	-
Heating	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Heating	Air Source Heat Pump	EER 10.3, COP 3.2	0.15	\$0.02	15	-	\$0.01
Heating	Air Source Heat Pump	EER 11.0, COP 3.3	0.29	\$0.00	15	1.00	\$0.00
Heating	Air Source Heat Pump	EER 11.7, COP 3.4	0.42	\$0.08	15	0.88	\$0.02
Heating	Air Source Heat Pump	EER 12.0, COP 3.4	0.42	\$0.12	15	0.59	\$0.03
Heating	Air Source Heat Pump	Ductless Minisplit	0.54	\$0.20	15	0.67	\$0.04
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	0.32	\$0.06	15	2.81	\$0.02
Heating	Geothermal Heat Pump	EER 18, COP 3.8	0.75	\$0.12	15	3.15	\$0.02
Heating	Geothermal Heat Pump	EER 30, COP 5.0	1.93	\$0.17	15	5.98	\$0.01

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incre- mental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Heating	Electric Room Heat	Standard	-	-	20	1.00	-
Heating	Electric Furnace	Standard	-	-	20	1.00	-
Heating	PTAC	EER 9.8	-	-	15	1.00	-
Heating	PTAC	EER 10.2	-	\$0.00	15	-	-
Heating	PTAC	EER 10.8	-	\$0.02	15	-	-
Heating	PTAC	EER 11	-	\$0.02	15	-	-
Heating	PTAC	EER 11.5	-	\$0.03	15	-	-
Heating	PTHP	EER 9.8	-	-	15	1.00	-
Heating	PTHP	EER 10.2	0.23	\$0.00	15	> 10	\$0.00
Heating	PTHP	EER 10.8	0.54	\$0.02	15	> 10	\$0.00
Heating	PTHP	EER 11	0.64	\$0.02	15	> 10	\$0.00
Heating	PTHP	EER 11.5	0.86	\$0.02	15	> 10	\$0.00
Ventilation	Ventilation	Constant Volume	-	-	10	1.00	-
Ventilation	Ventilation	Variable Air Volume	1.77	(\$0.47)	10	1.00	(\$0.04)
Water Heating	Water Heating	EF .97	-	-	15	1.00	-
Water Heating	Water Heating	EF .98	0.02	\$0.00	15	2.55	\$0.02
Water Heating	Water Heating	EF 2.0	0.79	\$0.01	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.3	0.89	\$0.01	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.4	0.92	\$0.01	15	> 10	\$0.00
Interior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Interior Lighting	Screw-in	90W Halogen PAR-38	0.26	\$0.01	3	2.46	\$0.01
Interior Lighting	Screw-in	70W HIR PAR-38	0.40	\$0.01	3	3.36	\$0.01
Interior Lighting	Screw-in	CFL	0.74	\$0.00	2.2	> 10	\$0.00
Interior Lighting	Screw-in	LED (2010)	0.81	\$0.06	20	7.25	\$0.01
Interior Lighting	Screw-in	LED (2020)	0.93	\$0.02	20	-	\$0.00
Interior Lighting	High-Bay Fixtures	Metal Halides	-	-	3	1.00	-
Interior Lighting	High-Bay Fixtures	LED (2010)	0.20	\$0.07	15	0.08	\$0.03
Interior Lighting	High-Bay Fixtures	T8	0.20	(\$0.00)	10	1.00	(\$0.00)
Interior Lighting	High-Bay Fixtures	High Pressure Sodium	0.21	\$0.00	6	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	Light Emitting Plasma	0.25	\$0.00	15	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	T5	0.26	\$0.00	10	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	LED (2020)	0.38	\$0.01	15	-	\$0.00
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Interior Lighting	Linear Fluorescent	LED (2010)	1.20	\$2.28	15	1.00	\$0.19
Interior Lighting	Linear Fluorescent	T8	1.25	(\$0.00)	10	1.00	(\$0.00)
Interior Lighting	Linear Fluorescent	Super T8	1.74	\$0.33	10	1.00	\$0.03
Interior Lighting	Linear Fluorescent	T5	2.01	\$0.25	10	1.00	\$0.02
Interior Lighting	Linear Fluorescent	LED (2020)	3.76	\$0.63	15	-	\$0.02
Exterior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Exterior Lighting	Screw-in	90W Halogen PAR-38	0.14	\$0.00	3	2.66	\$0.01
Exterior Lighting	Screw-in	70W HIR PAR-38	0.21	\$0.01	3	3.39	\$0.01
Exterior Lighting	Screw-in	CFL	0.40	\$0.00	6	> 10	\$0.00
Exterior Lighting	Screw-in	LED (2010)	0.43	\$0.08	20	2.98	\$0.02
Exterior Lighting	Screw-in	LED (2020)	0.50	\$0.02	20	-	\$0.00
Exterior Lighting	HID	Metal Halides	-	-	3	1.00	-
Exterior Lighting	HID	LED (2010)	0.33	\$0.29	15	0.28	\$0.09
Exterior Lighting	HID	T8	0.34	(\$0.01)	10	1.00	(\$0.00)
Exterior Lighting	HID	High Pressure Sodium	0.36	\$0.00	6	1.00	\$0.00
Exterior Lighting	HID	Light Emitting Plasma	0.42	\$0.01	15	1.00	\$0.00
Exterior Lighting	HID	T5	0.43	\$0.01	10	1.00	\$0.00
Exterior Lighting	HID	LED (2020)	0.63	\$0.08	15	-	\$0.01

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Exterior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Exterior Lighting	Linear Fluorescent	LED (2010)	0.00	\$0.00	15	1.00	\$0.19
Exterior Lighting	Linear Fluorescent	T8	0.00	(\$0.00)	10	1.00	(\$0.00)
Exterior Lighting	Linear Fluorescent	Super T8	0.00	\$0.00	10	1.00	\$0.03
Exterior Lighting	Linear Fluorescent	T5	0.00	\$0.00	10	1.00	\$0.02
Exterior Lighting	Linear Fluorescent	LED (2020)	0.00	\$0.00	15	-	\$0.02
Refrigeration	Walk-in Refrigerator	14600 kWh/yr	-	-	12	1.00	-
Refrigeration	Walk-in Refrigerator	10800 kWh/yr	0.06	\$0.00	12	> 10	\$0.00
Refrigeration	Walk-in Refrigerator	10000 kWh/yr	0.07	\$0.00	12	> 10	\$0.00
Refrigeration	Walk-in Refrigerator	9000 kWh/yr	0.07	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	3800 kWh/yr	-	-	12	1.00	-
Refrigeration	Reach-in Refrigerator	3100 kWh/yr	0.03	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	2500 kWh/yr	0.04	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	2400 kWh/yr	0.04	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	1500 kWh/yr	0.05	\$0.00	12	> 10	\$0.00
Refrigeration	Glass Door Display	14480 kWh/yr	-	-	12	-	-
Refrigeration	Glass Door Display	11700 kWh/yr	0.03	\$0.00	12	-	\$0.01
Refrigeration	Glass Door Display	8400 kWh/yr	0.06	-	12	1.00	-
Refrigeration	Glass Door Display	6800 kWh/yr	0.08	\$0.00	12	5.25	\$0.00
Refrigeration	Open Display Case	6500 kWh/yr	-	-	12	-	-
Refrigeration	Open Display Case	5350 kWh/yr	0.01	-	12	1.00	-
Refrigeration	Open Display Case	5300 kWh/yr	0.01	\$0.00	12	-	\$0.02
Refrigeration	Open Display Case	4330 kWh/yr	0.02	\$0.00	12	2.14	\$0.01
Refrigeration	Icemaker	7.0 kWh/100 lbs	-	-	10	1.00	-
Refrigeration	Icemaker	6.3 kWh/100 lbs	0.01	\$0.00	10	0.86	\$0.06
Refrigeration	Icemaker	6.0 kWh/100 lbs	0.01	\$0.01	10	0.86	\$0.06
Refrigeration	Icemaker	5.5 kWh/100 lbs	0.02	\$0.01	10	0.86	\$0.06
Refrigeration	Vending Machine	3400 kWh/year	-	-	12	1.00	-
Refrigeration	Vending Machine	3000 kWh/year	0.01	\$0.00	12	4.78	\$0.01
Refrigeration	Vending Machine	2400 kWh/year	0.03	\$0.00	12	4.78	\$0.01
Refrigeration	Vending Machine	1700 kWh/year	0.04	\$0.00	12	> 10	\$0.01
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.01	\$0.00	12	> 10	\$0.00
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.01	\$0.00	12	4.94	\$0.01
Food Preparation	Dishwasher	Standard	-	-	12	1.00	-
Food Preparation	Dishwasher	Energy Star	0.04	\$0.00	12	> 10	\$0.00
Food Preparation	Hot Food Container	Standard	-	-	12	1.00	-
Food Preparation	Hot Food Container	Energy Star	0.03	\$0.00	12	4.33	\$0.01
Food Preparation	Other	Standard	-	-	12	1.00	-
Office Equipment	Desktop Computer	Standard	-	-	5	1.00	-
Office Equipment	Desktop Computer	Energy Star	0.18	\$0.00	5	> 10	\$0.00
Office Equipment	Laptop	Standard	-	-	4	1.00	-
Office Equipment	Laptop	Energy Star	0.03	\$0.00	4	> 10	\$0.00
Office Equipment	Server	Standard	-	-	3	1.00	-
Office Equipment	Server	Energy Star	0.06	\$0.00	3	> 10	\$0.00
Office Equipment	Monitor	Standard	-	-	4	1.00	-
Office Equipment	Monitor	Energy Star	0.02	\$0.00	4	> 10	\$0.00
Office Equipment	Printer/Copier/Fax	Standard	-	-	6	1.00	-
Office Equipment	Printer/Copier/Fax	Energy Star	0.04	\$0.00	6	> 10	\$0.00
Office Equipment	POS Terminal	Standard	-	-	4	1.00	-

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incre- mental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Office Equipment	POS Terminal	Energy Star	0.04	\$0.01	4	0.78	\$0.05
Miscellaneous	Non-HVAC Motors	Standard (EPAAct)	-	-	15	1.00	-
Miscellaneous	Non-HVAC Motors	Standard (EPAAct 2015)	0.00	-	15	-	-
Miscellaneous	Non-HVAC Motors	High Efficiency	0.00	\$0.00	15	6.49	\$0.01
Miscellaneous	Non-HVAC Motors	High Efficiency (2015)	0.00	\$0.00	15	-	\$0.01
Miscellaneous	Non-HVAC Motors	Premium (NEMA)	0.00	\$0.00	15	6.49	\$0.01
Miscellaneous	Non-HVAC Motors	Premium (NEMA 2015)	0.00	\$0.00	15	-	\$0.01
Miscellaneous	Pool Pump	Standard	-	-	15	1.00	-
Miscellaneous	Pool Pump	High Efficiency	0.00	\$0.00	15	2.12	\$0.03
Miscellaneous	Pool Pump	High Efficiency, Multi-Speed	0.00	\$0.00	15	1.24	\$0.05
Miscellaneous	Pool Heater	Standard	-	-	15	1.00	-
Miscellaneous	Pool Heater	Heat Pump	0.00	\$0.00	15	2.70	\$0.02
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-22 Energy Efficiency Equipment Data, Natural Gas-College, New Vintage

End Use	Technology	Efficiency Definition	Savings (Therms/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/Therm)
Heating	Furnace	EF .76	-	-	16	1.00	-
Heating	Furnace	EF .80	0.02	\$0.03	16	3.06	\$0.19
Heating	Furnace	EF .82	0.03	\$0.09	16	1.66	\$0.35
Heating	Furnace	EF .90	0.06	\$0.08	16	4.03	\$0.14
Heating	Furnace	EF .96	0.08	\$0.12	16	3.72	\$0.16
Heating	Boiler	EF .76	-	-	20	-	-
Heating	Boiler	EF .80	0.02	\$0.00	20	1.00	\$0.00
Heating	Boiler	EF .83	0.04	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .90	0.06	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .96	0.08	\$0.00	20	> 10	\$0.00
Heating	Unit Heater	Standard	-	-	15	1.00	-
Heating	Unit Heater	Condensing	0.04	-	15	-	-
Water Heating	Water Heating	EF 0.77	-	-	12	1.00	-
Water Heating	Water Heating	EF 0.80	0.01	\$0.01	12	2.59	\$0.21
Water Heating	Water Heating	Tankless	0.01	\$0.03	12	1.94	\$0.28
Water Heating	Water Heating	Indirect Fired	0.02	\$0.02	12	5.07	\$0.11
Water Heating	Water Heating	EF 0.94	0.03	(\$0.01)	12	1.00	(\$0.02)
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.01	\$0.00	12	> 10	\$0.00
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.02	\$0.01	12	> 10	\$0.03
Food Preparation	Broiler	Standard	-	-	12	1.00	-
Food Preparation	Broiler	High Efficiency	0.02	\$0.00	12	> 10	\$0.02
Food Preparation	Griddle	Standard	-	-	12	1.00	-
Food Preparation	Griddle	High Efficiency	0.00	\$0.00	12	> 10	\$0.01
Food Preparation	Range	Standard	-	-	12	1.00	-
Food Preparation	Range	High Efficiency	0.01	\$0.00	12	> 10	\$0.01
Food Preparation	Steamer	Standard	-	-	12	1.00	-
Food Preparation	Steamer	Energy Star	0.06	\$0.00	12	> 10	\$0.01
Food Preparation	Other	Standard	-	-	12	1.00	-
Food Preparation	Other	Energy Star	0.01	\$0.00	12	> 10	\$0.00
Miscellaneous	Pool Heater	EF .78	-	-	5	-	-
Miscellaneous	Pool Heater	EF .82	0.00	-	5	1.00	-
Miscellaneous	Pool Heater	EF .90	0.00	-	5	-	-
Miscellaneous	Pool Heater	EF .95	0.00	-	5	-	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-23 Energy Efficiency Equipment Data, Electric-School Existing Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Air-Cooled Chiller	1.5 kw/ton, COP 2.3	-	-	20	1.00	-
Cooling	Air-Cooled Chiller	1.3 kw/ton, COP 2.7	0.41	\$0.39	20	2.54	\$0.08
Cooling	Air-Cooled Chiller	1.26 kw/ton, COP 2.8	0.50	\$0.44	20	2.70	\$0.08
Cooling	Air-Cooled Chiller	1.0 kw/ton, COP 3.5	1.03	\$0.49	20	5.05	\$0.04
Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	1.09	\$0.54	20	4.85	\$0.04
Cooling	Water-Cooled Chiller	0.75 kw/ton, COP 4.7	-	-	20	1.00	-
Cooling	Water-Cooled Chiller	0.60 kw/ton, COP 5.9	0.61	\$0.22	20	6.73	\$0.03
Cooling	Water-Cooled Chiller	0.58 kw/ton, COP 6.1	0.69	\$0.23	20	7.12	\$0.03
Cooling	Water-Cooled Chiller	0.55 kw/Ton, COP 6.4	0.82	\$0.28	20	6.99	\$0.03
Cooling	Water-Cooled Chiller	0.51 kw/ton, COP 6.9	0.98	\$0.43	20	5.39	\$0.04
Cooling	Water-Cooled Chiller	0.50 kw/Ton, COP 7.0	1.02	\$0.48	20	5.07	\$0.04
Cooling	Water-Cooled Chiller	0.48 kw/ton, COP 7.3	1.10	\$0.53	20	5.00	\$0.04
Cooling	Roof top AC	EER 9.2	-	-	15	-	-
Cooling	Roof top AC	EER 10.1	0.21	\$0.03	15	-	\$0.01
Cooling	Roof top AC	EER 11.2	0.42	\$0.03	15	1.00	\$0.01
Cooling	Roof top AC	EER 12.0	0.55	\$0.09	15	3.65	\$0.02
Cooling	Roof top AC	Ductless Minisplit	0.69	\$0.31	15	1.75	\$0.05
Cooling	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Cooling	Air Source Heat Pump	EER 10.3, COP 3.2	0.19	\$0.03	15	-	\$0.01
Cooling	Air Source Heat Pump	EER 11.0, COP 3.3	0.31	\$0.00	15	1.00	\$0.00
Cooling	Air Source Heat Pump	EER 11.7, COP 3.4	0.41	\$0.10	15	2.05	\$0.02
Cooling	Air Source Heat Pump	EER 12.0, COP 3.4	0.45	\$0.15	15	1.90	\$0.03
Cooling	Air Source Heat Pump	Ductless Minisplit	0.56	\$0.25	15	2.06	\$0.04
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	0.11	\$0.05	15	3.83	\$0.05
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	0.20	\$0.11	15	3.40	\$0.06
Cooling	Geothermal Heat Pump	EER 30, COP 5.0	0.48	\$0.15	15	6.11	\$0.03
Cooling	PTAC	EER 9.8	-	-	15	1.00	-
Cooling	PTAC	EER 10.2	0.07	\$0.00	15	> 10	\$0.00
Cooling	PTAC	EER 10.8	0.16	\$0.02	15	> 10	\$0.01
Cooling	PTAC	EER 11	0.18	\$0.02	15	> 10	\$0.01
Cooling	PTAC	EER 11.5	0.24	\$0.03	15	> 10	\$0.01
Cooling	PTHP	EER 9.8	-	-	15	1.00	-
Cooling	PTHP	EER 10.2	0.07	\$0.00	15	> 10	\$0.00
Cooling	PTHP	EER 10.8	0.16	\$0.02	15	> 10	\$0.01
Cooling	PTHP	EER 11	0.18	\$0.02	15	> 10	\$0.01
Cooling	PTHP	EER 11.5	0.24	\$0.03	15	> 10	\$0.01
Cooling	Evaporative AC	Direct	-	-	15	1.00	-
Cooling	Evaporative AC	Indirect	0.19	-	15	-	-
Cooling	Evaporative AC	Direct/Indirect	0.50	-	15	-	-
Heating	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Heating	Air Source Heat Pump	EER 10.3, COP 3.2	0.09	\$0.01	15	-	\$0.01
Heating	Air Source Heat Pump	EER 11.0, COP 3.3	0.17	\$0.00	15	1.00	\$0.00
Heating	Air Source Heat Pump	EER 11.7, COP 3.4	0.25	\$0.03	15	1.22	\$0.01
Heating	Air Source Heat Pump	EER 12.0, COP 3.4	0.25	\$0.05	15	0.81	\$0.02
Heating	Air Source Heat Pump	Ductless Minisplit	0.32	\$0.09	15	0.93	\$0.03
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	0.19	\$0.03	15	3.86	\$0.01
Heating	Geothermal Heat Pump	EER 18, COP 3.8	0.44	\$0.05	15	4.33	\$0.01
Heating	Geothermal Heat Pump	EER 30, COP 5.0	1.13	\$0.07	15	8.21	\$0.01

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Heating	Electric Room Heat	Standard	-	-	20	1.00	-
Heating	Electric Furnace	Standard	-	-	20	1.00	-
Heating	PTAC	EER 9.8	-	-	15	1.00	-
Heating	PTAC	EER 10.2	-	\$0.00	15	-	-
Heating	PTAC	EER 10.8	-	\$0.01	15	-	-
Heating	PTAC	EER 11	-	\$0.01	15	-	-
Heating	PTAC	EER 11.5	-	\$0.01	15	-	-
Heating	PTHP	EER 9.8	-	-	15	1.00	-
Heating	PTHP	EER 10.2	0.14	\$0.00	15	> 10	\$0.00
Heating	PTHP	EER 10.8	0.32	\$0.01	15	> 10	\$0.00
Heating	PTHP	EER 11	0.38	\$0.01	15	> 10	\$0.00
Heating	PTHP	EER 11.5	0.51	\$0.01	15	> 10	\$0.00
Ventilation	Ventilation	Constant Volume	-	-	10	1.00	-
Ventilation	Ventilation	Variable Air Volume	0.63	(\$0.17)	10	1.00	(\$0.04)
Water Heating	Water Heating	EF .97	-	-	15	1.00	-
Water Heating	Water Heating	EF .98	0.01	\$0.00	15	2.22	\$0.03
Water Heating	Water Heating	EF 2.0	0.54	\$0.01	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.3	0.61	\$0.01	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.4	0.63	\$0.01	15	> 10	\$0.00
Interior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Interior Lighting	Screw-in	90W Halogen PAR-38	0.05	\$0.00	3	1.06	\$0.02
Interior Lighting	Screw-in	70W HIR PAR-38	0.08	\$0.00	3	1.40	\$0.02
Interior Lighting	Screw-in	CFL	0.15	\$0.00	2.2	6.49	\$0.01
Interior Lighting	Screw-in	LED (2010)	0.16	\$0.03	20	3.10	\$0.01
Interior Lighting	Screw-in	LED (2020)	0.19	\$0.01	20	-	\$0.00
Interior Lighting	High-Bay Fixtures	Metal Halides	-	-	3	1.00	-
Interior Lighting	High-Bay Fixtures	LED (2010)	0.12	\$0.09	15	0.27	\$0.08
Interior Lighting	High-Bay Fixtures	T8	0.12	(\$0.01)	10	1.00	(\$0.01)
Interior Lighting	High-Bay Fixtures	High Pressure Sodium	0.13	\$0.00	6	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	Light Emitting Plasma	0.15	\$0.01	15	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	T5	0.15	\$0.01	10	1.00	\$0.01
Interior Lighting	High-Bay Fixtures	LED (2020)	0.23	\$0.02	15	-	\$0.01
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Interior Lighting	Linear Fluorescent	LED (2010)	0.99	\$4.52	15	1.00	\$0.47
Interior Lighting	Linear Fluorescent	T8	1.03	(\$0.00)	10	1.00	(\$0.00)
Interior Lighting	Linear Fluorescent	Super T8	1.43	\$0.66	10	1.00	\$0.06
Interior Lighting	Linear Fluorescent	T5	1.66	\$0.50	10	1.00	\$0.04
Interior Lighting	Linear Fluorescent	LED (2020)	3.10	\$1.24	15	-	\$0.04
Exterior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Exterior Lighting	Screw-in	90W Halogen PAR-38	0.05	\$0.00	3	1.10	\$0.02
Exterior Lighting	Screw-in	70W HIR PAR-38	0.07	\$0.00	3	1.41	\$0.02
Exterior Lighting	Screw-in	CFL	0.14	\$0.00	6	> 10	\$0.00
Exterior Lighting	Screw-in	LED (2010)	0.15	\$0.06	20	1.24	\$0.04
Exterior Lighting	Screw-in	LED (2020)	0.17	\$0.02	20	-	\$0.01
Exterior Lighting	HID	Metal Halides	-	-	3	1.00	-
Exterior Lighting	HID	LED (2010)	0.30	\$0.64	15	0.12	\$0.22
Exterior Lighting	HID	T8	0.31	(\$0.02)	10	1.00	(\$0.01)
Exterior Lighting	HID	High Pressure Sodium	0.33	\$0.01	6	1.00	\$0.00
Exterior Lighting	HID	Light Emitting Plasma	0.38	\$0.02	15	1.00	\$0.00
Exterior Lighting	HID	T5	0.39	\$0.02	10	1.00	\$0.01
Exterior Lighting	HID	LED (2020)	0.58	\$0.17	15	-	\$0.03

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Exterior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Exterior Lighting	Linear Fluorescent	LED (2010)	0.00	\$0.00	15	1.00	\$0.47
Exterior Lighting	Linear Fluorescent	T8	0.00	(\$0.00)	10	1.00	(\$0.00)
Exterior Lighting	Linear Fluorescent	Super T8	0.00	\$0.00	10	1.00	\$0.06
Exterior Lighting	Linear Fluorescent	T5	0.00	\$0.00	10	1.00	\$0.04
Exterior Lighting	Linear Fluorescent	LED (2020)	0.00	\$0.00	15	-	\$0.04
Refrigeration	Walk-in Refrigerator	14600 kWh/yr	-	-	12	1.00	-
Refrigeration	Walk-in Refrigerator	10800 kWh/yr	0.07	\$0.00	12	> 10	\$0.00
Refrigeration	Walk-in Refrigerator	10000 kWh/yr	0.07	\$0.00	12	8.17	\$0.01
Refrigeration	Walk-in Refrigerator	9000 kWh/yr	0.08	\$0.01	12	5.16	\$0.01
Refrigeration	Reach-in Refrigerator	3800 kWh/yr	-	-	12	1.00	-
Refrigeration	Reach-in Refrigerator	3100 kWh/yr	0.03	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	2500 kWh/yr	0.04	\$0.00	12	8.87	\$0.01
Refrigeration	Reach-in Refrigerator	2400 kWh/yr	0.04	\$0.00	12	7.97	\$0.01
Refrigeration	Reach-in Refrigerator	1500 kWh/yr	0.06	\$0.00	12	9.51	\$0.01
Refrigeration	Glass Door Display	14480 kWh/yr	-	-	12	-	-
Refrigeration	Glass Door Display	11700 kWh/yr	0.03	\$0.00	12	-	\$0.02
Refrigeration	Glass Door Display	8400 kWh/yr	0.07	-	12	1.00	-
Refrigeration	Glass Door Display	6800 kWh/yr	0.09	\$0.00	12	2.12	\$0.01
Refrigeration	Open Display Case	6500 kWh/yr	-	-	12	-	-
Refrigeration	Open Display Case	5350 kWh/yr	0.01	-	12	1.00	-
Refrigeration	Open Display Case	5300 kWh/yr	0.01	\$0.01	12	-	\$0.05
Refrigeration	Open Display Case	4330 kWh/yr	0.03	\$0.01	12	0.87	\$0.03
Refrigeration	Icemaker	7.0 kWh/100 lbs	-	-	10	1.00	-
Refrigeration	Icemaker	6.3 kWh/100 lbs	0.01	\$0.01	10	0.35	\$0.15
Refrigeration	Icemaker	6.0 kWh/100 lbs	0.02	\$0.02	10	0.35	\$0.15
Refrigeration	Icemaker	5.5 kWh/100 lbs	0.02	\$0.03	10	0.35	\$0.15
Refrigeration	Vending Machine	3400 kWh/year	-	-	12	1.00	-
Refrigeration	Vending Machine	3000 kWh/year	0.01	\$0.00	12	1.92	\$0.03
Refrigeration	Vending Machine	2400 kWh/year	0.03	\$0.01	12	1.92	\$0.03
Refrigeration	Vending Machine	1700 kWh/year	0.04	\$0.00	12	4.15	\$0.01
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.02	\$0.00	12	> 10	\$0.00
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.01	\$0.00	12	> 10	\$0.00
Food Preparation	Dishwasher	Standard	-	-	12	1.00	-
Food Preparation	Dishwasher	Energy Star	0.11	\$0.00	12	> 10	\$0.00
Food Preparation	Hot Food Container	Standard	-	-	12	1.00	-
Food Preparation	Hot Food Container	Energy Star	0.07	\$0.00	12	7.37	\$0.01
Food Preparation	Other	Standard	-	-	12	1.00	-
Office Equipment	Desktop Computer	Standard	-	-	5	1.00	-
Office Equipment	Desktop Computer	Energy Star	0.08	\$0.00	5	> 10	\$0.00
Office Equipment	Laptop	Standard	-	-	4	1.00	-
Office Equipment	Laptop	Energy Star	0.01	\$0.00	4	> 10	\$0.00
Office Equipment	Server	Standard	-	-	3	1.00	-
Office Equipment	Server	Energy Star	0.05	\$0.00	3	> 10	\$0.00
Office Equipment	Monitor	Standard	-	-	4	1.00	-
Office Equipment	Monitor	Energy Star	0.01	\$0.00	4	> 10	\$0.00
Office Equipment	Printer/Copier/Fax	Standard	-	-	6	1.00	-
Office Equipment	Printer/Copier/Fax	Energy Star	0.04	\$0.00	6	> 10	\$0.00
Office Equipment	POS Terminal	Standard	-	-	4	1.00	-

Commercial Energy Efficiency Equipment and Measure Data

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incre- mental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Office Equipment	POS Terminal	Energy Star	0.01	\$0.00	St1.14	1.14	\$0.03
Miscellaneous	Non-HVAC Motors	Standard (EPAct)	-	-	15	1.00	-
Miscellaneous	Non-HVAC Motors	Standard (EPAct 2015)	0.00	-	15	-	-
Miscellaneous	Non-HVAC Motors	High Efficiency	0.00	\$0.00	15	> 10	\$0.00
Miscellaneous	Non-HVAC Motors	High Efficiency (2015)	0.00	\$0.00	15	-	\$0.00
Miscellaneous	Non-HVAC Motors	Premium (NEMA)	0.00	\$0.00	15	> 10	\$0.00
Miscellaneous	Non-HVAC Motors	Premium (NEMA 2015)	0.00	\$0.00	15	-	\$0.00
Miscellaneous	Pool Pump	Standard	-	-	15	1.00	-
Miscellaneous	Pool Pump	High Efficiency	0.00	\$0.00	15	> 10	\$0.00
Miscellaneous	Pool Pump	High Efficiency, Multi-Speed	0.00	\$0.00	15	> 10	\$0.00
Miscellaneous	Pool Heater	Standard	-	-	15	1.00	-
Miscellaneous	Pool Heater	Heat Pump	0.00	-	15	-	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-24 Energy Efficiency Equipment Data, Natural Gas-School, Existing Vintage

End Use	Technology	Efficiency Definition	Savings (Therms/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/Therm)
Heating	Furnace	EF .76	-	-	16	1.00	-
Heating	Furnace	EF .80	0.01	\$0.02	16	3.00	\$0.19
Heating	Furnace	EF .82	0.01	\$0.04	16	1.62	\$0.36
Heating	Furnace	EF .90	0.03	\$0.04	16	3.94	\$0.15
Heating	Furnace	EF .96	0.03	\$0.05	16	3.64	\$0.16
Heating	Boiler	EF .76	-	-	20	-	-
Heating	Boiler	EF .80	0.01	\$0.00	20	1.00	\$0.00
Heating	Boiler	EF .83	0.02	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .90	0.03	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .96	0.04	\$0.00	20	> 10	\$0.00
Heating	Unit Heater	Standard	-	-	15	1.00	-
Heating	Unit Heater	Condensing	0.02	\$0.00	15	> 10	\$0.01
Water Heating	Water Heating	EF 0.77	-	-	12	1.00	-
Water Heating	Water Heating	EF 0.80	0.00	\$0.01	12	2.49	\$0.22
Water Heating	Water Heating	Tankless	0.01	\$0.02	12	1.86	\$0.29
Water Heating	Water Heating	Indirect Fired	0.01	\$0.01	12	4.87	\$0.11
Water Heating	Water Heating	EF 0.94	0.02	(\$0.00)	12	1.00	(\$0.02)
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.01	\$0.00	12	> 10	\$0.01
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.01	\$0.00	12	> 10	\$0.04
Food Preparation	Broiler	Standard	-	-	12	1.00	-
Food Preparation	Broiler	High Efficiency	0.01	\$0.00	12	> 10	\$0.04
Food Preparation	Griddle	Standard	-	-	12	1.00	-
Food Preparation	Griddle	High Efficiency	0.00	\$0.00	12	> 10	\$0.01
Food Preparation	Range	Standard	-	-	12	1.00	-
Food Preparation	Range	High Efficiency	0.00	\$0.00	12	> 10	\$0.01
Food Preparation	Steamer	Standard	-	-	12	1.00	-
Food Preparation	Steamer	Energy Star	0.02	\$0.00	12	> 10	\$0.01
Food Preparation	Other	Standard	-	-	12	1.00	-
Food Preparation	Other	Energy Star	0.00	-	12	-	-
Miscellaneous	Pool Heater	EF .78	-	-	5	-	-
Miscellaneous	Pool Heater	EF .82	0.00	\$0.00	5	1.00	\$0.04
Miscellaneous	Pool Heater	EF .90	0.00	\$0.00	5	1.35	\$0.23
Miscellaneous	Pool Heater	EF .95	0.00	\$0.00	5	1.81	\$0.19
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-25 Energy Efficiency Equipment Data, Electric-School, New Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incre- mental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Air-Cooled Chiller	1.5 kw/ton, COP 2.3	-	-	20	1.00	-
Cooling	Air-Cooled Chiller	1.3 kw/ton, COP 2.7	0.37	\$0.42	20	2.10	\$0.10
Cooling	Air-Cooled Chiller	1.26 kw/ton, COP 2.8	0.44	\$0.47	20	2.23	\$0.09
Cooling	Air-Cooled Chiller	1.0 kw/ton, COP 3.5	0.92	\$0.53	20	4.16	\$0.05
Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	0.97	\$0.58	20	3.99	\$0.05
Cooling	Water-Cooled Chiller	0.75 kw/ton, COP 4.7	-	-	20	1.00	-
Cooling	Water-Cooled Chiller	0.60 kw/ton, COP 5.9	0.52	\$0.21	20	5.91	\$0.04
Cooling	Water-Cooled Chiller	0.58 kw/ton, COP 6.1	0.59	\$0.23	20	6.26	\$0.03
Cooling	Water-Cooled Chiller	0.55 kw/Ton, COP 6.4	0.70	\$0.27	20	6.14	\$0.03
Cooling	Water-Cooled Chiller	0.51 kw/ton, COP 6.9	0.84	\$0.42	20	4.73	\$0.04
Cooling	Water-Cooled Chiller	0.50 kw/Ton, COP 7.0	0.87	\$0.47	20	4.46	\$0.05
Cooling	Water-Cooled Chiller	0.48 kw/ton, COP 7.3	0.94	\$0.51	20	4.39	\$0.05
Cooling	Roof top AC	EER 9.2	-	-	15	-	-
Cooling	Roof top AC	EER 10.1	0.19	\$0.02	15	-	\$0.01
Cooling	Roof top AC	EER 11.2	0.37	\$0.03	15	1.00	\$0.01
Cooling	Roof top AC	EER 12.0	0.49	\$0.09	15	3.32	\$0.02
Cooling	Roof top AC	Ductless Minisplit	0.61	\$0.30	15	1.60	\$0.05
Cooling	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Cooling	Air Source Heat Pump	EER 10.3, COP 3.2	0.17	\$0.03	15	-	\$0.02
Cooling	Air Source Heat Pump	EER 11.0, COP 3.3	0.27	\$0.00	15	1.00	\$0.00
Cooling	Air Source Heat Pump	EER 11.7, COP 3.4	0.36	\$0.10	15	1.86	\$0.03
Cooling	Air Source Heat Pump	EER 12.0, COP 3.4	0.40	\$0.14	15	1.73	\$0.04
Cooling	Air Source Heat Pump	Ductless Minisplit	0.50	\$0.24	15	1.88	\$0.05
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	0.12	\$0.07	15	3.49	\$0.06
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	0.22	\$0.14	15	3.10	\$0.06
Cooling	Geothermal Heat Pump	EER 30, COP 5.0	0.54	\$0.19	15	5.56	\$0.04
Cooling	PTAC	EER 9.8	-	-	15	1.00	-
Cooling	PTAC	EER 10.2	0.06	\$0.00	15	> 10	\$0.00
Cooling	PTAC	EER 10.8	0.14	\$0.02	15	> 10	\$0.01
Cooling	PTAC	EER 11	0.16	\$0.02	15	> 10	\$0.01
Cooling	PTAC	EER 11.5	0.21	\$0.02	15	> 10	\$0.01
Cooling	PTHP	EER 9.8	-	-	15	1.00	-
Cooling	PTHP	EER 10.2	0.06	\$0.00	15	> 10	\$0.00
Cooling	PTHP	EER 10.8	0.14	\$0.02	15	> 10	\$0.01
Cooling	PTHP	EER 11	0.16	\$0.02	15	> 10	\$0.01
Cooling	PTHP	EER 11.5	0.21	\$0.02	15	> 10	\$0.01
Cooling	Evaporative AC	Direct	-	-	15	1.00	-
Cooling	Evaporative AC	Indirect	0.19	-	15	-	-
Cooling	Evaporative AC	Direct/Indirect	0.50	-	15	-	-
Heating	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Heating	Air Source Heat Pump	EER 10.3, COP 3.2	0.09	\$0.01	15	-	\$0.01
Heating	Air Source Heat Pump	EER 11.0, COP 3.3	0.17	\$0.00	15	1.00	\$0.00
Heating	Air Source Heat Pump	EER 11.7, COP 3.4	0.24	\$0.05	15	0.88	\$0.02
Heating	Air Source Heat Pump	EER 12.0, COP 3.4	0.24	\$0.07	15	0.59	\$0.03
Heating	Air Source Heat Pump	Ductless Minisplit	0.31	\$0.11	15	0.67	\$0.04
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	0.19	\$0.03	15	2.81	\$0.02
Heating	Geothermal Heat Pump	EER 18, COP 3.8	0.43	\$0.07	15	3.15	\$0.02
Heating	Geothermal Heat Pump	EER 30, COP 5.0	1.11	\$0.10	15	5.98	\$0.01

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Heating	Electric Room Heat	Standard	-	-	20	1.00	-
Heating	Electric Furnace	Standard	-	-	20	1.00	-
Heating	PTAC	EER 9.8	-	-	15	1.00	-
Heating	PTAC	EER 10.2	-	\$0.00	15	-	-
Heating	PTAC	EER 10.8	-	\$0.01	15	-	-
Heating	PTAC	EER 11	-	\$0.01	15	-	-
Heating	PTAC	EER 11.5	-	\$0.01	15	-	-
Heating	PTHP	EER 9.8	-	-	15	1.00	-
Heating	PTHP	EER 10.2	0.13	\$0.00	15	> 10	\$0.00
Heating	PTHP	EER 10.8	0.31	\$0.01	15	> 10	\$0.00
Heating	PTHP	EER 11	0.37	\$0.01	15	> 10	\$0.00
Heating	PTHP	EER 11.5	0.50	\$0.01	15	> 10	\$0.00
Ventilation	Ventilation	Constant Volume	-	-	10	1.00	-
Ventilation	Ventilation	Variable Air Volume	1.13	(\$0.30)	10	1.00	(\$0.04)
Water Heating	Water Heating	EF .97	-	-	15	1.00	-
Water Heating	Water Heating	EF .98	0.01	\$0.00	15	2.31	\$0.02
Water Heating	Water Heating	EF 2.0	0.51	\$0.00	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.3	0.58	\$0.01	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.4	0.59	\$0.01	15	> 10	\$0.00
Interior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Interior Lighting	Screw-in	90W Halogen PAR-38	0.05	\$0.00	3	1.06	\$0.02
Interior Lighting	Screw-in	70W HIR PAR-38	0.08	\$0.00	3	1.40	\$0.02
Interior Lighting	Screw-in	CFL	0.15	\$0.00	2.2	6.49	\$0.01
Interior Lighting	Screw-in	LED (2010)	0.16	\$0.03	20	3.10	\$0.01
Interior Lighting	Screw-in	LED (2020)	0.19	\$0.01	20	-	\$0.00
Interior Lighting	High-Bay Fixtures	Metal Halides	-	-	3	1.00	-
Interior Lighting	High-Bay Fixtures	LED (2010)	0.12	\$0.09	15	0.27	\$0.08
Interior Lighting	High-Bay Fixtures	T8	0.12	(\$0.01)	10	1.00	(\$0.01)
Interior Lighting	High-Bay Fixtures	High Pressure Sodium	0.13	\$0.00	6	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	Light Emitting Plasma	0.15	\$0.01	15	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	T5	0.15	\$0.01	10	1.00	\$0.01
Interior Lighting	High-Bay Fixtures	LED (2020)	0.23	\$0.02	15	-	\$0.01
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Interior Lighting	Linear Fluorescent	LED (2010)	0.99	\$4.52	15	1.00	\$0.47
Interior Lighting	Linear Fluorescent	T8	1.03	(\$0.00)	10	1.00	(\$0.00)
Interior Lighting	Linear Fluorescent	Super T8	1.43	\$0.66	10	1.00	\$0.06
Interior Lighting	Linear Fluorescent	T5	1.66	\$0.50	10	1.00	\$0.04
Interior Lighting	Linear Fluorescent	LED (2020)	3.10	\$1.24	15	-	\$0.04
Exterior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Exterior Lighting	Screw-in	90W Halogen PAR-38	0.05	\$0.00	3	1.10	\$0.02
Exterior Lighting	Screw-in	70W HIR PAR-38	0.07	\$0.00	3	1.41	\$0.02
Exterior Lighting	Screw-in	CFL	0.14	\$0.00	6	> 10	\$0.00
Exterior Lighting	Screw-in	LED (2010)	0.15	\$0.06	20	1.24	\$0.04
Exterior Lighting	Screw-in	LED (2020)	0.17	\$0.02	20	-	\$0.01
Exterior Lighting	HID	Metal Halides	-	-	3	1.00	-
Exterior Lighting	HID	LED (2010)	0.30	\$0.64	15	0.12	\$0.22
Exterior Lighting	HID	T8	0.31	(\$0.02)	10	1.00	(\$0.01)
Exterior Lighting	HID	High Pressure Sodium	0.33	\$0.01	6	1.00	\$0.00
Exterior Lighting	HID	Light Emitting Plasma	0.38	\$0.02	15	1.00	\$0.00
Exterior Lighting	HID	T5	0.39	\$0.02	10	1.00	\$0.01
Exterior Lighting	HID	LED (2020)	0.58	\$0.17	15	-	\$0.03

Commercial Energy Efficiency Equipment and Measure Data

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Exterior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Exterior Lighting	Linear Fluorescent	LED (2010)	0.00	\$0.00	15	1.00	\$0.47
Exterior Lighting	Linear Fluorescent	T8	0.00	(\$0.00)	10	1.00	(\$0.00)
Exterior Lighting	Linear Fluorescent	Super T8	0.00	\$0.00	10	1.00	\$0.06
Exterior Lighting	Linear Fluorescent	T5	0.00	\$0.00	10	1.00	\$0.04
Exterior Lighting	Linear Fluorescent	LED (2020)	0.00	\$0.00	15	-	\$0.04
Refrigeration	Walk-in Refrigerator	14600 kWh/yr	-	-	12	1.00	-
Refrigeration	Walk-in Refrigerator	10800 kWh/yr	0.07	\$0.00	12	> 10	\$0.00
Refrigeration	Walk-in Refrigerator	10000 kWh/yr	0.07	\$0.00	12	8.17	\$0.01
Refrigeration	Walk-in Refrigerator	9000 kWh/yr	0.08	\$0.01	12	5.16	\$0.01
Refrigeration	Reach-in Refrigerator	3800 kWh/yr	-	-	12	1.00	-
Refrigeration	Reach-in Refrigerator	3100 kWh/yr	0.03	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	2500 kWh/yr	0.04	\$0.00	12	8.87	\$0.01
Refrigeration	Reach-in Refrigerator	2400 kWh/yr	0.04	\$0.00	12	7.97	\$0.01
Refrigeration	Reach-in Refrigerator	1500 kWh/yr	0.06	\$0.00	12	9.51	\$0.01
Refrigeration	Glass Door Display	14480 kWh/yr	-	-	12	-	-
Refrigeration	Glass Door Display	11700 kWh/yr	0.03	\$0.00	12	-	\$0.02
Refrigeration	Glass Door Display	8400 kWh/yr	0.07	-	12	1.00	-
Refrigeration	Glass Door Display	6800 kWh/yr	0.09	\$0.00	12	2.12	\$0.01
Refrigeration	Open Display Case	6500 kWh/yr	-	-	12	-	-
Refrigeration	Open Display Case	5350 kWh/yr	0.01	-	12	1.00	-
Refrigeration	Open Display Case	5300 kWh/yr	0.01	\$0.01	12	-	\$0.05
Refrigeration	Open Display Case	4330 kWh/yr	0.03	\$0.01	12	0.87	\$0.03
Refrigeration	Icemaker	7.0 kWh/100 lbs	-	-	10	1.00	-
Refrigeration	Icemaker	6.3 kWh/100 lbs	0.01	\$0.01	10	0.35	\$0.15
Refrigeration	Icemaker	6.0 kWh/100 lbs	0.02	\$0.02	10	0.35	\$0.15
Refrigeration	Icemaker	5.5 kWh/100 lbs	0.02	\$0.03	10	0.35	\$0.15
Refrigeration	Vending Machine	3400 kWh/year	-	-	12	1.00	-
Refrigeration	Vending Machine	3000 kWh/year	0.01	\$0.00	12	1.92	\$0.03
Refrigeration	Vending Machine	2400 kWh/year	0.03	\$0.01	12	1.92	\$0.03
Refrigeration	Vending Machine	1700 kWh/year	0.04	\$0.00	12	4.15	\$0.01
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.02	\$0.00	12	> 10	\$0.00
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.01	\$0.00	12	> 10	\$0.00
Food Preparation	Dishwasher	Standard	-	-	12	1.00	-
Food Preparation	Dishwasher	Energy Star	0.11	\$0.00	12	> 10	\$0.00
Food Preparation	Hot Food Container	Standard	-	-	12	1.00	-
Food Preparation	Hot Food Container	Energy Star	0.07	\$0.00	12	7.37	\$0.01
Food Preparation	Other	Standard	-	-	12	1.00	-
Office Equipment	Desktop Computer	Standard	-	-	5	1.00	-
Office Equipment	Desktop Computer	Energy Star	0.08	\$0.00	5	> 10	\$0.00
Office Equipment	Laptop	Standard	-	-	4	1.00	-
Office Equipment	Laptop	Energy Star	0.01	\$0.00	4	> 10	\$0.00
Office Equipment	Server	Standard	-	-	3	1.00	-
Office Equipment	Server	Energy Star	0.05	\$0.00	3	> 10	\$0.00
Office Equipment	Monitor	Standard	-	-	4	1.00	-
Office Equipment	Monitor	Energy Star	0.01	\$0.00	4	> 10	\$0.00
Office Equipment	Printer/Copier/Fax	Standard	-	-	6	1.00	-
Office Equipment	Printer/Copier/Fax	Energy Star	0.04	\$0.00	6	> 10	\$0.00
Office Equipment	POS Terminal	Standard	-	-	4	1.00	-

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incre- mental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Office Equipment	POS Terminal	Energy Star	0.01	\$0.00	4	1.14	\$0.03
Miscellaneous	Non-HVAC Motors	Standard (EPAAct)	-	-	15	1.00	-
Miscellaneous	Non-HVAC Motors	Standard (EPAAct 2015)	0.00	-	15	-	-
Miscellaneous	Non-HVAC Motors	High Efficiency	0.00	\$0.00	15	> 10	\$0.00
Miscellaneous	Non-HVAC Motors	High Efficiency (2015)	0.00	\$0.00	15	-	\$0.00
Miscellaneous	Non-HVAC Motors	Premium (NEMA)	0.00	\$0.00	15	> 10	\$0.00
Miscellaneous	Non-HVAC Motors	Premium (NEMA 2015)	0.00	\$0.00	15	-	\$0.00
Miscellaneous	Pool Pump	Standard	-	-	15	1.00	-
Miscellaneous	Pool Pump	High Efficiency	0.00	\$0.00	15	> 10	\$0.00
Miscellaneous	Pool Pump	High Efficiency, Multi-Speed	0.00	\$0.00	15	> 10	\$0.00
Miscellaneous	Pool Heater	Standard	-	-	15	1.00	-
Miscellaneous	Pool Heater	Heat Pump	0.00	-	15	-	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-26 Energy Efficiency Equipment Data, Natural Gas-School, New Vintage

End Use	Technology	Efficiency Definition	Savings (Therms/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/Therm)
Heating	Furnace	duct Ev-	-	-	16	1.00	-
Heating	Furnace	EF .80	0.01	\$0.02	16	3.06	\$0.19
Heating	Furnace	EF .82	0.01	\$0.04	16	1.66	\$0.35
Heating	Furnace	EF .90	0.03	\$0.04	16	4.03	\$0.14
Heating	Furnace	EF .96	0.03	\$0.05	16	3.72	\$0.16
Heating	Boiler	EF .76	-	-	20	-	-
Heating	Boiler	EF .80	0.01	\$0.00	20	1.00	\$0.00
Heating	Boiler	EF .83	0.02	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .90	0.02	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .96	0.04	\$0.00	20	> 10	\$0.00
Heating	Unit Heater	Standard	-	-	15	1.00	-
Heating	Unit Heater	Condensing	0.02	\$0.00	15	> 10	\$0.01
Water Heating	Water Heating	EF 0.77	-	-	12	1.00	-
Water Heating	Water Heating	EF 0.80	0.00	\$0.01	12	2.59	\$0.21
Water Heating	Water Heating	Tankless	0.01	\$0.01	12	1.94	\$0.28
Water Heating	Water Heating	Indirect Fired	0.01	\$0.01	12	5.07	\$0.11
Water Heating	Water Heating	EF 0.94	0.02	(\$0.00)	12	1.00	(\$0.02)
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.01	\$0.00	12	> 10	\$0.01
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.01	\$0.00	12	> 10	\$0.04
Food Preparation	Broiler	Standard	-	-	12	1.00	-
Food Preparation	Broiler	High Efficiency	0.01	\$0.00	12	> 10	\$0.04
Food Preparation	Griddle	Standard	-	-	12	1.00	-
Food Preparation	Griddle	High Efficiency	0.00	\$0.00	12	> 10	\$0.01
Food Preparation	Range	Standard	-	-	12	1.00	-
Food Preparation	Range	High Efficiency	0.00	\$0.00	12	> 10	\$0.01
Food Preparation	Steamer	Standard	-	-	12	1.00	-
Food Preparation	Steamer	Energy Star	0.02	\$0.00	12	> 10	\$0.01
Food Preparation	Other	Standard	-	-	12	1.00	-
Food Preparation	Other	Energy Star	0.00	-	12	-	-
Miscellaneous	Pool Heater	EF .78	-	-	5	-	-
Miscellaneous	Pool Heater	EF .82	0.00	\$0.00	5	1.00	\$0.04
Miscellaneous	Pool Heater	EF .90	0.00	\$0.00	5	1.35	\$0.23
Miscellaneous	Pool Heater	EF .95	0.00	\$0.00	5	1.81	\$0.19
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-27 Energy Efficiency Equipment Data, Electric-Health, Existing Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Air-Cooled Chiller	1.5 kw/ton, COP 2.3	-	-	20	1.00	-
Cooling	Air-Cooled Chiller	1.3 kw/ton, COP 2.7	0.66	\$0.57	20	1.11	\$0.08
Cooling	Air-Cooled Chiller	1.26 kw/ton, COP 2.8	0.79	\$0.65	20	1.17	\$0.07
Cooling	Air-Cooled Chiller	1.0 kw/ton, COP 3.5	1.64	\$0.72	20	2.20	\$0.04
Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	1.74	\$0.80	20	2.11	\$0.04
Cooling	Water-Cooled Chiller	0.75 kw/ton, COP 4.7	-	-	20	1.00	-
Cooling	Water-Cooled Chiller	0.60 kw/ton, COP 5.9	0.75	\$0.22	20	3.32	\$0.03
Cooling	Water-Cooled Chiller	0.58 kw/ton, COP 6.1	0.85	\$0.23	20	3.51	\$0.02
Cooling	Water-Cooled Chiller	0.55 kw/Ton, COP 6.4	1.00	\$0.28	20	3.45	\$0.02
Cooling	Water-Cooled Chiller	0.51 kw/ton, COP 6.9	1.20	\$0.44	20	2.66	\$0.03
Cooling	Water-Cooled Chiller	0.50 kw/Ton, COP 7.0	1.25	\$0.48	20	2.50	\$0.03
Cooling	Water-Cooled Chiller	0.48 kw/ton, COP 7.3	1.35	\$0.53	20	2.46	\$0.03
Cooling	Roof top AC	EER 9.2	-	-	15	-	-
Cooling	Roof top AC	EER 10.1	0.54	\$0.03	15	-	\$0.01
Cooling	Roof top AC	EER 11.2	1.08	\$0.03	15	1.00	\$0.00
Cooling	Roof top AC	EER 12.0	1.41	\$0.11	15	3.36	\$0.01
Cooling	Roof top AC	Ductless Minisplit	1.77	\$0.35	15	1.62	\$0.02
Cooling	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Cooling	Air Source Heat Pump	EER 10.3, COP 3.2	0.60	\$0.04	15	-	\$0.01
Cooling	Air Source Heat Pump	EER 11.0, COP 3.3	0.96	\$0.00	15	1.00	\$0.00
Cooling	Air Source Heat Pump	EER 11.7, COP 3.4	1.27	\$0.14	15	1.89	\$0.01
Cooling	Air Source Heat Pump	EER 12.0, COP 3.4	1.40	\$0.20	15	1.75	\$0.01
Cooling	Air Source Heat Pump	Ductless Minisplit	1.77	\$0.34	15	1.90	\$0.02
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	0.34	\$0.07	15	3.53	\$0.02
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	0.61	\$0.15	15	3.13	\$0.03
Cooling	Geothermal Heat Pump	EER 30, COP 5.0	1.50	\$0.21	15	5.63	\$0.01
Cooling	PTAC	EER 9.8	-	-	15	1.00	-
Cooling	PTAC	EER 10.2	0.17	\$0.00	15	> 10	\$0.00
Cooling	PTAC	EER 10.8	0.40	\$0.02	15	> 10	\$0.00
Cooling	PTAC	EER 11	0.46	\$0.02	15	> 10	\$0.00
Cooling	PTAC	EER 11.5	0.61	\$0.02	15	> 10	\$0.00
Cooling	PTHP	EER 9.8	-	-	15	1.00	-
Cooling	PTHP	EER 10.2	0.17	\$0.00	15	> 10	\$0.00
Cooling	PTHP	EER 10.8	0.40	\$0.02	15	> 10	\$0.00
Cooling	PTHP	EER 11	0.46	\$0.02	15	> 10	\$0.00
Cooling	PTHP	EER 11.5	0.61	\$0.02	15	> 10	\$0.00
Cooling	Evaporative AC	Direct	-	-	15	1.00	-
Cooling	Evaporative AC	Indirect	0.50	-	15	-	-
Cooling	Evaporative AC	Direct/Indirect	1.28	-	15	-	-
Heating	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Heating	Air Source Heat Pump	EER 10.3, COP 3.2	0.08	\$0.01	15	-	\$0.01
Heating	Air Source Heat Pump	EER 11.0, COP 3.3	0.15	\$0.00	15	1.00	\$0.00
Heating	Air Source Heat Pump	EER 11.7, COP 3.4	0.21	\$0.02	15	1.72	\$0.01
Heating	Air Source Heat Pump	EER 12.0, COP 3.4	0.21	\$0.03	15	1.15	\$0.01
Heating	Air Source Heat Pump	Ductless Minisplit	0.28	\$0.05	15	1.31	\$0.02
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	0.17	\$0.02	15	5.75	\$0.01
Heating	Geothermal Heat Pump	EER 18, COP 3.8	0.40	\$0.03	15	6.45	\$0.01
Heating	Geothermal Heat Pump	EER 30, COP 5.0	1.03	\$0.04	15	> 10	\$0.00

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incre- mental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Heating	Electric Room Heat	Standard	-	-	20	1.00	-
Heating	Electric Furnace	Standard	-	-	20	1.00	-
Heating	PTAC	EER 9.8	-	-	15	1.00	-
Heating	PTAC	EER 10.2	-	\$0.00	15	-	-
Heating	PTAC	EER 10.8	-	\$0.02	15	-	-
Heating	PTAC	EER 11	-	\$0.02	15	-	-
Heating	PTAC	EER 11.5	-	\$0.02	15	-	-
Heating	PTHP	EER 9.8	-	-	15	1.00	-
Heating	PTHP	EER 10.2	0.12	\$0.00	15	> 10	\$0.00
Heating	PTHP	EER 10.8	0.28	\$0.01	15	9.98	\$0.01
Heating	PTHP	EER 11	0.34	\$0.02	15	> 10	\$0.00
Heating	PTHP	EER 11.5	0.45	\$0.02	15	> 10	\$0.00
Ventilation	Ventilation	Constant Volume	-	-	10	1.00	-
Ventilation	Ventilation	Variable Air Volume	2.04	(\$0.14)	10	1.00	(\$0.01)
Water Heating	Water Heating	EF .97	-	-	15	1.00	-
Water Heating	Water Heating	EF .98	0.02	\$0.00	15	4.29	\$0.01
Water Heating	Water Heating	EF 2.0	1.10	\$0.01	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.3	1.23	\$0.01	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.4	1.27	\$0.01	15	> 10	\$0.00
Interior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Interior Lighting	Screw-in	90W Halogen PAR-38	0.38	\$0.01	3	1.70	\$0.01
Interior Lighting	Screw-in	70W HIR PAR-38	0.59	\$0.02	3	2.28	\$0.01
Interior Lighting	Screw-in	CFL	1.11	\$0.01	2.2	> 10	\$0.00
Interior Lighting	Screw-in	LED (2010)	1.20	\$0.12	20	4.99	\$0.01
Interior Lighting	Screw-in	LED (2020)	1.38	\$0.03	20	-	\$0.00
Interior Lighting	High-Bay Fixtures	Metal Halides	-	-	3	1.00	-
Interior Lighting	High-Bay Fixtures	LED (2010)	0.17	\$0.08	15	0.26	\$0.05
Interior Lighting	High-Bay Fixtures	T8	0.17	(\$0.01)	10	1.00	(\$0.00)
Interior Lighting	High-Bay Fixtures	High Pressure Sodium	0.18	\$0.00	6	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	Light Emitting Plasma	0.21	\$0.01	15	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	T5	0.22	\$0.01	10	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	LED (2020)	0.32	\$0.02	15	-	\$0.01
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Interior Lighting	Linear Fluorescent	LED (2010)	0.94	\$2.63	15	1.00	\$0.29
Interior Lighting	Linear Fluorescent	T8	0.98	(\$0.00)	10	1.00	(\$0.00)
Interior Lighting	Linear Fluorescent	Super T8	1.36	\$0.38	10	1.00	\$0.04
Interior Lighting	Linear Fluorescent	T5	1.58	\$0.29	10	1.00	\$0.02
Interior Lighting	Linear Fluorescent	LED (2020)	2.94	\$0.72	15	-	\$0.03
Exterior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Exterior Lighting	Screw-in	90W Halogen PAR-38	0.01	\$0.00	3	1.80	\$0.01
Exterior Lighting	Screw-in	70W HIR PAR-38	0.01	\$0.00	3	2.29	\$0.01
Exterior Lighting	Screw-in	CFL	0.03	\$0.00	6	> 10	\$0.00
Exterior Lighting	Screw-in	LED (2010)	0.03	\$0.01	20	2.01	\$0.02
Exterior Lighting	Screw-in	LED (2020)	0.03	\$0.00	20	-	\$0.01
Exterior Lighting	HID	Metal Halides	-	-	3	1.00	-
Exterior Lighting	HID	LED (2010)	0.17	\$0.23	15	0.19	\$0.14
Exterior Lighting	HID	T8	0.18	(\$0.01)	10	1.00	(\$0.00)
Exterior Lighting	HID	High Pressure Sodium	0.19	\$0.00	6	1.00	\$0.00
Exterior Lighting	HID	Light Emitting Plasma	0.22	\$0.01	15	1.00	\$0.00
Exterior Lighting	HID	T5	0.23	\$0.01	10	1.00	\$0.00
Exterior Lighting	HID	LED (2020)	0.33	\$0.06	15	-	\$0.02

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Exterior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Exterior Lighting	Linear Fluorescent	LED (2010)	0.00	\$0.00	15	1.00	\$0.29
Exterior Lighting	Linear Fluorescent	T8	0.00	(\$0.00)	10	1.00	(\$0.00)
Exterior Lighting	Linear Fluorescent	Super T8	0.00	\$0.00	10	1.00	\$0.04
Exterior Lighting	Linear Fluorescent	T5	0.00	\$0.00	10	1.00	\$0.02
Exterior Lighting	Linear Fluorescent	LED (2020)	0.00	\$0.00	15	-	\$0.03
Refrigeration	Walk-in Refrigerator	14600 kWh/yr	-	-	12	1.00	-
Refrigeration	Walk-in Refrigerator	10800 kWh/yr	0.07	\$0.00	12	> 10	\$0.00
Refrigeration	Walk-in Refrigerator	10000 kWh/yr	0.08	\$0.00	12	> 10	\$0.00
Refrigeration	Walk-in Refrigerator	9000 kWh/yr	0.09	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	3800 kWh/yr	-	-	12	1.00	-
Refrigeration	Reach-in Refrigerator	3100 kWh/yr	0.02	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	2500 kWh/yr	0.02	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	2400 kWh/yr	0.02	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	1500 kWh/yr	0.03	\$0.00	12	> 10	\$0.00
Refrigeration	Glass Door Display	14480 kWh/yr	-	-	12	-	-
Refrigeration	Glass Door Display	11700 kWh/yr	0.03	\$0.01	12	-	\$0.02
Refrigeration	Glass Door Display	8400 kWh/yr	0.08	-	12	1.00	-
Refrigeration	Glass Door Display	6800 kWh/yr	0.09	\$0.01	12	1.60	\$0.01
Refrigeration	Open Display Case	6500 kWh/yr	-	-	12	-	-
Refrigeration	Open Display Case	5350 kWh/yr	0.01	-	12	1.00	-
Refrigeration	Open Display Case	5300 kWh/yr	0.02	\$0.01	12	-	\$0.07
Refrigeration	Open Display Case	4330 kWh/yr	0.03	\$0.01	12	0.65	\$0.04
Refrigeration	Icemaker	7.0 kWh/100 lbs	-	-	10	1.00	-
Refrigeration	Icemaker	6.3 kWh/100 lbs	0.01	\$0.01	10	0.26	\$0.20
Refrigeration	Icemaker	6.0 kWh/100 lbs	0.02	\$0.02	10	0.26	\$0.20
Refrigeration	Icemaker	5.5 kWh/100 lbs	0.02	\$0.04	10	0.26	\$0.20
Refrigeration	Vending Machine	3400 kWh/year	-	-	12	1.00	-
Refrigeration	Vending Machine	3000 kWh/year	0.01	\$0.00	12	1.55	\$0.04
Refrigeration	Vending Machine	2400 kWh/year	0.03	\$0.01	12	1.55	\$0.04
Refrigeration	Vending Machine	1700 kWh/year	0.05	\$0.01	12	3.35	\$0.02
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.07	\$0.00	12	> 10	\$0.00
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.04	\$0.00	12	> 10	\$0.00
Food Preparation	Dishwasher	Standard	-	-	12	1.00	-
Food Preparation	Dishwasher	Energy Star	0.36	\$0.01	12	> 10	\$0.00
Food Preparation	Hot Food Container	Standard	-	-	12	1.00	-
Food Preparation	Hot Food Container	Energy Star	0.23	\$0.01	12	> 10	\$0.00
Food Preparation	Other	Standard	-	-	12	1.00	-
Office Equipment	Desktop Computer	Standard	-	-	5	1.00	-
Office Equipment	Desktop Computer	Energy Star	0.13	\$0.00	5	> 10	\$0.00
Office Equipment	Laptop	Standard	-	-	4	1.00	-
Office Equipment	Laptop	Energy Star	0.02	\$0.00	4	> 10	\$0.00
Office Equipment	Server	Standard	-	-	3	1.00	-
Office Equipment	Server	Energy Star	0.03	\$0.00	3	> 10	\$0.00
Office Equipment	Monitor	Standard	-	-	4	1.00	-
Office Equipment	Monitor	Energy Star	0.01	\$0.00	4	> 10	\$0.00
Office Equipment	Printer/Copier/Fax	Standard	-	-	6	1.00	-
Office Equipment	Printer/Copier/Fax	Energy Star	0.05	\$0.00	6	> 10	\$0.00
Office Equipment	POS Terminal	Standard	-	-	4	1.00	-

Commercial Energy Efficiency Equipment and Measure Data

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Office Equipment	POS Terminal	Energy Star	0.04	\$0.02	4	0.28	\$0.14
Miscellaneous	Non-HVAC Motors	Standard (EPAAct)	-	-	15	1.00	-
Miscellaneous	Non-HVAC Motors	Standard (EPAAct 2015)	0.01	-	15	-	-
Miscellaneous	Non-HVAC Motors	High Efficiency	0.01	\$0.00	15	7.43	\$0.01
Miscellaneous	Non-HVAC Motors	High Efficiency (2015)	0.02	\$0.00	15	-	\$0.01
Miscellaneous	Non-HVAC Motors	Premium (NEMA)	0.02	\$0.00	15	7.43	\$0.01
Miscellaneous	Non-HVAC Motors	Premium (NEMA 2015)	0.03	\$0.00	15	-	\$0.01
Miscellaneous	Pool Pump	Standard	-	-	15	1.00	-
Miscellaneous	Pool Pump	High Efficiency	0.00	-	15	-	-
Miscellaneous	Pool Pump	High Efficiency, Multi-Speed	0.00	-	15	-	-
Miscellaneous	Pool Heater	Standard	-	-	15	1.00	-
Miscellaneous	Pool Heater	Heat Pump	0.01	-	15	-	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-28 Energy Efficiency Equipment Data, Natural Gas-Health, Existing Vintage

End Use	Technology	Efficiency Definition	Savings (Therms/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/Therm)
Heating	Furnace	EF .76	-	-	16	1.00	-
Heating	Furnace	EF .80	0.03	\$0.04	16	4.39	\$0.13
Heating	Furnace	EF .82	0.04	\$0.10	16	2.37	\$0.25
Heating	Furnace	EF .90	0.08	\$0.09	16	5.78	\$0.10
Heating	Furnace	EF .96	0.11	\$0.12	16	5.33	\$0.11
Heating	Boiler	EF .76	-	-	20	-	-
Heating	Boiler	EF .80	0.05	\$0.00	20	1.00	\$0.00
Heating	Boiler	EF .83	0.08	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .90	0.12	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .96	0.17	\$0.00	20	> 10	\$0.00
Heating	Unit Heater	Standard	-	-	15	1.00	-
Heating	Unit Heater	Condensing	0.06	-	15	-	-
Water Heating	Water Heating	EF 0.77	-	-	12	1.00	-
Water Heating	Water Heating	EF 0.80	0.02	\$0.02	12	5.06	\$0.11
Water Heating	Water Heating	Tankless	0.03	\$0.03	12	3.80	\$0.14
Water Heating	Water Heating	Indirect Fired	0.05	\$0.02	12	9.91	\$0.05
Water Heating	Water Heating	EF 0.94	0.08	(\$0.01)	12	1.00	(\$0.01)
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.05	\$0.00	12	> 10	\$0.00
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.08	\$0.04	12	8.47	\$0.06
Food Preparation	Broiler	Standard	-	-	12	1.00	-
Food Preparation	Broiler	High Efficiency	0.07	\$0.00	12	> 10	\$0.01
Food Preparation	Griddle	Standard	-	-	12	1.00	-
Food Preparation	Griddle	High Efficiency	0.01	\$0.00	12	> 10	\$0.00
Food Preparation	Range	Standard	-	-	12	1.00	-
Food Preparation	Range	High Efficiency	0.04	\$0.00	12	> 10	\$0.00
Food Preparation	Steamer	Standard	-	-	12	1.00	-
Food Preparation	Steamer	Energy Star	0.19	\$0.00	12	> 10	\$0.00
Food Preparation	Other	Standard	-	-	12	1.00	-
Food Preparation	Other	Energy Star	0.02	-	12	-	-
Miscellaneous	Pool Heater	EF .78	-	-	5	-	-
Miscellaneous	Pool Heater	EF .82	0.01	-	5	1.00	-
Miscellaneous	Pool Heater	EF .90	0.03	-	5	-	-
Miscellaneous	Pool Heater	EF .95	0.04	-	5	-	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-29 Energy Efficiency Equipment Data, Electric-Health, New Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incre- mental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Air-Cooled Chiller	1.5 kw/ton, COP 2.3	-	-	20	1.00	-
Cooling	Air-Cooled Chiller	1.3 kw/ton, COP 2.7	0.58	\$0.50	20	1.11	\$0.08
Cooling	Air-Cooled Chiller	1.26 kw/ton, COP 2.8	0.69	\$0.57	20	1.18	\$0.07
Cooling	Air-Cooled Chiller	1.0 kw/ton, COP 3.5	1.44	\$0.63	20	2.21	\$0.04
Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	1.53	\$0.70	20	2.12	\$0.04
Cooling	Water-Cooled Chiller	0.75 kw/ton, COP 4.7	-	-	20	1.00	-
Cooling	Water-Cooled Chiller	0.60 kw/ton, COP 5.9	0.72	\$0.21	20	3.29	\$0.03
Cooling	Water-Cooled Chiller	0.58 kw/ton, COP 6.1	0.81	\$0.23	20	3.48	\$0.02
Cooling	Water-Cooled Chiller	0.55 kw/Ton, COP 6.4	0.96	\$0.27	20	3.41	\$0.03
Cooling	Water-Cooled Chiller	0.51 kw/ton, COP 6.9	1.15	\$0.42	20	2.63	\$0.03
Cooling	Water-Cooled Chiller	0.50 kw/Ton, COP 7.0	1.20	\$0.47	20	2.47	\$0.03
Cooling	Water-Cooled Chiller	0.48 kw/ton, COP 7.3	1.30	\$0.51	20	2.44	\$0.03
Cooling	Roof top AC	EER 9.2	-	-	15	-	-
Cooling	Roof top AC	EER 10.1	0.47	\$0.02	15	-	\$0.00
Cooling	Roof top AC	EER 11.2	0.94	\$0.02	15	1.00	\$0.00
Cooling	Roof top AC	EER 12.0	1.23	\$0.06	15	4.99	\$0.01
Cooling	Roof top AC	Ductless Minisplit	1.55	\$0.21	15	2.40	\$0.01
Cooling	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Cooling	Air Source Heat Pump	EER 10.3, COP 3.2	0.60	\$0.02	15	-	\$0.00
Cooling	Air Source Heat Pump	EER 11.0, COP 3.3	0.96	\$0.00	15	1.00	\$0.00
Cooling	Air Source Heat Pump	EER 11.7, COP 3.4	1.27	\$0.09	15	2.80	\$0.01
Cooling	Air Source Heat Pump	EER 12.0, COP 3.4	1.40	\$0.14	15	2.60	\$0.01
Cooling	Air Source Heat Pump	Ductless Minisplit	1.77	\$0.23	15	2.82	\$0.01
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	0.34	\$0.05	15	5.24	\$0.02
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	0.61	\$0.10	15	4.66	\$0.02
Cooling	Geothermal Heat Pump	EER 30, COP 5.0	1.50	\$0.14	15	8.36	\$0.01
Cooling	PTAC	EER 9.8	-	-	15	1.00	-
Cooling	PTAC	EER 10.2	0.16	\$0.00	15	> 10	\$0.00
Cooling	PTAC	EER 10.8	0.37	\$0.02	15	> 10	\$0.00
Cooling	PTAC	EER 11	0.42	\$0.02	15	> 10	\$0.00
Cooling	PTAC	EER 11.5	0.56	\$0.02	15	> 10	\$0.00
Cooling	PTHP	EER 9.8	-	-	15	1.00	-
Cooling	PTHP	EER 10.2	0.16	\$0.00	15	> 10	\$0.00
Cooling	PTHP	EER 10.8	0.37	\$0.02	15	> 10	\$0.00
Cooling	PTHP	EER 11	0.42	\$0.02	15	> 10	\$0.00
Cooling	PTHP	EER 11.5	0.56	\$0.02	15	> 10	\$0.00
Cooling	Evaporative AC	Direct	-	-	15	1.00	-
Cooling	Evaporative AC	Indirect	0.50	-	15	-	-
Cooling	Evaporative AC	Direct/Indirect	1.28	-	15	-	-
Heating	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Heating	Air Source Heat Pump	EER 10.3, COP 3.2	0.05	\$0.01	15	-	\$0.01
Heating	Air Source Heat Pump	EER 11.0, COP 3.3	0.09	\$0.00	15	1.00	\$0.00
Heating	Air Source Heat Pump	EER 11.7, COP 3.4	0.14	\$0.02	15	1.12	\$0.02
Heating	Air Source Heat Pump	EER 12.0, COP 3.4	0.14	\$0.03	15	0.75	\$0.02
Heating	Air Source Heat Pump	Ductless Minisplit	0.19	\$0.06	15	0.88	\$0.03
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	0.16	\$0.01	15	8.58	\$0.01
Heating	Geothermal Heat Pump	EER 18, COP 3.8	0.37	\$0.02	15	9.63	\$0.01
Heating	Geothermal Heat Pump	EER 30, COP 5.0	0.97	\$0.03	15	> 10	\$0.00

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Heating	Electric Room Heat	Standard	-	-	20	1.00	-
Heating	Electric Furnace	Standard	-	-	20	1.00	-
Heating	PTAC	EER 9.8	-	-	15	1.00	-
Heating	PTAC	EER 10.2	0.00	\$0.00	15	0.31	\$0.17
Heating	PTAC	EER 10.8	0.00	\$0.01	15	0.10	\$0.53
Heating	PTAC	EER 11	0.00	\$0.01	15	0.09	\$0.57
Heating	PTAC	EER 11.5	0.00	\$0.01	15	0.08	\$0.67
Heating	PTHP	EER 9.8	-	-	15	1.00	-
Heating	PTHP	EER 10.2	0.11	\$0.00	15	> 10	\$0.00
Heating	PTHP	EER 10.8	0.26	\$0.01	15	> 10	\$0.00
Heating	PTHP	EER 11	0.30	\$0.01	15	> 10	\$0.00
Heating	PTHP	EER 11.5	0.41	\$0.01	15	> 10	\$0.00
Ventilation	Ventilation	Constant Volume	-	-	10	1.00	-
Ventilation	Ventilation	Variable Air Volume	3.17	(\$0.22)	10	1.00	(\$0.01)
Water Heating	Water Heating	EF .97	-	-	15	1.00	-
Water Heating	Water Heating	EF .98	0.02	\$0.00	15	4.51	\$0.01
Water Heating	Water Heating	EF 2.0	1.04	\$0.01	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.3	1.17	\$0.01	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.4	1.21	\$0.01	15	> 10	\$0.00
Interior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Interior Lighting	Screw-in	90W Halogen PAR-38	0.38	\$0.01	3	1.70	\$0.01
Interior Lighting	Screw-in	70W HIR PAR-38	0.59	\$0.02	3	2.28	\$0.01
Interior Lighting	Screw-in	CFL	1.11	\$0.01	2.2	> 10	\$0.00
Interior Lighting	Screw-in	LED (2010)	1.20	\$0.12	20	4.99	\$0.01
Interior Lighting	Screw-in	LED (2020)	1.38	\$0.03	20	-	\$0.00
Interior Lighting	High-Bay Fixtures	Metal Halides	-	-	3	1.00	-
Interior Lighting	High-Bay Fixtures	LED (2010)	0.17	\$0.08	15	0.26	\$0.05
Interior Lighting	High-Bay Fixtures	T8	0.17	(\$0.01)	10	1.00	(\$0.00)
Interior Lighting	High-Bay Fixtures	High Pressure Sodium	0.18	\$0.00	6	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	Light Emitting Plasma	0.21	\$0.01	15	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	T5	0.22	\$0.01	10	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	LED (2020)	0.32	\$0.02	15	-	\$0.01
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Interior Lighting	Linear Fluorescent	LED (2010)	0.94	\$2.63	15	1.00	\$0.29
Interior Lighting	Linear Fluorescent	T8	0.98	(\$0.00)	10	1.00	(\$0.00)
Interior Lighting	Linear Fluorescent	Super T8	1.36	\$0.38	10	1.00	\$0.04
Interior Lighting	Linear Fluorescent	T5	1.58	\$0.29	10	1.00	\$0.02
Interior Lighting	Linear Fluorescent	LED (2020)	2.94	\$0.72	15	-	\$0.03
Exterior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Exterior Lighting	Screw-in	90W Halogen PAR-38	0.01	\$0.00	3	1.80	\$0.01
Exterior Lighting	Screw-in	70W HIR PAR-38	0.01	\$0.00	3	2.29	\$0.01
Exterior Lighting	Screw-in	CFL	0.03	\$0.00	6	> 10	\$0.00
Exterior Lighting	Screw-in	LED (2010)	0.03	\$0.01	20	2.01	\$0.02
Exterior Lighting	Screw-in	LED (2020)	0.03	\$0.00	20	-	\$0.01
Exterior Lighting	HID	Metal Halides	-	-	3	1.00	-
Exterior Lighting	HID	LED (2010)	0.17	\$0.23	15	0.19	\$0.14
Exterior Lighting	HID	T8	0.18	(\$0.01)	10	1.00	(\$0.00)
Exterior Lighting	HID	High Pressure Sodium	0.19	\$0.00	6	1.00	\$0.00
Exterior Lighting	HID	Light Emitting Plasma	0.22	\$0.01	15	1.00	\$0.00
Exterior Lighting	HID	T5	0.23	\$0.01	10	1.00	\$0.00
Exterior Lighting	HID	LED (2020)	0.33	\$0.06	15	-	\$0.02

Commercial Energy Efficiency Equipment and Measure Data

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Exterior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Exterior Lighting	Linear Fluorescent	LED (2010)	0.00	\$0.00	15	1.00	\$0.29
Exterior Lighting	Linear Fluorescent	T8	0.00	(\$0.00)	10	1.00	(\$0.00)
Exterior Lighting	Linear Fluorescent	Super T8	0.00	\$0.00	10	1.00	\$0.04
Exterior Lighting	Linear Fluorescent	T5	0.00	\$0.00	10	1.00	\$0.02
Exterior Lighting	Linear Fluorescent	LED (2020)	0.00	\$0.00	15	-	\$0.03
Refrigeration	Walk-in Refrigerator	14600 kWh/yr	-	-	12	1.00	-
Refrigeration	Walk-in Refrigerator	10800 kWh/yr	0.07	\$0.00	12	> 10	\$0.00
Refrigeration	Walk-in Refrigerator	10000 kWh/yr	0.08	\$0.00	12	> 10	\$0.00
Refrigeration	Walk-in Refrigerator	9000 kWh/yr	0.09	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	3800 kWh/yr	-	-	12	1.00	-
Refrigeration	Reach-in Refrigerator	3100 kWh/yr	0.02	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	2500 kWh/yr	0.02	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	2400 kWh/yr	0.02	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	1500 kWh/yr	0.03	\$0.00	12	> 10	\$0.00
Refrigeration	Glass Door Display	14480 kWh/yr	-	-	12	-	-
Refrigeration	Glass Door Display	11700 kWh/yr	0.03	\$0.01	12	-	\$0.02
Refrigeration	Glass Door Display	8400 kWh/yr	0.08	-	12	1.00	-
Refrigeration	Glass Door Display	6800 kWh/yr	0.09	\$0.01	12	1.60	\$0.01
Refrigeration	Open Display Case	6500 kWh/yr	-	-	12	-	-
Refrigeration	Open Display Case	5350 kWh/yr	0.01	-	12	1.00	-
Refrigeration	Open Display Case	5300 kWh/yr	0.02	\$0.01	12	-	\$0.07
Refrigeration	Open Display Case	4330 kWh/yr	0.03	\$0.01	12	0.65	\$0.04
Refrigeration	Icemaker	7.0 kWh/100 lbs	-	-	10	1.00	-
Refrigeration	Icemaker	6.3 kWh/100 lbs	0.01	\$0.01	10	0.26	\$0.20
Refrigeration	Icemaker	6.0 kWh/100 lbs	0.02	\$0.02	10	0.26	\$0.20
Refrigeration	Icemaker	5.5 kWh/100 lbs	0.02	\$0.04	10	0.26	\$0.20
Refrigeration	Vending Machine	3400 kWh/year	-	-	12	1.00	-
Refrigeration	Vending Machine	3000 kWh/year	0.01	\$0.00	12	1.03	\$0.05
Refrigeration	Vending Machine	2400 kWh/year	0.02	\$0.01	12	1.03	\$0.05
Refrigeration	Vending Machine	1700 kWh/year	0.03	\$0.01	12	2.23	\$0.03
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.07	\$0.00	12	> 10	\$0.00
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.04	\$0.00	12	> 10	\$0.00
Food Preparation	Dishwasher	Standard	-	-	12	1.00	-
Food Preparation	Dishwasher	Energy Star	0.36	\$0.01	12	> 10	\$0.00
Food Preparation	Hot Food Container	Standard	-	-	12	1.00	-
Food Preparation	Hot Food Container	Energy Star	0.23	\$0.01	12	> 10	\$0.00
Food Preparation	Other	Standard	-	-	12	1.00	-
Office Equipment	Desktop Computer	Standard	-	-	5	1.00	-
Office Equipment	Desktop Computer	Energy Star	0.13	\$0.00	5	> 10	\$0.00
Office Equipment	Laptop	Standard	-	-	4	1.00	-
Office Equipment	Laptop	Energy Star	0.02	\$0.00	4	> 10	\$0.00
Office Equipment	Server	Standard	-	-	3	1.00	-
Office Equipment	Server	Energy Star	0.03	\$0.00	3	> 10	\$0.00
Office Equipment	Monitor	Standard	-	-	4	1.00	-
Office Equipment	Monitor	Energy Star	0.01	\$0.00	4	> 10	\$0.00
Office Equipment	Printer/Copier/Fax	Standard	-	-	6	1.00	-
Office Equipment	Printer/Copier/Fax	Energy Star	0.05	\$0.00	6	> 10	\$0.00
Office Equipment	POS Terminal	Standard	-	-	4	1.00	-

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incre- mental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Office Equipment	POS Terminal	Energy Star	0.04	\$0.02	4	0.28	\$0.14
Miscellaneous	Non-HVAC Motors	Standard (EPAAct)	-	-	15	1.00	-
Miscellaneous	Non-HVAC Motors	Standard (EPAAct 2015)	0.01	-	15	-	-
Miscellaneous	Non-HVAC Motors	High Efficiency	0.01	\$0.00	15	7.43	\$0.01
Miscellaneous	Non-HVAC Motors	High Efficiency (2015)	0.02	\$0.00	15	-	\$0.01
Miscellaneous	Non-HVAC Motors	Premium (NEMA)	0.02	\$0.00	15	7.43	\$0.01
Miscellaneous	Non-HVAC Motors	Premium (NEMA 2015)	0.03	\$0.00	15	-	\$0.01
Miscellaneous	Pool Pump	Standard	-	-	15	1.00	-
Miscellaneous	Pool Pump	High Efficiency	0.00	-	15	-	-
Miscellaneous	Pool Pump	High Efficiency, Multi-Speed	0.00	-	15	-	-
Miscellaneous	Pool Heater	Standard	-	-	15	1.00	-
Miscellaneous	Pool Heater	Heat Pump	0.01	-	15	-	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-30 Energy Efficiency Equipment Data, Natural Gas-Health, New Vintage

End Use	Technology	Efficiency Definition	Savings (Therms/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/Therm)
Heating	Furnace	EF .76	-	-	16	1.00	-
Heating	Furnace	EF .80	0.02	\$0.03	16	3.85	\$0.15
Heating	Furnace	EF .82	0.03	\$0.09	16	2.08	\$0.28
Heating	Furnace	EF .90	0.06	\$0.08	16	5.07	\$0.12
Heating	Furnace	EF .96	0.09	\$0.11	16	4.67	\$0.12
Heating	Boiler	EF .76	-	-	20	-	-
Heating	Boiler	EF .80	0.02	\$0.00	20	1.00	\$0.00
Heating	Boiler	EF .83	0.03	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .90	0.05	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .96	0.07	\$0.00	20	> 10	\$0.00
Heating	Unit Heater	Standard	-	-	15	1.00	-
Heating	Unit Heater	Condensing	0.06	-	15	-	-
Water Heating	Water Heating	EF 0.77	-	-	12	1.00	-
Water Heating	Water Heating	EF 0.80	0.02	\$0.02	12	4.67	\$0.12
Water Heating	Water Heating	Tankless	0.03	\$0.03	12	3.50	\$0.15
Water Heating	Water Heating	Indirect Fired	0.05	\$0.02	12	9.18	\$0.06
Water Heating	Water Heating	EF 0.94	0.08	(\$0.01)	12	1.00	(\$0.01)
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.05	\$0.00	12	> 10	\$0.00
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.08	\$0.04	12	8.47	\$0.06
Food Preparation	Broiler	Standard	-	-	12	1.00	-
Food Preparation	Broiler	High Efficiency	0.07	\$0.00	12	> 10	\$0.01
Food Preparation	Griddle	Standard	-	-	12	1.00	-
Food Preparation	Griddle	High Efficiency	0.01	\$0.00	12	> 10	\$0.00
Food Preparation	Range	Standard	-	-	12	1.00	-
Food Preparation	Range	High Efficiency	0.04	\$0.00	12	> 10	\$0.00
Food Preparation	Steamer	Standard	-	-	12	1.00	-
Food Preparation	Steamer	Energy Star	0.19	\$0.00	12	> 10	\$0.00
Food Preparation	Other	Standard	-	-	12	1.00	-
Food Preparation	Other	Energy Star	0.02	-	12	-	-
Miscellaneous	Pool Heater	EF .78	-	-	5	-	-
Miscellaneous	Pool Heater	EF .82	0.01	-	5	1.00	-
Miscellaneous	Pool Heater	EF .90	0.03	-	5	-	-
Miscellaneous	Pool Heater	EF .95	0.04	-	5	-	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-31 Energy Efficiency Equipment Data, Electric-Lodging, Existing Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Air-Cooled Chiller	1.5 kw/ton, COP 2.3	-	-	20	1.00	-
Cooling	Air-Cooled Chiller	1.3 kw/ton, COP 2.7	0.11	\$0.07	20	1.80	\$0.05
Cooling	Air-Cooled Chiller	1.26 kw/ton, COP 2.8	0.13	\$0.07	20	1.92	\$0.05
Cooling	Air-Cooled Chiller	1.0 kw/ton, COP 3.5	0.27	\$0.08	20	3.58	\$0.03
Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	0.28	\$0.09	20	3.44	\$0.03
Cooling	Water-Cooled Chiller	0.75 kw/ton, COP 4.7	-	-	20	1.00	-
Cooling	Water-Cooled Chiller	0.60 kw/ton, COP 5.9	0.13	\$0.03	20	4.58	\$0.02
Cooling	Water-Cooled Chiller	0.58 kw/ton, COP 6.1	0.15	\$0.03	20	4.84	\$0.02
Cooling	Water-Cooled Chiller	0.55 kw/Ton, COP 6.4	0.18	\$0.04	20	4.75	\$0.02
Cooling	Water-Cooled Chiller	0.51 kw/ton, COP 6.9	0.21	\$0.06	20	3.66	\$0.03
Cooling	Water-Cooled Chiller	0.50 kw/Ton, COP 7.0	0.22	\$0.07	20	3.45	\$0.03
Cooling	Water-Cooled Chiller	0.48 kw/ton, COP 7.3	0.24	\$0.08	20	3.40	\$0.03
Cooling	Roof top AC	EER 9.2	-	-	15	-	-
Cooling	Roof top AC	EER 10.1	0.07	\$0.00	15	-	\$0.00
Cooling	Roof top AC	EER 11.2	0.14	\$0.00	15	1.00	\$0.00
Cooling	Roof top AC	EER 12.0	0.18	\$0.01	15	4.66	\$0.01
Cooling	Roof top AC	Ductless Minisplit	0.22	\$0.04	15	2.24	\$0.02
Cooling	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Cooling	Air Source Heat Pump	EER 10.3, COP 3.2	0.07	\$0.00	15	-	\$0.01
Cooling	Air Source Heat Pump	EER 11.0, COP 3.3	0.12	\$0.00	15	1.00	\$0.00
Cooling	Air Source Heat Pump	EER 11.7, COP 3.4	0.15	\$0.01	15	2.61	\$0.01
Cooling	Air Source Heat Pump	EER 12.0, COP 3.4	0.17	\$0.02	15	2.43	\$0.01
Cooling	Air Source Heat Pump	Ductless Minisplit	0.21	\$0.03	15	2.63	\$0.02
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	0.15	\$0.01	15	> 10	\$0.00
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	0.28	\$0.01	15	> 10	\$0.00
Cooling	Geothermal Heat Pump	EER 30, COP 5.0	0.69	\$0.02	15	> 10	\$0.00
Cooling	PTAC	EER 9.8	-	-	15	1.00	-
Cooling	PTAC	EER 10.2	0.07	\$0.00	15	> 10	\$0.00
Cooling	PTAC	EER 10.8	0.16	\$0.01	15	> 10	\$0.00
Cooling	PTAC	EER 11	0.18	\$0.01	15	> 10	\$0.00
Cooling	PTAC	EER 11.5	0.24	\$0.01	15	> 10	\$0.00
Cooling	PTHP	EER 9.8	-	-	15	1.00	-
Cooling	PTHP	EER 10.2	0.07	\$0.00	15	> 10	\$0.00
Cooling	PTHP	EER 10.8	0.16	\$0.01	15	> 10	\$0.00
Cooling	PTHP	EER 11	0.18	\$0.01	15	> 10	\$0.00
Cooling	PTHP	EER 11.5	0.24	\$0.01	15	> 10	\$0.00
Cooling	Evaporative AC	Direct	-	-	15	1.00	-
Cooling	Evaporative AC	Indirect	0.20	-	15	-	-
Cooling	Evaporative AC	Direct/Indirect	0.50	-	15	-	-
Heating	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Heating	Air Source Heat Pump	EER 10.3, COP 3.2	0.02	\$0.00	15	-	\$0.01
Heating	Air Source Heat Pump	EER 11.0, COP 3.3	0.04	\$0.00	15	1.00	\$0.00
Heating	Air Source Heat Pump	EER 11.7, COP 3.4	0.06	\$0.01	15	1.27	\$0.01
Heating	Air Source Heat Pump	EER 12.0, COP 3.4	0.06	\$0.01	15	0.84	\$0.02
Heating	Air Source Heat Pump	Ductless Minisplit	0.08	\$0.02	15	0.96	\$0.03
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	0.09	\$0.00	15	> 10	\$0.00
Heating	Geothermal Heat Pump	EER 18, COP 3.8	0.20	\$0.00	15	> 10	\$0.00
Heating	Geothermal Heat Pump	EER 30, COP 5.0	0.53	\$0.01	15	> 10	\$0.00

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incre- mental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Heating	Electric Room Heat	Standard	-	-	20	1.00	-
Heating	Electric Furnace	Standard	-	-	20	1.00	-
Heating	PTAC	EER 9.8	-	-	15	1.00	-
Heating	PTAC	EER 10.2	-	\$0.00	15	-	-
Heating	PTAC	EER 10.8	-	\$0.01	15	-	-
Heating	PTAC	EER 11	-	\$0.01	15	-	-
Heating	PTAC	EER 11.5	-	\$0.01	15	-	-
Heating	PTHP	EER 9.8	-	-	15	1.00	-
Heating	PTHP	EER 10.2	0.06	\$0.00	15	> 10	\$0.00
Heating	PTHP	EER 10.8	0.14	\$0.01	15	9.98	\$0.01
Heating	PTHP	EER 11	0.16	\$0.01	15	> 10	\$0.00
Heating	PTHP	EER 11.5	0.22	\$0.01	15	> 10	\$0.00
Ventilation	Ventilation	Constant Volume	-	-	10	1.00	-
Ventilation	Ventilation	Variable Air Volume	0.40	(\$0.06)	10	1.00	(\$0.02)
Water Heating	Water Heating	EF .97	-	-	15	1.00	-
Water Heating	Water Heating	EF .98	0.02	\$0.01	15	1.56	\$0.04
Water Heating	Water Heating	EF 2.0	1.11	\$0.02	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.3	1.25	\$0.02	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.4	1.29	\$0.02	15	> 10	\$0.00
Interior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Interior Lighting	Screw-in	90W Halogen PAR-38	1.19	\$0.06	3	1.37	\$0.02
Interior Lighting	Screw-in	70W HIR PAR-38	1.82	\$0.08	3	1.81	\$0.02
Interior Lighting	Screw-in	CFL	3.41	\$0.03	2.2	8.44	\$0.00
Interior Lighting	Screw-in	LED (2010)	3.70	\$0.48	20	4.01	\$0.01
Interior Lighting	Screw-in	LED (2020)	4.27	\$0.13	20	-	\$0.00
Interior Lighting	High-Bay Fixtures	Metal Halides	-	-	3	1.00	-
Interior Lighting	High-Bay Fixtures	LED (2010)	0.05	\$0.03	15	0.32	\$0.06
Interior Lighting	High-Bay Fixtures	T8	0.05	(\$0.00)	10	1.00	(\$0.01)
Interior Lighting	High-Bay Fixtures	High Pressure Sodium	0.06	\$0.00	6	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	Light Emitting Plasma	0.07	\$0.00	15	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	T5	0.07	\$0.00	10	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	LED (2020)	0.10	\$0.01	15	-	\$0.01
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Interior Lighting	Linear Fluorescent	LED (2010)	0.24	\$0.83	15	1.00	\$0.36
Interior Lighting	Linear Fluorescent	T8	0.25	(\$0.00)	10	1.00	(\$0.00)
Interior Lighting	Linear Fluorescent	Super T8	0.34	\$0.12	10	1.00	\$0.05
Interior Lighting	Linear Fluorescent	T5	0.40	\$0.09	10	1.00	\$0.03
Interior Lighting	Linear Fluorescent	LED (2020)	0.74	\$0.23	15	-	\$0.03
Exterior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Exterior Lighting	Screw-in	90W Halogen PAR-38	0.11	\$0.01	3	1.43	\$0.02
Exterior Lighting	Screw-in	70W HIR PAR-38	0.17	\$0.01	3	1.82	\$0.02
Exterior Lighting	Screw-in	CFL	0.31	\$0.00	6	> 10	\$0.00
Exterior Lighting	Screw-in	LED (2010)	0.34	\$0.11	20	1.60	\$0.03
Exterior Lighting	Screw-in	LED (2020)	0.39	\$0.03	20	-	\$0.01
Exterior Lighting	HID	Metal Halides	-	-	3	1.00	-
Exterior Lighting	HID	LED (2010)	0.11	\$0.18	15	0.15	\$0.17
Exterior Lighting	HID	T8	0.11	(\$0.00)	10	1.00	(\$0.01)
Exterior Lighting	HID	High Pressure Sodium	0.12	\$0.00	6	1.00	\$0.00
Exterior Lighting	HID	Light Emitting Plasma	0.14	\$0.00	15	1.00	\$0.00
Exterior Lighting	HID	T5	0.15	\$0.01	10	1.00	\$0.00
Exterior Lighting	HID	LED (2020)	0.21	\$0.05	15	-	\$0.02

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Exterior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Exterior Lighting	Linear Fluorescent	LED (2010)	0.00	\$0.00	15	1.00	\$0.36
Exterior Lighting	Linear Fluorescent	T8	0.00	(\$0.00)	10	1.00	(\$0.00)
Exterior Lighting	Linear Fluorescent	Super T8	0.00	\$0.00	10	1.00	\$0.05
Exterior Lighting	Linear Fluorescent	T5	0.00	\$0.00	10	1.00	\$0.03
Exterior Lighting	Linear Fluorescent	LED (2020)	0.00	\$0.00	15	-	\$0.03
Refrigeration	Walk-in Refrigerator	14600 kWh/yr	-	-	12	1.00	-
Refrigeration	Walk-in Refrigerator	10800 kWh/yr	0.08	\$0.00	12	> 10	\$0.00
Refrigeration	Walk-in Refrigerator	10000 kWh/yr	0.09	\$0.00	12	> 10	\$0.00
Refrigeration	Walk-in Refrigerator	9000 kWh/yr	0.10	\$0.01	12	7.59	\$0.01
Refrigeration	Reach-in Refrigerator	3800 kWh/yr	-	-	12	1.00	-
Refrigeration	Reach-in Refrigerator	3100 kWh/yr	0.02	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	2500 kWh/yr	0.03	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	2400 kWh/yr	0.03	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	1500 kWh/yr	0.04	\$0.00	12	> 10	\$0.00
Refrigeration	Glass Door Display	14480 kWh/yr	-	-	12	-	-
Refrigeration	Glass Door Display	11700 kWh/yr	0.03	\$0.00	12	-	\$0.02
Refrigeration	Glass Door Display	8400 kWh/yr	0.09	-	12	1.00	-
Refrigeration	Glass Door Display	6800 kWh/yr	0.11	\$0.00	12	2.35	\$0.00
Refrigeration	Open Display Case	6500 kWh/yr	-	-	12	-	-
Refrigeration	Open Display Case	5350 kWh/yr	0.02	-	12	1.00	-
Refrigeration	Open Display Case	5300 kWh/yr	0.02	\$0.01	12	-	\$0.05
Refrigeration	Open Display Case	4330 kWh/yr	0.03	\$0.01	12	0.96	\$0.03
Refrigeration	Icemaker	7.0 kWh/100 lbs	-	-	10	1.00	-
Refrigeration	Icemaker	6.3 kWh/100 lbs	0.01	\$0.01	10	0.39	\$0.14
Refrigeration	Icemaker	6.0 kWh/100 lbs	0.01	\$0.01	10	0.39	\$0.14
Refrigeration	Icemaker	5.5 kWh/100 lbs	0.01	\$0.01	10	0.39	\$0.14
Refrigeration	Vending Machine	3400 kWh/year	-	-	12	1.00	-
Refrigeration	Vending Machine	3000 kWh/year	0.01	\$0.00	12	2.03	\$0.03
Refrigeration	Vending Machine	2400 kWh/year	0.04	\$0.01	12	2.03	\$0.03
Refrigeration	Vending Machine	1700 kWh/year	0.05	\$0.00	12	4.39	\$0.01
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.01	\$0.00	12	> 10	\$0.00
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.01	\$0.00	12	> 10	\$0.00
Food Preparation	Dishwasher	Standard	-	-	12	1.00	-
Food Preparation	Dishwasher	Energy Star	0.04	\$0.00	12	> 10	\$0.00
Food Preparation	Hot Food Container	Standard	-	-	12	1.00	-
Food Preparation	Hot Food Container	Energy Star	0.03	-	12	-	-
Food Preparation	Other	Standard	-	-	12	1.00	-
Office Equipment	Desktop Computer	Standard	-	-	5	1.00	-
Office Equipment	Desktop Computer	Energy Star	0.02	\$0.00	5	> 10	\$0.00
Office Equipment	Laptop	Standard	-	-	4	1.00	-
Office Equipment	Laptop	Energy Star	0.00	\$0.00	4	> 10	\$0.00
Office Equipment	Server	Standard	-	-	3	1.00	-
Office Equipment	Server	Energy Star	0.01	\$0.00	3	> 10	\$0.00
Office Equipment	Monitor	Standard	-	-	4	1.00	-
Office Equipment	Monitor	Energy Star	0.00	\$0.00	4	> 10	\$0.00
Office Equipment	Printer/Copier/Fax	Standard	-	-	6	1.00	-
Office Equipment	Printer/Copier/Fax	Energy Star	0.00	\$0.00	6	> 10	\$0.00
Office Equipment	POS Terminal	Standard	-	-	4	1.00	-

Commercial Energy Efficiency Equipment and Measure Data

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incre- mental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Office Equipment	POS Terminal	Energy Star	0.00	\$0.00	4	0.33	\$0.12
Miscellaneous	Non-HVAC Motors	Standard (EPAAct)	-	-	15	1.00	-
Miscellaneous	Non-HVAC Motors	Standard (EPAAct 2015)	0.00	-	15	-	-
Miscellaneous	Non-HVAC Motors	High Efficiency	0.00	\$0.00	15	5.88	\$0.01
Miscellaneous	Non-HVAC Motors	High Efficiency (2015)	0.00	\$0.00	15	-	\$0.01
Miscellaneous	Non-HVAC Motors	Premium (NEMA)	0.00	\$0.00	15	5.88	\$0.01
Miscellaneous	Non-HVAC Motors	Premium (NEMA 2015)	0.00	\$0.00	15	-	\$0.01
Miscellaneous	Pool Pump	Standard	-	-	15	1.00	-
Miscellaneous	Pool Pump	High Efficiency	0.00	\$0.00	15	3.49	\$0.02
Miscellaneous	Pool Pump	High Efficiency, Multi-Speed	0.00	\$0.00	15	2.05	\$0.03
Miscellaneous	Pool Heater	Standard	-	-	15	1.00	-
Miscellaneous	Pool Heater	Heat Pump	0.01	\$0.00	15	> 10	\$0.00
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-32 Energy Efficiency Equipment Data, Natural Gas-Lodging, Existing Vintage

End Use	Technology	Efficiency Definition	Savings (Therms/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/Therm)
Heating	Furnace	EF .76	-	-	16	1.00	-
Heating	Furnace	EF .80	0.01	\$0.01	16	6.59	\$0.09
Heating	Furnace	EF .82	0.01	\$0.02	16	3.56	\$0.16
Heating	Furnace	EF .90	0.03	\$0.02	16	8.68	\$0.07
Heating	Furnace	EF .96	0.04	\$0.03	16	8.00	\$0.07
Heating	Boiler	EF .76	-	-	20	-	-
Heating	Boiler	EF .80	0.01	\$0.00	20	1.00	\$0.00
Heating	Boiler	EF .83	0.02	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .90	0.03	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .96	0.05	\$0.00	20	> 10	\$0.00
Heating	Unit Heater	Standard	-	-	15	1.00	-
Heating	Unit Heater	Condensing	0.02	\$0.00	15	> 10	\$0.00
Water Heating	Water Heating	EF 0.77	-	-	12	1.00	-
Water Heating	Water Heating	EF 0.80	0.01	\$0.03	12	1.70	\$0.32
Water Heating	Water Heating	Tankless	0.02	\$0.06	12	1.28	\$0.42
Water Heating	Water Heating	Indirect Fired	0.03	\$0.04	12	3.34	\$0.16
Water Heating	Water Heating	EF 0.94	0.05	(\$0.01)	12	1.00	(\$0.03)
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.01	\$0.00	12	> 10	\$0.00
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.02	\$0.01	12	> 10	\$0.03
Food Preparation	Broiler	Standard	-	-	12	1.00	-
Food Preparation	Broiler	High Efficiency	0.02	\$0.00	12	> 10	\$0.01
Food Preparation	Griddle	Standard	-	-	12	1.00	-
Food Preparation	Griddle	High Efficiency	0.00	\$0.00	12	> 10	\$0.01
Food Preparation	Range	Standard	-	-	12	1.00	-
Food Preparation	Range	High Efficiency	0.01	\$0.00	12	> 10	\$0.00
Food Preparation	Steamer	Standard	-	-	12	1.00	-
Food Preparation	Steamer	Energy Star	0.06	\$0.00	12	> 10	\$0.00
Food Preparation	Other	Standard	-	-	12	1.00	-
Food Preparation	Other	Energy Star	0.01	-	12	-	-
Miscellaneous	Pool Heater	EF .78	-	-	5	-	-
Miscellaneous	Pool Heater	EF .82	0.00	\$0.00	5	1.00	\$0.18
Miscellaneous	Pool Heater	EF .90	0.00	\$0.01	5	0.26	\$1.17
Miscellaneous	Pool Heater	EF .95	0.00	\$0.01	5	0.35	\$0.99
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-33 Energy Efficiency Equipment Data, Electric-Lodging, New Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Air-Cooled Chiller	1.5 kw/ton, COP 2.3	-	-	20	1.00	-
Cooling	Air-Cooled Chiller	1.3 kw/ton, COP 2.7	0.10	\$0.06	20	1.86	\$0.05
Cooling	Air-Cooled Chiller	1.26 kw/ton, COP 2.8	0.12	\$0.07	20	1.97	\$0.05
Cooling	Air-Cooled Chiller	1.0 kw/ton, COP 3.5	0.25	\$0.07	20	3.69	\$0.03
Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	0.26	\$0.08	20	3.54	\$0.03
Cooling	Water-Cooled Chiller	0.75 kw/ton, COP 4.7	-	-	20	1.00	-
Cooling	Water-Cooled Chiller	0.60 kw/ton, COP 5.9	0.12	\$0.03	20	4.69	\$0.02
Cooling	Water-Cooled Chiller	0.58 kw/ton, COP 6.1	0.14	\$0.03	20	4.96	\$0.02
Cooling	Water-Cooled Chiller	0.55 kw/Ton, COP 6.4	0.17	\$0.04	20	4.86	\$0.02
Cooling	Water-Cooled Chiller	0.51 kw/ton, COP 6.9	0.20	\$0.06	20	3.75	\$0.03
Cooling	Water-Cooled Chiller	0.50 kw/Ton, COP 7.0	0.21	\$0.06	20	3.53	\$0.03
Cooling	Water-Cooled Chiller	0.48 kw/ton, COP 7.3	0.22	\$0.07	20	3.48	\$0.03
Cooling	Roof top AC	EER 9.2	-	-	15	-	-
Cooling	Roof top AC	EER 10.1	0.07	\$0.00	15	-	\$0.00
Cooling	Roof top AC	EER 11.2	0.14	\$0.00	15	1.00	\$0.00
Cooling	Roof top AC	EER 12.0	0.18	\$0.01	15	4.90	\$0.01
Cooling	Roof top AC	Ductless Minisplit	0.23	\$0.04	15	2.36	\$0.02
Cooling	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Cooling	Air Source Heat Pump	EER 10.3, COP 3.2	0.07	\$0.00	15	-	\$0.00
Cooling	Air Source Heat Pump	EER 11.0, COP 3.3	0.12	\$0.00	15	1.00	\$0.00
Cooling	Air Source Heat Pump	EER 11.7, COP 3.4	0.16	\$0.01	15	2.75	\$0.01
Cooling	Air Source Heat Pump	EER 12.0, COP 3.4	0.17	\$0.02	15	2.55	\$0.01
Cooling	Air Source Heat Pump	Ductless Minisplit	0.22	\$0.03	15	2.77	\$0.02
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	0.14	\$0.01	15	> 10	\$0.00
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	0.26	\$0.01	15	> 10	\$0.00
Cooling	Geothermal Heat Pump	EER 30, COP 5.0	0.65	\$0.02	15	> 10	\$0.00
Cooling	PTAC	EER 9.8	-	-	15	1.00	-
Cooling	PTAC	EER 10.2	0.06	\$0.00	15	> 10	\$0.00
Cooling	PTAC	EER 10.8	0.14	\$0.01	15	> 10	\$0.00
Cooling	PTAC	EER 11	0.17	\$0.01	15	> 10	\$0.00
Cooling	PTAC	EER 11.5	0.22	\$0.01	15	> 10	\$0.00
Cooling	PTHP	EER 9.8	-	-	15	1.00	-
Cooling	PTHP	EER 10.2	0.06	\$0.00	15	> 10	\$0.00
Cooling	PTHP	EER 10.8	0.14	\$0.01	15	> 10	\$0.00
Cooling	PTHP	EER 11	0.17	\$0.01	15	> 10	\$0.00
Cooling	PTHP	EER 11.5	0.22	\$0.01	15	> 10	\$0.00
Cooling	Evaporative AC	Direct	-	-	15	1.00	-
Cooling	Evaporative AC	Indirect	0.20	-	15	-	-
Cooling	Evaporative AC	Direct/Indirect	0.50	-	15	-	-
Heating	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Heating	Air Source Heat Pump	EER 10.3, COP 3.2	0.02	\$0.00	15	-	\$0.02
Heating	Air Source Heat Pump	EER 11.0, COP 3.3	0.04	\$0.00	15	1.00	\$0.00
Heating	Air Source Heat Pump	EER 11.7, COP 3.4	0.06	\$0.01	15	0.85	\$0.02
Heating	Air Source Heat Pump	EER 12.0, COP 3.4	0.06	\$0.02	15	0.56	\$0.03
Heating	Air Source Heat Pump	Ductless Minisplit	0.07	\$0.03	15	0.64	\$0.04
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	0.08	\$0.00	15	> 10	\$0.00
Heating	Geothermal Heat Pump	EER 18, COP 3.8	0.19	\$0.01	15	> 10	\$0.00
Heating	Geothermal Heat Pump	EER 30, COP 5.0	0.50	\$0.01	15	> 10	\$0.00

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Heating	Electric Room Heat	Standard	-	-	20	1.00	-
Heating	Electric Furnace	Standard	-	-	20	1.00	-
Heating	PTAC	EER 9.8	-	-	15	1.00	-
Heating	PTAC	EER 10.2	0.00	\$0.00	15	0.31	\$0.17
Heating	PTAC	EER 10.8	0.00	\$0.00	15	0.10	\$0.53
Heating	PTAC	EER 11	0.00	\$0.00	15	0.09	\$0.57
Heating	PTAC	EER 11.5	0.00	\$0.01	15	0.08	\$0.67
Heating	PTHP	EER 9.8	-	-	15	1.00	-
Heating	PTHP	EER 10.2	0.05	\$0.00	15	> 10	\$0.00
Heating	PTHP	EER 10.8	0.12	\$0.00	15	> 10	\$0.00
Heating	PTHP	EER 11	0.15	\$0.00	15	> 10	\$0.00
Heating	PTHP	EER 11.5	0.20	\$0.00	15	> 10	\$0.00
Ventilation	Ventilation	Constant Volume	-	-	10	1.00	-
Ventilation	Ventilation	Variable Air Volume	0.29	(\$0.11)	10	1.00	(\$0.05)
Water Heating	Water Heating	EF .97	-	-	15	1.00	-
Water Heating	Water Heating	EF .98	0.02	\$0.01	15	1.56	\$0.04
Water Heating	Water Heating	EF 2.0	1.06	\$0.02	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.3	1.19	\$0.02	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.4	1.22	\$0.02	15	> 10	\$0.00
Interior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Interior Lighting	Screw-in	90W Halogen PAR-38	1.19	\$0.06	3	1.37	\$0.02
Interior Lighting	Screw-in	70W HIR PAR-38	1.82	\$0.08	3	1.81	\$0.02
Interior Lighting	Screw-in	CFL	3.41	\$0.03	2.2	8.44	\$0.00
Interior Lighting	Screw-in	LED (2010)	3.70	\$0.48	20	4.01	\$0.01
Interior Lighting	Screw-in	LED (2020)	4.27	\$0.13	20	-	\$0.00
Interior Lighting	High-Bay Fixtures	Metal Halides	-	-	3	1.00	-
Interior Lighting	High-Bay Fixtures	LED (2010)	0.05	\$0.03	15	0.32	\$0.06
Interior Lighting	High-Bay Fixtures	T8	0.05	(\$0.00)	10	1.00	(\$0.01)
Interior Lighting	High-Bay Fixtures	High Pressure Sodium	0.06	\$0.00	6	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	Light Emitting Plasma	0.07	\$0.00	15	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	T5	0.07	\$0.00	10	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	LED (2020)	0.10	\$0.01	15	-	\$0.01
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Interior Lighting	Linear Fluorescent	LED (2010)	0.24	\$0.83	15	1.00	\$0.36
Interior Lighting	Linear Fluorescent	T8	0.25	(\$0.00)	10	1.00	(\$0.00)
Interior Lighting	Linear Fluorescent	Super T8	0.34	\$0.12	10	1.00	\$0.05
Interior Lighting	Linear Fluorescent	T5	0.40	\$0.09	10	1.00	\$0.03
Interior Lighting	Linear Fluorescent	LED (2020)	0.74	\$0.23	15	-	\$0.03
Exterior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Exterior Lighting	Screw-in	90W Halogen PAR-38	0.11	\$0.01	3	1.43	\$0.02
Exterior Lighting	Screw-in	70W HIR PAR-38	0.17	\$0.01	3	1.82	\$0.02
Exterior Lighting	Screw-in	CFL	0.31	\$0.00	6	> 10	\$0.00
Exterior Lighting	Screw-in	LED (2010)	0.34	\$0.11	20	1.60	\$0.03
Exterior Lighting	Screw-in	LED (2020)	0.39	\$0.03	20	-	\$0.01
Exterior Lighting	HID	Metal Halides	-	-	3	1.00	-
Exterior Lighting	HID	LED (2010)	0.11	\$0.18	15	0.15	\$0.17
Exterior Lighting	HID	T8	0.11	(\$0.00)	10	1.00	(\$0.01)
Exterior Lighting	HID	High Pressure Sodium	0.12	\$0.00	6	1.00	\$0.00
Exterior Lighting	HID	Light Emitting Plasma	0.14	\$0.00	15	1.00	\$0.00
Exterior Lighting	HID	T5	0.15	\$0.01	10	1.00	\$0.00
Exterior Lighting	HID	LED (2020)	0.21	\$0.05	15	-	\$0.02

Commercial Energy Efficiency Equipment and Measure Data

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Exterior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Exterior Lighting	Linear Fluorescent	LED (2010)	0.00	\$0.00	15	1.00	\$0.36
Exterior Lighting	Linear Fluorescent	T8	0.00	(\$0.00)	10	1.00	(\$0.00)
Exterior Lighting	Linear Fluorescent	Super T8	0.00	\$0.00	10	1.00	\$0.05
Exterior Lighting	Linear Fluorescent	T5	0.00	\$0.00	10	1.00	\$0.03
Exterior Lighting	Linear Fluorescent	LED (2020)	0.00	\$0.00	15	-	\$0.03
Refrigeration	Walk-in Refrigerator	14600 kWh/yr	-	-	12	1.00	-
Refrigeration	Walk-in Refrigerator	10800 kWh/yr	0.08	\$0.00	12	> 10	\$0.00
Refrigeration	Walk-in Refrigerator	10000 kWh/yr	0.09	\$0.00	12	> 10	\$0.00
Refrigeration	Walk-in Refrigerator	9000 kWh/yr	0.10	\$0.01	12	7.59	\$0.01
Refrigeration	Reach-in Refrigerator	3800 kWh/yr	-	-	12	1.00	-
Refrigeration	Reach-in Refrigerator	3100 kWh/yr	0.02	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	2500 kWh/yr	0.03	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	2400 kWh/yr	0.03	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	1500 kWh/yr	0.04	\$0.00	12	> 10	\$0.00
Refrigeration	Glass Door Display	14480 kWh/yr	-	-	12	-	-
Refrigeration	Glass Door Display	11700 kWh/yr	0.03	\$0.00	12	-	\$0.02
Refrigeration	Glass Door Display	8400 kWh/yr	0.09	-	12	1.00	-
Refrigeration	Glass Door Display	6800 kWh/yr	0.11	\$0.00	12	2.35	\$0.00
Refrigeration	Open Display Case	6500 kWh/yr	-	-	12	-	-
Refrigeration	Open Display Case	5350 kWh/yr	0.02	-	12	1.00	-
Refrigeration	Open Display Case	5300 kWh/yr	0.02	\$0.01	12	-	\$0.05
Refrigeration	Open Display Case	4330 kWh/yr	0.03	\$0.01	12	0.96	\$0.03
Refrigeration	Icemaker	7.0 kWh/100 lbs	-	-	10	1.00	-
Refrigeration	Icemaker	6.3 kWh/100 lbs	0.01	\$0.01	10	0.39	\$0.14
Refrigeration	Icemaker	6.0 kWh/100 lbs	0.01	\$0.01	10	0.39	\$0.14
Refrigeration	Icemaker	5.5 kWh/100 lbs	0.01	\$0.01	10	0.39	\$0.14
Refrigeration	Vending Machine	3400 kWh/year	-	-	12	1.00	-
Refrigeration	Vending Machine	3000 kWh/year	0.02	\$0.00	12	3.18	\$0.02
Refrigeration	Vending Machine	2400 kWh/year	0.06	\$0.01	12	3.18	\$0.02
Refrigeration	Vending Machine	1700 kWh/year	0.07	\$0.00	12	6.88	\$0.01
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.01	\$0.00	12	> 10	\$0.00
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.01	\$0.00	12	> 10	\$0.00
Food Preparation	Dishwasher	Standard	-	-	12	1.00	-
Food Preparation	Dishwasher	Energy Star	0.04	\$0.00	12	> 10	\$0.00
Food Preparation	Hot Food Container	Standard	-	-	12	1.00	-
Food Preparation	Hot Food Container	Energy Star	0.03	-	12	-	-
Food Preparation	Other	Standard	-	-	12	1.00	-
Office Equipment	Desktop Computer	Standard	-	-	5	1.00	-
Office Equipment	Desktop Computer	Energy Star	0.02	\$0.00	5	> 10	\$0.00
Office Equipment	Laptop	Standard	-	-	4	1.00	-
Office Equipment	Laptop	Energy Star	0.00	\$0.00	4	> 10	\$0.00
Office Equipment	Server	Standard	-	-	3	1.00	-
Office Equipment	Server	Energy Star	0.01	\$0.00	3	> 10	\$0.00
Office Equipment	Monitor	Standard	-	-	4	1.00	-
Office Equipment	Monitor	Energy Star	0.00	\$0.00	4	> 10	\$0.00
Office Equipment	Printer/Copier/Fax	Standard	-	-	6	1.00	-
Office Equipment	Printer/Copier/Fax	Energy Star	0.00	\$0.00	6	> 10	\$0.00
Office Equipment	POS Terminal	Standard	-	-	4	1.00	-

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incre- mental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Office Equipment	POS Terminal	Energy Star	0.00	\$0.00	4	0.33	\$0.12
Miscellaneous	Non-HVAC Motors	Standard (EPAAct)	-	-	15	1.00	-
Miscellaneous	Non-HVAC Motors	Standard (EPAAct 2015)	0.00	-	15	-	-
Miscellaneous	Non-HVAC Motors	High Efficiency	0.00	\$0.00	15	5.88	\$0.01
Miscellaneous	Non-HVAC Motors	High Efficiency (2015)	0.00	\$0.00	15	-	\$0.01
Miscellaneous	Non-HVAC Motors	Premium (NEMA)	0.00	\$0.00	15	5.88	\$0.01
Miscellaneous	Non-HVAC Motors	Premium (NEMA 2015)	0.00	\$0.00	15	-	\$0.01
Miscellaneous	Pool Pump	Standard	-	-	15	1.00	-
Miscellaneous	Pool Pump	High Efficiency	0.00	\$0.00	15	3.49	\$0.02
Miscellaneous	Pool Pump	High Efficiency, Multi-Speed	0.00	\$0.00	15	2.05	\$0.03
Miscellaneous	Pool Heater	Standard	-	-	15	1.00	-
Miscellaneous	Pool Heater	Heat Pump	0.01	\$0.00	15	> 10	\$0.00
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-34 Energy Efficiency Equipment Data, Natural Gas-Lodging, New Vintage

End Use	Technology	Efficiency Definition	Savings (Therms/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/Therm)
Heating	Furnace	EF .76	-	-	16	1.00	-
Heating	Furnace	EF .80	0.01	\$0.00	16	8.88	\$0.07
Heating	Furnace	EF .82	0.01	\$0.01	16	4.81	\$0.12
Heating	Furnace	EF .90	0.02	\$0.01	16	> 10	\$0.05
Heating	Furnace	EF .96	0.03	\$0.01	16	> 10	\$0.05
Heating	Boiler	EF .76	-	-	20	-	-
Heating	Boiler	EF .80	0.01	\$0.00	20	1.00	\$0.00
Heating	Boiler	EF .83	0.02	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .90	0.02	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .96	0.04	\$0.00	20	> 10	\$0.00
Heating	Unit Heater	Standard	-	-	15	1.00	-
Heating	Unit Heater	Condensing	0.02	\$0.00	15	> 10	\$0.00
Water Heating	Water Heating	EF 0.77	-	-	12	1.00	-
Water Heating	Water Heating	EF 0.80	0.01	\$0.02	12	1.71	\$0.32
Water Heating	Water Heating	Tankless	0.01	\$0.05	12	1.28	\$0.42
Water Heating	Water Heating	Indirect Fired	0.03	\$0.04	12	3.35	\$0.16
Water Heating	Water Heating	EF 0.94	0.04	(\$0.01)	12	1.00	(\$0.03)
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.01	\$0.00	12	> 10	\$0.00
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.02	\$0.01	12	> 10	\$0.03
Food Preparation	Broiler	Standard	-	-	12	1.00	-
Food Preparation	Broiler	High Efficiency	0.02	\$0.00	12	> 10	\$0.01
Food Preparation	Griddle	Standard	-	-	12	1.00	-
Food Preparation	Griddle	High Efficiency	0.00	\$0.00	12	> 10	\$0.01
Food Preparation	Range	Standard	-	-	12	1.00	-
Food Preparation	Range	High Efficiency	0.01	\$0.00	12	> 10	\$0.00
Food Preparation	Steamer	Standard	-	-	12	1.00	-
Food Preparation	Steamer	Energy Star	0.06	\$0.00	12	> 10	\$0.00
Food Preparation	Other	Standard	-	-	12	1.00	-
Food Preparation	Other	Energy Star	0.01	-	12	-	-
Miscellaneous	Pool Heater	EF .78	-	-	5	-	-
Miscellaneous	Pool Heater	EF .82	0.00	\$0.00	5	1.00	\$0.18
Miscellaneous	Pool Heater	EF .90	0.00	\$0.01	5	0.26	\$1.17
Miscellaneous	Pool Heater	EF .95	0.00	\$0.01	5	0.35	\$0.99
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-35 Energy Efficiency Equipment Data, Electric-Warehouse, Existing Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Air-Cooled Chiller	1.5 kw/ton, COP 2.3	-	-	20	1.00	-
Cooling	Air-Cooled Chiller	1.3 kw/ton, COP 2.7	0.22	\$0.09	20	7.60	\$0.04
Cooling	Air-Cooled Chiller	1.26 kw/ton, COP 2.8	0.27	\$0.10	20	8.07	\$0.03
Cooling	Air-Cooled Chiller	1.0 kw/ton, COP 3.5	0.56	\$0.11	20	> 10	\$0.02
Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	0.59	\$0.13	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.75 kw/ton, COP 4.7	-	-	20	1.00	-
Cooling	Water-Cooled Chiller	0.60 kw/ton, COP 5.9	0.34	\$0.05	20	> 10	\$0.01
Cooling	Water-Cooled Chiller	0.58 kw/ton, COP 6.1	0.39	\$0.06	20	> 10	\$0.01
Cooling	Water-Cooled Chiller	0.55 kw/Ton, COP 6.4	0.46	\$0.07	20	> 10	\$0.01
Cooling	Water-Cooled Chiller	0.51 kw/ton, COP 6.9	0.55	\$0.11	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.50 kw/Ton, COP 7.0	0.57	\$0.12	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.48 kw/ton, COP 7.3	0.62	\$0.13	20	> 10	\$0.02
Cooling	Roof top AC	EER 9.2	-	-	15	-	-
Cooling	Roof top AC	EER 10.1	0.25	\$0.01	15	-	\$0.00
Cooling	Roof top AC	EER 11.2	0.51	\$0.01	15	1.00	\$0.00
Cooling	Roof top AC	EER 12.0	0.66	\$0.03	15	> 10	\$0.00
Cooling	Roof top AC	Ductless Minisplit	0.83	\$0.09	15	8.98	\$0.01
Cooling	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Cooling	Air Source Heat Pump	EER 10.3, COP 3.2	0.28	\$0.01	15	-	\$0.00
Cooling	Air Source Heat Pump	EER 11.0, COP 3.3	0.44	\$0.00	15	1.00	\$0.00
Cooling	Air Source Heat Pump	EER 11.7, COP 3.4	0.58	\$0.04	15	> 10	\$0.01
Cooling	Air Source Heat Pump	EER 12.0, COP 3.4	0.64	\$0.05	15	9.73	\$0.01
Cooling	Air Source Heat Pump	Ductless Minisplit	0.81	\$0.09	15	> 10	\$0.01
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	0.15	\$0.02	15	> 10	\$0.01
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	0.28	\$0.04	15	> 10	\$0.01
Cooling	Geothermal Heat Pump	EER 30, COP 5.0	0.69	\$0.05	15	> 10	\$0.01
Cooling	PTAC	EER 9.8	-	-	15	1.00	-
Cooling	PTAC	EER 10.2	0.08	\$0.00	15	> 10	\$0.00
Cooling	PTAC	EER 10.8	0.19	\$0.01	15	> 10	\$0.00
Cooling	PTAC	EER 11	0.22	\$0.01	15	> 10	\$0.00
Cooling	PTAC	EER 11.5	0.29	\$0.01	15	> 10	\$0.00
Cooling	PTHP	EER 9.8	-	-	15	1.00	-
Cooling	PTHP	EER 10.2	0.08	\$0.00	15	> 10	\$0.00
Cooling	PTHP	EER 10.8	0.19	\$0.01	15	> 10	\$0.00
Cooling	PTHP	EER 11	0.22	\$0.01	15	> 10	\$0.00
Cooling	PTHP	EER 11.5	0.29	\$0.01	15	> 10	\$0.00
Cooling	Evaporative AC	Direct	-	-	15	1.00	-
Cooling	Evaporative AC	Indirect	0.24	-	15	-	-
Cooling	Evaporative AC	Direct/Indirect	0.60	-	15	-	-
Heating	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Heating	Air Source Heat Pump	EER 10.3, COP 3.2	0.00	\$0.12	15	-	\$2.82
Heating	Air Source Heat Pump	EER 11.0, COP 3.3	0.01	\$0.01	15	1.00	\$0.21
Heating	Air Source Heat Pump	EER 11.7, COP 3.4	0.01	\$0.43	15	0.00	\$5.12
Heating	Air Source Heat Pump	EER 12.0, COP 3.4	0.01	\$0.63	15	0.00	\$7.59
Heating	Air Source Heat Pump	Ductless Minisplit	0.01	\$1.07	15	0.00	\$12.39
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	0.18	\$0.22	15	0.42	\$0.13
Heating	Geothermal Heat Pump	EER 18, COP 3.8	0.41	\$0.45	15	0.47	\$0.11
Heating	Geothermal Heat Pump	EER 30, COP 5.0	1.06	\$0.61	15	0.90	\$0.06

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incre- mental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Heating	Electric Room Heat	Standard	-	-	20	1.00	-
Heating	Electric Furnace	Standard	-	-	20	1.00	-
Heating	PTAC	EER 9.8	-	-	15	1.00	-
Heating	PTAC	EER 10.2	-	\$0.00	15	-	-
Heating	PTAC	EER 10.8	-	\$0.02	15	-	-
Heating	PTAC	EER 11	-	\$0.02	15	-	-
Heating	PTAC	EER 11.5	-	\$0.02	15	-	-
Heating	PTHP	EER 9.8	-	-	15	1.00	-
Heating	PTHP	EER 10.2	0.13	\$0.00	15	> 10	\$0.00
Heating	PTHP	EER 10.8	0.30	\$0.02	15	9.98	\$0.01
Heating	PTHP	EER 11	0.35	\$0.02	15	> 10	\$0.00
Heating	PTHP	EER 11.5	0.47	\$0.02	15	> 10	\$0.00
Ventilation	Ventilation	Constant Volume	-	-	10	1.00	-
Ventilation	Ventilation	Variable Air Volume	0.17	(\$0.06)	10	1.00	(\$0.05)
Water Heating	Water Heating	EF .97	-	-	15	1.00	-
Water Heating	Water Heating	EF .98	0.00	\$0.00	15	3.09	\$0.02
Water Heating	Water Heating	EF 2.0	0.11	\$0.00	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.3	0.13	\$0.00	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.4	0.13	\$0.00	15	> 10	\$0.00
Interior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Interior Lighting	Screw-in	90W Halogen PAR-38	0.11	\$0.01	3	1.15	\$0.02
Interior Lighting	Screw-in	70W HIR PAR-38	0.17	\$0.01	3	1.60	\$0.02
Interior Lighting	Screw-in	CFL	0.32	\$0.00	2.2	7.72	\$0.00
Interior Lighting	Screw-in	LED (2010)	0.35	\$0.05	20	3.39	\$0.01
Interior Lighting	Screw-in	LED (2020)	0.40	\$0.01	20	-	\$0.00
Interior Lighting	High-Bay Fixtures	Metal Halides	-	-	3	1.00	-
Interior Lighting	High-Bay Fixtures	LED (2010)	0.27	\$0.19	15	-	\$0.07
Interior Lighting	High-Bay Fixtures	T8	0.27	(\$0.01)	10	1.00	(\$0.01)
Interior Lighting	High-Bay Fixtures	High Pressure Sodium	0.29	\$0.01	6	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	Light Emitting Plasma	0.34	\$0.01	15	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	T5	0.35	\$0.01	10	1.00	\$0.01
Interior Lighting	High-Bay Fixtures	LED (2020)	0.52	\$0.04	15	-	\$0.01
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Interior Lighting	Linear Fluorescent	LED (2010)	0.36	\$1.43	15	1.00	\$0.41
Interior Lighting	Linear Fluorescent	T8	0.37	(\$0.00)	10	1.00	(\$0.00)
Interior Lighting	Linear Fluorescent	Super T8	0.52	\$0.21	10	1.00	\$0.05
Interior Lighting	Linear Fluorescent	T5	0.60	\$0.16	10	1.00	\$0.04
Interior Lighting	Linear Fluorescent	LED (2020)	1.12	\$0.39	15	-	\$0.04
Exterior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Exterior Lighting	Screw-in	90W Halogen PAR-38	0.00	\$0.00	3	1.27	\$0.02
Exterior Lighting	Screw-in	70W HIR PAR-38	0.00	\$0.00	3	1.61	\$0.02
Exterior Lighting	Screw-in	CFL	0.00	\$0.00	6	> 10	\$0.00
Exterior Lighting	Screw-in	LED (2010)	0.00	\$0.00	20	1.42	\$0.03
Exterior Lighting	Screw-in	LED (2020)	0.00	\$0.00	20	-	\$0.01
Exterior Lighting	HID	Metal Halides	-	-	3	1.00	-
Exterior Lighting	HID	LED (2010)	0.18	\$0.33	15	0.14	\$0.19
Exterior Lighting	HID	T8	0.18	(\$0.01)	10	1.00	(\$0.01)
Exterior Lighting	HID	High Pressure Sodium	0.19	\$0.00	6	1.00	\$0.00
Exterior Lighting	HID	Light Emitting Plasma	0.23	\$0.01	15	1.00	\$0.00
Exterior Lighting	HID	T5	0.23	\$0.01	10	1.00	\$0.01
Exterior Lighting	HID	LED (2020)	0.34	\$0.09	15	-	\$0.03

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incre- mental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Exterior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Exterior Lighting	Linear Fluorescent	LED (2010)	0.00	\$0.00	15	1.00	\$0.41
Exterior Lighting	Linear Fluorescent	T8	0.00	(\$0.00)	10	1.00	(\$0.00)
Exterior Lighting	Linear Fluorescent	Super T8	0.00	\$0.00	10	1.00	\$0.05
Exterior Lighting	Linear Fluorescent	T5	0.00	\$0.00	10	1.00	\$0.04
Exterior Lighting	Linear Fluorescent	LED (2020)	0.00	\$0.00	15	-	\$0.04
Refrigeration	Walk-in Refrigerator	14600 kWh/yr	-	-	12	1.00	-
Refrigeration	Walk-in Refrigerator	10800 kWh/yr	0.37	-	12	-	-
Refrigeration	Walk-in Refrigerator	10000 kWh/yr	0.41	-	12	-	-
Refrigeration	Walk-in Refrigerator	9000 kWh/yr	0.46	-	12	-	-
Refrigeration	Reach-in Refrigerator	3800 kWh/yr	-	-	12	1.00	-
Refrigeration	Reach-in Refrigerator	3100 kWh/yr	-	-	12	-	-
Refrigeration	Reach-in Refrigerator	2500 kWh/yr	-	-	12	-	-
Refrigeration	Reach-in Refrigerator	2400 kWh/yr	-	-	12	-	-
Refrigeration	Reach-in Refrigerator	1500 kWh/yr	-	-	12	-	-
Refrigeration	Glass Door Display	14480 kWh/yr	-	-	12	-	-
Refrigeration	Glass Door Display	11700 kWh/yr	-	-	12	-	-
Refrigeration	Glass Door Display	8400 kWh/yr	-	-	12	1.00	-
Refrigeration	Glass Door Display	6800 kWh/yr	-	-	12	-	-
Refrigeration	Open Display Case	6500 kWh/yr	-	-	12	-	-
Refrigeration	Open Display Case	5350 kWh/yr	-	-	12	1.00	-
Refrigeration	Open Display Case	5300 kWh/yr	-	-	12	-	-
Refrigeration	Open Display Case	4330 kWh/yr	-	-	12	-	-
Refrigeration	Icemaker	7.0 kWh/100 lbs	-	-	10	1.00	-
Refrigeration	Icemaker	6.3 kWh/100 lbs	0.10	\$0.03	10	1.28	\$0.04
Refrigeration	Icemaker	6.0 kWh/100 lbs	0.17	\$0.05	10	1.28	\$0.04
Refrigeration	Icemaker	5.5 kWh/100 lbs	0.25	\$0.08	10	1.28	\$0.04
Refrigeration	Vending Machine	3400 kWh/year	-	-	12	1.00	-
Refrigeration	Vending Machine	3000 kWh/year	0.10	\$0.01	12	6.90	\$0.01
Refrigeration	Vending Machine	2400 kWh/year	0.33	\$0.02	12	6.90	\$0.01
Refrigeration	Vending Machine	1700 kWh/year	0.43	\$0.01	12	> 10	\$0.00
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.00	-	12	-	-
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.00	\$0.00	12	> 10	\$0.00
Food Preparation	Dishwasher	Standard	-	-	12	1.00	-
Food Preparation	Dishwasher	Energy Star	0.01	\$0.00	12	> 10	\$0.00
Food Preparation	Hot Food Container	Standard	-	-	12	1.00	-
Food Preparation	Hot Food Container	Energy Star	-	-	12	-	-
Food Preparation	Other	Standard	-	-	12	1.00	-
Office Equipment	Desktop Computer	Standard	-	-	5	1.00	-
Office Equipment	Desktop Computer	Energy Star	0.04	\$0.00	5	> 10	\$0.00
Office Equipment	Laptop	Standard	-	-	4	1.00	-
Office Equipment	Laptop	Energy Star	0.00	\$0.00	4	> 10	\$0.00
Office Equipment	Server	Standard	-	-	3	1.00	-
Office Equipment	Server	Energy Star	0.03	\$0.00	3	> 10	\$0.00
Office Equipment	Monitor	Standard	-	-	4	1.00	-
Office Equipment	Monitor	Energy Star	0.00	\$0.00	4	> 10	\$0.00
Office Equipment	Printer/Copier/Fax	Standard	-	-	6	1.00	-
Office Equipment	Printer/Copier/Fax	Energy Star	0.00	\$0.00	6	> 10	\$0.00
Office Equipment	POS Terminal	Standard	-	-	4	1.00	-

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Office Equipment	POS Terminal	Energy Star	0.01	\$0.00	4	7.87	\$0.01
Miscellaneous	Non-HVAC Motors	Standard (EPAAct)	-	-	15	1.00	-
Miscellaneous	Non-HVAC Motors	Standard (EPAAct 2015)	0.00	-	15	-	-
Miscellaneous	Non-HVAC Motors	High Efficiency	0.00	\$0.00	15	> 10	\$0.01
Miscellaneous	Non-HVAC Motors	High Efficiency (2015)	0.00	\$0.00	15	-	\$0.00
Miscellaneous	Non-HVAC Motors	Premium (NEMA)	0.00	\$0.00	15	> 10	\$0.01
Miscellaneous	Non-HVAC Motors	Premium (NEMA 2015)	0.00	\$0.00	15	-	\$0.00
Miscellaneous	Pool Pump	Standard	-	-	15	1.00	-
Miscellaneous	Pool Pump	High Efficiency	-	-	15	-	-
Miscellaneous	Pool Pump	High Efficiency, Multi-Speed	-	-	15	-	-
Miscellaneous	Pool Heater	Standard	-	-	15	1.00	-
Miscellaneous	Pool Heater	Heat Pump	-	-	15	-	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-36 Energy Efficiency Equipment Data, Natural Gas-Warehouse, Existing Vintage

End Use	Technology	Efficiency Definition	Savings (Therms/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/Therm)
Heating	Furnace	EF .76	-	-	16	1.00	-
Heating	Furnace	EF .80	0.01	\$0.19	16	0.25	\$2.33
Heating	Furnace	EF .82	0.01	\$0.53	16	0.14	\$4.30
Heating	Furnace	EF .90	0.03	\$0.46	16	0.33	\$1.77
Heating	Furnace	EF .96	0.03	\$0.67	16	0.30	\$1.92
Heating	Boiler	EF .76	-	-	20	-	-
Heating	Boiler	EF .80	0.10	\$0.00	20	1.00	\$0.00
Heating	Boiler	EF .83	0.17	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .90	0.26	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .96	0.37	\$0.00	20	> 10	\$0.00
Heating	Unit Heater	Standard	-	-	15	1.00	-
Heating	Unit Heater	Condensing	0.02	\$0.01	15	9.09	\$0.06
Water Heating	Water Heating	EF 0.77	-	-	12	1.00	-
Water Heating	Water Heating	EF 0.80	0.00	\$0.00	12	3.18	\$0.17
Water Heating	Water Heating	Tankless	0.00	\$0.00	12	2.39	\$0.23
Water Heating	Water Heating	Indirect Fired	0.00	\$0.00	12	6.26	\$0.09
Water Heating	Water Heating	EF 0.94	0.01	(\$0.00)	12	1.00	(\$0.02)
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	-	-	12	-	-
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	-	-	12	-	-
Food Preparation	Broiler	Standard	-	-	12	1.00	-
Food Preparation	Broiler	High Efficiency	-	-	12	-	-
Food Preparation	Griddle	Standard	-	-	12	1.00	-
Food Preparation	Griddle	High Efficiency	-	-	12	-	-
Food Preparation	Range	Standard	-	-	12	1.00	-
Food Preparation	Range	High Efficiency	-	-	12	-	-
Food Preparation	Steamer	Standard	-	-	12	1.00	-
Food Preparation	Steamer	Energy Star	-	-	12	-	-
Food Preparation	Other	Standard	-	-	12	1.00	-
Food Preparation	Other	Energy Star	-	-	12	-	-
Miscellaneous	Pool Heater	EF .78	-	-	5	-	-
Miscellaneous	Pool Heater	EF .82	-	-	5	1.00	-
Miscellaneous	Pool Heater	EF .90	-	-	5	-	-
Miscellaneous	Pool Heater	EF .95	-	-	5	-	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-37 Energy Efficiency Equipment Data, Electric-Warehouse, New Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incre- mental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Air-Cooled Chiller	1.5 kw/ton, COP 2.3	-	-	20	1.00	-
Cooling	Air-Cooled Chiller	1.3 kw/ton, COP 2.7	0.23	\$0.13	20	5.18	\$0.05
Cooling	Air-Cooled Chiller	1.26 kw/ton, COP 2.8	0.27	\$0.15	20	5.50	\$0.05
Cooling	Air-Cooled Chiller	1.0 kw/ton, COP 3.5	0.57	\$0.17	20	> 10	\$0.03
Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	0.60	\$0.19	20	9.87	\$0.03
Cooling	Water-Cooled Chiller	0.75 kw/ton, COP 4.7	-	-	20	1.00	-
Cooling	Water-Cooled Chiller	0.60 kw/ton, COP 5.9	0.22	\$0.05	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.58 kw/ton, COP 6.1	0.24	\$0.05	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.55 kw/Ton, COP 6.4	0.29	\$0.07	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.51 kw/ton, COP 6.9	0.35	\$0.10	20	> 10	\$0.03
Cooling	Water-Cooled Chiller	0.50 kw/Ton, COP 7.0	0.36	\$0.11	20	9.80	\$0.03
Cooling	Water-Cooled Chiller	0.48 kw/ton, COP 7.3	0.39	\$0.12	20	9.65	\$0.03
Cooling	Roof top AC	EER 9.2	-	-	15	-	-
Cooling	Roof top AC	EER 10.1	0.19	\$0.01	15	-	\$0.00
Cooling	Roof top AC	EER 11.2	0.38	\$0.01	15	1.00	\$0.00
Cooling	Roof top AC	EER 12.0	0.50	\$0.02	15	> 10	\$0.00
Cooling	Roof top AC	Ductless Minisplit	0.63	\$0.08	15	8.02	\$0.01
Cooling	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Cooling	Air Source Heat Pump	EER 10.3, COP 3.2	0.23	\$0.01	15	-	\$0.00
Cooling	Air Source Heat Pump	EER 11.0, COP 3.3	0.37	\$0.00	15	1.00	\$0.00
Cooling	Air Source Heat Pump	EER 11.7, COP 3.4	0.49	\$0.03	15	9.36	\$0.01
Cooling	Air Source Heat Pump	EER 12.0, COP 3.4	0.53	\$0.05	15	8.69	\$0.01
Cooling	Air Source Heat Pump	Ductless Minisplit	0.68	\$0.08	15	9.43	\$0.01
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	0.14	\$0.02	15	> 10	\$0.01
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	0.26	\$0.04	15	> 10	\$0.02
Cooling	Geothermal Heat Pump	EER 30, COP 5.0	0.62	\$0.06	15	> 10	\$0.01
Cooling	PTAC	EER 9.8	-	-	15	1.00	-
Cooling	PTAC	EER 10.2	0.07	\$0.00	15	> 10	\$0.00
Cooling	PTAC	EER 10.8	0.17	\$0.01	15	> 10	\$0.00
Cooling	PTAC	EER 11	0.20	\$0.01	15	> 10	\$0.00
Cooling	PTAC	EER 11.5	0.26	\$0.01	15	> 10	\$0.00
Cooling	PTHP	EER 9.8	-	-	15	1.00	-
Cooling	PTHP	EER 10.2	0.07	\$0.00	15	> 10	\$0.00
Cooling	PTHP	EER 10.8	0.17	\$0.01	15	> 10	\$0.00
Cooling	PTHP	EER 11	0.20	\$0.01	15	> 10	\$0.00
Cooling	PTHP	EER 11.5	0.26	\$0.01	15	> 10	\$0.00
Cooling	Evaporative AC	Direct	-	-	15	1.00	-
Cooling	Evaporative AC	Indirect	0.24	-	15	-	-
Cooling	Evaporative AC	Direct/Indirect	0.60	-	15	-	-
Heating	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Heating	Air Source Heat Pump	EER 10.3, COP 3.2	0.04	\$0.06	15	-	\$0.17
Heating	Air Source Heat Pump	EER 11.0, COP 3.3	0.07	\$0.01	15	1.00	\$0.01
Heating	Air Source Heat Pump	EER 11.7, COP 3.4	0.11	\$0.23	15	0.09	\$0.21
Heating	Air Source Heat Pump	EER 12.0, COP 3.4	0.11	\$0.33	15	0.06	\$0.31
Heating	Air Source Heat Pump	Ductless Minisplit	0.15	\$0.56	15	0.07	\$0.39
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	0.16	\$0.10	15	0.79	\$0.07
Heating	Geothermal Heat Pump	EER 18, COP 3.8	0.36	\$0.21	15	0.89	\$0.06
Heating	Geothermal Heat Pump	EER 30, COP 5.0	0.94	\$0.29	15	1.69	\$0.03

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Heating	Electric Room Heat	Standard	-	-	20	1.00	-
Heating	Electric Furnace	Standard	-	-	20	1.00	-
Heating	PTAC	EER 9.8	-	-	15	1.00	-
Heating	PTAC	EER 10.2	0.00	\$0.00	15	0.31	\$0.17
Heating	PTAC	EER 10.8	0.00	\$0.01	15	0.10	\$0.53
Heating	PTAC	EER 11	0.00	\$0.01	15	0.09	\$0.57
Heating	PTAC	EER 11.5	0.00	\$0.01	15	0.08	\$0.67
Heating	PTHP	EER 9.8	-	-	15	1.00	-
Heating	PTHP	EER 10.2	0.11	\$0.00	15	> 10	\$0.00
Heating	PTHP	EER 10.8	0.27	\$0.01	15	> 10	\$0.00
Heating	PTHP	EER 11	0.31	\$0.01	15	> 10	\$0.00
Heating	PTHP	EER 11.5	0.43	\$0.01	15	> 10	\$0.00
Ventilation	Ventilation	Constant Volume	-	-	10	1.00	-
Ventilation	Ventilation	Variable Air Volume	0.02	(\$0.11)	10	1.00	(\$0.74)
Water Heating	Water Heating	EF .97	-	-	15	1.00	-
Water Heating	Water Heating	EF .98	0.00	\$0.00	15	3.19	\$0.02
Water Heating	Water Heating	EF 2.0	0.11	\$0.00	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.3	0.12	\$0.00	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.4	0.13	\$0.00	15	> 10	\$0.00
Interior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Interior Lighting	Screw-in	90W Halogen PAR-38	0.11	\$0.01	3	1.15	\$0.02
Interior Lighting	Screw-in	70W HIR PAR-38	0.17	\$0.01	3	1.60	\$0.02
Interior Lighting	Screw-in	CFL	0.32	\$0.00	2.2	7.72	\$0.00
Interior Lighting	Screw-in	LED (2010)	0.35	\$0.05	20	3.39	\$0.01
Interior Lighting	Screw-in	LED (2020)	0.40	\$0.01	20	-	\$0.00
Interior Lighting	High-Bay Fixtures	Metal Halides	-	-	3	1.00	-
Interior Lighting	High-Bay Fixtures	LED (2010)	0.27	\$0.19	15	-	\$0.07
Interior Lighting	High-Bay Fixtures	T8	0.27	(\$0.01)	10	1.00	(\$0.01)
Interior Lighting	High-Bay Fixtures	High Pressure Sodium	0.29	\$0.01	6	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	Light Emitting Plasma	0.34	\$0.01	15	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	T5	0.35	\$0.01	10	1.00	\$0.01
Interior Lighting	High-Bay Fixtures	LED (2020)	0.52	\$0.04	15	-	\$0.01
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Interior Lighting	Linear Fluorescent	LED (2010)	0.36	\$1.43	15	1.00	\$0.41
Interior Lighting	Linear Fluorescent	T8	0.37	(\$0.00)	10	1.00	(\$0.00)
Interior Lighting	Linear Fluorescent	Super T8	0.52	\$0.21	10	1.00	\$0.05
Interior Lighting	Linear Fluorescent	T5	0.60	\$0.16	10	1.00	\$0.04
Interior Lighting	Linear Fluorescent	LED (2020)	1.12	\$0.39	15	-	\$0.04
Exterior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Exterior Lighting	Screw-in	90W Halogen PAR-38	0.00	\$0.00	3	1.27	\$0.02
Exterior Lighting	Screw-in	70W HIR PAR-38	0.00	\$0.00	3	1.61	\$0.02
Exterior Lighting	Screw-in	CFL	0.00	\$0.00	6	> 10	\$0.00
Exterior Lighting	Screw-in	LED (2010)	0.00	\$0.00	20	1.42	\$0.03
Exterior Lighting	Screw-in	LED (2020)	0.00	\$0.00	20	-	\$0.01
Exterior Lighting	HID	Metal Halides	-	-	3	1.00	-
Exterior Lighting	HID	LED (2010)	0.18	\$0.33	15	0.14	\$0.19
Exterior Lighting	HID	T8	0.18	(\$0.01)	10	1.00	(\$0.01)
Exterior Lighting	HID	High Pressure Sodium	0.19	\$0.00	6	1.00	\$0.00
Exterior Lighting	HID	Light Emitting Plasma	0.23	\$0.01	15	1.00	\$0.00
Exterior Lighting	HID	T5	0.23	\$0.01	10	1.00	\$0.01
Exterior Lighting	HID	LED (2020)	0.34	\$0.09	15	-	\$0.03

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Exterior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Exterior Lighting	Linear Fluorescent	LED (2010)	0.00	\$0.00	15	1.00	\$0.41
Exterior Lighting	Linear Fluorescent	T8	0.00	(\$0.00)	10	1.00	(\$0.00)
Exterior Lighting	Linear Fluorescent	Super T8	0.00	\$0.00	10	1.00	\$0.05
Exterior Lighting	Linear Fluorescent	T5	0.00	\$0.00	10	1.00	\$0.04
Exterior Lighting	Linear Fluorescent	LED (2020)	0.00	\$0.00	15	-	\$0.04
Refrigeration	Walk-in Refrigerator	14600 kWh/yr	-	-	12	1.00	-
Refrigeration	Walk-in Refrigerator	10800 kWh/yr	0.37	-	12	-	-
Refrigeration	Walk-in Refrigerator	10000 kWh/yr	0.41	-	12	-	-
Refrigeration	Walk-in Refrigerator	9000 kWh/yr	0.46	-	12	-	-
Refrigeration	Reach-in Refrigerator	3800 kWh/yr	-	-	12	1.00	-
Refrigeration	Reach-in Refrigerator	3100 kWh/yr	-	-	12	-	-
Refrigeration	Reach-in Refrigerator	2500 kWh/yr	-	-	12	-	-
Refrigeration	Reach-in Refrigerator	2400 kWh/yr	-	-	12	-	-
Refrigeration	Reach-in Refrigerator	1500 kWh/yr	-	-	12	-	-
Refrigeration	Glass Door Display	14480 kWh/yr	-	-	12	-	-
Refrigeration	Glass Door Display	11700 kWh/yr	-	-	12	-	-
Refrigeration	Glass Door Display	8400 kWh/yr	-	-	12	1.00	-
Refrigeration	Glass Door Display	6800 kWh/yr	-	-	12	-	-
Refrigeration	Open Display Case	6500 kWh/yr	-	-	12	-	-
Refrigeration	Open Display Case	5350 kWh/yr	-	-	12	1.00	-
Refrigeration	Open Display Case	5300 kWh/yr	-	-	12	-	-
Refrigeration	Open Display Case	4330 kWh/yr	-	-	12	-	-
Refrigeration	Icemaker	7.0 kWh/100 lbs	-	-	10	1.00	-
Refrigeration	Icemaker	6.3 kWh/100 lbs	0.10	\$0.03	10	1.28	\$0.04
Refrigeration	Icemaker	6.0 kWh/100 lbs	0.17	\$0.05	10	1.28	\$0.04
Refrigeration	Icemaker	5.5 kWh/100 lbs	0.25	\$0.08	10	1.28	\$0.04
Refrigeration	Vending Machine	3400 kWh/year	-	-	12	1.00	-
Refrigeration	Vending Machine	3000 kWh/year	0.10	\$0.01	12	6.57	\$0.01
Refrigeration	Vending Machine	2400 kWh/year	0.31	\$0.02	12	6.57	\$0.01
Refrigeration	Vending Machine	1700 kWh/year	0.41	\$0.01	12	> 10	\$0.00
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.00	-	12	-	-
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.00	\$0.00	12	> 10	\$0.00
Food Preparation	Dishwasher	Standard	-	-	12	1.00	-
Food Preparation	Dishwasher	Energy Star	0.01	\$0.00	12	> 10	\$0.00
Food Preparation	Hot Food Container	Standard	-	-	12	1.00	-
Food Preparation	Hot Food Container	Energy Star	-	-	12	-	-
Food Preparation	Other	Standard	-	-	12	1.00	-
Office Equipment	Desktop Computer	Standard	-	-	5	1.00	-
Office Equipment	Desktop Computer	Energy Star	0.04	\$0.00	5	> 10	\$0.00
Office Equipment	Laptop	Standard	-	-	4	1.00	-
Office Equipment	Laptop	Energy Star	0.00	\$0.00	4	> 10	\$0.00
Office Equipment	Server	Standard	-	-	3	1.00	-
Office Equipment	Server	Energy Star	0.03	\$0.00	3	> 10	\$0.00
Office Equipment	Monitor	Standard	-	-	4	1.00	-
Office Equipment	Monitor	Energy Star	0.00	\$0.00	4	> 10	\$0.00
Office Equipment	Printer/Copier/Fax	Standard	-	-	6	1.00	-
Office Equipment	Printer/Copier/Fax	Energy Star	0.00	\$0.00	6	> 10	\$0.00
Office Equipment	POS Terminal	Standard	-	-	4	1.00	-

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incre- mental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Office Equipment	POS Terminal	Energy Star	0.01	\$0.00	4	7.87	\$0.01
Miscellaneous	Non-HVAC Motors	Standard (EPAAct)	-	-	15	1.00	-
Miscellaneous	Non-HVAC Motors	Standard (EPAAct 2015)	0.00	-	15	-	-
Miscellaneous	Non-HVAC Motors	High Efficiency	0.00	\$0.00	15	> 10	\$0.01
Miscellaneous	Non-HVAC Motors	High Efficiency (2015)	0.00	\$0.00	15	-	\$0.00
Miscellaneous	Non-HVAC Motors	Premium (NEMA)	0.00	\$0.00	15	> 10	\$0.01
Miscellaneous	Non-HVAC Motors	Premium (NEMA 2015)	0.00	\$0.00	15	-	\$0.00
Miscellaneous	Pool Pump	Standard	-	-	15	1.00	-
Miscellaneous	Pool Pump	High Efficiency	-	-	15	-	-
Miscellaneous	Pool Pump	High Efficiency, Multi-Speed	-	-	15	-	-
Miscellaneous	Pool Heater	Standard	-	-	15	1.00	-
Miscellaneous	Pool Heater	Heat Pump	-	-	15	-	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-38 Energy Efficiency Equipment Data, Natural Gas-Warehouse, New Vintage

End Use	Technology	Efficiency Definition	Savings (Therms/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/Therm)
Heating	Furnace	EF .76	-	-	16	1.00	-
Heating	Furnace	EF .80	0.01	\$0.09	16	0.54	\$1.08
Heating	Furnace	EF .82	0.01	\$0.24	16	0.29	\$1.99
Heating	Furnace	EF .90	0.03	\$0.21	16	0.71	\$0.82
Heating	Furnace	EF .96	0.03	\$0.31	16	0.66	\$0.89
Heating	Boiler	EF .76	-	-	20	-	-
Heating	Boiler	EF .80	0.08	\$0.00	20	1.00	\$0.00
Heating	Boiler	EF .83	0.13	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .90	0.20	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .96	0.28	\$0.00	20	> 10	\$0.00
Heating	Unit Heater	Standard	-	-	15	1.00	-
Heating	Unit Heater	Condensing	0.02	\$0.01	15	9.09	\$0.06
Water Heating	Water Heating	EF 0.77	-	-	12	1.00	-
Water Heating	Water Heating	EF 0.80	0.00	\$0.00	12	3.29	\$0.16
Water Heating	Water Heating	Tankless	0.00	\$0.00	12	2.47	\$0.22
Water Heating	Water Heating	Indirect Fired	0.00	\$0.00	12	6.44	\$0.08
Water Heating	Water Heating	EF 0.94	0.00	(\$0.00)	12	1.00	(\$0.02)
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	-	-	12	-	-
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	-	-	12	-	-
Food Preparation	Broiler	Standard	-	-	12	1.00	-
Food Preparation	Broiler	High Efficiency	-	-	12	-	-
Food Preparation	Griddle	Standard	-	-	12	1.00	-
Food Preparation	Griddle	High Efficiency	-	-	12	-	-
Food Preparation	Range	Standard	-	-	12	1.00	-
Food Preparation	Range	High Efficiency	-	-	12	-	-
Food Preparation	Steamer	Standard	-	-	12	1.00	-
Food Preparation	Steamer	Energy Star	-	-	12	-	-
Food Preparation	Other	Standard	-	-	12	1.00	-
Food Preparation	Other	Energy Star	-	-	12	-	-
Miscellaneous	Pool Heater	EF .78	-	-	5	-	-
Miscellaneous	Pool Heater	EF .82	-	-	5	1.00	-
Miscellaneous	Pool Heater	EF .90	-	-	5	-	-
Miscellaneous	Pool Heater	EF .95	-	-	5	-	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-39 Energy Efficiency Equipment Data, Electric-Miscellaneous, Existing Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Air-Cooled Chiller	1.5 kw/ton, COP 2.3	-	-	20	1.00	-
Cooling	Air-Cooled Chiller	1.3 kw/ton, COP 2.7	0.19	\$0.08	20	3.96	\$0.04
Cooling	Air-Cooled Chiller	1.26 kw/ton, COP 2.8	0.23	\$0.09	20	4.21	\$0.03
Cooling	Air-Cooled Chiller	1.0 kw/ton, COP 3.5	0.48	\$0.10	20	7.86	\$0.02
Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	0.51	\$0.11	20	7.56	\$0.02
Cooling	Water-Cooled Chiller	0.75 kw/ton, COP 4.7	-	-	20	1.00	-
Cooling	Water-Cooled Chiller	0.60 kw/ton, COP 5.9	0.30	\$0.05	20	> 10	\$0.01
Cooling	Water-Cooled Chiller	0.58 kw/ton, COP 6.1	0.34	\$0.05	20	> 10	\$0.01
Cooling	Water-Cooled Chiller	0.55 kw/Ton, COP 6.4	0.39	\$0.06	20	> 10	\$0.01
Cooling	Water-Cooled Chiller	0.51 kw/ton, COP 6.9	0.47	\$0.09	20	8.34	\$0.02
Cooling	Water-Cooled Chiller	0.50 kw/Ton, COP 7.0	0.49	\$0.10	20	7.84	\$0.02
Cooling	Water-Cooled Chiller	0.48 kw/ton, COP 7.3	0.53	\$0.11	20	7.73	\$0.02
Cooling	Roof top AC	EER 9.2	-	-	15	-	-
Cooling	Roof top AC	EER 10.1	0.22	\$0.01	15	-	\$0.00
Cooling	Roof top AC	EER 11.2	0.44	\$0.01	15	1.00	\$0.00
Cooling	Roof top AC	EER 12.0	0.57	\$0.03	15	7.04	\$0.01
Cooling	Roof top AC	Ductless Minisplit	0.71	\$0.11	15	3.38	\$0.02
Cooling	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Cooling	Air Source Heat Pump	EER 10.3, COP 3.2	0.24	\$0.01	15	-	\$0.00
Cooling	Air Source Heat Pump	EER 11.0, COP 3.3	0.38	\$0.00	15	1.00	\$0.00
Cooling	Air Source Heat Pump	EER 11.7, COP 3.4	0.50	\$0.04	15	3.95	\$0.01
Cooling	Air Source Heat Pump	EER 12.0, COP 3.4	0.55	\$0.06	15	3.67	\$0.01
Cooling	Air Source Heat Pump	Ductless Minisplit	0.70	\$0.10	15	3.98	\$0.02
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	0.13	\$0.02	15	7.39	\$0.02
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	0.24	\$0.05	15	6.57	\$0.02
Cooling	Geothermal Heat Pump	EER 30, COP 5.0	0.59	\$0.06	15	> 10	\$0.01
Cooling	PTAC	EER 9.8	-	-	15	1.00	-
Cooling	PTAC	EER 10.2	0.07	\$0.00	15	> 10	\$0.00
Cooling	PTAC	EER 10.8	0.16	\$0.01	15	> 10	\$0.00
Cooling	PTAC	EER 11	0.19	\$0.01	15	> 10	\$0.00
Cooling	PTAC	EER 11.5	0.25	\$0.01	15	> 10	\$0.00
Cooling	PTHP	EER 9.8	-	-	15	1.00	-
Cooling	PTHP	EER 10.2	0.07	\$0.00	15	> 10	\$0.00
Cooling	PTHP	EER 10.8	0.16	\$0.01	15	> 10	\$0.00
Cooling	PTHP	EER 11	0.19	\$0.01	15	> 10	\$0.00
Cooling	PTHP	EER 11.5	0.25	\$0.01	15	> 10	\$0.00
Cooling	Evaporative AC	Direct	-	-	15	1.00	-
Cooling	Evaporative AC	Indirect	0.20	-	15	-	-
Cooling	Evaporative AC	Direct/Indirect	0.52	-	15	-	-
Heating	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Heating	Air Source Heat Pump	EER 10.3, COP 3.2	0.02	\$0.01	15	-	\$0.06
Heating	Air Source Heat Pump	EER 11.0, COP 3.3	0.03	\$0.00	15	1.00	\$0.00
Heating	Air Source Heat Pump	EER 11.7, COP 3.4	0.04	\$0.03	15	0.19	\$0.08
Heating	Air Source Heat Pump	EER 12.0, COP 3.4	0.04	\$0.05	15	0.13	\$0.12
Heating	Air Source Heat Pump	Ductless Minisplit	0.05	\$0.09	15	0.14	\$0.16
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	0.09	\$0.02	15	1.99	\$0.03
Heating	Geothermal Heat Pump	EER 18, COP 3.8	0.21	\$0.05	15	2.23	\$0.02
Heating	Geothermal Heat Pump	EER 30, COP 5.0	0.54	\$0.07	15	4.24	\$0.01

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Heating	Electric Room Heat	Standard	-	-	20	1.00	-
Heating	Electric Furnace	Standard	-	-	20	1.00	-
Heating	PTAC	EER 9.8	-	-	15	1.00	-
Heating	PTAC	EER 10.2	-	\$0.00	15	-	-
Heating	PTAC	EER 10.8	-	\$0.01	15	-	-
Heating	PTAC	EER 11	-	\$0.01	15	-	-
Heating	PTAC	EER 11.5	-	\$0.01	15	-	-
Heating	PTHP	EER 9.8	-	-	15	1.00	-
Heating	PTHP	EER 10.2	0.07	\$0.00	15	> 10	\$0.00
Heating	PTHP	EER 10.8	0.16	\$0.01	15	9.98	\$0.01
Heating	PTHP	EER 11	0.19	\$0.01	15	> 10	\$0.00
Heating	PTHP	EER 11.5	0.26	\$0.01	15	> 10	\$0.00
Ventilation	Ventilation	Constant Volume	-	-	10	1.00	-
Ventilation	Ventilation	Variable Air Volume	0.38	(\$0.04)	10	1.00	(\$0.01)
Water Heating	Water Heating	EF .97	-	-	15	1.00	-
Water Heating	Water Heating	EF .98	0.01	\$0.00	15	4.66	\$0.01
Water Heating	Water Heating	EF 2.0	0.51	\$0.00	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.3	0.58	\$0.00	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.4	0.59	\$0.00	15	> 10	\$0.00
Interior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Interior Lighting	Screw-in	90W Halogen PAR-38	0.27	\$0.02	3	1.13	\$0.02
Interior Lighting	Screw-in	70W HIR PAR-38	0.41	\$0.02	3	1.53	\$0.02
Interior Lighting	Screw-in	CFL	0.77	\$0.01	2.2	7.24	\$0.00
Interior Lighting	Screw-in	LED (2010)	0.83	\$0.13	20	3.32	\$0.01
Interior Lighting	Screw-in	LED (2020)	0.96	\$0.04	20	-	\$0.00
Interior Lighting	High-Bay Fixtures	Metal Halides	-	-	3	1.00	-
Interior Lighting	High-Bay Fixtures	LED (2010)	0.21	\$0.15	15	0.09	\$0.07
Interior Lighting	High-Bay Fixtures	T8	0.21	(\$0.01)	10	1.00	(\$0.01)
Interior Lighting	High-Bay Fixtures	High Pressure Sodium	0.22	\$0.01	6	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	Light Emitting Plasma	0.26	\$0.01	15	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	T5	0.27	\$0.01	10	1.00	\$0.01
Interior Lighting	High-Bay Fixtures	LED (2020)	0.40	\$0.03	15	-	\$0.01
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Interior Lighting	Linear Fluorescent	LED (2010)	0.69	\$2.87	15	1.00	\$0.43
Interior Lighting	Linear Fluorescent	T8	0.72	(\$0.00)	10	1.00	(\$0.00)
Interior Lighting	Linear Fluorescent	Super T8	1.00	\$0.42	10	1.00	\$0.06
Interior Lighting	Linear Fluorescent	T5	1.15	\$0.32	10	1.00	\$0.04
Interior Lighting	Linear Fluorescent	LED (2020)	2.15	\$0.79	15	-	\$0.04
Exterior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Exterior Lighting	Screw-in	90W Halogen PAR-38	0.14	\$0.01	3	1.21	\$0.02
Exterior Lighting	Screw-in	70W HIR PAR-38	0.22	\$0.01	3	1.54	\$0.02
Exterior Lighting	Screw-in	CFL	0.41	\$0.00	6	> 10	\$0.00
Exterior Lighting	Screw-in	LED (2010)	0.45	\$0.17	20	1.35	\$0.03
Exterior Lighting	Screw-in	LED (2020)	0.52	\$0.05	20	-	\$0.01
Exterior Lighting	HID	Metal Halides	-	-	3	1.00	-
Exterior Lighting	HID	LED (2010)	0.22	\$0.42	15	0.13	\$0.20
Exterior Lighting	HID	T8	0.22	(\$0.01)	10	1.00	(\$0.01)
Exterior Lighting	HID	High Pressure Sodium	0.24	\$0.01	6	1.00	\$0.00
Exterior Lighting	HID	Light Emitting Plasma	0.28	\$0.01	15	1.00	\$0.00
Exterior Lighting	HID	T5	0.28	\$0.01	10	1.00	\$0.01
Exterior Lighting	HID	LED (2020)	0.42	\$0.11	15	-	\$0.03

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Exterior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Exterior Lighting	Linear Fluorescent	LED (2010)	0.08	\$0.33	15	1.00	\$0.43
Exterior Lighting	Linear Fluorescent	T8	0.08	(\$0.00)	10	1.00	(\$0.00)
Exterior Lighting	Linear Fluorescent	Super T8	0.11	\$0.05	10	1.00	\$0.06
Exterior Lighting	Linear Fluorescent	T5	0.13	\$0.04	10	1.00	\$0.04
Exterior Lighting	Linear Fluorescent	LED (2020)	0.25	\$0.09	15	-	\$0.04
Refrigeration	Walk-in Refrigerator	14600 kWh/yr	-	-	12	1.00	-
Refrigeration	Walk-in Refrigerator	10800 kWh/yr	0.08	\$0.00	12	> 10	\$0.00
Refrigeration	Walk-in Refrigerator	10000 kWh/yr	0.09	\$0.00	12	> 10	\$0.01
Refrigeration	Walk-in Refrigerator	9000 kWh/yr	0.10	\$0.01	12	6.56	\$0.01
Refrigeration	Reach-in Refrigerator	3800 kWh/yr	-	-	12	1.00	-
Refrigeration	Reach-in Refrigerator	3100 kWh/yr	0.02	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	2500 kWh/yr	0.03	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	2400 kWh/yr	0.03	\$0.00	12	> 10	\$0.01
Refrigeration	Reach-in Refrigerator	1500 kWh/yr	0.04	\$0.00	12	> 10	\$0.00
Refrigeration	Glass Door Display	14480 kWh/yr	-	-	12	-	-
Refrigeration	Glass Door Display	11700 kWh/yr	0.03	\$0.00	12	-	\$0.01
Refrigeration	Glass Door Display	8400 kWh/yr	0.08	-	12	1.00	-
Refrigeration	Glass Door Display	6800 kWh/yr	0.11	\$0.00	12	6.43	\$0.00
Refrigeration	Open Display Case	6500 kWh/yr	-	-	12	-	-
Refrigeration	Open Display Case	5350 kWh/yr	0.02	-	12	1.00	-
Refrigeration	Open Display Case	5300 kWh/yr	0.02	\$0.00	12	-	\$0.02
Refrigeration	Open Display Case	4330 kWh/yr	0.03	\$0.00	12	2.63	\$0.01
Refrigeration	Icemaker	7.0 kWh/100 lbs	-	-	10	1.00	-
Refrigeration	Icemaker	6.3 kWh/100 lbs	0.01	\$0.00	10	1.06	\$0.05
Refrigeration	Icemaker	6.0 kWh/100 lbs	0.01	\$0.00	10	1.06	\$0.05
Refrigeration	Icemaker	5.5 kWh/100 lbs	0.01	\$0.01	10	1.06	\$0.05
Refrigeration	Vending Machine	3400 kWh/year	-	-	12	1.00	-
Refrigeration	Vending Machine	3000 kWh/year	0.01	\$0.00	12	5.79	\$0.01
Refrigeration	Vending Machine	2400 kWh/year	0.04	\$0.00	12	5.79	\$0.01
Refrigeration	Vending Machine	1700 kWh/year	0.05	\$0.00	12	> 10	\$0.00
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.01	\$0.00	12	> 10	\$0.00
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.01	\$0.00	12	> 10	\$0.00
Food Preparation	Dishwasher	Standard	-	-	12	1.00	-
Food Preparation	Dishwasher	Energy Star	0.05	\$0.00	12	> 10	\$0.00
Food Preparation	Hot Food Container	Standard	-	-	12	1.00	-
Food Preparation	Hot Food Container	Energy Star	0.03	\$0.00	12	> 10	\$0.00
Food Preparation	Other	Standard	-	-	12	1.00	-
Office Equipment	Desktop Computer	Standard	-	-	5	1.00	-
Office Equipment	Desktop Computer	Energy Star	0.10	\$0.00	5	> 10	\$0.00
Office Equipment	Laptop	Standard	-	-	4	1.00	-
Office Equipment	Laptop	Energy Star	0.02	\$0.00	4	> 10	\$0.00
Office Equipment	Server	Standard	-	-	3	1.00	-
Office Equipment	Server	Energy Star	0.05	\$0.00	3	> 10	\$0.00
Office Equipment	Monitor	Standard	-	-	4	1.00	-
Office Equipment	Monitor	Energy Star	0.01	\$0.00	4	> 10	\$0.00
Office Equipment	Printer/Copier/Fax	Standard	-	-	6	1.00	-
Office Equipment	Printer/Copier/Fax	Energy Star	0.03	\$0.00	6	> 10	\$0.00
Office Equipment	POS Terminal	Standard	-	-	4	1.00	-

Commercial Energy Efficiency Equipment and Measure Data

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Office Equipment	POS Terminal	Energy Star	0.05	\$0.01	4	0.71	\$0.06
Miscellaneous	Non-HVAC Motors	Standard (EPAAct)	-	-	15	1.00	-
Miscellaneous	Non-HVAC Motors	Standard (EPAAct 2015)	0.00	-	15	-	-
Miscellaneous	Non-HVAC Motors	High Efficiency	0.00	\$0.00	15	> 10	\$0.01
Miscellaneous	Non-HVAC Motors	High Efficiency (2015)	0.01	\$0.00	15	-	\$0.00
Miscellaneous	Non-HVAC Motors	Premium (NEMA)	0.01	\$0.00	15	> 10	\$0.01
Miscellaneous	Non-HVAC Motors	Premium (NEMA 2015)	0.01	\$0.00	15	-	\$0.01
Miscellaneous	Pool Pump	Standard	-	-	15	1.00	-
Miscellaneous	Pool Pump	High Efficiency	0.00	\$0.00	15	2.51	\$0.03
Miscellaneous	Pool Pump	High Efficiency, Multi-Speed	0.00	\$0.00	15	1.47	\$0.05
Miscellaneous	Pool Heater	Standard	-	-	15	1.00	-
Miscellaneous	Pool Heater	Heat Pump	0.00	-	15	-	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-40 Energy Efficiency Equipment Data, Natural Gas-Miscellaneous, Existing Vintage

End Use	Technology	Efficiency Definition	Savings (Therms/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/Therm)
Heating	Furnace	EF .76	-	-	16	1.00	-
Heating	Furnace	EF .80	0.01	\$0.02	16	1.76	\$0.33
Heating	Furnace	EF .82	0.01	\$0.07	16	0.95	\$0.61
Heating	Furnace	EF .90	0.02	\$0.06	16	2.32	\$0.25
Heating	Furnace	EF .96	0.03	\$0.08	16	2.14	\$0.27
Heating	Boiler	EF .76	-	-	20	-	-
Heating	Boiler	EF .80	0.01	\$0.00	20	1.00	\$0.00
Heating	Boiler	EF .83	0.02	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .90	0.03	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .96	0.05	\$0.00	20	> 10	\$0.00
Heating	Unit Heater	Standard	-	-	15	1.00	-
Heating	Unit Heater	Condensing	0.02	\$0.00	15	> 10	\$0.00
Water Heating	Water Heating	EF 0.77	-	-	12	1.00	-
Water Heating	Water Heating	EF 0.80	0.00	\$0.00	12	4.44	\$0.12
Water Heating	Water Heating	Tankless	0.00	\$0.01	12	3.33	\$0.16
Water Heating	Water Heating	Indirect Fired	0.01	\$0.00	12	8.67	\$0.06
Water Heating	Water Heating	EF 0.94	0.01	(\$0.00)	12	1.00	(\$0.01)
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.00	\$0.00	12	> 10	\$0.01
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.00	\$0.00	12	> 10	\$0.01
Food Preparation	Broiler	Standard	-	-	12	1.00	-
Food Preparation	Broiler	High Efficiency	0.00	\$0.00	12	> 10	\$0.04
Food Preparation	Griddle	Standard	-	-	12	1.00	-
Food Preparation	Griddle	High Efficiency	0.00	\$0.00	12	> 10	\$0.02
Food Preparation	Range	Standard	-	-	12	1.00	-
Food Preparation	Range	High Efficiency	0.00	\$0.00	12	> 10	\$0.01
Food Preparation	Steamer	Standard	-	-	12	1.00	-
Food Preparation	Steamer	Energy Star	0.00	-	12	-	-
Food Preparation	Other	Standard	-	-	12	1.00	-
Food Preparation	Other	Energy Star	0.00	-	12	-	-
Miscellaneous	Pool Heater	EF .78	-	-	5	-	-
Miscellaneous	Pool Heater	EF .82	0.00	\$0.00	5	1.00	\$0.36
Miscellaneous	Pool Heater	EF .90	0.00	\$0.01	5	0.14	\$2.26
Miscellaneous	Pool Heater	EF .95	0.00	\$0.01	5	0.18	\$1.92
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-41 Energy Efficiency Equipment Data, Electric-Miscellaneous, New Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incre- mental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Air-Cooled Chiller	1.5 kw/ton, COP 2.3	-	-	20	1.00	-
Cooling	Air-Cooled Chiller	1.3 kw/ton, COP 2.7	0.19	\$0.11	20	2.70	\$0.05
Cooling	Air-Cooled Chiller	1.26 kw/ton, COP 2.8	0.23	\$0.13	20	2.87	\$0.05
Cooling	Air-Cooled Chiller	1.0 kw/ton, COP 3.5	0.49	\$0.14	20	5.36	\$0.03
Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	0.51	\$0.16	20	5.15	\$0.03
Cooling	Water-Cooled Chiller	0.75 kw/ton, COP 4.7	-	-	20	1.00	-
Cooling	Water-Cooled Chiller	0.60 kw/ton, COP 5.9	0.19	\$0.04	20	6.78	\$0.02
Cooling	Water-Cooled Chiller	0.58 kw/ton, COP 6.1	0.21	\$0.05	20	7.17	\$0.02
Cooling	Water-Cooled Chiller	0.55 kw/Ton, COP 6.4	0.25	\$0.06	20	7.04	\$0.02
Cooling	Water-Cooled Chiller	0.51 kw/ton, COP 6.9	0.30	\$0.09	20	5.43	\$0.03
Cooling	Water-Cooled Chiller	0.50 kw/Ton, COP 7.0	0.31	\$0.10	20	5.11	\$0.03
Cooling	Water-Cooled Chiller	0.48 kw/ton, COP 7.3	0.33	\$0.11	20	5.03	\$0.03
Cooling	Roof top AC	EER 9.2	-	-	15	-	-
Cooling	Roof top AC	EER 10.1	0.22	\$0.01	15	-	\$0.00
Cooling	Roof top AC	EER 11.2	0.44	\$0.01	15	1.00	\$0.00
Cooling	Roof top AC	EER 12.0	0.57	\$0.03	15	8.33	\$0.01
Cooling	Roof top AC	Ductless Minisplit	0.71	\$0.09	15	4.01	\$0.01
Cooling	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Cooling	Air Source Heat Pump	EER 10.3, COP 3.2	0.24	\$0.01	15	-	\$0.00
Cooling	Air Source Heat Pump	EER 11.0, COP 3.3	0.38	\$0.00	15	1.00	\$0.00
Cooling	Air Source Heat Pump	EER 11.7, COP 3.4	0.50	\$0.04	15	4.67	\$0.01
Cooling	Air Source Heat Pump	EER 12.0, COP 3.4	0.55	\$0.05	15	4.34	\$0.01
Cooling	Air Source Heat Pump	Ductless Minisplit	0.70	\$0.09	15	4.71	\$0.01
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	0.14	\$0.02	15	8.74	\$0.02
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	0.26	\$0.04	15	7.77	\$0.02
Cooling	Geothermal Heat Pump	EER 30, COP 5.0	0.64	\$0.06	15	> 10	\$0.01
Cooling	PTAC	EER 9.8	-	-	15	1.00	-
Cooling	PTAC	EER 10.2	0.06	\$0.00	15	> 10	\$0.00
Cooling	PTAC	EER 10.8	0.15	\$0.01	15	> 10	\$0.00
Cooling	PTAC	EER 11	0.17	\$0.01	15	> 10	\$0.00
Cooling	PTAC	EER 11.5	0.23	\$0.01	15	> 10	\$0.00
Cooling	PTHP	EER 9.8	-	-	15	1.00	-
Cooling	PTHP	EER 10.2	0.06	\$0.00	15	> 10	\$0.00
Cooling	PTHP	EER 10.8	0.15	\$0.01	15	> 10	\$0.00
Cooling	PTHP	EER 11	0.17	\$0.01	15	> 10	\$0.00
Cooling	PTHP	EER 11.5	0.23	\$0.01	15	> 10	\$0.00
Cooling	Evaporative AC	Direct	-	-	15	1.00	-
Cooling	Evaporative AC	Indirect	0.20	-	15	-	-
Cooling	Evaporative AC	Direct/Indirect	0.52	-	15	-	-
Heating	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	15	-	-
Heating	Air Source Heat Pump	EER 10.3, COP 3.2	0.03	\$0.00	15	-	\$0.02
Heating	Air Source Heat Pump	EER 11.0, COP 3.3	0.06	\$0.00	15	1.00	\$0.00
Heating	Air Source Heat Pump	EER 11.7, COP 3.4	0.08	\$0.02	15	0.82	\$0.02
Heating	Air Source Heat Pump	EER 12.0, COP 3.4	0.08	\$0.03	15	0.55	\$0.03
Heating	Air Source Heat Pump	Ductless Minisplit	0.11	\$0.05	15	0.65	\$0.04
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	15	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	0.11	\$0.01	15	5.75	\$0.01
Heating	Geothermal Heat Pump	EER 18, COP 3.8	0.25	\$0.02	15	6.45	\$0.01
Heating	Geothermal Heat Pump	EER 30, COP 5.0	0.63	\$0.03	15	> 10	\$0.00

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incre- mental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Heating	Electric Room Heat	Standard	-	-	20	1.00	-
Heating	Electric Furnace	Standard	-	-	20	1.00	-
Heating	PTAC	EER 9.8	-	-	15	1.00	-
Heating	PTAC	EER 10.2	0.00	\$0.00	15	0.31	\$0.17
Heating	PTAC	EER 10.8	0.00	\$0.00	15	0.10	\$0.53
Heating	PTAC	EER 11	0.00	\$0.01	15	0.09	\$0.57
Heating	PTAC	EER 11.5	0.00	\$0.01	15	0.08	\$0.67
Heating	PTHP	EER 9.8	-	-	15	1.00	-
Heating	PTHP	EER 10.2	0.06	\$0.00	15	> 10	\$0.00
Heating	PTHP	EER 10.8	0.15	\$0.00	15	> 10	\$0.00
Heating	PTHP	EER 11	0.17	\$0.00	15	> 10	\$0.00
Heating	PTHP	EER 11.5	0.23	\$0.00	15	> 10	\$0.00
Ventilation	Ventilation	Constant Volume	-	-	10	1.00	-
Ventilation	Ventilation	Variable Air Volume	0.51	(\$0.07)	10	1.00	(\$0.02)
Water Heating	Water Heating	EF .97	-	-	15	1.00	-
Water Heating	Water Heating	EF .98	0.01	\$0.00	15	2.57	\$0.03
Water Heating	Water Heating	EF 2.0	0.49	\$0.00	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.3	0.55	\$0.01	15	> 10	\$0.00
Water Heating	Water Heating	EF 2.4	0.56	\$0.01	15	> 10	\$0.00
Interior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Interior Lighting	Screw-in	90W Halogen PAR-38	0.27	\$0.02	3	1.13	\$0.02
Interior Lighting	Screw-in	70W HIR PAR-38	0.41	\$0.02	3	1.53	\$0.02
Interior Lighting	Screw-in	CFL	0.77	\$0.01	2.2	7.24	\$0.00
Interior Lighting	Screw-in	LED (2010)	0.83	\$0.13	20	3.32	\$0.01
Interior Lighting	Screw-in	LED (2020)	0.96	\$0.04	20	-	\$0.00
Interior Lighting	High-Bay Fixtures	Metal Halides	-	-	3	1.00	-
Interior Lighting	High-Bay Fixtures	LED (2010)	0.21	\$0.15	15	0.09	\$0.07
Interior Lighting	High-Bay Fixtures	T8	0.21	(\$0.01)	10	1.00	(\$0.01)
Interior Lighting	High-Bay Fixtures	High Pressure Sodium	0.22	\$0.01	6	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	Light Emitting Plasma	0.26	\$0.01	15	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	T5	0.27	\$0.01	10	1.00	\$0.01
Interior Lighting	High-Bay Fixtures	LED (2020)	0.40	\$0.03	15	-	\$0.01
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Interior Lighting	Linear Fluorescent	LED (2010)	0.69	\$2.87	15	1.00	\$0.43
Interior Lighting	Linear Fluorescent	T8	0.72	(\$0.00)	10	1.00	(\$0.00)
Interior Lighting	Linear Fluorescent	Super T8	1.00	\$0.42	10	1.00	\$0.06
Interior Lighting	Linear Fluorescent	T5	1.15	\$0.32	10	1.00	\$0.04
Interior Lighting	Linear Fluorescent	LED (2020)	2.15	\$0.79	15	-	\$0.04
Exterior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Exterior Lighting	Screw-in	90W Halogen PAR-38	0.14	\$0.01	3	1.21	\$0.02
Exterior Lighting	Screw-in	70W HIR PAR-38	0.22	\$0.01	3	1.54	\$0.02
Exterior Lighting	Screw-in	CFL	0.41	\$0.00	6	> 10	\$0.00
Exterior Lighting	Screw-in	LED (2010)	0.45	\$0.17	20	1.35	\$0.03
Exterior Lighting	Screw-in	LED (2020)	0.52	\$0.05	20	-	\$0.01
Exterior Lighting	HID	Metal Halides	-	-	3	1.00	-
Exterior Lighting	HID	LED (2010)	0.22	\$0.42	15	0.13	\$0.20
Exterior Lighting	HID	T8	0.22	(\$0.01)	10	1.00	(\$0.01)
Exterior Lighting	HID	High Pressure Sodium	0.24	\$0.01	6	1.00	\$0.00
Exterior Lighting	HID	Light Emitting Plasma	0.28	\$0.01	15	1.00	\$0.00
Exterior Lighting	HID	T5	0.28	\$0.01	10	1.00	\$0.01
Exterior Lighting	HID	LED (2020)	0.42	\$0.11	15	-	\$0.03

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Exterior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Exterior Lighting	Linear Fluorescent	LED (2010)	0.08	\$0.33	15	1.00	\$0.43
Exterior Lighting	Linear Fluorescent	T8	0.08	(\$0.00)	10	1.00	(\$0.00)
Exterior Lighting	Linear Fluorescent	Super T8	0.11	\$0.05	10	1.00	\$0.06
Exterior Lighting	Linear Fluorescent	T5	0.13	\$0.04	10	1.00	\$0.04
Exterior Lighting	Linear Fluorescent	LED (2020)	0.25	\$0.09	15	-	\$0.04
Refrigeration	Walk-in Refrigerator	14600 kWh/yr	-	-	12	1.00	-
Refrigeration	Walk-in Refrigerator	10800 kWh/yr	0.08	\$0.00	12	> 10	\$0.00
Refrigeration	Walk-in Refrigerator	10000 kWh/yr	0.09	\$0.00	12	> 10	\$0.01
Refrigeration	Walk-in Refrigerator	9000 kWh/yr	0.10	\$0.01	12	6.56	\$0.01
Refrigeration	Reach-in Refrigerator	3800 kWh/yr	-	-	12	1.00	-
Refrigeration	Reach-in Refrigerator	3100 kWh/yr	0.02	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	2500 kWh/yr	0.03	\$0.00	12	> 10	\$0.00
Refrigeration	Reach-in Refrigerator	2400 kWh/yr	0.03	\$0.00	12	> 10	\$0.01
Refrigeration	Reach-in Refrigerator	1500 kWh/yr	0.04	\$0.00	12	> 10	\$0.00
Refrigeration	Glass Door Display	14480 kWh/yr	-	-	12	-	-
Refrigeration	Glass Door Display	11700 kWh/yr	0.03	\$0.00	12	-	\$0.01
Refrigeration	Glass Door Display	8400 kWh/yr	0.08	-	12	1.00	-
Refrigeration	Glass Door Display	6800 kWh/yr	0.11	\$0.00	12	6.43	\$0.00
Refrigeration	Open Display Case	6500 kWh/yr	-	-	12	-	-
Refrigeration	Open Display Case	5350 kWh/yr	0.02	-	12	1.00	-
Refrigeration	Open Display Case	5300 kWh/yr	0.02	\$0.00	12	-	\$0.02
Refrigeration	Open Display Case	4330 kWh/yr	0.03	\$0.00	12	2.63	\$0.01
Refrigeration	Icemaker	7.0 kWh/100 lbs	-	-	10	1.00	-
Refrigeration	Icemaker	6.3 kWh/100 lbs	0.01	\$0.00	10	1.06	\$0.05
Refrigeration	Icemaker	6.0 kWh/100 lbs	0.01	\$0.00	10	1.06	\$0.05
Refrigeration	Icemaker	5.5 kWh/100 lbs	0.01	\$0.01	10	1.06	\$0.05
Refrigeration	Vending Machine	3400 kWh/year	-	-	12	1.00	-
Refrigeration	Vending Machine	3000 kWh/year	0.01	\$0.00	12	5.81	\$0.01
Refrigeration	Vending Machine	2400 kWh/year	0.04	\$0.00	12	5.81	\$0.01
Refrigeration	Vending Machine	1700 kWh/year	0.05	\$0.00	12	> 10	\$0.00
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.01	\$0.00	12	> 10	\$0.00
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.01	\$0.00	12	> 10	\$0.00
Food Preparation	Dishwasher	Standard	-	-	12	1.00	-
Food Preparation	Dishwasher	Energy Star	0.05	\$0.00	12	> 10	\$0.00
Food Preparation	Hot Food Container	Standard	-	-	12	1.00	-
Food Preparation	Hot Food Container	Energy Star	0.03	\$0.00	12	> 10	\$0.00
Food Preparation	Other	Standard	-	-	12	1.00	-
Office Equipment	Desktop Computer	Standard	-	-	5	1.00	-
Office Equipment	Desktop Computer	Energy Star	0.10	\$0.00	5	> 10	\$0.00
Office Equipment	Laptop	Standard	-	-	4	1.00	-
Office Equipment	Laptop	Energy Star	0.02	\$0.00	4	> 10	\$0.00
Office Equipment	Server	Standard	-	-	3	1.00	-
Office Equipment	Server	Energy Star	0.05	\$0.00	3	> 10	\$0.00
Office Equipment	Monitor	Standard	-	-	4	1.00	-
Office Equipment	Monitor	Energy Star	0.01	\$0.00	4	> 10	\$0.00
Office Equipment	Printer/Copier/Fax	Standard	-	-	6	1.00	-
Office Equipment	Printer/Copier/Fax	Energy Star	0.03	\$0.00	6	> 10	\$0.00
Office Equipment	POS Terminal	Standard	-	-	4	1.00	-

End Use	Technology	Efficiency Definition	Savings (kWh/sq ft/yr)	Incre- mental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Office Equipment	POS Terminal	Energy Star	0.05	\$0.01	4	0.71	\$0.06
Miscellaneous	Non-HVAC Motors	Standard (EPAAct)	-	-	15	1.00	-
Miscellaneous	Non-HVAC Motors	Standard (EPAAct 2015)	0.00	-	15	-	-
Miscellaneous	Non-HVAC Motors	High Efficiency	0.00	\$0.00	15	> 10	\$0.01
Miscellaneous	Non-HVAC Motors	High Efficiency (2015)	0.01	\$0.00	15	-	\$0.00
Miscellaneous	Non-HVAC Motors	Premium (NEMA)	0.01	\$0.00	15	> 10	\$0.01
Miscellaneous	Non-HVAC Motors	Premium (NEMA 2015)	0.01	\$0.00	15	-	\$0.01
Miscellaneous	Pool Pump	Standard	-	-	15	1.00	-
Miscellaneous	Pool Pump	High Efficiency	0.00	\$0.00	15	2.51	\$0.03
Miscellaneous	Pool Pump	High Efficiency, Multi-Speed	0.00	\$0.00	15	1.47	\$0.05
Miscellaneous	Pool Heater	Standard	-	-	15	1.00	-
Miscellaneous	Pool Heater	Heat Pump	0.00	-	15	-	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-42 Energy Efficiency Equipment Data, Natural Gas-Miscellaneous, New Vintage

End Use	Technology	Efficiency Definition	Savings (Therms/sq ft/yr)	Incremental Cost (\$/sq ft)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/Therm)
Heating	Furnace	EF .76	-	-	16	1.00	-
Heating	Furnace	EF .80	0.01	\$0.01	16	3.74	\$0.16
Heating	Furnace	EF .82	0.01	\$0.03	16	2.02	\$0.29
Heating	Furnace	EF .90	0.02	\$0.03	16	4.92	\$0.12
Heating	Furnace	EF .96	0.03	\$0.04	16	4.54	\$0.13
Heating	Boiler	EF .76	-	-	20	-	-
Heating	Boiler	EF .80	0.01	\$0.00	20	1.00	\$0.00
Heating	Boiler	EF .83	0.02	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .90	0.02	\$0.00	20	> 10	\$0.00
Heating	Boiler	EF .96	0.03	\$0.00	20	> 10	\$0.00
Heating	Unit Heater	Standard	-	-	15	1.00	-
Heating	Unit Heater	Condensing	0.02	\$0.00	15	> 10	\$0.00
Water Heating	Water Heating	EF 0.77	-	-	12	1.00	-
Water Heating	Water Heating	EF 0.80	0.00	\$0.00	12	2.49	\$0.22
Water Heating	Water Heating	Tankless	0.00	\$0.01	12	1.87	\$0.29
Water Heating	Water Heating	Indirect Fired	0.01	\$0.01	12	4.80	\$0.11
Water Heating	Water Heating	EF 0.94	0.01	(\$0.00)	12	1.00	(\$0.02)
Food Preparation	Oven	Standard	-	-	12	1.00	-
Food Preparation	Oven	Energy Star	0.00	\$0.00	12	> 10	\$0.01
Food Preparation	Fryer	Standard	-	-	12	1.00	-
Food Preparation	Fryer	Energy Star	0.00	\$0.00	12	> 10	\$0.01
Food Preparation	Broiler	Standard	-	-	12	1.00	-
Food Preparation	Broiler	High Efficiency	0.00	\$0.00	12	> 10	\$0.04
Food Preparation	Griddle	Standard	-	-	12	1.00	-
Food Preparation	Griddle	High Efficiency	0.00	\$0.00	12	> 10	\$0.02
Food Preparation	Range	Standard	-	-	12	1.00	-
Food Preparation	Range	High Efficiency	0.00	\$0.00	12	> 10	\$0.01
Food Preparation	Steamer	Standard	-	-	12	1.00	-
Food Preparation	Steamer	Energy Star	0.00	-	12	-	-
Food Preparation	Other	Standard	-	-	12	1.00	-
Food Preparation	Other	Energy Star	0.00	-	12	-	-
Miscellaneous	Pool Heater	EF .78	-	-	5	-	-
Miscellaneous	Pool Heater	EF .82	0.00	\$0.00	5	1.00	\$0.36
Miscellaneous	Pool Heater	EF .90	0.00	\$0.01	5	0.14	\$2.26
Miscellaneous	Pool Heater	EF .95	0.00	\$0.01	5	0.18	\$1.92
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table C-43 Energy Efficiency Non-Equipment Data- Electric Office, Existing Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	21,249.6	\$/bldg	245,001.9	1.25	0.05
Insulation - Ducting	17%	50%	20	0.8	\$/sqft	0.7	0.31	0.09
Insulation - Radiant Barrier	7%	13%	20	5,429.6	\$/bldg	95,772.7	1.92	0.04
Insulation - Wall Cavity	7%	13%	20	26,830.6	\$/bldg	545,078.1	2.16	0.03
HVAC - Duct Repair and Sealing	5%	25%	18	66.8	\$/bldg	175,495.5	> 10	0.00
Doors - High Efficiency	0%	0%	10	0.2	\$/sqft	2.2	1.03	0.05
Windows - High Efficiency	75%	80%	20	29,863.8	\$/bldg	3,842,949.7	> 10	0.01
Roof - High Reflectivity	42%	75%	15	833.3	\$/bldg	48,982.4	8.17	0.01
Air-Cooled Chiller - Condenser Air Temperature Reset	30%	75%	10	814.4	\$/sqft	829,874.2	> 10	0.00
Air-Cooled Chiller - Economizer	25%	49%	10	813.6	\$/sqft	903,336.4	> 10	0.00
Air-Cooled Chiller - VSD on fans	15%	66%	15	2,521.0	\$/bldg	433.1	1.27	0.11
Air-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	617,989.5	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	140,120.6	0.58	0.07
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	44,150.2	3.48	0.02
Air-Cooled Chiller - Maintenance	42%	90%	18	9,374.8	\$/bldg	387,152.3	> 10	0.02
Water-Cooled Chiller - Condenser Water Temperature Reset	30%	75%	4	0.0	\$/sqft	2.2	7.87	0.00
Water-Cooled Chiller - Economizer	25%	49%	10	2,717.6	\$/sqft	903,336.4	> 10	0.00
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	16.4	1.06	0.04
Water-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	829,874.2	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	140,120.6	0.44	0.07
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	44,150.2	2.60	0.02
Water-Cooled Chiller - Maintenance	42%	90%	18	9,374.8	\$/bldg	387,152.3	7.99	0.02
RTU - Evaporative Precooler	0%	3%	20	3.0	\$/sqft	1.4	0.04	0.09
RTU - Maintenance	42%	90%	18	9,374.8	\$/bldg	387,152.3	9.22	0.02
Gas Boiler - High Efficiency Hot Water Circulation	0%	34%	10	0.4	\$/sqft	2.5	0.03	0.08
Gas Boiler - Hot Water Reset	30%	75%	3	992.7	\$/sqft	1,490,100.0	1.69	0.00
Gas Boiler - Maintenance	25%	90%	3	2,039.9	\$/bldg	651,800.0	0.36	0.00
Gas Furnace - Maintenance	25%	90%	3	2,039.9	\$/bldg	196,900.0	0.11	0.01
Space Heating - Heat Recovery Ventilator	44%	49%	15	0.0	\$/sqft	6.1	> 10	0.00
Heat Pump - Maintenance	8%	95%	18	4,675.9	\$/bldg	651,404.2	> 10	0.01
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	7.2	5.44	0.02
Ventilation - Variable Speed Control	0%	81%	15	0.0	\$/sqft	4.1	> 10	0.01
Ventilation - CO2 Controlled	1%	11%	15	0.2	\$/sqft	7.1	2.30	0.02

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	1.6	0.34	0.02
Water Heater - Faucet Aerators	42%	20%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	0%	0%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	0.9	0.05	0.12
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	3.6	0.90	0.01
Water Heater - Solar System	0%	25%	20	0.1	\$/sqft	13.7	> 10	0.00
Water Heater - Install Timer	33%	38%	15	0.3	\$/sqft	1.5	0.26	0.07
Water Heater - Pipe Insulation	33%	38%	12	2,610.0	\$/bldg	20,290.2	0.57	0.07
Water Heater - Tank Blanket/Insulation	0%	0%	10	0.0	\$/sqft	0.9	0.88	0.02
Water Heater - Pre-Rinse Spray Valve	0%	0%	5	100.0	\$/sqft	14,822.0	6.40	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	18.3	0.19	0.03
Interior Lighting - Daylighting Controls	8%	13%	8	0.1	\$/sqft	3.1	1.30	0.03
Interior Lighting - LED Exit Lighting	50%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	25%	56%	8	0.1	\$/sqft	1.0	0.68	0.05
Interior Lighting - Task Lighting	42%	75%	5	0.2	\$/sqft	1.1	0.12	0.13
Interior Lighting - Timeclocks and Timers	8%	56%	8	0.2	\$/sqft	0.5	0.12	0.13
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	2.2	0.19	0.10
Interior Fluorescent - Delamp and Install Reflectors	33%	68%	11	0.5	\$/sqft	0.9	0.12	0.11
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.1	0.01	0.17
Exterior Lighting - Daylighting Controls	18%	38%	8	0.0	\$/sqft	0.2	0.22	0.07
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.2	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	0%	12	250.0	\$/sqft	8,953.8	1.49	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	3.58	0.01
Refrigerator - Decommissioning	50%	0%	8	0.1	\$/sqft	5.9	1.36	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	0.0	0.01	0.11
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	0.1	0.02	0.16
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	-	0.00	-
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	1.49	0.04
Refrigerator - Floating Head Pressure	38%	45%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.31	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.38	0.01
Grocery - Display Case - LED Lighting	0%	0%	8	378.0	\$/sqft	22,291.7	1.57	0.02

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	0.3	0.00	0.18
Grocery - ECMs for Display Cases	0%	0%	15	50.0	\$/sqft	4,570.0	6.84	0.01
Grocery - Open Display Case - Night Covers	0%	0%	8	0.1	\$/sqft	0.0	0.02	0.16
Cooking - Exhaust Hoods with Sensor Control	1%	11%	15	1,494.0	\$/bldg	51,124.9	3.33	0.02
Office Equipment - Plug Load Occupancy Sensors	13%	56%	5	5,437.4	\$/bldg	157,666.0	0.49	0.03
Pool Pump - Timer	8%	34%	10	100.0	\$/bldg	20,513.8	8.82	0.00
Pool Heater - Solar	0%	34%	15	3,500.0	\$/bldg	4.8	0.00	0.11
Non-HVAC Motors - Variable Speed Control	8%	38%	10	199.3	\$/bldg	3,749.5	1.60	0.04
Energy Management System	8%	90%	15	31,723.2	\$/bldg	1,605,422.8	4.04	0.02
Thermostat - Clock/Programmable	58%	63%	11	937.5	\$/bldg	9,105.8	0.86	0.06
Lodging - Guest Room Controls	0%	0%	15	260.0	\$/sqft	3,134.1	5.64	0.05
HVAC - Occupancy Sensors	14%	56%	8	0.1	\$/sqft	0.9	0.55	0.09
Commissioning - HVAC	0%	0%	25	0.4	\$/sqft	3.9	1.37	0.05
Commissioning - Lighting	0%	0%	5	0.0	\$/sqft	4.7	1.92	0.01
Retrocommissioning - HVAC	9%	36%	25	0.8	\$/sqft	3.9	0.69	0.06
Retrocommissioning - Lighting	67%	72%	5	0.1	\$/sqft	4.7	0.96	0.02
Advanced New Construction Designs	0%	0%	25	2.0	\$/sqft	10.3	2.50	0.06
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	1.95	0.06
Refrigerator - eCube	5%	75%	12	0.0	\$/sqft	0.1	0.58	0.05
Electronics - Smart Power Strip	13%	56%	7	0.0	\$/sqft	0.0	> 10	0.00
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	2.3	> 10	0.00
Insulation - Foundation	7%	13%	20	1.4	\$/sqft	1.3	0.33	0.09
Water Heating - Booster Water Heater	33%	38%	20	0.0	\$/sqft	0.6	6.02	0.02
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.0	\$/sqft	-	0.00	-
Boiler O2 Trim Controls	25%	49%	15	0.0	\$/sqft	1.2	0.66	0.01
Boiler Parallel Positioning Control	25%	49%	15	0.2	\$/sqft	1.2	0.05	0.07
Boiler blowdown heat exchanger (steam)	25%	49%	20	1.0	\$/sqft	3.4	0.05	0.07
Repair malfunctioning steam traps	25%	90%	6	77.0	\$/sqft	13,880.0	0.47	0.01
Insulate steam lines/condensate tank	33%	38%	12	1,302.0	\$/bldg	1.2	0.00	0.13
Destratification Fans (HVLS)	0%	0%	12	0.3	\$/sqft	7.8	0.15	0.03
Exhaust Hood Makeup Air	1%	11%	10	0.2	\$/sqft	8.6	0.26	0.02
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-44 Energy Efficiency Non-Equipment Data-Natural Gas Office, Existing Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	21,249.6	\$/bldg	245,001.9	1.78	0.05
Insulation - Ducting	17%	50%	20	0.8	\$/sqft	0.7	0.37	0.09
Insulation - Radiant Barrier	7%	13%	20	5,429.6	\$/bldg	95,772.7	2.72	0.04
Insulation - Wall Cavity	7%	13%	20	26,830.6	\$/bldg	545,078.1	2.94	0.03
HVAC - Duct Repair and Sealing	5%	25%	18	66.8	\$/bldg	175,495.5	> 10	0.00
Doors - High Efficiency	0%	0%	10	0.2	\$/sqft	2.2	1.17	0.05
Windows - High Efficiency	75%	80%	20	29,863.8	\$/bldg	3,842,949.7	> 10	0.01
Roof - High Reflectivity	42%	75%	15	833.3	\$/bldg	48,982.4	> 10	0.01
Air-Cooled Chiller - Condenser Air Temperature Reset	30%	75%	10	814.4	\$/sqft	829,874.2	> 10	0.00
Air-Cooled Chiller - Economizer	25%	49%	10	813.6	\$/sqft	903,336.4	> 10	0.00
Air-Cooled Chiller - VSD on fans	15%	66%	15	2,521.0	\$/bldg	433.1	1.37	0.11
Air-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	617,989.5	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	140,120.6	0.63	0.07
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	44,150.2	3.75	0.02
Air-Cooled Chiller - Maintenance	42%	90%	18	9,374.8	\$/bldg	387,152.3	> 10	0.02
Water-Cooled Chiller - Condenser Water Temperature Reset	30%	75%	4	0.0	\$/sqft	2.2	9.79	0.00
Water-Cooled Chiller - Economizer	25%	49%	10	2,717.6	\$/sqft	903,336.4	> 10	0.00
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	16.4	1.53	0.04
Water-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	829,874.2	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	140,120.6	0.63	0.07
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	44,150.2	3.75	0.02
Water-Cooled Chiller - Maintenance	42%	90%	18	9,374.8	\$/bldg	387,152.3	> 10	0.02
RTU - Evaporative Precooler	0%	3%	20	3.0	\$/sqft	1.4	0.06	0.09
RTU - Maintenance	42%	90%	18	9,374.8	\$/bldg	387,152.3	> 10	0.02
Gas Boiler - High Efficiency Hot Water Circulation	0%	34%	10	0.4	\$/sqft	2.5	0.28	0.08
Gas Boiler - Hot Water Reset	30%	75%	3	992.7	\$/sqft	1,490,100.0	> 10	0.00
Gas Boiler - Maintenance	25%	90%	3	2,039.9	\$/bldg	651,800.0	3.83	0.00
Gas Furnace - Maintenance	25%	90%	3	2,039.9	\$/bldg	196,900.0	1.33	0.01
Space Heating - Heat Recovery Ventilator	44%	49%	15	0.0	\$/sqft	6.1	> 10	0.00
Heat Pump - Maintenance	8%	95%	18	4,675.9	\$/bldg	651,404.2	> 10	0.01
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	7.2	5.86	0.02
Ventilation - Variable Speed Control	0%	81%	15	0.0	\$/sqft	4.1	> 10	0.01

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	1%	11%	15	0.2	\$/sqft	7.1	2.47	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	1.6	0.88	0.02
Water Heater - Faucet Aerators	42%	20%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	0%	0%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	0.9	0.12	0.12
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	3.6	2.12	0.01
Water Heater - Solar System	0%	25%	20	0.1	\$/sqft	13.7	> 10	0.00
Water Heater - Install Timer	33%	38%	15	0.3	\$/sqft	1.5	0.55	0.07
Water Heater - Pipe Insulation	33%	38%	12	2,610.0	\$/bldg	20,290.2	0.71	0.07
Water Heater - Tank Blanket/Insulation	0%	0%	10	0.0	\$/sqft	0.9	2.27	0.02
Water Heater - Pre-Rinse Spray Valve	0%	0%	5	100.0	\$/sqft	14,822.0	7.53	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	18.3	1.95	0.03
Interior Lighting - Daylighting Controls	8%	13%	8	0.1	\$/sqft	3.1	1.58	0.03
Interior Lighting - LED Exit Lighting	50%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	25%	56%	8	0.1	\$/sqft	1.0	0.83	0.05
Interior Lighting - Task Lighting	42%	75%	5	0.2	\$/sqft	1.1	0.12	0.13
Interior Lighting - Timeclocks and Timers	8%	56%	8	0.2	\$/sqft	0.5	0.15	0.13
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	2.2	0.24	0.10
Interior Fluorescent - Delamp and Install Reflectors	33%	68%	11	0.5	\$/sqft	0.9	0.16	0.11
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.1	0.01	0.17
Exterior Lighting - Daylighting Controls	18%	38%	8	0.0	\$/sqft	0.2	0.31	0.07
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.2	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	0%	12	250.0	\$/sqft	8,953.8	1.98	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	4.45	0.01
Refrigerator - Decommissioning	50%	0%	8	0.1	\$/sqft	5.9	1.75	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	0.0	0.01	0.11
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	0.1	0.02	0.16
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	-	0.00	-
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	2.03	0.04
Refrigerator - Floating Head Pressure	38%	45%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.31	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.86	0.01
Grocery - Display Case - LED Lighting	0%	0%	8	378.0	\$/sqft	22,291.7	1.92	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	0.3	0.00	0.18
Grocery - ECMs for Display Cases	0%	0%	15	50.0	\$/sqft	4,570.0	8.65	0.01
Grocery - Open Display Case - Night Covers	0%	0%	8	0.1	\$/sqft	0.0	0.03	0.16
Cooking - Exhaust Hoods with Sensor Control	1%	11%	15	1,494.0	\$/bldg	51,124.9	3.58	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	13%	56%	5	5,437.4	\$/bldg	157,666.0	0.53	0.03
Pool Pump - Timer	8%	34%	10	100.0	\$/bldg	20,513.8	8.82	0.00
Pool Heater - Solar	0%	34%	15	3,500.0	\$/bldg	4.8	0.00	0.11
Non-HVAC Motors - Variable Speed Control	8%	38%	10	199.3	\$/bldg	3,749.5	1.60	0.04
Energy Management System	8%	90%	15	31,723.2	\$/bldg	1,605,422.8	5.05	0.02
Thermostat - Clock/Programmable	58%	63%	11	937.5	\$/bldg	9,105.8	1.04	0.06
Lodging - Guest Room Controls	0%	0%	15	260.0	\$/sqft	3,134.1	7.06	0.05
HVAC - Occupancy Sensors	14%	56%	8	0.1	\$/sqft	0.9	0.65	0.09
Commissioning - HVAC	0%	0%	25	0.4	\$/sqft	3.9	1.74	0.05
Commissioning - Lighting	0%	0%	5	0.0	\$/sqft	4.7	2.26	0.01
Retrocommissioning - HVAC	9%	36%	25	0.8	\$/sqft	3.9	0.87	0.06
Retrocommissioning - Lighting	67%	72%	5	0.1	\$/sqft	4.7	1.13	0.02
Advanced New Construction Designs	0%	0%	25	2.0	\$/sqft	10.3	3.18	0.06
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	1.99	0.06
Refrigerator - eCube	5%	75%	12	0.0	\$/sqft	0.1	0.77	0.05
Electronics - Smart Power Strip	13%	56%	7	0.0	\$/sqft	0.0	> 10	0.00
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	2.3	> 10	0.00
Insulation - Foundation	7%	13%	20	1.4	\$/sqft	1.3	0.41	0.09
Water Heating - Booster Water Heater	33%	38%	20	0.0	\$/sqft	0.6	6.17	0.02
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.0	\$/sqft	-	0.00	-
Boiler O2 Trim Controls	25%	49%	15	0.0	\$/sqft	1.2	6.40	0.01
Boiler Parallel Positioning Control	25%	49%	15	0.2	\$/sqft	1.2	0.44	0.07
Boiler blowdown heat exchanger (steam)	25%	49%	20	1.0	\$/sqft	3.4	0.46	0.07
Repair malfunctioning steam traps	25%	90%	6	77.0	\$/sqft	13,880.0	4.74	0.01
Insulate steam lines/condensate tank	33%	38%	12	1,302.0	\$/bldg	1.2	0.00	0.13
Destratification Fans (HVLS)	0%	0%	12	0.3	\$/sqft	7.8	1.50	0.03

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	11%	10	0.2	\$/sqft	8.6	2.62	0.02
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-45 Energy Efficiency Non-Equipment Data-Electric Office, New Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	21,249.6	\$/bldg	181,453.3	1.00	0.05
Insulation - Ducting	0%	50%	20	0.8	\$/sqft	-	0.17	-
Insulation - Radiant Barrier	7%	13%	20	5,429.6	\$/bldg	58,526.8	1.24	0.05
Insulation - Wall Cavity	7%	13%	20	26,830.6	\$/bldg	339,314.7	1.22	0.04
HVAC - Duct Repair and Sealing	25%	25%	18	66.8	\$/bldg	154,366.3	> 10	0.00
Doors - High Efficiency	100%	100%	10	0.2	\$/sqft	2.2	1.08	0.05
Windows - High Efficiency	100%	100%	20	29,863.8	\$/bldg	1,729,749.5	6.28	0.01
Roof - High Reflectivity	50%	95%	15	833.3	\$/bldg	16,468.0	6.08	0.04
Air-Cooled Chiller - Condenser Air Temperature Reset	60%	75%	10	814.4	\$/sqft	466,210.2	> 10	0.00
Air-Cooled Chiller - Economizer	54%	55%	10	813.6	\$/sqft	961,071.3	> 10	0.00
Air-Cooled Chiller - VSD on fans	15%	66%	15	2,521.0	\$/bldg	1,287.8	1.25	0.11
Air-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	364,621.3	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	127,196.9	0.54	0.07
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	18,188.9	1.94	0.05
Air-Cooled Chiller - Maintenance	50%	90%	18	9,374.8	\$/bldg	330,614.0	> 10	0.02
Water-Cooled Chiller - Condenser Water Temperature Reset	60%	75%	4	0.0	\$/sqft	1.5	6.47	0.00
Water-Cooled Chiller - Economizer	54%	55%	10	2,717.6	\$/sqft	961,071.3	> 10	0.00
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	11.9	1.11	0.05
Water-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	466,210.2	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	127,196.9	0.54	0.07
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	18,188.9	1.93	0.05
Water-Cooled Chiller - Maintenance	50%	90%	18	9,374.8	\$/bldg	330,614.0	> 10	0.02
RTU - Evaporative Precooler	0%	1%	20	3.0	\$/sqft	1.1	0.04	0.09
RTU - Maintenance	50%	90%	18	9,374.8	\$/bldg	330,614.0	> 10	0.02
Gas Boiler - High Efficiency Hot Water Circulation	5%	34%	10	0.4	\$/sqft	2.5	0.03	0.08
Gas Boiler - Hot Water Reset	60%	75%	3	992.7	\$/sqft	642,600.0	0.73	0.00
Gas Boiler - Maintenance	50%	90%	3	2,039.9	\$/bldg	641,800.0	0.35	0.00
Gas Furnace - Maintenance	50%	90%	3	2,039.9	\$/bldg	241,200.0	0.13	0.01
Space Heating - Heat Recovery Ventilator	44%	49%	15	0.0	\$/sqft	6.5	> 10	0.00
Heat Pump - Maintenance	0%	95%	18	4,675.9	\$/bldg	474,974.1	> 10	0.01
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	8.5	6.87	0.02
Ventilation - Variable Speed Control	0%	81%	15	0.0	\$/sqft	4.8	> 10	0.00

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	9%	11%	15	0.2	\$/sqft	7.1	2.46	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	1.6	0.33	0.02
Water Heater - Faucet Aerators	50%	20%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	0%	0%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	0.9	0.05	0.12
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	3.5	0.88	0.01
Water Heater - Solar System	0%	25%	20	0.1	\$/sqft	13.0	> 10	0.01
Water Heater - Install Timer	100%	100%	15	0.3	\$/sqft	1.5	0.26	0.07
Water Heater - Pipe Insulation	100%	100%	12	2,610.0	\$/bldg	21,507.0	0.60	0.06
Water Heater - Tank Blanket/Insulation	0%	0%	10	0.0	\$/sqft	0.9	0.87	0.02
Water Heater - Pre-Rinse Spray Valve	0%	0%	5	100.0	\$/sqft	14,822.0	6.55	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	18.3	0.19	0.03
Interior Lighting - Daylighting Controls	19%	19%	8	0.1	\$/sqft	3.1	1.53	0.03
Interior Lighting - LED Exit Lighting	86%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	1.0	0.80	0.05
Interior Lighting - Task Lighting	50%	75%	5	0.2	\$/sqft	1.1	0.11	0.13
Interior Lighting - Timers and Timers	56%	56%	8	0.2	\$/sqft	0.5	0.14	0.13
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	2.2	0.23	0.10
Interior Fluorescent - Delamp and Install Reflectors	100%	100%	11	0.5	\$/sqft	0.9	0.15	0.11
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.1	0.01	0.17
Exterior Lighting - Daylighting Controls	18%	38%	8	0.0	\$/sqft	0.2	0.31	0.07
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.2	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	0%	12	250.0	\$/sqft	8,953.8	1.85	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	4.39	0.01
Refrigerator - Decommissioning	50%	0%	8	0.1	\$/sqft	5.9	1.64	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	0.0	0.01	0.11
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	0.1	0.02	0.16
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	-	0.00	-
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	1.88	0.04
Refrigerator - Floating Head Pressure	38%	45%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.31	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.42	0.01
Grocery - Display Case - LED Lighting	0%	0%	8	378.0	\$/sqft	22,291.7	1.89	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	0.3	0.00	0.18
Grocery - ECMs for Display Cases	0%	0%	15	50.0	\$/sqft	4,570.0	8.50	0.01
Grocery - Open Display Case - Night Covers	0%	0%	8	0.1	\$/sqft	0.0	0.03	0.16
Cooking - Exhaust Hoods with Sensor Control	1%	11%	15	1,494.0	\$/bldg	51,124.9	3.57	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	13%	56%	5	5,437.4	\$/bldg	157,666.0	0.50	0.03
Pool Pump - Timer	34%	34%	10	100.0	\$/bldg	20,513.8	8.82	0.00
Pool Heater - Solar	0%	34%	15	3,500.0	\$/bldg	4.8	0.00	0.11
Non-HVAC Motors - Variable Speed Control	50%	55%	10	199.3	\$/bldg	3,749.5	1.59	0.04
Energy Management System	50%	90%	15	31,723.2	\$/bldg	1,841,228.0	4.41	0.01
Thermostat - Clock/Programmable	50%	50%	11	937.5	\$/bldg	31,614.0	3.63	0.02
Lodging - Guest Room Controls	0%	0%	15	260.0	\$/sqft	3,134.1	7.07	0.05
HVAC - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	0.7	0.53	0.10
Commissioning - HVAC	75%	75%	25	0.4	\$/sqft	3.1	1.42	0.05
Commissioning - Lighting	60%	75%	5	0.0	\$/sqft	4.7	2.19	0.01
Retrocommissioning - HVAC	0%	0%	25	0.8	\$/sqft	3.1	0.71	0.06
Retrocommissioning - Lighting	0%	0%	5	0.1	\$/sqft	4.7	1.09	0.02
Advanced New Construction Designs	5%	75%	25	2.0	\$/sqft	8.4	2.59	0.06
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	2.24	0.06
Refrigerator - eCube	5%	75%	12	0.0	\$/sqft	0.1	0.72	0.05
Electronics - Smart Power Strip	13%	56%	7	0.0	\$/sqft	0.0	> 10	0.00
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	2.3	> 10	0.00
Insulation - Foundation	7%	13%	20	0.3	\$/sqft	1.0	1.43	0.07
Water Heating - Booster Water Heater	100%	100%	20	0.0	\$/sqft	0.6	5.97	0.02
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.0	\$/sqft	-	0.00	-
Boiler O2 Trim Controls	54%	55%	15	0.0	\$/sqft	1.2	0.66	0.01
Boiler Parallel Positioning Control	54%	55%	15	0.2	\$/sqft	1.2	0.05	0.07
Boiler blowdown heat exchanger (steam)	54%	55%	20	1.0	\$/sqft	3.4	0.05	0.07
Repair malfunctioning steam traps	50%	90%	6	77.0	\$/sqft	13,880.0	0.47	0.01
Insulate steam lines/condensate tank	100%	100%	12	1,302.0	\$/bldg	1.2	0.00	0.13
Destratification Fans (HVLS)	0%	0%	12	0.3	\$/sqft	8.1	0.16	0.03

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	11%	10	0.2	\$/sqft	9.0	0.28	0.02
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-46 Energy Efficiency Non-Equipment Data-Natural Gas Office, New Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	21,249.6	\$/bldg	181,453.3	1.31	0.05
Insulation - Ducting	0%	50%	20	0.8	\$/sqft	-	0.17	-
Insulation - Radiant Barrier	7%	13%	20	5,429.6	\$/bldg	58,526.8	1.65	0.05
Insulation - Wall Cavity	7%	13%	20	26,830.6	\$/bldg	339,314.7	1.76	0.04
HVAC - Duct Repair and Sealing	25%	25%	18	66.8	\$/bldg	154,366.3	> 10	0.00
Doors - High Efficiency	100%	100%	10	0.2	\$/sqft	2.2	1.08	0.05
Windows - High Efficiency	100%	100%	20	29,863.8	\$/bldg	1,729,749.5	9.06	0.01
Roof - High Reflectivity	50%	95%	15	833.3	\$/bldg	16,468.0	6.07	0.04
Air-Cooled Chiller - Condenser Air Temperature Reset	60%	75%	10	814.4	\$/sqft	466,210.2	> 10	0.00
Air-Cooled Chiller - Economizer	54%	55%	10	813.6	\$/sqft	961,071.3	> 10	0.00
Air-Cooled Chiller - VSD on fans	15%	66%	15	2,521.0	\$/bldg	1,287.8	1.25	0.11
Air-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	364,621.3	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	127,196.9	0.54	0.07
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	18,188.9	1.93	0.05
Air-Cooled Chiller - Maintenance	50%	90%	18	9,374.8	\$/bldg	330,614.0	> 10	0.02
Water-Cooled Chiller - Condenser Water Temperature Reset	60%	75%	4	0.0	\$/sqft	1.5	6.47	0.00
Water-Cooled Chiller - Economizer	54%	55%	10	2,717.6	\$/sqft	961,071.3	> 10	0.00
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	11.9	1.11	0.05
Water-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	466,210.2	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	127,196.9	0.54	0.07
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	18,188.9	1.93	0.05
Water-Cooled Chiller - Maintenance	50%	90%	18	9,374.8	\$/bldg	330,614.0	> 10	0.02
RTU - Evaporative Precooler	0%	1%	20	3.0	\$/sqft	1.1	0.04	0.09
RTU - Maintenance	50%	90%	18	9,374.8	\$/bldg	330,614.0	> 10	0.02
Gas Boiler - High Efficiency Hot Water Circulation	5%	34%	10	0.4	\$/sqft	2.5	0.33	0.08
Gas Boiler - Hot Water Reset	60%	75%	3	992.7	\$/sqft	642,600.0	9.08	0.00
Gas Boiler - Maintenance	50%	90%	3	2,039.9	\$/bldg	641,800.0	4.41	0.00
Gas Furnace - Maintenance	50%	90%	3	2,039.9	\$/bldg	241,200.0	1.64	0.01
Space Heating - Heat Recovery Ventilator	44%	49%	15	0.0	\$/sqft	6.5	> 10	0.00
Heat Pump - Maintenance	0%	95%	18	4,675.9	\$/bldg	474,974.1	> 10	0.01
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	8.5	6.90	0.02
Ventilation - Variable Speed Control	0%	81%	15	0.0	\$/sqft	4.8	> 10	0.00

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	9%	11%	15	0.2	\$/sqft	7.1	2.47	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	1.6	0.86	0.02
Water Heater - Faucet Aerators	50%	20%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	0%	0%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	0.9	0.12	0.12
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	3.5	2.06	0.01
Water Heater - Solar System	0%	25%	20	0.1	\$/sqft	13.0	> 10	0.01
Water Heater - Install Timer	100%	100%	15	0.3	\$/sqft	1.5	0.54	0.07
Water Heater - Pipe Insulation	100%	100%	12	2,610.0	\$/bldg	21,507.0	0.75	0.06
Water Heater - Tank Blanket/Insulation	0%	0%	10	0.0	\$/sqft	0.9	2.23	0.02
Water Heater - Pre-Rinse Spray Valve	0%	0%	5	100.0	\$/sqft	14,822.0	7.58	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	18.3	2.18	0.03
Interior Lighting - Daylighting Controls	19%	19%	8	0.1	\$/sqft	3.1	1.58	0.03
Interior Lighting - LED Exit Lighting	86%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	1.0	0.83	0.05
Interior Lighting - Task Lighting	50%	75%	5	0.2	\$/sqft	1.1	0.12	0.13
Interior Lighting - Timeclocks and Timers	56%	56%	8	0.2	\$/sqft	0.5	0.15	0.13
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	2.2	0.24	0.10
Interior Fluorescent - Delamp and Install Reflectors	100%	100%	11	0.5	\$/sqft	0.9	0.16	0.11
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.1	0.01	0.17
Exterior Lighting - Daylighting Controls	18%	38%	8	0.0	\$/sqft	0.2	0.31	0.07
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.2	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	0%	12	250.0	\$/sqft	8,953.8	1.98	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	4.45	0.01
Refrigerator - Decommissioning	50%	0%	8	0.1	\$/sqft	5.9	1.75	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	0.0	0.01	0.11
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	0.1	0.02	0.16
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	-	0.00	-
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	2.03	0.04
Refrigerator - Floating Head Pressure	38%	45%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.31	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.86	0.01
Grocery - Display Case - LED Lighting	0%	0%	8	378.0	\$/sqft	22,291.7	1.92	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	0.3	0.00	0.18
Grocery - ECMs for Display Cases	0%	0%	15	50.0	\$/sqft	4,570.0	8.65	0.01
Grocery - Open Display Case - Night Covers	0%	0%	8	0.1	\$/sqft	0.0	0.03	0.16
Cooking - Exhaust Hoods with Sensor Control	1%	11%	15	1,494.0	\$/bldg	51,124.9	3.58	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	13%	56%	5	5,437.4	\$/bldg	157,666.0	0.53	0.03
Pool Pump - Timer	34%	34%	10	100.0	\$/bldg	20,513.8	8.82	0.00
Pool Heater - Solar	0%	34%	15	3,500.0	\$/bldg	4.8	0.00	0.11
Non-HVAC Motors - Variable Speed Control	50%	55%	10	199.3	\$/bldg	3,749.5	1.60	0.04
Energy Management System	50%	90%	15	31,723.2	\$/bldg	1,841,228.0	5.28	0.01
Thermostat - Clock/Programmable	50%	50%	11	937.5	\$/bldg	31,614.0	3.63	0.02
Lodging - Guest Room Controls	0%	0%	15	260.0	\$/sqft	3,134.1	7.06	0.05
HVAC - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	0.7	0.53	0.10
Commissioning - HVAC	75%	75%	25	0.4	\$/sqft	3.1	1.41	0.05
Commissioning - Lighting	60%	75%	5	0.0	\$/sqft	4.7	2.25	0.01
Retrocommissioning - HVAC	0%	0%	25	0.8	\$/sqft	3.1	0.71	0.06
Retrocommissioning - Lighting	0%	0%	5	0.1	\$/sqft	4.7	1.13	0.02
Advanced New Construction Designs	5%	75%	25	2.0	\$/sqft	8.4	2.59	0.06
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	1.92	0.06
Refrigerator - eCube	5%	75%	12	0.0	\$/sqft	0.1	0.78	0.05
Electronics - Smart Power Strip	13%	56%	7	0.0	\$/sqft	0.0	> 10	0.00
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	2.3	> 10	0.00
Insulation - Foundation	7%	13%	20	0.3	\$/sqft	1.0	1.43	0.07
Water Heating - Booster Water Heater	100%	100%	20	0.0	\$/sqft	0.6	5.97	0.02
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.0	\$/sqft	-	0.00	-
Boiler O2 Trim Controls	54%	55%	15	0.0	\$/sqft	1.2	7.61	0.01
Boiler Parallel Positioning Control	54%	55%	15	0.2	\$/sqft	1.2	0.52	0.07
Boiler blowdown heat exchanger (steam)	54%	55%	20	1.0	\$/sqft	3.4	0.55	0.07
Repair malfunctioning steam traps	50%	90%	6	77.0	\$/sqft	13,880.0	5.59	0.01
Insulate steam lines/condensate tank	100%	100%	12	1,302.0	\$/bldg	1.2	0.00	0.13
Destratification Fans (HVLS)	0%	0%	12	0.3	\$/sqft	8.1	1.87	0.03

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	11%	10	0.2	\$/sqft	9.0	3.27	0.02
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-47 Energy Efficiency Non-Equipment Data-Electric Restaurant, Existing Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	56,202.0	\$/bldg	209,122.3	0.47	0.07
Insulation - Ducting	11%	50%	20	0.8	\$/sqft	0.8	0.16	0.09
Insulation - Radiant Barrier	4%	13%	20	14,360.4	\$/bldg	92,766.4	0.79	0.06
Insulation - Wall Cavity	7%	13%	20	35,615.6	\$/bldg	217,391.3	0.54	0.06
HVAC - Duct Repair and Sealing	5%	25%	18	56.0	\$/bldg	105,158.2	> 10	0.00
Doors - High Efficiency	0%	0%	10	0.2	\$/sqft	3.5	1.54	0.03
Windows - High Efficiency	54%	75%	20	2,181.0	\$/bldg	97,788.4	5.51	0.02
Roof - High Reflectivity	36%	95%	15	2,204.0	\$/bldg	183,780.8	8.71	0.01
Air-Cooled Chiller - Condenser Air Temperature Reset	0%	0%	10	814.4	\$/sqft	723,510.2	> 10	0.00
Air-Cooled Chiller - Economizer	0%	49%	10	813.6	\$/sqft	1,826,138.1	> 10	0.00
Air-Cooled Chiller - VSD on fans	0%	0%	15	2,114.1	\$/bldg	433.1	1.58	0.11
Air-Cooled Chiller - Chilled Water Reset	0%	75%	10	814.4	\$/sqft	836,586.8	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	0%	0%	15	27,671.0	\$/bldg	125,726.8	0.42	0.08
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	0%	0%	15	1,407.1	\$/sqft	44,150.2	3.64	0.02
Air-Cooled Chiller - Maintenance	64%	90%	18	12,397.5	\$/bldg	551,969.2	8.55	0.02
Water-Cooled Chiller - Condenser Water Temperature Reset	0%	0%	4	0.0	\$/sqft	10.2	> 10	0.00
Water-Cooled Chiller - Economizer	0%	49%	10	5,493.8	\$/sqft	1,826,138.1	> 10	0.00
Water-Cooled Chiller - VSD on Fans	0%	0%	15	1.2	\$/bldg	30.7	3.97	0.03
Water-Cooled Chiller - Chilled Water Reset	0%	75%	10	814.4	\$/sqft	723,510.2	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	0%	0%	15	27,671.0	\$/bldg	125,726.8	0.44	0.08
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	0%	0%	15	1,407.1	\$/sqft	44,150.2	3.75	0.02
Water-Cooled Chiller - Maintenance	64%	90%	18	12,397.5	\$/bldg	551,969.2	8.82	0.02
RTU - Evaporative Precooler	0%	13%	20	3.0	\$/sqft	2.5	0.08	0.09
RTU - Maintenance	64%	90%	18	12,397.5	\$/bldg	551,969.2	6.95	0.02
Gas Boiler - High Efficiency Hot Water Circulation	0%	34%	10	0.4	\$/sqft	2.3	0.03	0.09
Gas Boiler - Hot Water Reset	0%	0%	3	992.7	\$/sqft	1,440,300.0	1.63	0.00
Gas Boiler - Maintenance	39%	90%	3	2,039.9	\$/bldg	346,700.0	0.19	0.01
Gas Furnace - Maintenance	39%	90%	3	2,057.0	\$/bldg	27,100.0	0.01	0.07
Space Heating - Heat Recovery Ventilator	45%	49%	15	0.0	\$/sqft	7.2	> 10	0.00
Heat Pump - Maintenance	4%	95%	18	3,921.2	\$/bldg	562,750.4	> 10	0.01
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	6.4	4.00	0.02
Ventilation - Variable Speed Control	0%	81%	15	0.0	\$/sqft	3.6	> 10	0.00

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	1%	15%	15	0.2	\$/sqft	7.1	1.92	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	10.7	3.32	0.00
Water Heater - Faucet Aerators	29%	20%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	0%	0%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	6.0	0.56	0.05
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	23.9	9.08	0.00
Water Heater - Solar System	0%	25%	20	0.1	\$/sqft	89.5	> 10	0.00
Water Heater - Install Timer	11%	50%	15	0.3	\$/sqft	10.1	2.71	0.02
Water Heater - Pipe Insulation	11%	50%	12	3,001.4	\$/bldg	35,750.0	0.66	0.05
Water Heater - Tank Blanket/Insulation	40%	50%	10	0.0	\$/sqft	6.0	8.71	0.00
Water Heater - Pre-Rinse Spray Valve	29%	90%	5	100.0	\$/sqft	14,822.0	6.43	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	16.5	0.17	0.03
Interior Lighting - Daylighting Controls	0%	50%	8	0.1	\$/sqft	3.2	1.04	0.03
Interior Lighting - LED Exit Lighting	50%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	0%	56%	8	0.1	\$/sqft	1.1	0.55	0.05
Interior Lighting - Task Lighting	4%	75%	5	0.2	\$/sqft	1.1	0.08	0.12
Interior Lighting - Timeclocks and Timers	4%	56%	8	0.2	\$/sqft	0.5	0.10	0.12
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	1.0	0.07	0.14
Interior Fluorescent - Delamp and Install Reflectors	7%	38%	11	0.5	\$/sqft	0.9	0.10	0.11
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.3	0.04	0.14
Exterior Lighting - Daylighting Controls	19%	38%	8	0.0	\$/sqft	0.8	1.00	0.02
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.9	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	0%	12	250.0	\$/sqft	8,953.8	1.46	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	3.58	0.01
Refrigerator - Decommissioning	50%	25%	8	0.1	\$/sqft	5.9	1.33	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	2.4	0.91	0.05
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	2.9	0.64	0.03
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	5.8	0.00	0.15
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	1.46	0.04
Refrigerator - Floating Head Pressure	18%	38%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.18	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.38	0.01
Grocery - Display Case - LED Lighting	0%	0%	8	378.0	\$/sqft	22,291.7	1.57	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	6.8	0.09	0.11
Grocery - ECMs for Display Cases	0%	0%	15	50.0	\$/sqft	4,570.0	6.84	0.01
Grocery - Open Display Case - Night Covers	0%	0%	8	0.1	\$/sqft	0.9	0.50	0.04
Cooking - Exhaust Hoods with Sensor Control	1%	15%	15	1,494.0	\$/bldg	51,124.9	2.78	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	7%	56%	5	7,190.6	\$/bldg	37,713.8	0.09	0.12
Pool Pump - Timer	0%	34%	10	100.0	\$/bldg	20,513.8	8.82	0.00
Pool Heater - Solar	0%	34%	15	3,500.0	\$/bldg	-	0.00	-
Non-HVAC Motors - Variable Speed Control	0%	38%	10	199.3	\$/bldg	3,749.5	1.60	0.04
Energy Management System	7%	50%	15	41,951.5	\$/bldg	899,536.2	1.52	0.03
Thermostat - Clock/Programmable	50%	50%	11	1,239.8	\$/bldg	9,105.8	0.56	0.07
Lodging - Guest Room Controls	0%	0%	15	260.0	\$/sqft	3,134.1	5.58	0.05
HVAC - Occupancy Sensors	14%	56%	8	0.1	\$/sqft	1.7	0.90	0.06
Commissioning - HVAC	0%	0%	25	0.4	\$/sqft	7.7	2.70	0.03
Commissioning - Lighting	0%	0%	5	0.0	\$/sqft	4.9	1.82	0.01
Retrocommissioning - HVAC	5%	24%	25	0.8	\$/sqft	7.7	1.35	0.05
Retrocommissioning - Lighting	11%	16%	5	0.1	\$/sqft	4.9	0.91	0.01
Advanced New Construction Designs	0%	0%	25	2.0	\$/sqft	20.4	4.03	0.05
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	2.09	0.06
Refrigerator - eCube	5%	75%	12	0.0	\$/sqft	3.5	> 10	0.00
Electronics - Smart Power Strip	7%	56%	7	0.0	\$/sqft	0.0	3.63	0.01
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	0.4	> 10	0.00
Insulation - Foundation	7%	13%	20	1.4	\$/sqft	2.6	0.53	0.08
Water Heating - Booster Water Heater	11%	50%	20	0.0	\$/sqft	6.2	> 10	0.00
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.1	\$/sqft	24.3	> 10	0.00
Boiler O2 Trim Controls	0%	49%	15	0.0	\$/sqft	1.1	0.79	0.01
Boiler Parallel Positioning Control	0%	49%	15	0.2	\$/sqft	1.1	0.05	0.07
Boiler blowdown heat exchanger (steam)	0%	49%	20	0.7	\$/sqft	3.1	0.06	0.07
Repair malfunctioning steam traps	39%	90%	6	77.0	\$/sqft	13,880.0	0.47	0.01
Insulate steam lines/condensate tank	11%	50%	12	1,302.0	\$/bldg	1.1	0.00	0.13
Destratification Fans (HVLS)	0%	0%	12	0.2	\$/sqft	5.8	0.15	0.03

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	15%	10	0.1	\$/sqft	6.5	0.26	0.02
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-48 Energy Efficiency Non-Equipment Data-Natural Gas Restaurant, Existing Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	56,202.0	\$/bldg	209,122.3	0.71	0.07
Insulation - Ducting	11%	50%	20	0.8	\$/sqft	0.8	0.20	0.09
Insulation - Radiant Barrier	4%	13%	20	14,360.4	\$/bldg	92,766.4	1.18	0.06
Insulation - Wall Cavity	7%	13%	20	35,615.6	\$/bldg	217,391.3	0.82	0.06
HVAC - Duct Repair and Sealing	5%	25%	18	56.0	\$/bldg	105,158.2	> 10	0.00
Doors - High Efficiency	0%	0%	10	0.2	\$/sqft	3.5	1.82	0.03
Windows - High Efficiency	54%	75%	20	2,181.0	\$/bldg	97,788.4	7.59	0.02
Roof - High Reflectivity	36%	95%	15	2,204.0	\$/bldg	183,780.8	> 10	0.01
Air-Cooled Chiller - Condenser Air Temperature Reset	0%	0%	10	814.4	\$/sqft	723,510.2	> 10	0.00
Air-Cooled Chiller - Economizer	0%	49%	10	813.6	\$/sqft	1,826,138.1	> 10	0.00
Air-Cooled Chiller - VSD on fans	0%	0%	15	2,114.1	\$/bldg	433.1	1.63	0.11
Air-Cooled Chiller - Chilled Water Reset	0%	75%	10	814.4	\$/sqft	836,586.8	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	0%	0%	15	27,671.0	\$/bldg	125,726.8	0.44	0.08
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	0%	0%	15	1,407.1	\$/sqft	44,150.2	3.75	0.02
Air-Cooled Chiller - Maintenance	64%	90%	18	12,397.5	\$/bldg	551,969.2	8.82	0.02
Water-Cooled Chiller - Condenser Water Temperature Reset	0%	0%	4	0.0	\$/sqft	10.2	> 10	0.00
Water-Cooled Chiller - Economizer	0%	49%	10	5,493.8	\$/sqft	1,826,138.1	> 10	0.00
Water-Cooled Chiller - VSD on Fans	0%	0%	15	1.2	\$/bldg	30.7	3.97	0.03
Water-Cooled Chiller - Chilled Water Reset	0%	75%	10	814.4	\$/sqft	723,510.2	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	0%	0%	15	27,671.0	\$/bldg	125,726.8	0.44	0.08
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	0%	0%	15	1,407.1	\$/sqft	44,150.2	3.75	0.02
Water-Cooled Chiller - Maintenance	64%	90%	18	12,397.5	\$/bldg	551,969.2	8.82	0.02
RTU - Evaporative Precooler	0%	13%	20	3.0	\$/sqft	2.5	0.10	0.09
RTU - Maintenance	64%	90%	18	12,397.5	\$/bldg	551,969.2	8.82	0.02
Gas Boiler - High Efficiency Hot Water Circulation	0%	34%	10	0.4	\$/sqft	2.3	0.27	0.09
Gas Boiler - Hot Water Reset	0%	0%	3	992.7	\$/sqft	1,440,300.0	> 10	0.00
Gas Boiler - Maintenance	39%	90%	3	2,039.9	\$/bldg	346,700.0	2.18	0.01
Gas Furnace - Maintenance	39%	90%	3	2,057.0	\$/bldg	27,100.0	0.18	0.07
Space Heating - Heat Recovery Ventilator	45%	49%	15	0.0	\$/sqft	7.2	> 10	0.00
Heat Pump - Maintenance	4%	95%	18	3,921.2	\$/bldg	562,750.4	> 10	0.01
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	6.4	5.19	0.02
Ventilation - Variable Speed Control	0%	81%	15	0.0	\$/sqft	3.6	> 10	0.00

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	1%	15%	15	0.2	\$/sqft	7.1	2.47	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	10.7	5.41	0.00
Water Heater - Faucet Aerators	29%	20%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	0%	0%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	6.0	0.80	0.05
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	23.9	> 10	0.00
Water Heater - Solar System	0%	25%	20	0.1	\$/sqft	89.5	> 10	0.00
Water Heater - Install Timer	11%	50%	15	0.3	\$/sqft	10.1	3.84	0.02
Water Heater - Pipe Insulation	11%	50%	12	3,001.4	\$/bldg	35,750.0	0.88	0.05
Water Heater - Tank Blanket/Insulation	40%	50%	10	0.0	\$/sqft	6.0	> 10	0.00
Water Heater - Pre-Rinse Spray Valve	29%	90%	5	100.0	\$/sqft	14,822.0	7.54	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	16.5	1.83	0.03
Interior Lighting - Daylighting Controls	0%	50%	8	0.1	\$/sqft	3.2	1.40	0.03
Interior Lighting - LED Exit Lighting	50%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	0%	56%	8	0.1	\$/sqft	1.1	0.73	0.05
Interior Lighting - Task Lighting	4%	75%	5	0.2	\$/sqft	1.1	0.11	0.12
Interior Lighting - Timeclocks and Timers	4%	56%	8	0.2	\$/sqft	0.5	0.13	0.12
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	1.0	0.09	0.14
Interior Fluorescent - Delamp and Install Reflectors	7%	38%	11	0.5	\$/sqft	0.9	0.14	0.11
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.3	0.05	0.14
Exterior Lighting - Daylighting Controls	19%	38%	8	0.0	\$/sqft	0.8	1.27	0.02
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.9	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	0%	12	250.0	\$/sqft	8,953.8	1.98	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	4.45	0.01
Refrigerator - Decommissioning	50%	25%	8	0.1	\$/sqft	5.9	1.75	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	2.4	1.26	0.05
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	2.9	0.95	0.03
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	5.8	0.00	0.15
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	2.03	0.04
Refrigerator - Floating Head Pressure	18%	38%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.31	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.86	0.01
Grocery - Display Case - LED Lighting	0%	0%	8	378.0	\$/sqft	22,291.7	1.92	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	6.8	0.11	0.11
Grocery - ECMs for Display Cases	0%	0%	15	50.0	\$/sqft	4,570.0	8.65	0.01
Grocery - Open Display Case - Night Covers	0%	0%	8	0.1	\$/sqft	0.9	0.60	0.04
Cooking - Exhaust Hoods with Sensor Control	1%	15%	15	1,494.0	\$/bldg	51,124.9	3.58	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	7%	56%	5	7,190.6	\$/bldg	37,713.8	0.10	0.12
Pool Pump - Timer	0%	34%	10	100.0	\$/bldg	20,513.8	8.82	0.00
Pool Heater - Solar	0%	34%	15	3,500.0	\$/bldg	-	0.00	-
Non-HVAC Motors - Variable Speed Control	0%	38%	10	199.3	\$/bldg	3,749.5	1.60	0.04
Energy Management System	7%	50%	15	41,951.5	\$/bldg	899,536.2	1.90	0.03
Thermostat - Clock/Programmable	50%	50%	11	1,239.8	\$/bldg	9,105.8	0.68	0.07
Lodging - Guest Room Controls	0%	0%	15	260.0	\$/sqft	3,134.1	7.06	0.05
HVAC - Occupancy Sensors	14%	56%	8	0.1	\$/sqft	1.7	1.07	0.06
Commissioning - HVAC	0%	0%	25	0.4	\$/sqft	7.7	3.45	0.03
Commissioning - Lighting	0%	0%	5	0.0	\$/sqft	4.9	2.36	0.01
Retrocommissioning - HVAC	5%	24%	25	0.8	\$/sqft	7.7	1.73	0.05
Retrocommissioning - Lighting	11%	16%	5	0.1	\$/sqft	4.9	1.18	0.01
Advanced New Construction Designs	0%	0%	25	2.0	\$/sqft	20.4	5.18	0.05
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	2.16	0.06
Refrigerator - eCube	5%	75%	12	0.0	\$/sqft	3.5	> 10	0.00
Electronics - Smart Power Strip	7%	56%	7	0.0	\$/sqft	0.0	4.01	0.01
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	0.4	> 10	0.00
Insulation - Foundation	7%	13%	20	1.4	\$/sqft	2.6	0.67	0.08
Water Heating - Booster Water Heater	11%	50%	20	0.0	\$/sqft	6.2	> 10	0.00
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.1	\$/sqft	24.3	> 10	0.00
Boiler O2 Trim Controls	0%	49%	15	0.0	\$/sqft	1.1	8.19	0.01
Boiler Parallel Positioning Control	0%	49%	15	0.2	\$/sqft	1.1	0.56	0.07
Boiler blowdown heat exchanger (steam)	0%	49%	20	0.7	\$/sqft	3.1	0.59	0.07
Repair malfunctioning steam traps	39%	90%	6	77.0	\$/sqft	13,880.0	5.08	0.01
Insulate steam lines/condensate tank	11%	50%	12	1,302.0	\$/bldg	1.1	0.00	0.13
Destratification Fans (HVLS)	0%	0%	12	0.2	\$/sqft	5.8	1.60	0.03

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	15%	10	0.1	\$/sqft	6.5	2.81	0.02
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-49 Energy Efficiency Non-Equipment Data-Electric Restaurant, New Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	56,202.0	\$/bldg	251,560.1	0.61	0.07
Insulation - Ducting	0%	50%	20	0.8	\$/sqft	0.6	0.12	0.09
Insulation - Radiant Barrier	4%	13%	20	14,360.4	\$/bldg	92,849.9	0.84	0.06
Insulation - Wall Cavity	7%	13%	20	35,615.6	\$/bldg	131,989.3	0.37	0.07
HVAC - Duct Repair and Sealing	25%	25%	18	56.0	\$/bldg	46,691.7	> 10	0.00
Doors - High Efficiency	100%	100%	10	0.2	\$/sqft	2.9	1.39	0.04
Windows - High Efficiency	0%	75%	20	2,181.0	\$/bldg	118,047.2	6.45	0.02
Roof - High Reflectivity	50%	95%	15	2,204.0	\$/bldg	73,416.6	5.78	0.02
Air-Cooled Chiller - Condenser Air Temperature Reset	0%	0%	10	814.4	\$/sqft	311,775.5	> 10	0.00
Air-Cooled Chiller - Economizer	37%	49%	10	813.6	\$/sqft	1,025,553.0	> 10	0.00
Air-Cooled Chiller - VSD on fans	0%	0%	15	2,114.1	\$/bldg	1,287.8	1.49	0.11
Air-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	367,516.0	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	0%	0%	15	27,671.0	\$/bldg	134,798.4	0.44	0.07
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	0%	0%	15	1,407.1	\$/sqft	18,188.9	1.94	0.05
Air-Cooled Chiller - Maintenance	100%	100%	18	12,397.5	\$/bldg	372,336.8	6.39	0.03
Water-Cooled Chiller - Condenser Water Temperature Reset	0%	0%	4	0.0	\$/sqft	6.3	> 10	0.00
Water-Cooled Chiller - Economizer	37%	49%	10	5,493.8	\$/sqft	1,025,553.0	8.02	0.01
Water-Cooled Chiller - VSD on Fans	0%	0%	15	1.2	\$/bldg	25.5	3.31	0.03
Water-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	311,775.5	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	0%	0%	15	27,671.0	\$/bldg	134,798.4	0.43	0.07
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	0%	0%	15	1,407.1	\$/sqft	18,188.9	1.93	0.05
Water-Cooled Chiller - Maintenance	100%	100%	18	12,397.5	\$/bldg	372,336.8	6.36	0.03
RTU - Evaporative Precooler	0%	13%	20	3.0	\$/sqft	1.4	0.06	0.09
RTU - Maintenance	100%	100%	18	12,397.5	\$/bldg	372,336.8	6.36	0.03
Gas Boiler - High Efficiency Hot Water Circulation	5%	34%	10	0.4	\$/sqft	1.4	0.02	0.10
Gas Boiler - Hot Water Reset	0%	0%	3	992.7	\$/sqft	978,400.0	1.11	0.00
Gas Boiler - Maintenance	0%	90%	3	2,039.9	\$/bldg	228,900.0	0.13	0.01
Gas Furnace - Maintenance	0%	90%	3	2,057.0	\$/bldg	47,400.0	0.03	0.04
Space Heating - Heat Recovery Ventilator	45%	49%	15	0.0	\$/sqft	5.8	> 10	0.00
Heat Pump - Maintenance	0%	95%	18	3,921.2	\$/bldg	388,656.6	> 10	0.01
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	7.7	6.11	0.02
Ventilation - Variable Speed Control	0%	81%	15	0.0	\$/sqft	4.4	> 10	0.00

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	12%	15%	15	0.2	\$/sqft	7.1	2.41	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	10.3	3.24	0.00
Water Heater - Faucet Aerators	29%	20%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	0%	0%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	5.7	0.55	0.05
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	22.8	8.87	0.00
Water Heater - Solar System	0%	25%	20	0.1	\$/sqft	85.5	> 10	0.00
Water Heater - Install Timer	50%	50%	15	0.3	\$/sqft	9.7	2.66	0.02
Water Heater - Pipe Insulation	50%	50%	12	3,001.4	\$/bldg	32,559.2	0.59	0.05
Water Heater - Tank Blanket/Insulation	40%	50%	10	0.0	\$/sqft	5.7	8.52	0.00
Water Heater - Pre-Rinse Spray Valve	29%	90%	5	100.0	\$/sqft	14,822.0	6.55	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	10.3	0.11	0.05
Interior Lighting - Daylighting Controls	75%	75%	8	0.1	\$/sqft	3.3	1.35	0.03
Interior Lighting - LED Exit Lighting	86%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	1.1	0.71	0.05
Interior Lighting - Task Lighting	0%	75%	5	0.2	\$/sqft	1.1	0.10	0.12
Interior Lighting - Timeclocks and Timers	56%	56%	8	0.2	\$/sqft	0.5	0.12	0.12
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	1.0	0.09	0.14
Interior Fluorescent - Delamp and Install Reflectors	0%	38%	11	0.5	\$/sqft	0.9	0.13	0.11
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.3	0.05	0.14
Exterior Lighting - Daylighting Controls	19%	38%	8	0.0	\$/sqft	0.8	1.27	0.02
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.9	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	0%	12	250.0	\$/sqft	8,953.8	1.91	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	4.39	0.01
Refrigerator - Decommissioning	50%	25%	8	0.1	\$/sqft	5.9	1.69	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	1.1	0.53	0.07
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	2.9	0.93	0.03
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	5.8	0.00	0.15
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	1.95	0.04
Refrigerator - Floating Head Pressure	18%	38%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.30	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.49	0.01
Grocery - Display Case - LED Lighting	0%	0%	8	378.0	\$/sqft	22,291.7	1.89	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	6.8	0.11	0.11
Grocery - ECMs for Display Cases	0%	0%	15	50.0	\$/sqft	4,570.0	8.50	0.01
Grocery - Open Display Case - Night Covers	0%	0%	8	0.1	\$/sqft	0.9	0.59	0.04
Cooking - Exhaust Hoods with Sensor Control	1%	15%	15	1,494.0	\$/bldg	51,124.9	3.49	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	7%	56%	5	7,190.6	\$/bldg	37,713.8	0.09	0.12
Pool Pump - Timer	34%	34%	10	100.0	\$/bldg	20,513.8	8.82	0.00
Pool Heater - Solar	0%	34%	15	3,500.0	\$/bldg	-	0.00	-
Non-HVAC Motors - Variable Speed Control	0%	38%	10	199.3	\$/bldg	3,749.5	1.59	0.04
Energy Management System	0%	50%	15	41,951.5	\$/bldg	531,443.5	0.99	0.05
Thermostat - Clock/Programmable	50%	50%	11	1,239.8	\$/bldg	31,614.0	2.36	0.03
Lodging - Guest Room Controls	0%	0%	15	260.0	\$/sqft	3,134.1	7.03	0.05
HVAC - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	1.2	0.74	0.07
Commissioning - HVAC	40%	75%	25	0.4	\$/sqft	5.3	2.38	0.04
Commissioning - Lighting	30%	75%	5	0.0	\$/sqft	4.9	2.30	0.01
Retrocommissioning - HVAC	0%	0%	25	0.8	\$/sqft	5.3	1.19	0.05
Retrocommissioning - Lighting	0%	0%	5	0.1	\$/sqft	4.9	1.15	0.01
Advanced New Construction Designs	5%	75%	25	2.0	\$/sqft	14.1	3.57	0.05
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	2.32	0.06
Refrigerator - eCube	5%	75%	12	0.0	\$/sqft	3.4	> 10	0.00
Electronics - Smart Power Strip	7%	56%	7	0.0	\$/sqft	0.0	3.81	0.01
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	0.4	> 10	0.00
Insulation - Foundation	7%	13%	20	0.3	\$/sqft	1.8	1.97	0.06
Water Heating - Booster Water Heater	50%	50%	20	0.0	\$/sqft	6.0	> 10	0.00
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.1	\$/sqft	24.3	> 10	0.00
Boiler O2 Trim Controls	37%	49%	15	0.0	\$/sqft	0.7	0.49	0.02
Boiler Parallel Positioning Control	37%	49%	15	0.2	\$/sqft	0.7	0.03	0.08
Boiler blowdown heat exchanger (steam)	37%	49%	20	0.7	\$/sqft	1.9	0.04	0.08
Repair malfunctioning steam traps	0%	90%	6	77.0	\$/sqft	13,880.0	0.47	0.01
Insulate steam lines/condensate tank	50%	50%	12	1,302.0	\$/bldg	0.7	0.00	0.13
Destratification Fans (HVLS)	0%	0%	12	0.2	\$/sqft	4.2	0.11	0.04

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	15%	10	0.1	\$/sqft	4.7	0.19	0.02
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-50 Energy Efficiency Non-Equipment Data-Natural Gas Restaurant, New Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	56,202.0	\$/bldg	251,560.1	0.71	0.07
Insulation - Ducting	0%	50%	20	0.8	\$/sqft	0.6	0.12	0.09
Insulation - Radiant Barrier	4%	13%	20	14,360.4	\$/bldg	92,849.9	0.99	0.06
Insulation - Wall Cavity	7%	13%	20	35,615.6	\$/bldg	131,989.3	0.49	0.07
HVAC - Duct Repair and Sealing	25%	25%	18	56.0	\$/bldg	46,691.7	> 10	0.00
Doors - High Efficiency	100%	100%	10	0.2	\$/sqft	2.9	1.40	0.04
Windows - High Efficiency	0%	75%	20	2,181.0	\$/bldg	118,047.2	8.36	0.02
Roof - High Reflectivity	50%	95%	15	2,204.0	\$/bldg	73,416.6	5.82	0.02
Air-Cooled Chiller - Condenser Air Temperature Reset	0%	0%	10	814.4	\$/sqft	311,775.5	> 10	0.00
Air-Cooled Chiller - Economizer	37%	49%	10	813.6	\$/sqft	1,025,553.0	> 10	0.00
Air-Cooled Chiller - VSD on fans	0%	0%	15	2,114.1	\$/bldg	1,287.8	1.49	0.11
Air-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	367,516.0	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	0%	0%	15	27,671.0	\$/bldg	134,798.4	0.43	0.07
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	0%	0%	15	1,407.1	\$/sqft	18,188.9	1.93	0.05
Air-Cooled Chiller - Maintenance	100%	100%	18	12,397.5	\$/bldg	372,336.8	6.36	0.03
Water-Cooled Chiller - Condenser Water Temperature Reset	0%	0%	4	0.0	\$/sqft	6.3	> 10	0.00
Water-Cooled Chiller - Economizer	37%	49%	10	5,493.8	\$/sqft	1,025,553.0	8.02	0.01
Water-Cooled Chiller - VSD on Fans	0%	0%	15	1.2	\$/bldg	25.5	3.31	0.03
Water-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	311,775.5	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	0%	0%	15	27,671.0	\$/bldg	134,798.4	0.43	0.07
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	0%	0%	15	1,407.1	\$/sqft	18,188.9	1.93	0.05
Water-Cooled Chiller - Maintenance	100%	100%	18	12,397.5	\$/bldg	372,336.8	6.36	0.03
RTU - Evaporative Precooler	0%	13%	20	3.0	\$/sqft	1.4	0.06	0.09
RTU - Maintenance	100%	100%	18	12,397.5	\$/bldg	372,336.8	6.36	0.03
Gas Boiler - High Efficiency Hot Water Circulation	5%	34%	10	0.4	\$/sqft	1.4	0.19	0.10
Gas Boiler - Hot Water Reset	0%	0%	3	992.7	\$/sqft	978,400.0	> 10	0.00
Gas Boiler - Maintenance	0%	90%	3	2,039.9	\$/bldg	228,900.0	1.57	0.01
Gas Furnace - Maintenance	0%	90%	3	2,057.0	\$/bldg	47,400.0	0.32	0.04
Space Heating - Heat Recovery Ventilator	45%	49%	15	0.0	\$/sqft	5.8	> 10	0.00
Heat Pump - Maintenance	0%	95%	18	3,921.2	\$/bldg	388,656.6	> 10	0.01
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	7.7	6.28	0.02
Ventilation - Variable Speed Control	0%	81%	15	0.0	\$/sqft	4.4	> 10	0.00

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	12%	15%	15	0.2	\$/sqft	7.1	2.47	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	10.3	5.24	0.00
Water Heater - Faucet Aerators	29%	20%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	0%	0%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	5.7	0.78	0.05
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	22.8	> 10	0.00
Water Heater - Solar System	0%	25%	20	0.1	\$/sqft	85.5	> 10	0.00
Water Heater - Install Timer	50%	50%	15	0.3	\$/sqft	9.7	3.72	0.02
Water Heater - Pipe Insulation	50%	50%	12	3,001.4	\$/bldg	32,559.2	0.78	0.05
Water Heater - Tank Blanket/Insulation	40%	50%	10	0.0	\$/sqft	5.7	> 10	0.00
Water Heater - Pre-Rinse Spray Valve	29%	90%	5	100.0	\$/sqft	14,822.0	7.58	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	10.3	1.23	0.05
Interior Lighting - Daylighting Controls	75%	75%	8	0.1	\$/sqft	3.3	1.40	0.03
Interior Lighting - LED Exit Lighting	86%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	1.1	0.74	0.05
Interior Lighting - Task Lighting	0%	75%	5	0.2	\$/sqft	1.1	0.11	0.12
Interior Lighting - Timeclocks and Timers	56%	56%	8	0.2	\$/sqft	0.5	0.13	0.12
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	1.0	0.09	0.14
Interior Fluorescent - Delamp and Install Reflectors	0%	38%	11	0.5	\$/sqft	0.9	0.14	0.11
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.3	0.05	0.14
Exterior Lighting - Daylighting Controls	19%	38%	8	0.0	\$/sqft	0.8	1.27	0.02
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.9	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	0%	12	250.0	\$/sqft	8,953.8	1.98	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	4.45	0.01
Refrigerator - Decommissioning	50%	25%	8	0.1	\$/sqft	5.9	1.75	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	1.1	0.55	0.07
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	2.9	0.95	0.03
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	5.8	0.00	0.15
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	2.03	0.04
Refrigerator - Floating Head Pressure	18%	38%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.31	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.86	0.01
Grocery - Display Case - LED Lighting	0%	0%	8	378.0	\$/sqft	22,291.7	1.92	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	6.8	0.11	0.11
Grocery - ECMs for Display Cases	0%	0%	15	50.0	\$/sqft	4,570.0	8.65	0.01
Grocery - Open Display Case - Night Covers	0%	0%	8	0.1	\$/sqft	0.9	0.60	0.04
Cooking - Exhaust Hoods with Sensor Control	1%	15%	15	1,494.0	\$/bldg	51,124.9	3.58	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	7%	56%	5	7,190.6	\$/bldg	37,713.8	0.10	0.12
Pool Pump - Timer	34%	34%	10	100.0	\$/bldg	20,513.8	8.82	0.00
Pool Heater - Solar	0%	34%	15	3,500.0	\$/bldg	-	0.00	-
Non-HVAC Motors - Variable Speed Control	0%	38%	10	199.3	\$/bldg	3,749.5	1.60	0.04
Energy Management System	0%	50%	15	41,951.5	\$/bldg	531,443.5	1.02	0.05
Thermostat - Clock/Programmable	50%	50%	11	1,239.8	\$/bldg	31,614.0	2.37	0.03
Lodging - Guest Room Controls	0%	0%	15	260.0	\$/sqft	3,134.1	7.06	0.05
HVAC - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	1.2	0.74	0.07
Commissioning - HVAC	40%	75%	25	0.4	\$/sqft	5.3	2.39	0.04
Commissioning - Lighting	30%	75%	5	0.0	\$/sqft	4.9	2.37	0.01
Retrocommissioning - HVAC	0%	0%	25	0.8	\$/sqft	5.3	1.19	0.05
Retrocommissioning - Lighting	0%	0%	5	0.1	\$/sqft	4.9	1.19	0.01
Advanced New Construction Designs	5%	75%	25	2.0	\$/sqft	14.1	3.59	0.05
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	2.00	0.06
Refrigerator - eCube	5%	75%	12	0.0	\$/sqft	3.4	> 10	0.00
Electronics - Smart Power Strip	7%	56%	7	0.0	\$/sqft	0.0	4.01	0.01
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	0.4	> 10	0.00
Insulation - Foundation	7%	13%	20	0.3	\$/sqft	1.8	1.98	0.06
Water Heating - Booster Water Heater	50%	50%	20	0.0	\$/sqft	6.0	> 10	0.00
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.1	\$/sqft	24.3	> 10	0.00
Boiler O2 Trim Controls	37%	49%	15	0.0	\$/sqft	0.7	5.68	0.02
Boiler Parallel Positioning Control	37%	49%	15	0.2	\$/sqft	0.7	0.39	0.08
Boiler blowdown heat exchanger (steam)	37%	49%	20	0.7	\$/sqft	1.9	0.41	0.08
Repair malfunctioning steam traps	0%	90%	6	77.0	\$/sqft	13,880.0	5.59	0.01
Insulate steam lines/condensate tank	50%	50%	12	1,302.0	\$/bldg	0.7	0.00	0.13
Destratification Fans (HVLS)	0%	0%	12	0.2	\$/sqft	4.2	1.29	0.04

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	15%	10	0.1	\$/sqft	4.7	2.26	0.02
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-51 Energy Efficiency Non-Equipment Data-Electric Retail, Existing Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	56,202.0	\$/bldg	209,122.3	0.48	0.07
Insulation - Ducting	21%	50%	20	0.8	\$/sqft	0.8	0.16	0.09
Insulation - Radiant Barrier	7%	13%	20	14,360.4	\$/bldg	92,766.4	0.80	0.06
Insulation - Wall Cavity	7%	13%	20	35,615.6	\$/bldg	217,391.3	0.57	0.06
HVAC - Duct Repair and Sealing	5%	25%	18	56.0	\$/bldg	105,158.2	> 10	0.00
Doors - High Efficiency	0%	0%	10	0.2	\$/sqft	2.5	1.20	0.04
Windows - High Efficiency	45%	75%	20	2,181.0	\$/bldg	97,788.4	5.77	0.02
Roof - High Reflectivity	58%	95%	15	2,204.0	\$/bldg	183,780.8	8.70	0.01
Air-Cooled Chiller - Condenser Air Temperature Reset	0%	0%	10	814.4	\$/sqft	723,510.2	> 10	0.00
Air-Cooled Chiller - Economizer	4%	49%	10	813.6	\$/sqft	1,826,138.1	> 10	0.00
Air-Cooled Chiller - VSD on fans	0%	0%	15	2,114.1	\$/bldg	843.3	0.93	0.11
Air-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	836,586.8	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	0%	0%	15	27,671.0	\$/bldg	125,726.8	0.44	0.08
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	0%	0%	15	1,407.1	\$/sqft	44,150.2	3.75	0.02
Air-Cooled Chiller - Maintenance	45%	90%	18	12,397.5	\$/bldg	551,969.2	8.82	0.02
Water-Cooled Chiller - Condenser Water Temperature Reset	0%	0%	4	0.0	\$/sqft	3.1	> 10	0.00
Water-Cooled Chiller - Economizer	4%	49%	10	5,493.8	\$/sqft	1,826,138.1	> 10	0.00
Water-Cooled Chiller - VSD on Fans	0%	0%	15	1.2	\$/bldg	19.5	2.13	0.04
Water-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	723,510.2	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	0%	0%	15	27,671.0	\$/bldg	125,726.8	0.34	0.08
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	0%	0%	15	1,407.1	\$/sqft	44,150.2	2.89	0.02
Water-Cooled Chiller - Maintenance	45%	90%	18	12,397.5	\$/bldg	551,969.2	6.72	0.02
RTU - Evaporative Precooler	0%	13%	20	3.0	\$/sqft	1.6	0.05	0.09
RTU - Maintenance	45%	90%	18	12,397.5	\$/bldg	551,969.2	6.93	0.02
Gas Boiler - High Efficiency Hot Water Circulation	0%	34%	10	0.4	\$/sqft	2.2	0.02	0.09
Gas Boiler - Hot Water Reset	0%	0%	3	992.7	\$/sqft	1,440,300.0	1.63	0.00
Gas Boiler - Maintenance	38%	90%	3	2,039.9	\$/bldg	346,700.0	0.19	0.01
Gas Furnace - Maintenance	38%	90%	3	2,057.0	\$/bldg	27,100.0	0.01	0.07
Space Heating - Heat Recovery Ventilator	45%	49%	15	0.0	\$/sqft	7.0	> 10	0.00
Heat Pump - Maintenance	4%	95%	18	3,921.2	\$/bldg	562,750.4	> 10	0.01
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	3.7	2.99	0.03
Ventilation - Variable Speed Control	0%	81%	15	0.0	\$/sqft	2.1	> 10	0.01

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	1%	15%	15	0.2	\$/sqft	7.1	2.43	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	2.1	0.41	0.02
Water Heater - Faucet Aerators	23%	20%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	0%	0%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	1.2	0.06	0.11
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	4.7	1.08	0.01
Water Heater - Solar System	0%	25%	20	0.1	\$/sqft	17.6	> 10	0.00
Water Heater - Install Timer	10%	50%	15	0.3	\$/sqft	2.0	0.31	0.06
Water Heater - Pipe Insulation	10%	50%	12	3,001.4	\$/bldg	35,750.0	0.66	0.05
Water Heater - Tank Blanket/Insulation	40%	50%	10	0.0	\$/sqft	1.2	1.07	0.02
Water Heater - Pre-Rinse Spray Valve	23%	5%	5	100.0	\$/sqft	14,822.0	6.43	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	15.9	0.17	0.04
Interior Lighting - Daylighting Controls	14%	50%	8	0.1	\$/sqft	3.7	1.22	0.03
Interior Lighting - LED Exit Lighting	50%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	4%	56%	8	0.1	\$/sqft	1.2	0.64	0.04
Interior Lighting - Task Lighting	12%	75%	5	0.2	\$/sqft	1.3	0.08	0.12
Interior Lighting - Timeclocks and Timers	4%	56%	8	0.2	\$/sqft	0.6	0.11	0.12
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	2.0	0.15	0.11
Interior Fluorescent - Delamp and Install Reflectors	10%	30%	11	0.5	\$/sqft	1.0	0.12	0.11
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.3	0.03	0.14
Exterior Lighting - Daylighting Controls	17%	38%	8	0.0	\$/sqft	0.8	0.69	0.02
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.9	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	0%	12	250.0	\$/sqft	8,953.8	1.52	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	3.58	0.01
Refrigerator - Decommissioning	50%	0%	8	0.1	\$/sqft	5.9	1.38	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	0.4	0.17	0.09
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	0.4	0.11	0.11
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	0.8	0.00	0.15
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	1.52	0.04
Refrigerator - Floating Head Pressure	18%	38%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.31	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.38	0.01
Grocery - Display Case - LED Lighting	0%	0%	8	378.0	\$/sqft	22,291.7	1.57	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	0.9	0.01	0.17
Grocery - ECMs for Display Cases	0%	0%	15	50.0	\$/sqft	4,570.0	6.84	0.01
Grocery - Open Display Case - Night Covers	0%	0%	8	0.1	\$/sqft	0.1	0.07	0.13
Cooking - Exhaust Hoods with Sensor Control	1%	15%	15	1,494.0	\$/bldg	51,124.9	3.51	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	7%	56%	5	7,190.6	\$/bldg	37,713.8	0.09	0.12
Pool Pump - Timer	0%	34%	10	100.0	\$/bldg	20,513.8	8.82	0.00
Pool Heater - Solar	0%	34%	15	3,500.0	\$/bldg	-	0.00	-
Non-HVAC Motors - Variable Speed Control	0%	38%	10	199.3	\$/bldg	3,749.5	1.60	0.04
Energy Management System	8%	75%	15	41,951.5	\$/bldg	899,536.2	1.52	0.03
Thermostat - Clock/Programmable	44%	50%	11	1,239.8	\$/bldg	9,105.8	0.65	0.07
Lodging - Guest Room Controls	0%	0%	15	260.0	\$/sqft	3,134.1	5.57	0.05
HVAC - Occupancy Sensors	14%	56%	8	0.1	\$/sqft	1.0	0.64	0.08
Commissioning - HVAC	0%	0%	25	0.4	\$/sqft	4.4	1.56	0.04
Commissioning - Lighting	0%	0%	5	0.0	\$/sqft	5.5	2.15	0.01
Retrocommissioning - HVAC	5%	36%	25	0.8	\$/sqft	4.4	0.78	0.06
Retrocommissioning - Lighting	32%	37%	5	0.1	\$/sqft	5.5	1.07	0.01
Advanced New Construction Designs	0%	0%	25	2.0	\$/sqft	11.8	2.92	0.06
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	1.94	0.06
Refrigerator - eCube	5%	75%	12	0.0	\$/sqft	0.5	3.61	0.01
Electronics - Smart Power Strip	7%	56%	7	0.0	\$/sqft	0.0	1.98	0.01
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	0.2	> 10	0.00
Insulation - Foundation	7%	13%	20	1.4	\$/sqft	1.5	0.38	0.09
Water Heating - Booster Water Heater	10%	50%	20	0.0	\$/sqft	0.7	9.29	0.02
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.0	\$/sqft	3.2	> 10	0.00
Boiler O2 Trim Controls	4%	49%	15	0.0	\$/sqft	1.1	0.76	0.01
Boiler Parallel Positioning Control	4%	49%	15	0.2	\$/sqft	1.1	0.05	0.07
Boiler blowdown heat exchanger (steam)	4%	49%	20	0.7	\$/sqft	3.0	0.05	0.07
Repair malfunctioning steam traps	38%	90%	6	77.0	\$/sqft	13,880.0	0.47	0.01
Insulate steam lines/condensate tank	10%	50%	12	1,302.0	\$/bldg	1.1	0.00	0.13
Destratification Fans (HVLS)	0%	33%	12	0.2	\$/sqft	6.2	0.16	0.03

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	15%	10	0.1	\$/sqft	6.9	0.28	0.02
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-52 Energy Efficiency Non-Equipment Data-Natural Gas Retail, Existing Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	56,202.0	\$/bldg	209,122.3	0.71	0.07
Insulation - Ducting	21%	50%	20	0.8	\$/sqft	0.8	0.20	0.09
Insulation - Radiant Barrier	7%	13%	20	14,360.4	\$/bldg	92,766.4	1.18	0.06
Insulation - Wall Cavity	7%	13%	20	35,615.6	\$/bldg	217,391.3	0.82	0.06
HVAC - Duct Repair and Sealing	5%	25%	18	56.0	\$/bldg	105,158.2	> 10	0.00
Doors - High Efficiency	0%	0%	10	0.2	\$/sqft	2.5	1.37	0.04
Windows - High Efficiency	45%	75%	20	2,181.0	\$/bldg	97,788.4	7.59	0.02
Roof - High Reflectivity	58%	95%	15	2,204.0	\$/bldg	183,780.8	> 10	0.01
Air-Cooled Chiller - Condenser Air Temperature Reset	0%	0%	10	814.4	\$/sqft	723,510.2	> 10	0.00
Air-Cooled Chiller - Economizer	4%	49%	10	813.6	\$/sqft	1,826,138.1	> 10	0.00
Air-Cooled Chiller - VSD on fans	0%	0%	15	2,114.1	\$/bldg	843.3	0.93	0.11
Air-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	836,586.8	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	0%	0%	15	27,671.0	\$/bldg	125,726.8	0.44	0.08
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	0%	0%	15	1,407.1	\$/sqft	44,150.2	3.75	0.02
Air-Cooled Chiller - Maintenance	45%	90%	18	12,397.5	\$/bldg	551,969.2	8.82	0.02
Water-Cooled Chiller - Condenser Water Temperature Reset	0%	0%	4	0.0	\$/sqft	3.1	> 10	0.00
Water-Cooled Chiller - Economizer	4%	49%	10	5,493.8	\$/sqft	1,826,138.1	> 10	0.00
Water-Cooled Chiller - VSD on Fans	0%	0%	15	1.2	\$/bldg	19.5	2.78	0.04
Water-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	723,510.2	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	0%	0%	15	27,671.0	\$/bldg	125,726.8	0.44	0.08
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	0%	0%	15	1,407.1	\$/sqft	44,150.2	3.75	0.02
Water-Cooled Chiller - Maintenance	45%	90%	18	12,397.5	\$/bldg	551,969.2	8.82	0.02
RTU - Evaporative Precooler	0%	13%	20	3.0	\$/sqft	1.6	0.06	0.09
RTU - Maintenance	45%	90%	18	12,397.5	\$/bldg	551,969.2	8.82	0.02
Gas Boiler - High Efficiency Hot Water Circulation	0%	34%	10	0.4	\$/sqft	2.2	0.25	0.09
Gas Boiler - Hot Water Reset	0%	0%	3	992.7	\$/sqft	1,440,300.0	> 10	0.00
Gas Boiler - Maintenance	38%	90%	3	2,039.9	\$/bldg	346,700.0	2.12	0.01
Gas Furnace - Maintenance	38%	90%	3	2,057.0	\$/bldg	27,100.0	0.18	0.07
Space Heating - Heat Recovery Ventilator	45%	49%	15	0.0	\$/sqft	7.0	> 10	0.00
Heat Pump - Maintenance	4%	95%	18	3,921.2	\$/bldg	562,750.4	> 10	0.01
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	3.7	3.05	0.03
Ventilation - Variable Speed Control	0%	81%	15	0.0	\$/sqft	2.1	> 10	0.01

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	1%	15%	15	0.2	\$/sqft	7.1	2.47	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	2.1	1.15	0.02
Water Heater - Faucet Aerators	23%	20%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	0%	0%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	1.2	0.15	0.11
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	4.7	2.72	0.01
Water Heater - Solar System	0%	25%	20	0.1	\$/sqft	17.6	> 10	0.00
Water Heater - Install Timer	10%	50%	15	0.3	\$/sqft	2.0	0.70	0.06
Water Heater - Pipe Insulation	10%	50%	12	3,001.4	\$/bldg	35,750.0	0.88	0.05
Water Heater - Tank Blanket/Insulation	40%	50%	10	0.0	\$/sqft	1.2	2.94	0.02
Water Heater - Pre-Rinse Spray Valve	23%	5%	5	100.0	\$/sqft	14,822.0	7.53	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	15.9	1.72	0.04
Interior Lighting - Daylighting Controls	14%	50%	8	0.1	\$/sqft	3.7	1.58	0.03
Interior Lighting - LED Exit Lighting	50%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	4%	56%	8	0.1	\$/sqft	1.2	0.83	0.04
Interior Lighting - Task Lighting	12%	75%	5	0.2	\$/sqft	1.3	0.12	0.12
Interior Lighting - Timeclocks and Timers	4%	56%	8	0.2	\$/sqft	0.6	0.14	0.12
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	2.0	0.19	0.11
Interior Fluorescent - Delamp and Install Reflectors	10%	30%	11	0.5	\$/sqft	1.0	0.15	0.11
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.3	0.05	0.14
Exterior Lighting - Daylighting Controls	17%	38%	8	0.0	\$/sqft	0.8	1.26	0.02
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.9	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	0%	12	250.0	\$/sqft	8,953.8	1.98	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	4.45	0.01
Refrigerator - Decommissioning	50%	0%	8	0.1	\$/sqft	5.9	1.75	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	0.4	0.23	0.09
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	0.4	0.12	0.11
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	0.8	0.00	0.15
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	2.03	0.04
Refrigerator - Floating Head Pressure	18%	38%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.31	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.86	0.01
Grocery - Display Case - LED Lighting	0%	0%	8	378.0	\$/sqft	22,291.7	1.92	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	0.9	0.01	0.17
Grocery - ECMs for Display Cases	0%	0%	15	50.0	\$/sqft	4,570.0	8.65	0.01
Grocery - Open Display Case - Night Covers	0%	0%	8	0.1	\$/sqft	0.1	0.08	0.13
Cooking - Exhaust Hoods with Sensor Control	1%	15%	15	1,494.0	\$/bldg	51,124.9	3.58	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	7%	56%	5	7,190.6	\$/bldg	37,713.8	0.10	0.12
Pool Pump - Timer	0%	34%	10	100.0	\$/bldg	20,513.8	8.82	0.00
Pool Heater - Solar	0%	34%	15	3,500.0	\$/bldg	-	0.00	-
Non-HVAC Motors - Variable Speed Control	0%	38%	10	199.3	\$/bldg	3,749.5	1.60	0.04
Energy Management System	8%	75%	15	41,951.5	\$/bldg	899,536.2	1.90	0.03
Thermostat - Clock/Programmable	44%	50%	11	1,239.8	\$/bldg	9,105.8	0.81	0.07
Lodging - Guest Room Controls	0%	0%	15	260.0	\$/sqft	3,134.1	7.06	0.05
HVAC - Occupancy Sensors	14%	56%	8	0.1	\$/sqft	1.0	0.77	0.08
Commissioning - HVAC	0%	0%	25	0.4	\$/sqft	4.4	2.00	0.04
Commissioning - Lighting	0%	0%	5	0.0	\$/sqft	5.5	2.67	0.01
Retrocommissioning - HVAC	5%	36%	25	0.8	\$/sqft	4.4	1.00	0.06
Retrocommissioning - Lighting	32%	37%	5	0.1	\$/sqft	5.5	1.33	0.01
Advanced New Construction Designs	0%	0%	25	2.0	\$/sqft	11.8	3.76	0.06
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	2.06	0.06
Refrigerator - eCube	5%	75%	12	0.0	\$/sqft	0.5	4.72	0.01
Electronics - Smart Power Strip	7%	56%	7	0.0	\$/sqft	0.0	2.25	0.01
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	0.2	> 10	0.00
Insulation - Foundation	7%	13%	20	1.4	\$/sqft	1.5	0.49	0.09
Water Heating - Booster Water Heater	10%	50%	20	0.0	\$/sqft	0.7	9.51	0.02
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.0	\$/sqft	3.2	> 10	0.00
Boiler O2 Trim Controls	4%	49%	15	0.0	\$/sqft	1.1	7.62	0.01
Boiler Parallel Positioning Control	4%	49%	15	0.2	\$/sqft	1.1	0.53	0.07
Boiler blowdown heat exchanger (steam)	4%	49%	20	0.7	\$/sqft	3.0	0.55	0.07
Repair malfunctioning steam traps	38%	90%	6	77.0	\$/sqft	13,880.0	4.93	0.01
Insulate steam lines/condensate tank	10%	50%	12	1,302.0	\$/bldg	1.1	0.00	0.13
Destratification Fans (HVLS)	0%	33%	12	0.2	\$/sqft	6.2	1.64	0.03

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	15%	10	0.1	\$/sqft	6.9	2.88	0.02
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-53 Energy Efficiency Non-Equipment Data-Electric Retail, New Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	56,202.0	\$/bldg	251,560.1	0.61	0.07
Insulation - Ducting	0%	50%	20	0.8	\$/sqft	0.6	0.12	0.09
Insulation - Radiant Barrier	7%	13%	20	14,360.4	\$/bldg	92,849.9	0.84	0.06
Insulation - Wall Cavity	7%	13%	20	35,615.6	\$/bldg	131,989.3	0.37	0.07
HVAC - Duct Repair and Sealing	25%	25%	18	56.0	\$/bldg	46,691.7	> 10	0.00
Doors - High Efficiency	100%	100%	10	0.2	\$/sqft	3.6	1.56	0.03
Windows - High Efficiency	73%	75%	20	2,181.0	\$/bldg	118,047.2	6.46	0.02
Roof - High Reflectivity	64%	95%	15	2,204.0	\$/bldg	73,416.6	5.77	0.02
Air-Cooled Chiller - Condenser Air Temperature Reset	0%	0%	10	814.4	\$/sqft	311,775.5	> 10	0.00
Air-Cooled Chiller - Economizer	37%	49%	10	813.6	\$/sqft	1,025,553.0	> 10	0.00
Air-Cooled Chiller - VSD on fans	0%	0%	15	2,114.1	\$/bldg	1,253.6	0.76	0.11
Air-Cooled Chiller - Chilled Water Reset	10%	75%	10	814.4	\$/sqft	367,516.0	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	0%	0%	15	27,671.0	\$/bldg	134,798.4	0.43	0.07
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	0%	0%	15	1,407.1	\$/sqft	18,188.9	1.93	0.05
Air-Cooled Chiller - Maintenance	45%	90%	18	12,397.5	\$/bldg	372,336.8	6.36	0.03
Water-Cooled Chiller - Condenser Water Temperature Reset	0%	0%	4	0.0	\$/sqft	2.0	> 10	0.00
Water-Cooled Chiller - Economizer	37%	49%	10	5,493.8	\$/sqft	1,025,553.0	8.02	0.01
Water-Cooled Chiller - VSD on Fans	0%	0%	15	1.2	\$/bldg	15.8	2.25	0.04
Water-Cooled Chiller - Chilled Water Reset	10%	75%	10	814.4	\$/sqft	311,775.5	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	0%	0%	15	27,671.0	\$/bldg	134,798.4	0.43	0.07
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	0%	0%	15	1,407.1	\$/sqft	18,188.9	1.93	0.05
Water-Cooled Chiller - Maintenance	45%	90%	18	12,397.5	\$/bldg	372,336.8	6.36	0.03
RTU - Evaporative Precooler	0%	13%	20	3.0	\$/sqft	1.2	0.05	0.09
RTU - Maintenance	45%	90%	18	12,397.5	\$/bldg	372,336.8	6.36	0.03
Gas Boiler - High Efficiency Hot Water Circulation	5%	34%	10	0.4	\$/sqft	1.6	0.02	0.10
Gas Boiler - Hot Water Reset	0%	0%	3	992.7	\$/sqft	978,400.0	1.11	0.00
Gas Boiler - Maintenance	36%	90%	3	2,039.9	\$/bldg	228,900.0	0.13	0.01
Gas Furnace - Maintenance	36%	90%	3	2,057.0	\$/bldg	47,400.0	0.03	0.04
Space Heating - Heat Recovery Ventilator	45%	49%	15	0.0	\$/sqft	12.0	> 10	0.00
Heat Pump - Maintenance	0%	95%	18	3,921.2	\$/bldg	388,656.6	> 10	0.01
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	3.7	3.02	0.03
Ventilation - Variable Speed Control	0%	81%	15	0.0	\$/sqft	2.1	> 10	0.01

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	12%	15%	15	0.2	\$/sqft	7.1	2.48	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	2.0	0.39	0.02
Water Heater - Faucet Aerators	36%	20%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	0%	0%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	1.1	0.06	0.11
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	4.4	1.04	0.01
Water Heater - Solar System	0%	25%	20	0.1	\$/sqft	16.6	> 10	0.00
Water Heater - Install Timer	50%	50%	15	0.3	\$/sqft	1.9	0.30	0.06
Water Heater - Pipe Insulation	50%	50%	12	3,001.4	\$/bldg	32,559.2	0.59	0.05
Water Heater - Tank Blanket/Insulation	40%	50%	10	0.0	\$/sqft	1.1	1.03	0.02
Water Heater - Pre-Rinse Spray Valve	36%	5%	5	100.0	\$/sqft	14,822.0	6.58	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	12.0	0.12	0.04
Interior Lighting - Daylighting Controls	75%	75%	8	0.1	\$/sqft	3.7	1.53	0.03
Interior Lighting - LED Exit Lighting	86%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	1.2	0.80	0.04
Interior Lighting - Task Lighting	18%	75%	5	0.2	\$/sqft	1.3	0.12	0.12
Interior Lighting - Timeclocks and Timers	56%	56%	8	0.2	\$/sqft	0.6	0.14	0.12
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	2.0	0.18	0.11
Interior Fluorescent - Delamp and Install Reflectors	9%	30%	11	0.5	\$/sqft	1.0	0.15	0.11
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.3	0.05	0.14
Exterior Lighting - Daylighting Controls	17%	38%	8	0.0	\$/sqft	0.8	1.19	0.02
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.9	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	0%	12	250.0	\$/sqft	8,953.8	1.89	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	4.39	0.01
Refrigerator - Decommissioning	50%	0%	8	0.1	\$/sqft	5.9	1.67	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	0.2	0.09	0.10
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	0.4	0.12	0.11
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	0.8	0.00	0.15
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	1.92	0.04
Refrigerator - Floating Head Pressure	18%	38%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.31	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.42	0.01
Grocery - Display Case - LED Lighting	0%	0%	8	378.0	\$/sqft	22,291.7	1.89	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	0.9	0.01	0.17
Grocery - ECMs for Display Cases	0%	0%	15	50.0	\$/sqft	4,570.0	8.50	0.01
Grocery - Open Display Case - Night Covers	0%	0%	8	0.1	\$/sqft	0.1	0.08	0.13
Cooking - Exhaust Hoods with Sensor Control	1%	15%	15	1,494.0	\$/bldg	51,124.9	3.58	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	7%	56%	5	7,190.6	\$/bldg	37,713.8	0.09	0.12
Pool Pump - Timer	34%	34%	10	100.0	\$/bldg	20,513.8	8.82	0.00
Pool Heater - Solar	0%	34%	15	3,500.0	\$/bldg	-	0.00	-
Non-HVAC Motors - Variable Speed Control	0%	38%	10	199.3	\$/bldg	3,749.5	1.59	0.04
Energy Management System	0%	75%	15	41,951.5	\$/bldg	531,443.5	0.99	0.05
Thermostat - Clock/Programmable	50%	50%	11	1,239.8	\$/bldg	31,614.0	2.78	0.03
Lodging - Guest Room Controls	0%	0%	15	260.0	\$/sqft	3,134.1	6.99	0.05
HVAC - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	0.8	0.60	0.09
Commissioning - HVAC	40%	75%	25	0.4	\$/sqft	3.5	1.57	0.05
Commissioning - Lighting	30%	75%	5	0.0	\$/sqft	5.5	2.59	0.01
Retrocommissioning - HVAC	0%	0%	25	0.8	\$/sqft	3.5	0.78	0.06
Retrocommissioning - Lighting	0%	0%	5	0.1	\$/sqft	5.5	1.30	0.01
Advanced New Construction Designs	5%	75%	25	2.0	\$/sqft	9.3	2.95	0.06
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	2.26	0.06
Refrigerator - eCube	5%	75%	12	0.0	\$/sqft	0.5	4.47	0.01
Electronics - Smart Power Strip	7%	56%	7	0.0	\$/sqft	0.0	2.09	0.01
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	0.2	> 10	0.00
Insulation - Foundation	7%	13%	20	0.3	\$/sqft	1.2	1.63	0.07
Water Heating - Booster Water Heater	50%	50%	20	0.0	\$/sqft	0.6	9.01	0.02
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.0	\$/sqft	3.2	> 10	0.00
Boiler O2 Trim Controls	37%	49%	15	0.0	\$/sqft	0.8	0.57	0.01
Boiler Parallel Positioning Control	37%	49%	15	0.2	\$/sqft	0.8	0.04	0.08
Boiler blowdown heat exchanger (steam)	37%	49%	20	0.7	\$/sqft	2.2	0.04	0.07
Repair malfunctioning steam traps	36%	90%	6	77.0	\$/sqft	13,880.0	0.47	0.01
Insulate steam lines/condensate tank	50%	50%	12	1,302.0	\$/bldg	0.8	0.00	0.13
Destratification Fans (HVLS)	0%	33%	12	0.2	\$/sqft	7.4	0.19	0.03

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	15%	10	0.1	\$/sqft	8.3	0.33	0.01
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-54 Energy Efficiency Non-Equipment Data-Natural Gas Retail, New Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	56,202.0	\$/bldg	251,560.1	0.71	0.07
Insulation - Ducting	0%	50%	20	0.8	\$/sqft	0.6	0.12	0.09
Insulation - Radiant Barrier	7%	13%	20	14,360.4	\$/bldg	92,849.9	0.99	0.06
Insulation - Wall Cavity	7%	13%	20	35,615.6	\$/bldg	131,989.3	0.49	0.07
HVAC - Duct Repair and Sealing	25%	25%	18	56.0	\$/bldg	46,691.7	> 10	0.00
Doors - High Efficiency	100%	100%	10	0.2	\$/sqft	3.6	1.56	0.03
Windows - High Efficiency	73%	75%	20	2,181.0	\$/bldg	118,047.2	8.36	0.02
Roof - High Reflectivity	64%	95%	15	2,204.0	\$/bldg	73,416.6	5.82	0.02
Air-Cooled Chiller - Condenser Air Temperature Reset	0%	0%	10	814.4	\$/sqft	311,775.5	> 10	0.00
Air-Cooled Chiller - Economizer	37%	49%	10	813.6	\$/sqft	1,025,553.0	> 10	0.00
Air-Cooled Chiller - VSD on fans	0%	0%	15	2,114.1	\$/bldg	1,253.6	0.76	0.11
Air-Cooled Chiller - Chilled Water Reset	10%	75%	10	814.4	\$/sqft	367,516.0	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	0%	0%	15	27,671.0	\$/bldg	134,798.4	0.43	0.07
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	0%	0%	15	1,407.1	\$/sqft	18,188.9	1.93	0.05
Air-Cooled Chiller - Maintenance	45%	90%	18	12,397.5	\$/bldg	372,336.8	6.36	0.03
Water-Cooled Chiller - Condenser Water Temperature Reset	0%	0%	4	0.0	\$/sqft	2.0	> 10	0.00
Water-Cooled Chiller - Economizer	37%	49%	10	5,493.8	\$/sqft	1,025,553.0	8.02	0.01
Water-Cooled Chiller - VSD on Fans	0%	0%	15	1.2	\$/bldg	15.8	2.25	0.04
Water-Cooled Chiller - Chilled Water Reset	10%	75%	10	814.4	\$/sqft	311,775.5	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	0%	0%	15	27,671.0	\$/bldg	134,798.4	0.43	0.07
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	0%	0%	15	1,407.1	\$/sqft	18,188.9	1.93	0.05
Water-Cooled Chiller - Maintenance	45%	90%	18	12,397.5	\$/bldg	372,336.8	6.36	0.03
RTU - Evaporative Precooler	0%	13%	20	3.0	\$/sqft	1.2	0.05	0.09
RTU - Maintenance	45%	90%	18	12,397.5	\$/bldg	372,336.8	6.36	0.03
Gas Boiler - High Efficiency Hot Water Circulation	5%	34%	10	0.4	\$/sqft	1.6	0.21	0.10
Gas Boiler - Hot Water Reset	0%	0%	3	992.7	\$/sqft	978,400.0	> 10	0.00
Gas Boiler - Maintenance	36%	90%	3	2,039.9	\$/bldg	228,900.0	1.56	0.01
Gas Furnace - Maintenance	36%	90%	3	2,057.0	\$/bldg	47,400.0	0.32	0.04
Space Heating - Heat Recovery Ventilator	45%	49%	15	0.0	\$/sqft	12.0	> 10	0.00
Heat Pump - Maintenance	0%	95%	18	3,921.2	\$/bldg	388,656.6	> 10	0.01
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	3.7	3.01	0.03
Ventilation - Variable Speed Control	0%	81%	15	0.0	\$/sqft	2.1	> 10	0.01

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	12%	15%	15	0.2	\$/sqft	7.1	2.47	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	2.0	1.11	0.02
Water Heater - Faucet Aerators	36%	20%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	0%	0%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	1.1	0.15	0.11
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	4.4	2.63	0.01
Water Heater - Solar System	0%	25%	20	0.1	\$/sqft	16.6	> 10	0.00
Water Heater - Install Timer	50%	50%	15	0.3	\$/sqft	1.9	0.68	0.06
Water Heater - Pipe Insulation	50%	50%	12	3,001.4	\$/bldg	32,559.2	0.78	0.05
Water Heater - Tank Blanket/Insulation	40%	50%	10	0.0	\$/sqft	1.1	2.86	0.02
Water Heater - Pre-Rinse Spray Valve	36%	5%	5	100.0	\$/sqft	14,822.0	7.58	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	12.0	1.41	0.04
Interior Lighting - Daylighting Controls	75%	75%	8	0.1	\$/sqft	3.7	1.58	0.03
Interior Lighting - LED Exit Lighting	86%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	1.2	0.83	0.04
Interior Lighting - Task Lighting	18%	75%	5	0.2	\$/sqft	1.3	0.12	0.12
Interior Lighting - Timeclocks and Timers	56%	56%	8	0.2	\$/sqft	0.6	0.14	0.12
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	2.0	0.19	0.11
Interior Fluorescent - Delamp and Install Reflectors	9%	30%	11	0.5	\$/sqft	1.0	0.15	0.11
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.3	0.05	0.14
Exterior Lighting - Daylighting Controls	17%	38%	8	0.0	\$/sqft	0.8	1.26	0.02
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.9	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	0%	12	250.0	\$/sqft	8,953.8	1.98	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	4.45	0.01
Refrigerator - Decommissioning	50%	0%	8	0.1	\$/sqft	5.9	1.75	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	0.2	0.10	0.10
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	0.4	0.12	0.11
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	0.8	0.00	0.15
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	2.03	0.04
Refrigerator - Floating Head Pressure	18%	38%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.31	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.86	0.01
Grocery - Display Case - LED Lighting	0%	0%	8	378.0	\$/sqft	22,291.7	1.92	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	0.9	0.01	0.17
Grocery - ECMs for Display Cases	0%	0%	15	50.0	\$/sqft	4,570.0	8.65	0.01
Grocery - Open Display Case - Night Covers	0%	0%	8	0.1	\$/sqft	0.1	0.08	0.13
Cooking - Exhaust Hoods with Sensor Control	1%	15%	15	1,494.0	\$/bldg	51,124.9	3.58	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	7%	56%	5	7,190.6	\$/bldg	37,713.8	0.10	0.12
Pool Pump - Timer	34%	34%	10	100.0	\$/bldg	20,513.8	8.82	0.00
Pool Heater - Solar	0%	34%	15	3,500.0	\$/bldg	-	0.00	-
Non-HVAC Motors - Variable Speed Control	0%	38%	10	199.3	\$/bldg	3,749.5	1.60	0.04
Energy Management System	0%	75%	15	41,951.5	\$/bldg	531,443.5	1.02	0.05
Thermostat - Clock/Programmable	50%	50%	11	1,239.8	\$/bldg	31,614.0	2.81	0.03
Lodging - Guest Room Controls	0%	0%	15	260.0	\$/sqft	3,134.1	7.06	0.05
HVAC - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	0.8	0.61	0.09
Commissioning - HVAC	40%	75%	25	0.4	\$/sqft	3.5	1.58	0.05
Commissioning - Lighting	30%	75%	5	0.0	\$/sqft	5.5	2.67	0.01
Retrocommissioning - HVAC	0%	0%	25	0.8	\$/sqft	3.5	0.79	0.06
Retrocommissioning - Lighting	0%	0%	5	0.1	\$/sqft	5.5	1.33	0.01
Advanced New Construction Designs	5%	75%	25	2.0	\$/sqft	9.3	2.98	0.06
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	1.97	0.06
Refrigerator - eCube	5%	75%	12	0.0	\$/sqft	0.5	4.70	0.01
Electronics - Smart Power Strip	7%	56%	7	0.0	\$/sqft	0.0	2.25	0.01
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	0.2	> 10	0.00
Insulation - Foundation	7%	13%	20	0.3	\$/sqft	1.2	1.64	0.07
Water Heating - Booster Water Heater	50%	50%	20	0.0	\$/sqft	0.6	8.97	0.02
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.0	\$/sqft	3.2	> 10	0.00
Boiler O2 Trim Controls	37%	49%	15	0.0	\$/sqft	0.8	6.47	0.01
Boiler Parallel Positioning Control	37%	49%	15	0.2	\$/sqft	0.8	0.45	0.08
Boiler blowdown heat exchanger (steam)	37%	49%	20	0.7	\$/sqft	2.2	0.46	0.07
Repair malfunctioning steam traps	36%	90%	6	77.0	\$/sqft	13,880.0	5.51	0.01
Insulate steam lines/condensate tank	50%	50%	12	1,302.0	\$/bldg	0.8	0.00	0.13
Destratification Fans (HVLS)	0%	33%	12	0.2	\$/sqft	7.4	2.22	0.03

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	15%	10	0.1	\$/sqft	8.3	3.88	0.01
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-55 Energy Efficiency Non-Equipment Data-Electric Grocery, Existing Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	30,233.0	\$/bldg	145,758.9	0.73	0.07
Insulation - Ducting	33%	50%	20	0.8	\$/sqft	0.1	0.06	0.10
Insulation - Radiant Barrier	0%	13%	20	7,725.0	\$/bldg	58,780.1	1.23	0.06
Insulation - Wall Cavity	7%	13%	20	17,381.7	\$/bldg	247,363.2	1.45	0.04
HVAC - Duct Repair and Sealing	5%	25%	18	31.7	\$/bldg	17,061.4	> 10	0.00
Doors - High Efficiency	0%	0%	10	0.2	\$/sqft	4.0	3.82	0.03
Windows - High Efficiency	33%	75%	20	4,270.6	\$/bldg	248,694.7	6.96	0.01
Roof - High Reflectivity	67%	95%	15	1,185.6	\$/bldg	41,221.3	7.82	0.02
Air-Cooled Chiller - Condenser Air Temperature Reset	0%	0%	10	814.4	\$/sqft	723,510.2	> 10	0.00
Air-Cooled Chiller - Economizer	0%	49%	10	813.6	\$/sqft	31,181.0	1.65	0.02
Air-Cooled Chiller - VSD on fans	0%	0%	15	1,196.5	\$/bldg	433.1	2.89	0.11
Air-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	836,586.8	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	0%	0%	15	27,671.0	\$/bldg	125,726.8	0.44	0.08
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	0%	0%	15	1,407.1	\$/sqft	44,150.2	3.75	0.02
Air-Cooled Chiller - Maintenance	33%	90%	18	3,334.5	\$/bldg	551,969.2	> 10	0.01
Water-Cooled Chiller - Condenser Water Temperature Reset	0%	0%	4	0.0	\$/sqft	6.6	> 10	0.00
Water-Cooled Chiller - Economizer	0%	49%	10	81.4	\$/sqft	31,181.0	> 10	0.00
Water-Cooled Chiller - VSD on Fans	0%	0%	15	1.2	\$/bldg	26.7	> 10	0.03
Water-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	723,510.2	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	0%	0%	15	27,671.0	\$/bldg	125,726.8	0.44	0.08
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	0%	0%	15	1,407.1	\$/sqft	44,150.2	3.75	0.02
Water-Cooled Chiller - Maintenance	33%	90%	18	3,334.5	\$/bldg	551,969.2	> 10	0.01
RTU - Evaporative Precooler	0%	18%	20	3.0	\$/sqft	3.4	0.11	0.09
RTU - Maintenance	33%	90%	18	3,334.5	\$/bldg	551,969.2	> 10	0.01
Gas Boiler - High Efficiency Hot Water Circulation	0%	34%	10	0.4	\$/sqft	1.9	0.02	0.09
Gas Boiler - Hot Water Reset	0%	0%	3	992.7	\$/sqft	1,440,300.0	1.63	0.00
Gas Boiler - Maintenance	22%	90%	3	2,039.9	\$/bldg	346,700.0	0.19	0.01
Gas Furnace - Maintenance	22%	90%	3	1,074.1	\$/bldg	27,100.0	0.03	0.04
Space Heating - Heat Recovery Ventilator	45%	49%	15	0.1	\$/sqft	8.3	9.13	0.01
Heat Pump - Maintenance	0%	95%	18	2,219.3	\$/bldg	562,750.4	> 10	0.00
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	7.6	4.85	0.02
Ventilation - Variable Speed Control	0%	81%	15	0.1	\$/sqft	4.3	5.31	0.01

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	1%	15%	15	0.2	\$/sqft	7.1	1.93	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	3.8	1.19	0.01
Water Heater - Faucet Aerators	22%	20%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	0%	0%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	2.1	0.20	0.09
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	8.3	3.28	0.00
Water Heater - Solar System	0%	25%	20	0.2	\$/sqft	31.3	> 10	0.01
Water Heater - Install Timer	22%	50%	15	0.3	\$/sqft	3.5	0.99	0.05
Water Heater - Pipe Insulation	22%	50%	12	1,556.6	\$/bldg	69,027.5	2.63	0.02
Water Heater - Tank Blanket/Insulation	40%	50%	10	0.0	\$/sqft	2.1	3.12	0.01
Water Heater - Pre-Rinse Spray Valve	22%	5%	5	100.0	\$/sqft	14,822.0	6.49	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	13.8	0.14	0.04
Interior Lighting - Daylighting Controls	22%	50%	8	0.1	\$/sqft	8.3	3.30	0.01
Interior Lighting - LED Exit Lighting	50%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	0%	56%	8	0.1	\$/sqft	2.8	1.73	0.02
Interior Lighting - Task Lighting	0%	75%	5	0.2	\$/sqft	2.9	0.17	0.07
Interior Lighting - Timeclocks and Timers	11%	56%	8	0.2	\$/sqft	1.4	0.30	0.08
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	6.4	0.57	0.06
Interior Fluorescent - Delamp and Install Reflectors	44%	49%	11	0.5	\$/sqft	2.3	0.33	0.09
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.2	0.02	0.15
Exterior Lighting - Daylighting Controls	31%	38%	8	0.0	\$/sqft	0.6	0.55	0.03
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.7	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	75%	12	250.0	\$/sqft	8,953.8	1.54	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	3.58	0.01
Refrigerator - Decommissioning	50%	25%	8	0.1	\$/sqft	5.9	1.39	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	3.8	1.52	0.04
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	9.4	2.25	0.01
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	10.2	0.00	0.15
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	1.56	0.04
Refrigerator - Floating Head Pressure	18%	38%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.18	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.38	0.01
Grocery - Display Case - LED Lighting	12%	56%	8	378.0	\$/sqft	22,291.7	1.57	0.02
Grocery - Display Case Motion Sensors	12%	56%	8	2.0	\$/sqft	34.3	0.45	0.04
Grocery - ECMs for Display Cases	12%	56%	15	50.0	\$/sqft	4,570.0	6.84	0.01
Grocery - Open Display Case - Night Covers	5%	75%	8	0.1	\$/sqft	4.6	2.51	0.01
Cooking - Exhaust Hoods with Sensor Control	1%	15%	15	1,494.0	\$/bldg	51,124.9	2.79	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	7%	56%	5	1,934.0	\$/bldg	9,072.8	0.08	0.12
Pool Pump - Timer	0%	34%	10	100.0	\$/bldg	20,513.8	8.82	0.00
Pool Heater - Solar	0%	34%	15	3,500.0	\$/bldg	-	0.00	-
Non-HVAC Motors - Variable Speed Control	0%	38%	10	199.3	\$/bldg	3,749.5	1.60	0.04
Energy Management System	0%	50%	15	11,283.6	\$/bldg	899,536.2	5.66	0.01
Thermostat - Clock/Programmable	33%	50%	11	333.5	\$/bldg	28,730.7	> 10	0.01
Lodging - Guest Room Controls	0%	0%	15	260.0	\$/sqft	3,134.1	5.58	0.05
HVAC - Occupancy Sensors	14%	56%	8	0.1	\$/sqft	1.8	2.67	0.05
Commissioning - HVAC	0%	0%	25	0.4	\$/sqft	7.9	2.80	0.03
Commissioning - Lighting	0%	0%	5	0.0	\$/sqft	12.4	4.97	0.00
Retrocommissioning - HVAC	5%	24%	25	0.8	\$/sqft	7.9	1.40	0.05
Retrocommissioning - Lighting	56%	61%	5	0.1	\$/sqft	12.4	2.49	0.01
Advanced New Construction Designs	0%	0%	25	2.0	\$/sqft	21.1	> 10	0.05
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	3.34	0.06
Refrigerator - eCube	5%	75%	12	0.0	\$/sqft	10.6	> 10	0.00
Electronics - Smart Power Strip	7%	56%	7	0.0	\$/sqft	0.0	1.79	0.01
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	0.2	> 10	0.00
Insulation - Foundation	7%	13%	20	1.4	\$/sqft	2.6	1.65	0.08
Water Heating - Booster Water Heater	22%	50%	20	0.0	\$/sqft	2.2	8.70	0.02
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.1	\$/sqft	42.6	> 10	0.00
Boiler O2 Trim Controls	0%	49%	15	0.0	\$/sqft	0.9	0.18	0.03
Boiler Parallel Positioning Control	0%	49%	15	0.7	\$/sqft	0.9	0.01	0.10
Boiler blowdown heat exchanger (steam)	0%	49%	20	2.7	\$/sqft	2.6	0.01	0.09
Repair malfunctioning steam traps	22%	90%	6	77.0	\$/sqft	13,880.0	0.47	0.01
Insulate steam lines/condensate tank	22%	50%	12	1,302.0	\$/bldg	0.9	0.00	0.13
Destratification Fans (HVLS)	0%	33%	12	0.9	\$/sqft	5.4	0.04	0.07

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	15%	10	0.4	\$/sqft	6.0	0.07	0.05
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-56 Energy Efficiency Non-Equipment Data-Natural Gas Grocery, Existing Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	30,233.0	\$/bldg	145,758.9	1.00	0.07
Insulation - Ducting	33%	50%	20	0.8	\$/sqft	0.1	0.07	0.10
Insulation - Radiant Barrier	0%	13%	20	7,725.0	\$/bldg	58,780.1	1.69	0.06
Insulation - Wall Cavity	7%	13%	20	17,381.7	\$/bldg	247,363.2	2.05	0.04
HVAC - Duct Repair and Sealing	5%	25%	18	31.7	\$/bldg	17,061.4	> 10	0.00
Doors - High Efficiency	0%	0%	10	0.2	\$/sqft	4.0	4.59	0.03
Windows - High Efficiency	33%	75%	20	4,270.6	\$/bldg	248,694.7	8.75	0.01
Roof - High Reflectivity	67%	95%	15	1,185.6	\$/bldg	41,221.3	9.87	0.02
Air-Cooled Chiller - Condenser Air Temperature Reset	0%	0%	10	814.4	\$/sqft	723,510.2	> 10	0.00
Air-Cooled Chiller - Economizer	0%	49%	10	813.6	\$/sqft	31,181.0	1.65	0.02
Air-Cooled Chiller - VSD on fans	0%	0%	15	1,196.5	\$/bldg	433.1	2.89	0.11
Air-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	836,586.8	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	0%	0%	15	27,671.0	\$/bldg	125,726.8	0.44	0.08
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	0%	0%	15	1,407.1	\$/sqft	44,150.2	3.75	0.02
Air-Cooled Chiller - Maintenance	33%	90%	18	3,334.5	\$/bldg	551,969.2	> 10	0.01
Water-Cooled Chiller - Condenser Water Temperature Reset	0%	0%	4	0.0	\$/sqft	6.6	> 10	0.00
Water-Cooled Chiller - Economizer	0%	49%	10	81.4	\$/sqft	31,181.0	> 10	0.00
Water-Cooled Chiller - VSD on Fans	0%	0%	15	1.2	\$/bldg	26.7	> 10	0.03
Water-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	723,510.2	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	0%	0%	15	27,671.0	\$/bldg	125,726.8	0.44	0.08
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	0%	0%	15	1,407.1	\$/sqft	44,150.2	3.75	0.02
Water-Cooled Chiller - Maintenance	33%	90%	18	3,334.5	\$/bldg	551,969.2	> 10	0.01
RTU - Evaporative Precooler	0%	18%	20	3.0	\$/sqft	3.4	0.14	0.09
RTU - Maintenance	33%	90%	18	3,334.5	\$/bldg	551,969.2	> 10	0.01
Gas Boiler - High Efficiency Hot Water Circulation	0%	34%	10	0.4	\$/sqft	1.9	0.25	0.09
Gas Boiler - Hot Water Reset	0%	0%	3	992.7	\$/sqft	1,440,300.0	> 10	0.00
Gas Boiler - Maintenance	22%	90%	3	2,039.9	\$/bldg	346,700.0	2.36	0.01
Gas Furnace - Maintenance	22%	90%	3	1,074.1	\$/bldg	27,100.0	0.35	0.04
Space Heating - Heat Recovery Ventilator	45%	49%	15	0.1	\$/sqft	8.3	> 10	0.01
Heat Pump - Maintenance	0%	95%	18	2,219.3	\$/bldg	562,750.4	> 10	0.00
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	7.6	6.27	0.02
Ventilation - Variable Speed Control	0%	81%	15	0.1	\$/sqft	4.3	6.81	0.01

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	1%	15%	15	0.2	\$/sqft	7.1	2.47	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	3.8	1.88	0.01
Water Heater - Faucet Aerators	22%	20%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	0%	0%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	2.1	0.28	0.09
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	8.3	4.83	0.00
Water Heater - Solar System	0%	25%	20	0.2	\$/sqft	31.3	> 10	0.01
Water Heater - Install Timer	22%	50%	15	0.3	\$/sqft	3.5	1.36	0.05
Water Heater - Pipe Insulation	22%	50%	12	1,556.6	\$/bldg	69,027.5	3.37	0.02
Water Heater - Tank Blanket/Insulation	40%	50%	10	0.0	\$/sqft	2.1	4.87	0.01
Water Heater - Pre-Rinse Spray Valve	22%	5%	5	100.0	\$/sqft	14,822.0	7.53	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	13.8	1.59	0.04
Interior Lighting - Daylighting Controls	22%	50%	8	0.1	\$/sqft	8.3	4.14	0.01
Interior Lighting - LED Exit Lighting	50%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	0%	56%	8	0.1	\$/sqft	2.8	2.17	0.02
Interior Lighting - Task Lighting	0%	75%	5	0.2	\$/sqft	2.9	0.31	0.07
Interior Lighting - Timeclocks and Timers	11%	56%	8	0.2	\$/sqft	1.4	0.38	0.08
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	6.4	0.70	0.06
Interior Fluorescent - Delamp and Install Reflectors	44%	49%	11	0.5	\$/sqft	2.3	0.41	0.09
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.2	0.04	0.15
Exterior Lighting - Daylighting Controls	31%	38%	8	0.0	\$/sqft	0.6	0.99	0.03
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.7	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	75%	12	250.0	\$/sqft	8,953.8	1.98	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	4.45	0.01
Refrigerator - Decommissioning	50%	25%	8	0.1	\$/sqft	5.9	1.75	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	3.8	1.97	0.04
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	9.4	3.05	0.01
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	10.2	0.00	0.15
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	2.03	0.04
Refrigerator - Floating Head Pressure	18%	38%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.31	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.86	0.01
Grocery - Display Case - LED Lighting	12%	56%	8	378.0	\$/sqft	22,291.7	1.92	0.02
Grocery - Display Case Motion Sensors	12%	56%	8	2.0	\$/sqft	34.3	0.56	0.04
Grocery - ECMs for Display Cases	12%	56%	15	50.0	\$/sqft	4,570.0	8.65	0.01
Grocery - Open Display Case - Night Covers	5%	75%	8	0.1	\$/sqft	4.6	3.02	0.01
Cooking - Exhaust Hoods with Sensor Control	1%	15%	15	1,494.0	\$/bldg	51,124.9	3.58	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	7%	56%	5	1,934.0	\$/bldg	9,072.8	0.09	0.12
Pool Pump - Timer	0%	34%	10	100.0	\$/bldg	20,513.8	8.82	0.00
Pool Heater - Solar	0%	34%	15	3,500.0	\$/bldg	-	0.00	-
Non-HVAC Motors - Variable Speed Control	0%	38%	10	199.3	\$/bldg	3,749.5	1.60	0.04
Energy Management System	0%	50%	15	11,283.6	\$/bldg	899,536.2	7.07	0.01
Thermostat - Clock/Programmable	33%	50%	11	333.5	\$/bldg	28,730.7	> 10	0.01
Lodging - Guest Room Controls	0%	0%	15	260.0	\$/sqft	3,134.1	7.06	0.05
HVAC - Occupancy Sensors	14%	56%	8	0.1	\$/sqft	1.8	3.21	0.05
Commissioning - HVAC	0%	0%	25	0.4	\$/sqft	7.9	3.58	0.03
Commissioning - Lighting	0%	0%	5	0.0	\$/sqft	12.4	6.01	0.00
Retrocommissioning - HVAC	5%	24%	25	0.8	\$/sqft	7.9	1.79	0.05
Retrocommissioning - Lighting	56%	61%	5	0.1	\$/sqft	12.4	3.00	0.01
Advanced New Construction Designs	0%	0%	25	2.0	\$/sqft	21.1	> 10	0.05
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	3.82	0.06
Refrigerator - eCube	5%	75%	12	0.0	\$/sqft	10.6	> 10	0.00
Electronics - Smart Power Strip	7%	56%	7	0.0	\$/sqft	0.0	2.01	0.01
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	0.2	> 10	0.00
Insulation - Foundation	7%	13%	20	1.4	\$/sqft	2.6	2.11	0.08
Water Heating - Booster Water Heater	22%	50%	20	0.0	\$/sqft	2.2	8.79	0.02
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.1	\$/sqft	42.6	> 10	0.00
Boiler O2 Trim Controls	0%	49%	15	0.0	\$/sqft	0.9	2.01	0.03
Boiler Parallel Positioning Control	0%	49%	15	0.7	\$/sqft	0.9	0.14	0.10
Boiler blowdown heat exchanger (steam)	0%	49%	20	2.7	\$/sqft	2.6	0.14	0.09
Repair malfunctioning steam traps	22%	90%	6	77.0	\$/sqft	13,880.0	5.51	0.01
Insulate steam lines/condensate tank	22%	50%	12	1,302.0	\$/bldg	0.9	0.00	0.13
Destratification Fans (HVLS)	0%	33%	12	0.9	\$/sqft	5.4	0.44	0.07

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	15%	10	0.4	\$/sqft	6.0	0.76	0.05
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-57 Energy Efficiency Non-Equipment Data-Electric Grocery, New Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	30,233.0	\$/bldg	86,078.5	0.38	0.08
Insulation - Ducting	33%	50%	20	0.8	\$/sqft	0.1	0.05	0.10
Insulation - Radiant Barrier	0%	13%	20	7,725.0	\$/bldg	28,949.4	0.49	0.07
Insulation - Wall Cavity	7%	13%	20	17,381.7	\$/bldg	105,885.0	0.67	0.06
HVAC - Duct Repair and Sealing	25%	25%	18	31.7	\$/bldg	14,764.5	> 10	0.00
Doors - High Efficiency	100%	100%	10	0.2	\$/sqft	3.4	3.65	0.03
Windows - High Efficiency	33%	75%	20	4,270.6	\$/bldg	159,094.5	4.38	0.02
Roof - High Reflectivity	67%	95%	15	1,185.6	\$/bldg	21,573.7	4.26	0.04
Air-Cooled Chiller - Condenser Air Temperature Reset	0%	0%	10	814.4	\$/sqft	311,775.5	> 10	0.00
Air-Cooled Chiller - Economizer	37%	49%	10	813.6	\$/sqft	25,163.6	1.33	0.03
Air-Cooled Chiller - VSD on fans	0%	0%	15	1,196.5	\$/bldg	1,287.8	2.62	0.10
Air-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	367,516.0	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	0%	0%	15	27,671.0	\$/bldg	134,798.4	0.43	0.07
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	0%	0%	15	1,407.1	\$/sqft	18,188.9	1.93	0.05
Air-Cooled Chiller - Maintenance	33%	90%	18	3,334.5	\$/bldg	372,336.8	> 10	0.01
Water-Cooled Chiller - Condenser Water Temperature Reset	0%	0%	4	0.0	\$/sqft	4.1	> 10	0.00
Water-Cooled Chiller - Economizer	37%	49%	10	81.4	\$/sqft	25,163.6	> 10	0.00
Water-Cooled Chiller - VSD on Fans	0%	0%	15	1.2	\$/bldg	21.7	9.26	0.04
Water-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	311,775.5	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	0%	0%	15	27,671.0	\$/bldg	134,798.4	0.43	0.07
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	0%	0%	15	1,407.1	\$/sqft	18,188.9	1.93	0.05
Water-Cooled Chiller - Maintenance	33%	90%	18	3,334.5	\$/bldg	372,336.8	> 10	0.01
RTU - Evaporative Precooler	0%	14%	20	3.0	\$/sqft	2.5	0.10	0.09
RTU - Maintenance	33%	90%	18	3,334.5	\$/bldg	372,336.8	> 10	0.01
Gas Boiler - High Efficiency Hot Water Circulation	5%	34%	10	0.4	\$/sqft	1.2	0.01	0.11
Gas Boiler - Hot Water Reset	0%	0%	3	992.7	\$/sqft	978,400.0	1.11	0.00
Gas Boiler - Maintenance	22%	90%	3	2,039.9	\$/bldg	228,900.0	0.13	0.01
Gas Furnace - Maintenance	22%	90%	3	1,074.1	\$/bldg	47,400.0	0.05	0.02
Space Heating - Heat Recovery Ventilator	45%	49%	15	0.1	\$/sqft	5.9	6.30	0.01
Heat Pump - Maintenance	0%	95%	18	2,219.3	\$/bldg	388,656.6	> 10	0.01
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	11.5	9.13	0.01
Ventilation - Variable Speed Control	0%	81%	15	0.1	\$/sqft	6.6	9.95	0.01

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	12%	15%	15	0.2	\$/sqft	7.1	2.39	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	3.6	1.14	0.01
Water Heater - Faucet Aerators	22%	20%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	0%	0%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	2.0	0.20	0.09
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	7.9	3.14	0.00
Water Heater - Solar System	0%	25%	20	0.2	\$/sqft	29.7	> 10	0.01
Water Heater - Install Timer	50%	50%	15	0.3	\$/sqft	3.4	0.95	0.05
Water Heater - Pipe Insulation	50%	50%	12	1,556.6	\$/bldg	69,079.0	2.63	0.02
Water Heater - Tank Blanket/Insulation	40%	50%	10	0.0	\$/sqft	2.0	2.99	0.01
Water Heater - Pre-Rinse Spray Valve	22%	5%	5	100.0	\$/sqft	14,822.0	6.55	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	8.5	0.09	0.05
Interior Lighting - Daylighting Controls	75%	75%	8	0.1	\$/sqft	8.2	3.95	0.01
Interior Lighting - LED Exit Lighting	86%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	2.7	2.07	0.02
Interior Lighting - Task Lighting	0%	75%	5	0.2	\$/sqft	2.8	0.29	0.07
Interior Lighting - Timeclocks and Timers	56%	56%	8	0.2	\$/sqft	1.4	0.36	0.08
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	6.3	0.68	0.06
Interior Fluorescent - Delamp and Install Reflectors	44%	49%	11	0.5	\$/sqft	2.3	0.39	0.09
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.2	0.04	0.15
Exterior Lighting - Daylighting Controls	31%	38%	8	0.0	\$/sqft	0.6	0.97	0.03
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.7	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	75%	12	250.0	\$/sqft	8,953.8	1.94	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	4.39	0.01
Refrigerator - Decommissioning	50%	25%	8	0.1	\$/sqft	5.9	1.71	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	1.6	0.83	0.06
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	9.4	2.99	0.01
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	10.2	0.00	0.15
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	1.97	0.04
Refrigerator - Floating Head Pressure	18%	38%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.30	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.42	0.01
Grocery - Display Case - LED Lighting	12%	56%	8	378.0	\$/sqft	22,291.7	1.89	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	34.3	0.55	0.04
Grocery - ECMs for Display Cases	12%	56%	15	50.0	\$/sqft	4,570.0	8.50	0.01
Grocery - Open Display Case - Night Covers	5%	75%	8	0.1	\$/sqft	4.6	2.97	0.01
Cooking - Exhaust Hoods with Sensor Control	1%	15%	15	1,494.0	\$/bldg	51,124.9	3.45	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	7%	56%	5	1,934.0	\$/bldg	9,072.8	0.08	0.12
Pool Pump - Timer	34%	34%	10	100.0	\$/bldg	20,513.8	8.82	0.00
Pool Heater - Solar	0%	34%	15	3,500.0	\$/bldg	-	0.00	-
Non-HVAC Motors - Variable Speed Control	0%	38%	10	199.3	\$/bldg	3,749.5	1.59	0.04
Energy Management System	0%	50%	15	11,283.6	\$/bldg	531,443.5	3.68	0.02
Thermostat - Clock/Programmable	50%	50%	11	333.5	\$/bldg	11,362.4	7.71	0.02
Lodging - Guest Room Controls	0%	0%	15	260.0	\$/sqft	3,134.1	7.03	0.05
HVAC - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	1.4	2.50	0.07
Commissioning - HVAC	40%	75%	25	0.4	\$/sqft	6.2	2.77	0.04
Commissioning - Lighting	30%	75%	5	0.0	\$/sqft	12.3	5.76	0.00
Retrocommissioning - HVAC	0%	0%	25	0.8	\$/sqft	6.2	1.39	0.05
Retrocommissioning - Lighting	0%	0%	5	0.1	\$/sqft	12.3	2.88	0.01
Advanced New Construction Designs	5%	75%	25	2.0	\$/sqft	16.5	> 10	0.05
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	3.66	0.06
Refrigerator - eCube	5%	75%	12	0.0	\$/sqft	10.6	> 10	0.00
Electronics - Smart Power Strip	7%	56%	7	0.0	\$/sqft	0.0	1.88	0.01
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	0.2	> 10	0.00
Insulation - Foundation	7%	13%	20	0.3	\$/sqft	2.1	6.93	0.06
Water Heating - Booster Water Heater	50%	50%	20	0.0	\$/sqft	2.1	8.35	0.02
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.1	\$/sqft	42.6	> 10	0.00
Boiler O2 Trim Controls	37%	49%	15	0.0	\$/sqft	0.6	0.11	0.05
Boiler Parallel Positioning Control	37%	49%	15	0.7	\$/sqft	0.6	0.01	0.10
Boiler blowdown heat exchanger (steam)	37%	49%	20	2.7	\$/sqft	1.6	0.01	0.09
Repair malfunctioning steam traps	22%	90%	6	77.0	\$/sqft	13,880.0	0.47	0.01
Insulate steam lines/condensate tank	50%	50%	12	1,302.0	\$/bldg	0.6	0.00	0.13
Destratification Fans (HVLS)	0%	33%	12	0.9	\$/sqft	4.0	0.03	0.08

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	15%	10	0.4	\$/sqft	4.5	0.05	0.06
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-58 Energy Efficiency Non-Equipment Data-Natural Gas Grocery, New Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	30,233.0	\$/bldg	86,078.5	0.49	0.08
Insulation - Ducting	33%	50%	20	0.8	\$/sqft	0.1	0.05	0.10
Insulation - Radiant Barrier	0%	13%	20	7,725.0	\$/bldg	28,949.4	0.63	0.07
Insulation - Wall Cavity	7%	13%	20	17,381.7	\$/bldg	105,885.0	0.87	0.06
HVAC - Duct Repair and Sealing	25%	25%	18	31.7	\$/bldg	14,764.5	> 10	0.00
Doors - High Efficiency	100%	100%	10	0.2	\$/sqft	3.4	3.67	0.03
Windows - High Efficiency	33%	75%	20	4,270.6	\$/bldg	159,094.5	4.86	0.02
Roof - High Reflectivity	67%	95%	15	1,185.6	\$/bldg	21,573.7	4.28	0.04
Air-Cooled Chiller - Condenser Air Temperature Reset	0%	0%	10	814.4	\$/sqft	311,775.5	> 10	0.00
Air-Cooled Chiller - Economizer	37%	49%	10	813.6	\$/sqft	25,163.6	1.33	0.03
Air-Cooled Chiller - VSD on fans	0%	0%	15	1,196.5	\$/bldg	1,287.8	2.62	0.10
Air-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	367,516.0	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	0%	0%	15	27,671.0	\$/bldg	134,798.4	0.43	0.07
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	0%	0%	15	1,407.1	\$/sqft	18,188.9	1.93	0.05
Air-Cooled Chiller - Maintenance	33%	90%	18	3,334.5	\$/bldg	372,336.8	> 10	0.01
Water-Cooled Chiller - Condenser Water Temperature Reset	0%	0%	4	0.0	\$/sqft	4.1	> 10	0.00
Water-Cooled Chiller - Economizer	37%	49%	10	81.4	\$/sqft	25,163.6	> 10	0.00
Water-Cooled Chiller - VSD on Fans	0%	0%	15	1.2	\$/bldg	21.7	9.26	0.04
Water-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	311,775.5	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	0%	0%	15	27,671.0	\$/bldg	134,798.4	0.43	0.07
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	0%	0%	15	1,407.1	\$/sqft	18,188.9	1.93	0.05
Water-Cooled Chiller - Maintenance	33%	90%	18	3,334.5	\$/bldg	372,336.8	> 10	0.01
RTU - Evaporative Precooler	0%	14%	20	3.0	\$/sqft	2.5	0.10	0.09
RTU - Maintenance	33%	90%	18	3,334.5	\$/bldg	372,336.8	> 10	0.01
Gas Boiler - High Efficiency Hot Water Circulation	5%	34%	10	0.4	\$/sqft	1.2	0.15	0.11
Gas Boiler - Hot Water Reset	0%	0%	3	992.7	\$/sqft	978,400.0	> 10	0.00
Gas Boiler - Maintenance	22%	90%	3	2,039.9	\$/bldg	228,900.0	1.56	0.01
Gas Furnace - Maintenance	22%	90%	3	1,074.1	\$/bldg	47,400.0	0.61	0.02
Space Heating - Heat Recovery Ventilator	45%	49%	15	0.1	\$/sqft	5.9	9.39	0.01
Heat Pump - Maintenance	0%	95%	18	2,219.3	\$/bldg	388,656.6	> 10	0.01
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	11.5	9.50	0.01
Ventilation - Variable Speed Control	0%	81%	15	0.1	\$/sqft	6.6	> 10	0.01

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	12%	15%	15	0.2	\$/sqft	7.1	2.47	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	3.6	1.81	0.01
Water Heater - Faucet Aerators	22%	20%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	0%	0%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	2.0	0.27	0.09
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	7.9	4.65	0.00
Water Heater - Solar System	0%	25%	20	0.2	\$/sqft	29.7	> 10	0.01
Water Heater - Install Timer	50%	50%	15	0.3	\$/sqft	3.4	1.31	0.05
Water Heater - Pipe Insulation	50%	50%	12	1,556.6	\$/bldg	69,079.0	3.43	0.02
Water Heater - Tank Blanket/Insulation	40%	50%	10	0.0	\$/sqft	2.0	4.72	0.01
Water Heater - Pre-Rinse Spray Valve	22%	5%	5	100.0	\$/sqft	14,822.0	7.58	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	8.5	1.00	0.05
Interior Lighting - Daylighting Controls	75%	75%	8	0.1	\$/sqft	8.2	4.10	0.01
Interior Lighting - LED Exit Lighting	86%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	2.7	2.15	0.02
Interior Lighting - Task Lighting	0%	75%	5	0.2	\$/sqft	2.8	0.31	0.07
Interior Lighting - Timeclocks and Timers	56%	56%	8	0.2	\$/sqft	1.4	0.38	0.08
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	6.3	0.70	0.06
Interior Fluorescent - Delamp and Install Reflectors	44%	49%	11	0.5	\$/sqft	2.3	0.41	0.09
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.2	0.04	0.15
Exterior Lighting - Daylighting Controls	31%	38%	8	0.0	\$/sqft	0.6	0.98	0.03
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.7	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	75%	12	250.0	\$/sqft	8,953.8	1.98	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	4.45	0.01
Refrigerator - Decommissioning	50%	25%	8	0.1	\$/sqft	5.9	1.75	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	1.6	0.86	0.06
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	9.4	3.05	0.01
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	10.2	0.00	0.15
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	2.03	0.04
Refrigerator - Floating Head Pressure	18%	38%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.31	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.86	0.01
Grocery - Display Case - LED Lighting	12%	56%	8	378.0	\$/sqft	22,291.7	1.92	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	34.3	0.56	0.04
Grocery - ECMs for Display Cases	12%	56%	15	50.0	\$/sqft	4,570.0	8.65	0.01
Grocery - Open Display Case - Night Covers	5%	75%	8	0.1	\$/sqft	4.6	3.02	0.01
Cooking - Exhaust Hoods with Sensor Control	1%	15%	15	1,494.0	\$/bldg	51,124.9	3.58	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	7%	56%	5	1,934.0	\$/bldg	9,072.8	0.09	0.12
Pool Pump - Timer	34%	34%	10	100.0	\$/bldg	20,513.8	8.82	0.00
Pool Heater - Solar	0%	34%	15	3,500.0	\$/bldg	-	0.00	-
Non-HVAC Motors - Variable Speed Control	0%	38%	10	199.3	\$/bldg	3,749.5	1.60	0.04
Energy Management System	0%	50%	15	11,283.6	\$/bldg	531,443.5	3.79	0.02
Thermostat - Clock/Programmable	50%	50%	11	333.5	\$/bldg	11,362.4	7.75	0.02
Lodging - Guest Room Controls	0%	0%	15	260.0	\$/sqft	3,134.1	7.06	0.05
HVAC - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	1.4	2.51	0.07
Commissioning - HVAC	40%	75%	25	0.4	\$/sqft	6.2	2.79	0.04
Commissioning - Lighting	30%	75%	5	0.0	\$/sqft	12.3	5.95	0.00
Retrocommissioning - HVAC	0%	0%	25	0.8	\$/sqft	6.2	1.39	0.05
Retrocommissioning - Lighting	0%	0%	5	0.1	\$/sqft	12.3	2.97	0.01
Advanced New Construction Designs	5%	75%	25	2.0	\$/sqft	16.5	> 10	0.05
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	3.34	0.06
Refrigerator - eCube	5%	75%	12	0.0	\$/sqft	10.6	> 10	0.00
Electronics - Smart Power Strip	7%	56%	7	0.0	\$/sqft	0.0	2.01	0.01
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	0.2	> 10	0.00
Insulation - Foundation	7%	13%	20	0.3	\$/sqft	2.1	6.96	0.06
Water Heating - Booster Water Heater	50%	50%	20	0.0	\$/sqft	2.1	8.35	0.02
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.1	\$/sqft	42.6	> 10	0.00
Boiler O2 Trim Controls	37%	49%	15	0.0	\$/sqft	0.6	1.23	0.05
Boiler Parallel Positioning Control	37%	49%	15	0.7	\$/sqft	0.6	0.09	0.10
Boiler blowdown heat exchanger (steam)	37%	49%	20	2.7	\$/sqft	1.6	0.09	0.09
Repair malfunctioning steam traps	22%	90%	6	77.0	\$/sqft	13,880.0	5.51	0.01
Insulate steam lines/condensate tank	50%	50%	12	1,302.0	\$/bldg	0.6	0.00	0.13
Destratification Fans (HVLS)	0%	33%	12	0.9	\$/sqft	4.0	0.32	0.08

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	15%	10	0.4	\$/sqft	4.5	0.57	0.06
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-59 Energy Efficiency Non-Equipment Data-Electric College, Existing Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	2%	13%	20	84,147.3	\$/bldg	761,541.5	0.96	0.05
Insulation - Ducting	56%	61%	20	0.8	\$/sqft	1.3	0.61	0.08
Insulation - Radiant Barrier	2%	13%	20	21,500.9	\$/bldg	289,637.8	1.42	0.04
Insulation - Wall Cavity	2%	13%	20	19,567.9	\$/bldg	318,121.5	1.47	0.04
HVAC - Duct Repair and Sealing	5%	25%	18	123.6	\$/bldg	75,034.9	> 10	0.00
Doors - High Efficiency	0%	0%	10	0.2	\$/sqft	4.1	1.67	0.03
Windows - High Efficiency	44%	100%	20	11,849.0	\$/bldg	526,064.9	7.84	0.02
Roof - High Reflectivity	22%	95%	15	3,299.9	\$/bldg	119,276.3	5.95	0.02
Air-Cooled Chiller - Condenser Air Temperature Reset	30%	75%	10	814.4	\$/sqft	403,118.9	> 10	0.00
Air-Cooled Chiller - Economizer	11%	81%	10	813.6	\$/sqft	20,889.9	1.02	0.03
Air-Cooled Chiller - VSD on fans	3%	75%	15	4,665.3	\$/bldg	2,894.7	0.15	0.11
Air-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	-	0.00	-
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	-	0.00	-
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	25%	37%	15	1,407.1	\$/sqft	44,150.2	3.40	0.02
Air-Cooled Chiller - Maintenance	44%	90%	18	9,281.0	\$/bldg	260,342.9	> 10	0.03
Water-Cooled Chiller - Condenser Water Temperature Reset	30%	75%	4	0.0	\$/sqft	5.2	> 10	0.00
Water-Cooled Chiller - Economizer	11%	81%	10	81.4	\$/sqft	20,889.9	8.94	0.00
Water-Cooled Chiller - VSD on Fans	3%	75%	15	1.2	\$/bldg	18.7	2.16	0.04
Water-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	403,118.9	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	-	0.00	-
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	25%	37%	15	1,407.1	\$/sqft	44,150.2	2.91	0.02
Water-Cooled Chiller - Maintenance	44%	90%	18	9,281.0	\$/bldg	260,342.9	> 10	0.03
RTU - Evaporative Precooler	0%	5%	20	3.0	\$/sqft	1.2	0.04	0.09
RTU - Maintenance	44%	90%	18	9,281.0	\$/bldg	260,342.9	> 10	0.03
Gas Boiler - High Efficiency Hot Water Circulation	1%	34%	10	0.4	\$/sqft	1.8	0.02	0.09
Gas Boiler - Hot Water Reset	30%	75%	3	992.7	\$/sqft	1,758,300.0	1.99	0.00
Gas Boiler - Maintenance	0%	90%	3	2,039.9	\$/bldg	1,181,200.0	0.65	0.00
Gas Furnace - Maintenance	0%	90%	3	5,291.5	\$/bldg	749,700.0	0.16	0.01
Space Heating - Heat Recovery Ventilator	73%	81%	15	0.0	\$/sqft	12.1	> 10	0.00
Heat Pump - Maintenance	33%	95%	18	8,653.1	\$/bldg	1,048,699.4	> 10	0.01
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	3.5	2.09	0.03
Ventilation - Variable Speed Control	0%	81%	15	0.0	\$/sqft	2.0	6.35	0.01

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	1%	8%	15	0.2	\$/sqft	7.1	1.81	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	3.6	0.85	0.01
Water Heater - Faucet Aerators	56%	20%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	56%	5%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	2.0	0.14	0.09
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	8.0	2.34	0.00
Water Heater - Solar System	0%	25%	20	0.1	\$/sqft	29.8	> 10	0.00
Water Heater - Install Timer	44%	49%	15	0.3	\$/sqft	3.4	0.70	0.05
Water Heater - Pipe Insulation	44%	49%	12	2,596.9	\$/bldg	52,997.6	1.10	0.04
Water Heater - Tank Blanket/Insulation	0%	0%	10	0.0	\$/sqft	2.0	2.22	0.01
Water Heater - Pre-Rinse Spray Valve	56%	5%	5	100.0	\$/sqft	14,822.0	6.49	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	13.3	0.14	0.04
Interior Lighting - Daylighting Controls	0%	10%	8	0.1	\$/sqft	4.2	1.69	0.02
Interior Lighting - LED Exit Lighting	50%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	11%	56%	8	0.1	\$/sqft	1.4	0.89	0.04
Interior Lighting - Task Lighting	11%	75%	5	0.2	\$/sqft	1.5	0.14	0.11
Interior Lighting - Timeclocks and Timers	0%	56%	8	0.2	\$/sqft	0.7	0.16	0.11
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	2.6	0.23	0.09
Interior Fluorescent - Delamp and Install Reflectors	56%	61%	11	0.5	\$/sqft	1.2	0.17	0.11
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.1	0.01	0.17
Exterior Lighting - Daylighting Controls	6%	38%	8	0.0	\$/sqft	0.3	0.36	0.05
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.3	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	0%	12	250.0	\$/sqft	8,953.8	1.47	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	3.58	0.01
Refrigerator - Decommissioning	50%	0%	8	0.1	\$/sqft	5.9	1.34	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	0.1	0.03	0.10
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	0.2	0.03	0.14
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	0.3	0.00	0.15
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	1.47	0.04
Refrigerator - Floating Head Pressure	38%	45%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.17	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.38	0.01
Grocery - Display Case - LED Lighting	0%	0%	8	378.0	\$/sqft	22,291.7	1.57	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	0.3	0.00	0.18
Grocery - ECMs for Display Cases	0%	0%	15	50.0	\$/sqft	4,570.0	6.84	0.01
Grocery - Open Display Case - Night Covers	0%	0%	8	0.1	\$/sqft	0.0	0.02	0.16
Cooking - Exhaust Hoods with Sensor Control	1%	8%	15	1,494.0	\$/bldg	51,124.9	2.61	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	42%	56%	5	5,383.0	\$/bldg	54,396.4	0.17	0.07
Pool Pump - Timer	11%	34%	10	100.0	\$/bldg	20,513.8	9.00	0.00
Pool Heater - Solar	0%	34%	15	3,500.0	\$/bldg	0.0	0.00	0.11
Non-HVAC Motors - Variable Speed Control	11%	38%	10	199.3	\$/bldg	3,749.5	1.60	0.04
Energy Management System	44%	90%	15	31,405.5	\$/bldg	1,396,350.3	2.71	0.02
Thermostat - Clock/Programmable	44%	50%	11	928.1	\$/bldg	248,159.9	> 10	0.00
Lodging - Guest Room Controls	0%	0%	15	260.0	\$/sqft	3,134.1	5.68	0.05
HVAC - Occupancy Sensors	14%	56%	8	0.1	\$/sqft	1.0	0.68	0.08
Commissioning - HVAC	0%	0%	25	0.4	\$/sqft	4.6	1.64	0.04
Commissioning - Lighting	0%	0%	5	0.0	\$/sqft	6.3	2.76	0.01
Retrocommissioning - HVAC	5%	36%	25	0.8	\$/sqft	4.6	0.82	0.06
Retrocommissioning - Lighting	67%	72%	5	0.1	\$/sqft	6.3	1.38	0.01
Advanced New Construction Designs	0%	0%	25	2.0	\$/sqft	12.2	3.13	0.06
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	2.09	0.06
Refrigerator - eCube	5%	75%	12	0.0	\$/sqft	0.2	1.03	0.03
Electronics - Smart Power Strip	42%	56%	7	0.0	\$/sqft	0.0	4.03	0.01
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	0.6	> 10	0.00
Insulation - Foundation	2%	13%	20	1.4	\$/sqft	1.5	0.41	0.09
Water Heating - Booster Water Heater	44%	49%	20	0.0	\$/sqft	1.5	> 10	0.01
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.0	\$/sqft	1.2	> 10	0.00
Boiler O2 Trim Controls	11%	81%	15	0.0	\$/sqft	0.9	0.47	0.02
Boiler Parallel Positioning Control	11%	81%	15	0.2	\$/sqft	0.9	0.03	0.08
Boiler blowdown heat exchanger (steam)	11%	81%	20	1.0	\$/sqft	2.5	0.03	0.08
Repair malfunctioning steam traps	0%	90%	6	77.0	\$/sqft	13,880.0	0.47	0.01
Insulate steam lines/condensate tank	44%	49%	12	1,302.0	\$/bldg	0.9	0.00	0.13
Destratification Fans (HVLS)	0%	33%	12	0.3	\$/sqft	5.8	0.11	0.04

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	8%	10	0.2	\$/sqft	6.5	0.20	0.02
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-60 Energy Efficiency Non-Equipment Data-Natural Gas College, Existing Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	2%	13%	20	84,147.3	\$/bldg	761,541.5	1.36	0.05
Insulation - Ducting	56%	61%	20	0.8	\$/sqft	1.3	0.77	0.08
Insulation - Radiant Barrier	2%	13%	20	21,500.9	\$/bldg	289,637.8	2.03	0.04
Insulation - Wall Cavity	2%	13%	20	19,567.9	\$/bldg	318,121.5	2.14	0.04
HVAC - Duct Repair and Sealing	5%	25%	18	123.6	\$/bldg	75,034.9	> 10	0.00
Doors - High Efficiency	0%	0%	10	0.2	\$/sqft	4.1	1.86	0.03
Windows - High Efficiency	44%	100%	20	11,849.0	\$/bldg	526,064.9	8.98	0.02
Roof - High Reflectivity	22%	95%	15	3,299.9	\$/bldg	119,276.3	7.37	0.02
Air-Cooled Chiller - Condenser Air Temperature Reset	30%	75%	10	814.4	\$/sqft	403,118.9	> 10	0.00
Air-Cooled Chiller - Economizer	11%	81%	10	813.6	\$/sqft	20,889.9	1.10	0.03
Air-Cooled Chiller - VSD on fans	3%	75%	15	4,665.3	\$/bldg	2,894.7	0.17	0.11
Air-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	-	0.00	-
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	-	0.00	-
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	25%	37%	15	1,407.1	\$/sqft	44,150.2	3.75	0.02
Air-Cooled Chiller - Maintenance	44%	90%	18	9,281.0	\$/bldg	260,342.9	> 10	0.03
Water-Cooled Chiller - Condenser Water Temperature Reset	30%	75%	4	0.0	\$/sqft	5.2	> 10	0.00
Water-Cooled Chiller - Economizer	11%	81%	10	81.4	\$/sqft	20,889.9	> 10	0.00
Water-Cooled Chiller - VSD on Fans	3%	75%	15	1.2	\$/bldg	18.7	2.79	0.04
Water-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	403,118.9	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	-	0.00	-
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	25%	37%	15	1,407.1	\$/sqft	44,150.2	3.75	0.02
Water-Cooled Chiller - Maintenance	44%	90%	18	9,281.0	\$/bldg	260,342.9	> 10	0.03
RTU - Evaporative Precooler	0%	5%	20	3.0	\$/sqft	1.2	0.05	0.09
RTU - Maintenance	44%	90%	18	9,281.0	\$/bldg	260,342.9	> 10	0.03
Gas Boiler - High Efficiency Hot Water Circulation	1%	34%	10	0.4	\$/sqft	1.8	0.19	0.09
Gas Boiler - Hot Water Reset	30%	75%	3	992.7	\$/sqft	1,758,300.0	> 10	0.00
Gas Boiler - Maintenance	0%	90%	3	2,039.9	\$/bldg	1,181,200.0	6.74	0.00
Gas Furnace - Maintenance	0%	90%	3	5,291.5	\$/bldg	749,700.0	1.95	0.01
Space Heating - Heat Recovery Ventilator	73%	81%	15	0.0	\$/sqft	12.1	> 10	0.00
Heat Pump - Maintenance	33%	95%	18	8,653.1	\$/bldg	1,048,699.4	> 10	0.01
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	3.5	2.89	0.03
Ventilation - Variable Speed Control	0%	81%	15	0.0	\$/sqft	2.0	8.73	0.01

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	1%	8%	15	0.2	\$/sqft	7.1	2.47	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	3.6	1.90	0.01
Water Heater - Faucet Aerators	56%	20%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	56%	5%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	2.0	0.27	0.09
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	8.0	4.68	0.00
Water Heater - Solar System	0%	25%	20	0.1	\$/sqft	29.8	> 10	0.00
Water Heater - Install Timer	44%	49%	15	0.3	\$/sqft	3.4	1.26	0.05
Water Heater - Pipe Insulation	44%	49%	12	2,596.9	\$/bldg	52,997.6	1.46	0.04
Water Heater - Tank Blanket/Insulation	0%	0%	10	0.0	\$/sqft	2.0	4.89	0.01
Water Heater - Pre-Rinse Spray Valve	56%	5%	5	100.0	\$/sqft	14,822.0	7.54	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	13.3	1.39	0.04
Interior Lighting - Daylighting Controls	0%	10%	8	0.1	\$/sqft	4.2	1.92	0.02
Interior Lighting - LED Exit Lighting	50%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	11%	56%	8	0.1	\$/sqft	1.4	1.00	0.04
Interior Lighting - Task Lighting	11%	75%	5	0.2	\$/sqft	1.5	0.15	0.11
Interior Lighting - Timeclocks and Timers	0%	56%	8	0.2	\$/sqft	0.7	0.18	0.11
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	2.6	0.26	0.09
Interior Fluorescent - Delamp and Install Reflectors	56%	61%	11	0.5	\$/sqft	1.2	0.19	0.11
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.1	0.02	0.17
Exterior Lighting - Daylighting Controls	6%	38%	8	0.0	\$/sqft	0.3	0.46	0.05
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.3	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	0%	12	250.0	\$/sqft	8,953.8	1.98	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	4.45	0.01
Refrigerator - Decommissioning	50%	0%	8	0.1	\$/sqft	5.9	1.75	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	0.1	0.05	0.10
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	0.2	0.05	0.14
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	0.3	0.00	0.15
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	2.03	0.04
Refrigerator - Floating Head Pressure	38%	45%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.31	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.86	0.01
Grocery - Display Case - LED Lighting	0%	0%	8	378.0	\$/sqft	22,291.7	1.92	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	0.3	0.01	0.18
Grocery - ECMs for Display Cases	0%	0%	15	50.0	\$/sqft	4,570.0	8.65	0.01
Grocery - Open Display Case - Night Covers	0%	0%	8	0.1	\$/sqft	0.0	0.03	0.16
Cooking - Exhaust Hoods with Sensor Control	1%	8%	15	1,494.0	\$/bldg	51,124.9	3.58	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	42%	56%	5	5,383.0	\$/bldg	54,396.4	0.18	0.07
Pool Pump - Timer	11%	34%	10	100.0	\$/bldg	20,513.8	8.82	0.00
Pool Heater - Solar	0%	34%	15	3,500.0	\$/bldg	0.0	0.00	0.11
Non-HVAC Motors - Variable Speed Control	11%	38%	10	199.3	\$/bldg	3,749.5	1.60	0.04
Energy Management System	44%	90%	15	31,405.5	\$/bldg	1,396,350.3	3.54	0.02
Thermostat - Clock/Programmable	44%	50%	11	928.1	\$/bldg	248,159.9	> 10	0.00
Lodging - Guest Room Controls	0%	0%	15	260.0	\$/sqft	3,134.1	7.06	0.05
HVAC - Occupancy Sensors	14%	56%	8	0.1	\$/sqft	1.0	0.81	0.08
Commissioning - HVAC	0%	0%	25	0.4	\$/sqft	4.6	2.06	0.04
Commissioning - Lighting	0%	0%	5	0.0	\$/sqft	6.3	3.06	0.01
Retrocommissioning - HVAC	5%	36%	25	0.8	\$/sqft	4.6	1.03	0.06
Retrocommissioning - Lighting	67%	72%	5	0.1	\$/sqft	6.3	1.53	0.01
Advanced New Construction Designs	0%	0%	25	2.0	\$/sqft	12.2	3.95	0.06
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	2.08	0.06
Refrigerator - eCube	5%	75%	12	0.0	\$/sqft	0.2	1.38	0.03
Electronics - Smart Power Strip	42%	56%	7	0.0	\$/sqft	0.0	4.34	0.01
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	0.6	> 10	0.00
Insulation - Foundation	2%	13%	20	1.4	\$/sqft	1.5	0.51	0.09
Water Heating - Booster Water Heater	44%	49%	20	0.0	\$/sqft	1.5	> 10	0.01
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.0	\$/sqft	1.2	> 10	0.00
Boiler O2 Trim Controls	11%	81%	15	0.0	\$/sqft	0.9	4.43	0.02
Boiler Parallel Positioning Control	11%	81%	15	0.2	\$/sqft	0.9	0.31	0.08
Boiler blowdown heat exchanger (steam)	11%	81%	20	1.0	\$/sqft	2.5	0.32	0.08
Repair malfunctioning steam traps	0%	90%	6	77.0	\$/sqft	13,880.0	4.59	0.01
Insulate steam lines/condensate tank	44%	49%	12	1,302.0	\$/bldg	0.9	0.00	0.13
Destratification Fans (HVLS)	0%	33%	12	0.3	\$/sqft	5.8	1.08	0.04

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	8%	10	0.2	\$/sqft	6.5	1.89	0.02
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-61 Energy Efficiency Non-Equipment Data-Electric College New Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	2%	13%	20	84,147.3	\$/bldg	590,983.9	0.79	0.06
Insulation - Ducting	56%	61%	20	0.8	\$/sqft	1.2	0.71	0.08
Insulation - Radiant Barrier	2%	13%	20	21,500.9	\$/bldg	192,618.5	1.02	0.05
Insulation - Wall Cavity	2%	13%	20	19,567.9	\$/bldg	155,732.6	0.76	0.05
HVAC - Duct Repair and Sealing	25%	25%	18	123.6	\$/bldg	78,624.8	> 10	0.00
Doors - High Efficiency	100%	100%	10	0.2	\$/sqft	4.0	1.79	0.03
Windows - High Efficiency	44%	100%	20	11,849.0	\$/bldg	136,952.4	4.21	0.05
Roof - High Reflectivity	22%	95%	15	3,299.9	\$/bldg	94,055.8	6.12	0.03
Air-Cooled Chiller - Condenser Air Temperature Reset	60%	75%	10	814.4	\$/sqft	371,117.4	> 10	0.00
Air-Cooled Chiller - Economizer	64%	81%	10	813.6	\$/sqft	15,579.1	0.84	0.04
Air-Cooled Chiller - VSD on fans	3%	75%	15	4,665.3	\$/bldg	1,846.2	0.28	0.11
Air-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	-	0.00	-
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	-	0.00	-
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	25%	37%	15	1,407.1	\$/sqft	18,188.9	1.97	0.05
Air-Cooled Chiller - Maintenance	44%	90%	18	9,281.0	\$/bldg	253,447.9	> 10	0.03
Water-Cooled Chiller - Condenser Water Temperature Reset	60%	75%	4	0.0	\$/sqft	4.4	> 10	0.00
Water-Cooled Chiller - Economizer	64%	81%	10	81.4	\$/sqft	15,579.1	8.23	0.01
Water-Cooled Chiller - VSD on Fans	3%	75%	15	1.2	\$/bldg	15.0	2.23	0.05
Water-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	371,117.4	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	-	0.00	-
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	25%	37%	15	1,407.1	\$/sqft	18,188.9	1.93	0.05
Water-Cooled Chiller - Maintenance	44%	90%	18	9,281.0	\$/bldg	253,447.9	> 10	0.03
RTU - Evaporative Precooler	0%	3%	20	3.0	\$/sqft	1.1	0.04	0.09
RTU - Maintenance	44%	90%	18	9,281.0	\$/bldg	253,447.9	> 10	0.03
Gas Boiler - High Efficiency Hot Water Circulation	1%	34%	10	0.4	\$/sqft	1.4	0.02	0.10
Gas Boiler - Hot Water Reset	60%	75%	3	992.7	\$/sqft	1,285,100.0	1.45	0.00
Gas Boiler - Maintenance	0%	90%	3	2,039.9	\$/bldg	1,015,500.0	0.56	0.00
Gas Furnace - Maintenance	0%	90%	3	5,291.5	\$/bldg	816,000.0	0.17	0.01
Space Heating - Heat Recovery Ventilator	73%	81%	15	0.0	\$/sqft	11.3	> 10	0.00
Heat Pump - Maintenance	33%	95%	18	8,653.1	\$/bldg	1,022,510.1	> 10	0.01
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	5.6	4.57	0.02
Ventilation - Variable Speed Control	0%	81%	15	0.0	\$/sqft	3.2	> 10	0.01

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	6%	8%	15	0.2	\$/sqft	7.1	2.46	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	3.4	0.81	0.01
Water Heater - Faucet Aerators	56%	20%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	56%	5%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	1.9	0.14	0.09
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	7.5	2.23	0.01
Water Heater - Solar System	0%	25%	20	0.1	\$/sqft	28.2	> 10	0.00
Water Heater - Install Timer	49%	49%	15	0.3	\$/sqft	3.2	0.67	0.05
Water Heater - Pipe Insulation	49%	49%	12	2,596.9	\$/bldg	59,686.7	1.27	0.03
Water Heater - Tank Blanket/Insulation	0%	0%	10	0.0	\$/sqft	1.9	2.13	0.01
Water Heater - Pre-Rinse Spray Valve	56%	5%	5	100.0	\$/sqft	14,822.0	6.55	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	10.3	0.11	0.05
Interior Lighting - Daylighting Controls	15%	15%	8	0.1	\$/sqft	4.2	1.86	0.02
Interior Lighting - LED Exit Lighting	86%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	1.4	0.98	0.04
Interior Lighting - Task Lighting	11%	75%	5	0.2	\$/sqft	1.5	0.14	0.11
Interior Lighting - Timeclocks and Timers	56%	56%	8	0.2	\$/sqft	0.7	0.17	0.11
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	2.6	0.25	0.09
Interior Fluorescent - Delamp and Install Reflectors	56%	61%	11	0.5	\$/sqft	1.2	0.18	0.11
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.1	0.02	0.17
Exterior Lighting - Daylighting Controls	6%	38%	8	0.0	\$/sqft	0.3	0.45	0.05
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.3	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	0%	12	250.0	\$/sqft	8,953.8	1.88	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	4.39	0.01
Refrigerator - Decommissioning	50%	0%	8	0.1	\$/sqft	5.9	1.66	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	0.0	0.02	0.11
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	0.2	0.05	0.14
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	0.3	0.00	0.15
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	1.92	0.04
Refrigerator - Floating Head Pressure	38%	45%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.30	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.42	0.01
Grocery - Display Case - LED Lighting	0%	0%	8	378.0	\$/sqft	22,291.7	1.89	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	0.3	0.01	0.18
Grocery - ECMs for Display Cases	0%	0%	15	50.0	\$/sqft	4,570.0	8.50	0.01
Grocery - Open Display Case - Night Covers	0%	0%	8	0.1	\$/sqft	0.0	0.03	0.16
Cooking - Exhaust Hoods with Sensor Control	1%	8%	15	1,494.0	\$/bldg	51,124.9	3.56	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	42%	56%	5	5,383.0	\$/bldg	54,396.4	0.18	0.07
Pool Pump - Timer	34%	34%	10	100.0	\$/bldg	20,513.8	8.82	0.00
Pool Heater - Solar	0%	34%	15	3,500.0	\$/bldg	0.0	0.00	0.11
Non-HVAC Motors - Variable Speed Control	11%	38%	10	199.3	\$/bldg	3,749.5	1.59	0.04
Energy Management System	44%	90%	15	31,405.5	\$/bldg	2,113,354.0	4.85	0.01
Thermostat - Clock/Programmable	50%	50%	11	928.1	\$/bldg	245,367.8	> 10	0.00
Lodging - Guest Room Controls	0%	0%	15	260.0	\$/sqft	3,134.1	7.10	0.05
HVAC - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	0.9	0.73	0.08
Commissioning - HVAC	75%	75%	25	0.4	\$/sqft	4.1	1.86	0.04
Commissioning - Lighting	60%	75%	5	0.0	\$/sqft	6.3	2.98	0.01
Retrocommissioning - HVAC	0%	0%	25	0.8	\$/sqft	4.1	0.93	0.06
Retrocommissioning - Lighting	0%	0%	5	0.1	\$/sqft	6.3	1.49	0.01
Advanced New Construction Designs	5%	75%	25	2.0	\$/sqft	11.0	3.58	0.06
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	2.36	0.06
Refrigerator - eCube	5%	75%	12	0.0	\$/sqft	0.2	1.27	0.03
Electronics - Smart Power Strip	42%	56%	7	0.0	\$/sqft	0.0	4.10	0.01
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	0.6	> 10	0.00
Insulation - Foundation	2%	13%	20	0.3	\$/sqft	1.4	1.97	0.07
Water Heating - Booster Water Heater	49%	49%	20	0.0	\$/sqft	1.4	> 10	0.01
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.0	\$/sqft	1.2	> 10	0.00
Boiler O2 Trim Controls	64%	81%	15	0.0	\$/sqft	0.7	0.37	0.02
Boiler Parallel Positioning Control	64%	81%	15	0.2	\$/sqft	0.7	0.03	0.09
Boiler blowdown heat exchanger (steam)	64%	81%	20	1.0	\$/sqft	1.9	0.03	0.08
Repair malfunctioning steam traps	0%	90%	6	77.0	\$/sqft	13,880.0	0.47	0.01
Insulate steam lines/condensate tank	49%	49%	12	1,302.0	\$/bldg	0.7	0.00	0.13
Destratification Fans (HVLS)	0%	33%	12	0.3	\$/sqft	5.1	0.10	0.04

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	8%	10	0.2	\$/sqft	5.7	0.17	0.02
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-62 Energy Efficiency Non-Equipment Data-Natural Gas College, New Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	2%	13%	20	84,147.3	\$/bldg	590,983.9	1.07	0.06
Insulation - Ducting	56%	61%	20	0.8	\$/sqft	1.2	0.71	0.08
Insulation - Radiant Barrier	2%	13%	20	21,500.9	\$/bldg	192,618.5	1.37	0.05
Insulation - Wall Cavity	2%	13%	20	19,567.9	\$/bldg	155,732.6	1.08	0.05
HVAC - Duct Repair and Sealing	25%	25%	18	123.6	\$/bldg	78,624.8	> 10	0.00
Doors - High Efficiency	100%	100%	10	0.2	\$/sqft	4.0	1.78	0.03
Windows - High Efficiency	44%	100%	20	11,849.0	\$/bldg	136,952.4	4.19	0.05
Roof - High Reflectivity	22%	95%	15	3,299.9	\$/bldg	94,055.8	6.09	0.03
Air-Cooled Chiller - Condenser Air Temperature Reset	60%	75%	10	814.4	\$/sqft	371,117.4	> 10	0.00
Air-Cooled Chiller - Economizer	64%	81%	10	813.6	\$/sqft	15,579.1	0.82	0.04
Air-Cooled Chiller - VSD on fans	3%	75%	15	4,665.3	\$/bldg	1,846.2	0.27	0.11
Air-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	-	0.00	-
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	-	0.00	-
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	25%	37%	15	1,407.1	\$/sqft	18,188.9	1.93	0.05
Air-Cooled Chiller - Maintenance	44%	90%	18	9,281.0	\$/bldg	253,447.9	> 10	0.03
Water-Cooled Chiller - Condenser Water Temperature Reset	60%	75%	4	0.0	\$/sqft	4.4	> 10	0.00
Water-Cooled Chiller - Economizer	64%	81%	10	81.4	\$/sqft	15,579.1	8.23	0.01
Water-Cooled Chiller - VSD on Fans	3%	75%	15	1.2	\$/bldg	15.0	2.23	0.05
Water-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	371,117.4	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	-	0.00	-
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	25%	37%	15	1,407.1	\$/sqft	18,188.9	1.93	0.05
Water-Cooled Chiller - Maintenance	44%	90%	18	9,281.0	\$/bldg	253,447.9	> 10	0.03
RTU - Evaporative Precooler	0%	3%	20	3.0	\$/sqft	1.1	0.04	0.09
RTU - Maintenance	44%	90%	18	9,281.0	\$/bldg	253,447.9	> 10	0.03
Gas Boiler - High Efficiency Hot Water Circulation	1%	34%	10	0.4	\$/sqft	1.4	0.19	0.10
Gas Boiler - Hot Water Reset	60%	75%	3	992.7	\$/sqft	1,285,100.0	> 10	0.00
Gas Boiler - Maintenance	0%	90%	3	2,039.9	\$/bldg	1,015,500.0	6.97	0.00
Gas Furnace - Maintenance	0%	90%	3	5,291.5	\$/bldg	816,000.0	2.13	0.01
Space Heating - Heat Recovery Ventilator	73%	81%	15	0.0	\$/sqft	11.3	> 10	0.00
Heat Pump - Maintenance	33%	95%	18	8,653.1	\$/bldg	1,022,510.1	> 10	0.01
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	5.6	4.60	0.02
Ventilation - Variable Speed Control	0%	81%	15	0.0	\$/sqft	3.2	> 10	0.01

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	6%	8%	15	0.2	\$/sqft	7.1	2.47	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	3.4	1.83	0.01
Water Heater - Faucet Aerators	56%	20%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	56%	5%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	1.9	0.26	0.09
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	7.5	4.51	0.01
Water Heater - Solar System	0%	25%	20	0.1	\$/sqft	28.2	> 10	0.00
Water Heater - Install Timer	49%	49%	15	0.3	\$/sqft	3.2	1.22	0.05
Water Heater - Pipe Insulation	49%	49%	12	2,596.9	\$/bldg	59,686.7	1.68	0.03
Water Heater - Tank Blanket/Insulation	0%	0%	10	0.0	\$/sqft	1.9	4.74	0.01
Water Heater - Pre-Rinse Spray Valve	56%	5%	5	100.0	\$/sqft	14,822.0	7.58	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	10.3	1.23	0.05
Interior Lighting - Daylighting Controls	15%	15%	8	0.1	\$/sqft	4.2	1.92	0.02
Interior Lighting - LED Exit Lighting	86%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	1.4	1.01	0.04
Interior Lighting - Task Lighting	11%	75%	5	0.2	\$/sqft	1.5	0.15	0.11
Interior Lighting - Timeclocks and Timers	56%	56%	8	0.2	\$/sqft	0.7	0.18	0.11
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	2.6	0.26	0.09
Interior Fluorescent - Delamp and Install Reflectors	56%	61%	11	0.5	\$/sqft	1.2	0.19	0.11
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.1	0.02	0.17
Exterior Lighting - Daylighting Controls	6%	38%	8	0.0	\$/sqft	0.3	0.46	0.05
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.3	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	0%	12	250.0	\$/sqft	8,953.8	1.98	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	4.45	0.01
Refrigerator - Decommissioning	50%	0%	8	0.1	\$/sqft	5.9	1.75	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	0.0	0.02	0.11
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	0.2	0.05	0.14
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	0.3	0.00	0.15
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	2.03	0.04
Refrigerator - Floating Head Pressure	38%	45%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.31	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.86	0.01
Grocery - Display Case - LED Lighting	0%	0%	8	378.0	\$/sqft	22,291.7	1.92	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	0.3	0.01	0.18
Grocery - ECMs for Display Cases	0%	0%	15	50.0	\$/sqft	4,570.0	8.65	0.01
Grocery - Open Display Case - Night Covers	0%	0%	8	0.1	\$/sqft	0.0	0.03	0.16
Cooking - Exhaust Hoods with Sensor Control	1%	8%	15	1,494.0	\$/bldg	51,124.9	3.58	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	42%	56%	5	5,383.0	\$/bldg	54,396.4	0.18	0.07
Pool Pump - Timer	34%	34%	10	100.0	\$/bldg	20,513.8	8.82	0.00
Pool Heater - Solar	0%	34%	15	3,500.0	\$/bldg	0.0	0.00	0.11
Non-HVAC Motors - Variable Speed Control	11%	38%	10	199.3	\$/bldg	3,749.5	1.60	0.04
Energy Management System	44%	90%	15	31,405.5	\$/bldg	2,113,354.0	6.81	0.01
Thermostat - Clock/Programmable	50%	50%	11	928.1	\$/bldg	245,367.8	> 10	0.00
Lodging - Guest Room Controls	0%	0%	15	260.0	\$/sqft	3,134.1	7.06	0.05
HVAC - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	0.9	0.73	0.08
Commissioning - HVAC	75%	75%	25	0.4	\$/sqft	4.1	1.85	0.04
Commissioning - Lighting	60%	75%	5	0.0	\$/sqft	6.3	3.07	0.01
Retrocommissioning - HVAC	0%	0%	25	0.8	\$/sqft	4.1	0.93	0.06
Retrocommissioning - Lighting	0%	0%	5	0.1	\$/sqft	6.3	1.53	0.01
Advanced New Construction Designs	5%	75%	25	2.0	\$/sqft	11.0	3.56	0.06
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	2.03	0.06
Refrigerator - eCube	5%	75%	12	0.0	\$/sqft	0.2	1.34	0.03
Electronics - Smart Power Strip	42%	56%	7	0.0	\$/sqft	0.0	4.34	0.01
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	0.6	> 10	0.00
Insulation - Foundation	2%	13%	20	0.3	\$/sqft	1.4	1.96	0.07
Water Heating - Booster Water Heater	49%	49%	20	0.0	\$/sqft	1.4	> 10	0.01
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.0	\$/sqft	1.2	> 10	0.00
Boiler O2 Trim Controls	64%	81%	15	0.0	\$/sqft	0.7	4.26	0.02
Boiler Parallel Positioning Control	64%	81%	15	0.2	\$/sqft	0.7	0.29	0.09
Boiler blowdown heat exchanger (steam)	64%	81%	20	1.0	\$/sqft	1.9	0.31	0.08
Repair malfunctioning steam traps	0%	90%	6	77.0	\$/sqft	13,880.0	5.57	0.01
Insulate steam lines/condensate tank	49%	49%	12	1,302.0	\$/bldg	0.7	0.00	0.13
Destratification Fans (HVLS)	0%	33%	12	0.3	\$/sqft	5.1	1.16	0.04

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	8%	10	0.2	\$/sqft	5.7	2.03	0.02
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-63 Energy Efficiency Non-Equipment Data-Electric School, Existing Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	84,147.3	\$/bldg	761,541.5	0.93	0.05
Insulation - Ducting	27%	50%	20	0.8	\$/sqft	1.3	0.61	0.08
Insulation - Radiant Barrier	2%	13%	20	21,500.9	\$/bldg	289,637.8	1.37	0.04
Insulation - Wall Cavity	7%	13%	20	19,567.9	\$/bldg	318,121.5	1.42	0.04
HVAC - Duct Repair and Sealing	5%	25%	18	123.6	\$/bldg	75,034.9	> 10	0.00
Doors - High Efficiency	0%	0%	10	0.2	\$/sqft	2.5	1.55	0.04
Windows - High Efficiency	73%	75%	20	11,849.0	\$/bldg	526,064.9	7.71	0.02
Roof - High Reflectivity	50%	75%	15	3,299.9	\$/bldg	119,276.3	5.97	0.02
Air-Cooled Chiller - Condenser Air Temperature Reset	30%	75%	10	814.4	\$/sqft	403,118.9	> 10	0.00
Air-Cooled Chiller - Economizer	4%	49%	10	813.6	\$/sqft	20,889.9	1.01	0.03
Air-Cooled Chiller - VSD on fans	15%	66%	15	4,663.7	\$/bldg	2,894.7	0.15	0.11
Air-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	-	0.00	-
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	-	0.00	-
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	44,150.2	3.37	0.02
Air-Cooled Chiller - Maintenance	73%	90%	18	9,281.0	\$/bldg	260,342.9	> 10	0.03
Water-Cooled Chiller - Condenser Water Temperature Reset	30%	75%	4	0.0	\$/sqft	4.0	> 10	0.00
Water-Cooled Chiller - Economizer	4%	49%	10	81.4	\$/sqft	20,889.9	8.74	0.00
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	9.0	1.38	0.06
Water-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	403,118.9	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	-	0.00	-
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	44,150.2	2.85	0.02
Water-Cooled Chiller - Maintenance	73%	90%	18	9,281.0	\$/bldg	260,342.9	9.99	0.03
RTU - Evaporative Precooler	0%	8%	20	3.0	\$/sqft	1.0	0.03	0.09
RTU - Maintenance	73%	90%	18	9,281.0	\$/bldg	260,342.9	> 10	0.03
Gas Boiler - High Efficiency Hot Water Circulation	0%	34%	10	0.4	\$/sqft	0.8	0.01	0.12
Gas Boiler - Hot Water Reset	30%	75%	3	992.7	\$/sqft	1,758,300.0	1.99	0.00
Gas Boiler - Maintenance	35%	90%	3	2,039.9	\$/bldg	1,181,200.0	0.65	0.00
Gas Furnace - Maintenance	35%	90%	3	5,289.5	\$/bldg	749,700.0	0.16	0.01
Space Heating - Heat Recovery Ventilator	44%	49%	15	0.0	\$/sqft	6.7	> 10	0.00
Heat Pump - Maintenance	0%	95%	18	8,650.1	\$/bldg	1,048,699.4	> 10	0.01
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	2.2	1.33	0.04
Ventilation - Variable Speed Control	0%	81%	15	0.0	\$/sqft	1.3	4.06	0.02

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	1%	11%	15	0.2	\$/sqft	7.1	1.81	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	2.1	0.54	0.02
Water Heater - Faucet Aerators	31%	20%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	31%	5%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	1.2	0.08	0.11
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	4.7	1.34	0.01
Water Heater - Solar System	0%	25%	20	0.1	\$/sqft	17.8	> 10	0.00
Water Heater - Install Timer	15%	20%	15	0.3	\$/sqft	2.0	0.38	0.06
Water Heater - Pipe Insulation	15%	20%	12	2,596.9	\$/bldg	52,997.6	1.10	0.04
Water Heater - Tank Blanket/Insulation	0%	0%	10	0.0	\$/sqft	1.2	1.42	0.02
Water Heater - Pre-Rinse Spray Valve	31%	5%	5	100.0	\$/sqft	14,822.0	6.49	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	6.0	0.06	0.06
Interior Lighting - Daylighting Controls	12%	13%	8	0.1	\$/sqft	3.6	1.08	0.03
Interior Lighting - LED Exit Lighting	50%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	15%	56%	8	0.1	\$/sqft	1.2	0.57	0.04
Interior Lighting - Task Lighting	4%	75%	5	0.2	\$/sqft	1.2	0.06	0.12
Interior Lighting - Timeclocks and Timers	4%	56%	8	0.2	\$/sqft	0.6	0.10	0.12
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	1.4	0.10	0.12
Interior Fluorescent - Delamp and Install Reflectors	19%	56%	11	0.5	\$/sqft	1.0	0.10	0.11
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.1	0.01	0.17
Exterior Lighting - Daylighting Controls	6%	38%	8	0.0	\$/sqft	0.2	0.27	0.06
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.3	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	0%	12	250.0	\$/sqft	8,953.8	1.43	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	3.58	0.01
Refrigerator - Decommissioning	50%	0%	8	0.1	\$/sqft	5.9	1.31	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	0.1	0.03	0.10
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	0.2	0.04	0.14
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	0.3	0.00	0.15
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	1.43	0.04
Refrigerator - Floating Head Pressure	38%	45%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.18	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.38	0.01
Grocery - Display Case - LED Lighting	0%	0%	8	378.0	\$/sqft	22,291.7	1.57	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	0.4	0.00	0.18
Grocery - ECMs for Display Cases	0%	0%	15	50.0	\$/sqft	4,570.0	6.84	0.01
Grocery - Open Display Case - Night Covers	0%	0%	8	0.1	\$/sqft	0.1	0.03	0.16
Cooking - Exhaust Hoods with Sensor Control	1%	11%	15	1,494.0	\$/bldg	51,124.9	2.61	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	13%	56%	5	5,383.0	\$/bldg	30,456.7	0.10	0.11
Pool Pump - Timer	0%	34%	10	100.0	\$/bldg	20,513.8	9.00	0.00
Pool Heater - Solar	0%	34%	15	3,500.0	\$/bldg	0.0	0.00	0.11
Non-HVAC Motors - Variable Speed Control	4%	38%	10	199.3	\$/bldg	3,749.5	1.60	0.04
Energy Management System	19%	75%	15	31,405.5	\$/bldg	1,396,350.3	2.62	0.02
Thermostat - Clock/Programmable	50%	50%	11	928.1	\$/bldg	248,159.9	> 10	0.00
Lodging - Guest Room Controls	0%	0%	15	260.0	\$/sqft	3,134.1	5.70	0.05
HVAC - Occupancy Sensors	14%	56%	8	0.1	\$/sqft	0.7	0.88	0.09
Commissioning - HVAC	0%	0%	25	0.4	\$/sqft	3.2	1.17	0.05
Commissioning - Lighting	0%	0%	5	0.0	\$/sqft	5.4	2.14	0.01
Retrocommissioning - HVAC	9%	36%	25	0.8	\$/sqft	3.2	0.59	0.06
Retrocommissioning - Lighting	31%	36%	5	0.1	\$/sqft	5.4	1.07	0.01
Advanced New Construction Designs	0%	0%	25	2.0	\$/sqft	8.7	4.19	0.06
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	2.25	0.06
Refrigerator - eCube	5%	75%	12	0.0	\$/sqft	0.2	1.13	0.03
Electronics - Smart Power Strip	13%	56%	7	0.0	\$/sqft	0.0	2.25	0.01
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	0.3	> 10	0.00
Insulation - Foundation	7%	13%	20	1.4	\$/sqft	1.1	0.55	0.09
Water Heating - Booster Water Heater	15%	20%	20	0.0	\$/sqft	1.0	8.78	0.01
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.0	\$/sqft	1.3	> 10	0.00
Boiler O2 Trim Controls	4%	49%	15	0.0	\$/sqft	0.4	0.21	0.03
Boiler Parallel Positioning Control	4%	49%	15	0.2	\$/sqft	0.4	0.01	0.10
Boiler blowdown heat exchanger (steam)	4%	49%	20	1.0	\$/sqft	1.1	0.02	0.09
Repair malfunctioning steam traps	35%	90%	6	77.0	\$/sqft	13,880.0	0.47	0.01
Insulate steam lines/condensate tank	15%	20%	12	1,302.0	\$/bldg	0.4	0.00	0.13
Destratification Fans (HVLS)	0%	33%	12	0.3	\$/sqft	2.6	0.05	0.06

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	11%	10	0.2	\$/sqft	2.9	0.09	0.04
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-64 Energy Efficiency Non-Equipment Data-Natural Gas School, Existing Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	84,147.3	\$/bldg	761,541.5	1.33	0.05
Insulation - Ducting	27%	50%	20	0.8	\$/sqft	1.3	0.77	0.08
Insulation - Radiant Barrier	2%	13%	20	21,500.9	\$/bldg	289,637.8	1.98	0.04
Insulation - Wall Cavity	7%	13%	20	19,567.9	\$/bldg	318,121.5	2.09	0.04
HVAC - Duct Repair and Sealing	5%	25%	18	123.6	\$/bldg	75,034.9	> 10	0.00
Doors - High Efficiency	0%	0%	10	0.2	\$/sqft	2.5	1.80	0.04
Windows - High Efficiency	73%	75%	20	11,849.0	\$/bldg	526,064.9	8.98	0.02
Roof - High Reflectivity	50%	75%	15	3,299.9	\$/bldg	119,276.3	7.37	0.02
Air-Cooled Chiller - Condenser Air Temperature Reset	30%	75%	10	814.4	\$/sqft	403,118.9	> 10	0.00
Air-Cooled Chiller - Economizer	4%	49%	10	813.6	\$/sqft	20,889.9	1.10	0.03
Air-Cooled Chiller - VSD on fans	15%	66%	15	4,663.7	\$/bldg	2,894.7	0.17	0.11
Air-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	-	0.00	-
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	-	0.00	-
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	44,150.2	3.75	0.02
Air-Cooled Chiller - Maintenance	73%	90%	18	9,281.0	\$/bldg	260,342.9	> 10	0.03
Water-Cooled Chiller - Condenser Water Temperature Reset	30%	75%	4	0.0	\$/sqft	4.0	> 10	0.00
Water-Cooled Chiller - Economizer	4%	49%	10	81.4	\$/sqft	20,889.9	> 10	0.00
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	9.0	1.82	0.06
Water-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	403,118.9	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	-	0.00	-
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	44,150.2	3.75	0.02
Water-Cooled Chiller - Maintenance	73%	90%	18	9,281.0	\$/bldg	260,342.9	> 10	0.03
RTU - Evaporative Precooler	0%	8%	20	3.0	\$/sqft	1.0	0.04	0.09
RTU - Maintenance	73%	90%	18	9,281.0	\$/bldg	260,342.9	> 10	0.03
Gas Boiler - High Efficiency Hot Water Circulation	0%	34%	10	0.4	\$/sqft	0.8	0.09	0.12
Gas Boiler - Hot Water Reset	30%	75%	3	992.7	\$/sqft	1,758,300.0	> 10	0.00
Gas Boiler - Maintenance	35%	90%	3	2,039.9	\$/bldg	1,181,200.0	6.74	0.00
Gas Furnace - Maintenance	35%	90%	3	5,289.5	\$/bldg	749,700.0	1.95	0.01
Space Heating - Heat Recovery Ventilator	44%	49%	15	0.0	\$/sqft	6.7	> 10	0.00
Heat Pump - Maintenance	0%	95%	18	8,650.1	\$/bldg	1,048,699.4	> 10	0.01
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	2.2	1.84	0.04
Ventilation - Variable Speed Control	0%	81%	15	0.0	\$/sqft	1.3	5.58	0.02

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	1%	11%	15	0.2	\$/sqft	7.1	2.47	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	2.1	1.12	0.02
Water Heater - Faucet Aerators	31%	20%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	31%	5%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	1.2	0.15	0.11
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	4.7	2.64	0.01
Water Heater - Solar System	0%	25%	20	0.1	\$/sqft	17.8	> 10	0.00
Water Heater - Install Timer	15%	20%	15	0.3	\$/sqft	2.0	0.68	0.06
Water Heater - Pipe Insulation	15%	20%	12	2,596.9	\$/bldg	52,997.6	1.46	0.04
Water Heater - Tank Blanket/Insulation	0%	0%	10	0.0	\$/sqft	1.2	2.89	0.02
Water Heater - Pre-Rinse Spray Valve	31%	5%	5	100.0	\$/sqft	14,822.0	7.54	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	6.0	0.63	0.06
Interior Lighting - Daylighting Controls	12%	13%	8	0.1	\$/sqft	3.6	1.36	0.03
Interior Lighting - LED Exit Lighting	50%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	15%	56%	8	0.1	\$/sqft	1.2	0.71	0.04
Interior Lighting - Task Lighting	4%	75%	5	0.2	\$/sqft	1.2	0.11	0.12
Interior Lighting - Timeclocks and Timers	4%	56%	8	0.2	\$/sqft	0.6	0.12	0.12
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	1.4	0.12	0.12
Interior Fluorescent - Delamp and Install Reflectors	19%	56%	11	0.5	\$/sqft	1.0	0.13	0.11
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.1	0.01	0.17
Exterior Lighting - Daylighting Controls	6%	38%	8	0.0	\$/sqft	0.2	0.36	0.06
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.3	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	0%	12	250.0	\$/sqft	8,953.8	1.98	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	4.45	0.01
Refrigerator - Decommissioning	50%	0%	8	0.1	\$/sqft	5.9	1.75	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	0.1	0.05	0.10
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	0.2	0.06	0.14
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	0.3	0.00	0.15
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	2.03	0.04
Refrigerator - Floating Head Pressure	38%	45%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.31	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.86	0.01
Grocery - Display Case - LED Lighting	0%	0%	8	378.0	\$/sqft	22,291.7	1.92	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	0.4	0.01	0.18
Grocery - ECMs for Display Cases	0%	0%	15	50.0	\$/sqft	4,570.0	8.65	0.01
Grocery - Open Display Case - Night Covers	0%	0%	8	0.1	\$/sqft	0.1	0.03	0.16
Cooking - Exhaust Hoods with Sensor Control	1%	11%	15	1,494.0	\$/bldg	51,124.9	3.58	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	13%	56%	5	5,383.0	\$/bldg	30,456.7	0.10	0.11
Pool Pump - Timer	0%	34%	10	100.0	\$/bldg	20,513.8	8.82	0.00
Pool Heater - Solar	0%	34%	15	3,500.0	\$/bldg	0.0	0.00	0.11
Non-HVAC Motors - Variable Speed Control	4%	38%	10	199.3	\$/bldg	3,749.5	1.60	0.04
Energy Management System	19%	75%	15	31,405.5	\$/bldg	1,396,350.3	3.48	0.02
Thermostat - Clock/Programmable	50%	50%	11	928.1	\$/bldg	248,159.9	> 10	0.00
Lodging - Guest Room Controls	0%	0%	15	260.0	\$/sqft	3,134.1	7.06	0.05
HVAC - Occupancy Sensors	14%	56%	8	0.1	\$/sqft	0.7	1.05	0.09
Commissioning - HVAC	0%	0%	25	0.4	\$/sqft	3.2	1.46	0.05
Commissioning - Lighting	0%	0%	5	0.0	\$/sqft	5.4	2.59	0.01
Retrocommissioning - HVAC	9%	36%	25	0.8	\$/sqft	3.2	0.73	0.06
Retrocommissioning - Lighting	31%	36%	5	0.1	\$/sqft	5.4	1.30	0.01
Advanced New Construction Designs	0%	0%	25	2.0	\$/sqft	8.7	5.26	0.06
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	2.32	0.06
Refrigerator - eCube	5%	75%	12	0.0	\$/sqft	0.2	1.56	0.03
Electronics - Smart Power Strip	13%	56%	7	0.0	\$/sqft	0.0	2.43	0.01
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	0.3	> 10	0.00
Insulation - Foundation	7%	13%	20	1.4	\$/sqft	1.1	0.69	0.09
Water Heating - Booster Water Heater	15%	20%	20	0.0	\$/sqft	1.0	8.87	0.01
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.0	\$/sqft	1.3	> 10	0.00
Boiler O2 Trim Controls	4%	49%	15	0.0	\$/sqft	0.4	1.99	0.03
Boiler Parallel Positioning Control	4%	49%	15	0.2	\$/sqft	0.4	0.14	0.10
Boiler blowdown heat exchanger (steam)	4%	49%	20	1.0	\$/sqft	1.1	0.14	0.09
Repair malfunctioning steam traps	35%	90%	6	77.0	\$/sqft	13,880.0	4.59	0.01
Insulate steam lines/condensate tank	15%	20%	12	1,302.0	\$/bldg	0.4	0.00	0.13
Destratification Fans (HVLS)	0%	33%	12	0.3	\$/sqft	2.6	0.48	0.06

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	11%	10	0.2	\$/sqft	2.9	0.85	0.04
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-65 Energy Efficiency Non-Equipment Data-Electric School, New Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	84,147.3	\$/bldg	590,983.9	0.79	0.06
Insulation - Ducting	34%	50%	20	0.8	\$/sqft	1.2	0.71	0.08
Insulation - Radiant Barrier	2%	13%	20	21,500.9	\$/bldg	192,618.5	1.02	0.05
Insulation - Wall Cavity	7%	13%	20	19,567.9	\$/bldg	155,732.6	0.76	0.05
HVAC - Duct Repair and Sealing	25%	25%	18	123.6	\$/bldg	78,624.8	> 10	0.00
Doors - High Efficiency	100%	100%	10	0.2	\$/sqft	2.5	1.68	0.04
Windows - High Efficiency	67%	75%	20	11,849.0	\$/bldg	136,952.4	4.21	0.05
Roof - High Reflectivity	34%	95%	15	3,299.9	\$/bldg	94,055.8	6.12	0.03
Air-Cooled Chiller - Condenser Air Temperature Reset	60%	75%	10	814.4	\$/sqft	371,117.4	> 10	0.00
Air-Cooled Chiller - Economizer	37%	49%	10	813.6	\$/sqft	15,579.1	0.84	0.04
Air-Cooled Chiller - VSD on fans	15%	66%	15	4,663.7	\$/bldg	1,846.2	0.28	0.11
Air-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	-	0.00	-
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	-	0.00	-
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	18,188.9	1.97	0.05
Air-Cooled Chiller - Maintenance	67%	90%	18	9,281.0	\$/bldg	253,447.9	> 10	0.03
Water-Cooled Chiller - Condenser Water Temperature Reset	60%	75%	4	0.0	\$/sqft	3.4	> 10	0.00
Water-Cooled Chiller - Economizer	37%	49%	10	81.4	\$/sqft	15,579.1	8.23	0.01
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	7.2	1.46	0.07
Water-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	371,117.4	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	-	0.00	-
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	18,188.9	1.93	0.05
Water-Cooled Chiller - Maintenance	67%	90%	18	9,281.0	\$/bldg	253,447.9	> 10	0.03
RTU - Evaporative Precooler	0%	3%	20	3.0	\$/sqft	0.8	0.03	0.09
RTU - Maintenance	67%	90%	18	9,281.0	\$/bldg	253,447.9	> 10	0.03
Gas Boiler - High Efficiency Hot Water Circulation	5%	34%	10	0.4	\$/sqft	0.6	0.01	0.13
Gas Boiler - Hot Water Reset	60%	75%	3	992.7	\$/sqft	1,285,100.0	1.45	0.00
Gas Boiler - Maintenance	34%	90%	3	2,039.9	\$/bldg	1,015,500.0	0.56	0.00
Gas Furnace - Maintenance	34%	90%	3	5,289.5	\$/bldg	816,000.0	0.17	0.01
Space Heating - Heat Recovery Ventilator	44%	49%	15	0.0	\$/sqft	6.3	> 10	0.00
Heat Pump - Maintenance	0%	95%	18	8,650.1	\$/bldg	1,022,510.1	> 10	0.01
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	3.6	2.92	0.03
Ventilation - Variable Speed Control	0%	81%	15	0.0	\$/sqft	2.0	8.84	0.01

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	9%	11%	15	0.2	\$/sqft	7.1	2.46	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	2.0	0.52	0.02
Water Heater - Faucet Aerators	34%	20%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	34%	5%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	1.1	0.08	0.11
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	4.5	1.28	0.01
Water Heater - Solar System	0%	25%	20	0.1	\$/sqft	16.9	> 10	0.00
Water Heater - Install Timer	0%	0%	15	0.3	\$/sqft	1.9	0.36	0.06
Water Heater - Pipe Insulation	0%	0%	12	2,596.9	\$/bldg	59,686.7	1.27	0.03
Water Heater - Tank Blanket/Insulation	0%	0%	10	0.0	\$/sqft	1.1	1.36	0.02
Water Heater - Pre-Rinse Spray Valve	34%	5%	5	100.0	\$/sqft	14,822.0	6.55	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	4.6	0.05	0.07
Interior Lighting - Daylighting Controls	19%	19%	8	0.1	\$/sqft	3.6	1.32	0.03
Interior Lighting - LED Exit Lighting	86%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	1.2	0.69	0.04
Interior Lighting - Task Lighting	0%	75%	5	0.2	\$/sqft	1.2	0.11	0.12
Interior Lighting - Timeclocks and Timers	56%	56%	8	0.2	\$/sqft	0.6	0.12	0.12
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	1.4	0.12	0.12
Interior Fluorescent - Delamp and Install Reflectors	67%	72%	11	0.5	\$/sqft	1.0	0.13	0.11
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.1	0.01	0.17
Exterior Lighting - Daylighting Controls	6%	38%	8	0.0	\$/sqft	0.2	0.36	0.06
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.3	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	0%	12	250.0	\$/sqft	8,953.8	1.88	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	4.39	0.01
Refrigerator - Decommissioning	50%	0%	8	0.1	\$/sqft	5.9	1.66	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	0.0	0.02	0.11
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	0.2	0.05	0.14
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	0.3	0.00	0.15
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	1.92	0.04
Refrigerator - Floating Head Pressure	38%	45%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.30	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.42	0.01
Grocery - Display Case - LED Lighting	0%	0%	8	378.0	\$/sqft	22,291.7	1.89	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	0.4	0.01	0.18
Grocery - ECMs for Display Cases	0%	0%	15	50.0	\$/sqft	4,570.0	8.50	0.01
Grocery - Open Display Case - Night Covers	0%	0%	8	0.1	\$/sqft	0.1	0.03	0.16
Cooking - Exhaust Hoods with Sensor Control	1%	11%	15	1,494.0	\$/bldg	51,124.9	3.56	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	13%	56%	5	5,383.0	\$/bldg	30,456.7	0.10	0.11
Pool Pump - Timer	34%	34%	10	100.0	\$/bldg	20,513.8	8.82	0.00
Pool Heater - Solar	0%	34%	15	3,500.0	\$/bldg	0.0	0.00	0.11
Non-HVAC Motors - Variable Speed Control	0%	38%	10	199.3	\$/bldg	3,749.5	1.59	0.04
Energy Management System	0%	75%	15	31,405.5	\$/bldg	2,113,354.0	4.84	0.01
Thermostat - Clock/Programmable	72%	72%	11	928.1	\$/bldg	245,367.8	> 10	0.00
Lodging - Guest Room Controls	0%	0%	15	260.0	\$/sqft	3,134.1	7.10	0.05
HVAC - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	0.7	0.95	0.10
Commissioning - HVAC	75%	75%	25	0.4	\$/sqft	2.9	1.32	0.05
Commissioning - Lighting	60%	75%	5	0.0	\$/sqft	5.4	2.53	0.01
Retrocommissioning - HVAC	0%	0%	25	0.8	\$/sqft	2.9	0.66	0.07
Retrocommissioning - Lighting	0%	0%	5	0.1	\$/sqft	5.4	1.26	0.01
Advanced New Construction Designs	5%	75%	25	2.0	\$/sqft	7.8	4.74	0.07
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	2.59	0.06
Refrigerator - eCube	5%	75%	12	0.0	\$/sqft	0.2	1.48	0.03
Electronics - Smart Power Strip	13%	56%	7	0.0	\$/sqft	0.0	2.29	0.01
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	0.3	> 10	0.00
Insulation - Foundation	7%	13%	20	0.3	\$/sqft	1.0	2.62	0.07
Water Heating - Booster Water Heater	0%	0%	20	0.0	\$/sqft	0.9	8.43	0.02
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.0	\$/sqft	1.3	> 10	0.00
Boiler O2 Trim Controls	37%	49%	15	0.0	\$/sqft	0.3	0.17	0.04
Boiler Parallel Positioning Control	37%	49%	15	0.2	\$/sqft	0.3	0.01	0.10
Boiler blowdown heat exchanger (steam)	37%	49%	20	1.0	\$/sqft	0.9	0.01	0.09
Repair malfunctioning steam traps	34%	90%	6	77.0	\$/sqft	13,880.0	0.47	0.01
Insulate steam lines/condensate tank	0%	0%	12	1,302.0	\$/bldg	0.3	0.00	0.13
Destratification Fans (HVLS)	0%	33%	12	0.3	\$/sqft	2.3	0.04	0.07

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	11%	10	0.2	\$/sqft	2.6	0.08	0.04
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-66 Energy Efficiency Non-Equipment Data-Natural Gas School, New Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	84,147.3	\$/bldg	590,983.9	1.07	0.06
Insulation - Ducting	34%	50%	20	0.8	\$/sqft	1.2	0.71	0.08
Insulation - Radiant Barrier	2%	13%	20	21,500.9	\$/bldg	192,618.5	1.37	0.05
Insulation - Wall Cavity	7%	13%	20	19,567.9	\$/bldg	155,732.6	1.08	0.05
HVAC - Duct Repair and Sealing	25%	25%	18	123.6	\$/bldg	78,624.8	> 10	0.00
Doors - High Efficiency	100%	100%	10	0.2	\$/sqft	2.5	1.68	0.04
Windows - High Efficiency	67%	75%	20	11,849.0	\$/bldg	136,952.4	4.19	0.05
Roof - High Reflectivity	34%	95%	15	3,299.9	\$/bldg	94,055.8	6.09	0.03
Air-Cooled Chiller - Condenser Air Temperature Reset	60%	75%	10	814.4	\$/sqft	371,117.4	> 10	0.00
Air-Cooled Chiller - Economizer	37%	49%	10	813.6	\$/sqft	15,579.1	0.82	0.04
Air-Cooled Chiller - VSD on fans	15%	66%	15	4,663.7	\$/bldg	1,846.2	0.27	0.11
Air-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	-	0.00	-
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	-	0.00	-
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	18,188.9	1.93	0.05
Air-Cooled Chiller - Maintenance	67%	90%	18	9,281.0	\$/bldg	253,447.9	> 10	0.03
Water-Cooled Chiller - Condenser Water Temperature Reset	60%	75%	4	0.0	\$/sqft	3.4	> 10	0.00
Water-Cooled Chiller - Economizer	37%	49%	10	81.4	\$/sqft	15,579.1	8.23	0.01
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	7.2	1.46	0.07
Water-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	371,117.4	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	-	0.00	-
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	18,188.9	1.93	0.05
Water-Cooled Chiller - Maintenance	67%	90%	18	9,281.0	\$/bldg	253,447.9	> 10	0.03
RTU - Evaporative Precooler	0%	3%	20	3.0	\$/sqft	0.8	0.03	0.09
RTU - Maintenance	67%	90%	18	9,281.0	\$/bldg	253,447.9	> 10	0.03
Gas Boiler - High Efficiency Hot Water Circulation	5%	34%	10	0.4	\$/sqft	0.6	0.08	0.13
Gas Boiler - Hot Water Reset	60%	75%	3	992.7	\$/sqft	1,285,100.0	> 10	0.00
Gas Boiler - Maintenance	34%	90%	3	2,039.9	\$/bldg	1,015,500.0	6.97	0.00
Gas Furnace - Maintenance	34%	90%	3	5,289.5	\$/bldg	816,000.0	2.13	0.01
Space Heating - Heat Recovery Ventilator	44%	49%	15	0.0	\$/sqft	6.3	> 10	0.00
Heat Pump - Maintenance	0%	95%	18	8,650.1	\$/bldg	1,022,510.1	> 10	0.01
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	3.6	2.94	0.03
Ventilation - Variable Speed Control	0%	81%	15	0.0	\$/sqft	2.0	8.88	0.01

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	9%	11%	15	0.2	\$/sqft	7.1	2.47	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	2.0	1.08	0.02
Water Heater - Faucet Aerators	34%	20%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	34%	5%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	1.1	0.14	0.11
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	4.5	2.54	0.01
Water Heater - Solar System	0%	25%	20	0.1	\$/sqft	16.9	> 10	0.00
Water Heater - Install Timer	0%	0%	15	0.3	\$/sqft	1.9	0.66	0.06
Water Heater - Pipe Insulation	0%	0%	12	2,596.9	\$/bldg	59,686.7	1.68	0.03
Water Heater - Tank Blanket/Insulation	0%	0%	10	0.0	\$/sqft	1.1	2.80	0.02
Water Heater - Pre-Rinse Spray Valve	34%	5%	5	100.0	\$/sqft	14,822.0	7.58	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	4.6	0.55	0.07
Interior Lighting - Daylighting Controls	19%	19%	8	0.1	\$/sqft	3.6	1.36	0.03
Interior Lighting - LED Exit Lighting	86%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	1.2	0.71	0.04
Interior Lighting - Task Lighting	0%	75%	5	0.2	\$/sqft	1.2	0.11	0.12
Interior Lighting - Timeclocks and Timers	56%	56%	8	0.2	\$/sqft	0.6	0.12	0.12
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	1.4	0.12	0.12
Interior Fluorescent - Delamp and Install Reflectors	67%	72%	11	0.5	\$/sqft	1.0	0.13	0.11
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.1	0.01	0.17
Exterior Lighting - Daylighting Controls	6%	38%	8	0.0	\$/sqft	0.2	0.36	0.06
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.3	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	0%	12	250.0	\$/sqft	8,953.8	1.98	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	4.45	0.01
Refrigerator - Decommissioning	50%	0%	8	0.1	\$/sqft	5.9	1.75	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	0.0	0.02	0.11
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	0.2	0.06	0.14
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	0.3	0.00	0.15
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	2.03	0.04
Refrigerator - Floating Head Pressure	38%	45%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.31	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.86	0.01
Grocery - Display Case - LED Lighting	0%	0%	8	378.0	\$/sqft	22,291.7	1.92	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	0.4	0.01	0.18
Grocery - ECMs for Display Cases	0%	0%	15	50.0	\$/sqft	4,570.0	8.65	0.01
Grocery - Open Display Case - Night Covers	0%	0%	8	0.1	\$/sqft	0.1	0.03	0.16
Cooking - Exhaust Hoods with Sensor Control	1%	11%	15	1,494.0	\$/bldg	51,124.9	3.58	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	13%	56%	5	5,383.0	\$/bldg	30,456.7	0.10	0.11
Pool Pump - Timer	34%	34%	10	100.0	\$/bldg	20,513.8	8.82	0.00
Pool Heater - Solar	0%	34%	15	3,500.0	\$/bldg	0.0	0.00	0.11
Non-HVAC Motors - Variable Speed Control	0%	38%	10	199.3	\$/bldg	3,749.5	1.60	0.04
Energy Management System	0%	75%	15	31,405.5	\$/bldg	2,113,354.0	6.84	0.01
Thermostat - Clock/Programmable	72%	72%	11	928.1	\$/bldg	245,367.8	> 10	0.00
Lodging - Guest Room Controls	0%	0%	15	260.0	\$/sqft	3,134.1	7.06	0.05
HVAC - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	0.7	0.94	0.10
Commissioning - HVAC	75%	75%	25	0.4	\$/sqft	2.9	1.31	0.05
Commissioning - Lighting	60%	75%	5	0.0	\$/sqft	5.4	2.60	0.01
Retrocommissioning - HVAC	0%	0%	25	0.8	\$/sqft	2.9	0.66	0.07
Retrocommissioning - Lighting	0%	0%	5	0.1	\$/sqft	5.4	1.30	0.01
Advanced New Construction Designs	5%	75%	25	2.0	\$/sqft	7.8	4.72	0.07
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	2.25	0.06
Refrigerator - eCube	5%	75%	12	0.0	\$/sqft	0.2	1.56	0.03
Electronics - Smart Power Strip	13%	56%	7	0.0	\$/sqft	0.0	2.43	0.01
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	0.3	> 10	0.00
Insulation - Foundation	7%	13%	20	0.3	\$/sqft	1.0	2.60	0.07
Water Heating - Booster Water Heater	0%	0%	20	0.0	\$/sqft	0.9	8.43	0.02
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.0	\$/sqft	1.3	> 10	0.00
Boiler O2 Trim Controls	37%	49%	15	0.0	\$/sqft	0.3	1.91	0.04
Boiler Parallel Positioning Control	37%	49%	15	0.2	\$/sqft	0.3	0.13	0.10
Boiler blowdown heat exchanger (steam)	37%	49%	20	1.0	\$/sqft	0.9	0.14	0.09
Repair malfunctioning steam traps	34%	90%	6	77.0	\$/sqft	13,880.0	5.57	0.01
Insulate steam lines/condensate tank	0%	0%	12	1,302.0	\$/bldg	0.3	0.00	0.13
Destratification Fans (HVLS)	0%	33%	12	0.3	\$/sqft	2.3	0.52	0.07

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	11%	10	0.2	\$/sqft	2.6	0.91	0.04
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-67 Energy Efficiency Non-Equipment Data-Electric Health, Existing Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	2%	13%	20	92,807.8	\$/bldg	267,655.3	0.25	0.08
Insulation - Ducting	10%	50%	20	0.8	\$/sqft	-	0.00	-
Insulation - Radiant Barrier	5%	13%	20	23,713.7	\$/bldg	102,362.2	0.48	0.07
Insulation - Wall Cavity	2%	13%	20	77,544.0	\$/bldg	33,390.7	0.01	0.09
HVAC - Duct Repair and Sealing	5%	25%	18	56.0	\$/bldg	105,158.2	> 10	0.00
Doors - High Efficiency	0%	0%	10	0.2	\$/sqft	3.5	1.21	0.03
Windows - High Efficiency	66%	100%	20	95,051.0	\$/bldg	576,356.8	0.76	0.06
Roof - High Reflectivity	39%	95%	15	3,639.5	\$/bldg	119,276.3	5.20	0.02
Air-Cooled Chiller - Condenser Air Temperature Reset	30%	75%	10	814.4	\$/sqft	723,510.2	> 10	0.00
Air-Cooled Chiller - Economizer	2%	81%	10	813.6	\$/sqft	1,826,138.1	> 10	0.00
Air-Cooled Chiller - VSD on fans	3%	75%	15	2,114.1	\$/bldg	433.1	1.51	0.11
Air-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	712,717.6	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	168,429.7	0.60	0.07
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	25%	37%	15	1,407.1	\$/sqft	44,150.2	3.47	0.02
Air-Cooled Chiller - Maintenance	49%	90%	18	29,436.2	\$/bldg	551,969.2	3.42	0.04
Water-Cooled Chiller - Condenser Water Temperature Reset	30%	75%	4	0.0	\$/sqft	3.2	> 10	0.00
Water-Cooled Chiller - Economizer	2%	81%	10	81.4	\$/sqft	99,822.4	> 10	0.00
Water-Cooled Chiller - VSD on Fans	3%	75%	15	1.2	\$/bldg	30.2	2.03	0.03
Water-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	723,510.2	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	125,726.8	0.30	0.08
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	25%	37%	15	1,407.1	\$/sqft	16,217.3	0.90	0.05
Water-Cooled Chiller - Maintenance	49%	90%	18	29,436.2	\$/bldg	354,125.1	2.04	0.05
RTU - Evaporative Precooler	0%	2%	20	3.0	\$/sqft	2.4	0.08	0.09
RTU - Maintenance	49%	90%	18	29,436.2	\$/bldg	354,125.1	2.35	0.05
Gas Boiler - High Efficiency Hot Water Circulation	1%	34%	10	0.4	\$/sqft	3.5	0.04	0.07
Gas Boiler - Hot Water Reset	30%	75%	3	992.7	\$/sqft	1,983,400.0	2.25	0.00
Gas Boiler - Maintenance	34%	90%	3	2,039.9	\$/bldg	1,162,600.0	0.64	0.00
Gas Furnace - Maintenance	34%	90%	3	2,057.0	\$/bldg	822,900.0	0.45	0.00
Space Heating - Heat Recovery Ventilator	73%	81%	15	0.0	\$/sqft	9.9	> 10	0.00
Heat Pump - Maintenance	5%	95%	18	3,921.2	\$/bldg	857,590.6	> 10	0.00
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	7.1	4.28	0.02
Ventilation - Variable Speed Control	2%	81%	15	0.0	\$/sqft	4.0	> 10	0.00

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	1%	8%	15	0.2	\$/sqft	7.1	1.77	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	6.5	1.21	0.01
Water Heater - Faucet Aerators	20%	20%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	20%	5%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	3.6	0.19	0.07
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	14.4	3.11	0.00
Water Heater - Solar System	0%	25%	20	0.0	\$/sqft	53.9	> 10	0.00
Water Heater - Install Timer	15%	20%	15	0.3	\$/sqft	6.1	0.90	0.03
Water Heater - Pipe Insulation	15%	20%	12	4,624.8	\$/bldg	435,786.0	4.29	0.01
Water Heater - Tank Blanket/Insulation	0%	0%	10	0.0	\$/sqft	3.6	3.16	0.01
Water Heater - Pre-Rinse Spray Valve	20%	5%	5	100.0	\$/sqft	14,822.0	6.49	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	25.2	0.26	0.03
Interior Lighting - Daylighting Controls	15%	20%	8	0.1	\$/sqft	4.0	1.32	0.02
Interior Lighting - LED Exit Lighting	50%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	5%	56%	8	0.1	\$/sqft	1.3	0.69	0.04
Interior Lighting - Task Lighting	10%	75%	5	0.2	\$/sqft	1.4	0.10	0.11
Interior Lighting - Timeclocks and Timers	7%	56%	8	0.2	\$/sqft	0.7	0.12	0.11
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	2.8	0.20	0.09
Interior Fluorescent - Delamp and Install Reflectors	12%	25%	11	0.5	\$/sqft	1.1	0.13	0.11
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.1	0.01	0.18
Exterior Lighting - Daylighting Controls	11%	38%	8	0.0	\$/sqft	0.2	0.15	0.08
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.2	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	0%	12	250.0	\$/sqft	8,953.8	1.52	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	3.58	0.01
Refrigerator - Decommissioning	50%	0%	8	0.1	\$/sqft	5.9	1.38	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	0.1	0.05	0.10
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	0.2	0.04	0.14
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	0.3	0.00	0.15
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	1.52	0.04
Refrigerator - Floating Head Pressure	38%	45%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.18	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.40	0.01
Grocery - Display Case - LED Lighting	0%	0%	8	378.0	\$/sqft	22,291.7	1.57	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	0.4	0.01	0.18
Grocery - ECMs for Display Cases	0%	0%	15	50.0	\$/sqft	4,570.0	6.84	0.01
Grocery - Open Display Case - Night Covers	0%	0%	8	0.1	\$/sqft	0.1	0.03	0.15
Cooking - Exhaust Hoods with Sensor Control	1%	8%	15	1,494.0	\$/bldg	51,124.9	2.56	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	42%	56%	5	17,073.0	\$/bldg	19,756.8	0.02	0.22
Pool Pump - Timer	2%	34%	10	100.0	\$/bldg	20,513.8	8.82	0.00
Pool Heater - Solar	0%	34%	15	3,500.0	\$/bldg	0.1	0.00	0.11
Non-HVAC Motors - Variable Speed Control	2%	38%	10	199.3	\$/bldg	3,749.5	1.60	0.04
Energy Management System	0%	90%	15	99,608.0	\$/bldg	1,077,215.3	0.61	0.05
Thermostat - Clock/Programmable	63%	68%	11	2,943.6	\$/bldg	9,105.8	0.19	0.10
Lodging - Guest Room Controls	0%	0%	15	260.0	\$/sqft	3,134.1	5.47	0.05
HVAC - Occupancy Sensors	14%	56%	8	0.1	\$/sqft	1.4	0.55	0.06
Commissioning - HVAC	0%	0%	25	0.4	\$/sqft	6.4	2.21	0.04
Commissioning - Lighting	0%	0%	5	0.0	\$/sqft	6.0	2.40	0.01
Retrocommissioning - HVAC	5%	36%	25	0.8	\$/sqft	6.4	1.10	0.05
Retrocommissioning - Lighting	12%	17%	5	0.1	\$/sqft	6.0	1.20	0.01
Advanced New Construction Designs	0%	0%	25	2.0	\$/sqft	17.0	2.39	0.05
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	1.83	0.06
Refrigerator - eCube	5%	75%	12	0.0	\$/sqft	0.2	3.91	0.01
Electronics - Smart Power Strip	42%	56%	7	0.0	\$/sqft	0.0	3.03	0.01
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	0.4	> 10	0.00
Insulation - Foundation	2%	13%	20	1.4	\$/sqft	2.1	0.31	0.08
Water Heating - Booster Water Heater	15%	20%	20	0.0	\$/sqft	1.9	> 10	0.00
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.0	\$/sqft	1.4	> 10	0.00
Boiler O2 Trim Controls	2%	81%	15	0.0	\$/sqft	1.7	2.85	0.00
Boiler Parallel Positioning Control	2%	81%	15	0.1	\$/sqft	1.7	0.20	0.03
Boiler blowdown heat exchanger (steam)	2%	81%	20	0.3	\$/sqft	4.7	0.21	0.04
Repair malfunctioning steam traps	34%	90%	6	77.0	\$/sqft	13,880.0	0.47	0.01
Insulate steam lines/condensate tank	15%	20%	12	1,302.0	\$/bldg	1.7	0.00	0.13
Destratification Fans (HVLS)	2%	33%	12	0.1	\$/sqft	10.1	0.62	0.01

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	8%	10	0.1	\$/sqft	11.2	1.08	0.00
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-68 Energy Efficiency Non-Equipment Data-Natural Gas Health, Existing Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	2%	13%	20	92,807.8	\$/bldg	267,655.3	0.65	0.08
Insulation - Ducting	10%	50%	20	0.8	\$/sqft	-	0.00	-
Insulation - Radiant Barrier	5%	13%	20	23,713.7	\$/bldg	102,362.2	1.09	0.07
Insulation - Wall Cavity	2%	13%	20	77,544.0	\$/bldg	33,390.7	0.07	0.09
HVAC - Duct Repair and Sealing	5%	25%	18	56.0	\$/bldg	105,158.2	> 10	0.00
Doors - High Efficiency	0%	0%	10	0.2	\$/sqft	3.5	1.41	0.03
Windows - High Efficiency	66%	100%	20	95,051.0	\$/bldg	576,356.8	1.16	0.06
Roof - High Reflectivity	39%	95%	15	3,639.5	\$/bldg	119,276.3	6.68	0.02
Air-Cooled Chiller - Condenser Air Temperature Reset	30%	75%	10	814.4	\$/sqft	723,510.2	> 10	0.00
Air-Cooled Chiller - Economizer	2%	81%	10	813.6	\$/sqft	1,826,138.1	> 10	0.00
Air-Cooled Chiller - VSD on fans	3%	75%	15	2,114.1	\$/bldg	433.1	1.63	0.11
Air-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	712,717.6	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	168,429.7	0.65	0.07
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	25%	37%	15	1,407.1	\$/sqft	44,150.2	3.75	0.02
Air-Cooled Chiller - Maintenance	49%	90%	18	29,436.2	\$/bldg	551,969.2	3.72	0.04
Water-Cooled Chiller - Condenser Water Temperature Reset	30%	75%	4	0.0	\$/sqft	3.2	> 10	0.00
Water-Cooled Chiller - Economizer	2%	81%	10	81.4	\$/sqft	99,822.4	> 10	0.00
Water-Cooled Chiller - VSD on Fans	3%	75%	15	1.2	\$/bldg	30.2	2.91	0.03
Water-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	723,510.2	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	125,726.8	0.44	0.08
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	25%	37%	15	1,407.1	\$/sqft	16,217.3	1.29	0.05
Water-Cooled Chiller - Maintenance	49%	90%	18	29,436.2	\$/bldg	354,125.1	2.98	0.05
RTU - Evaporative Precooler	0%	2%	20	3.0	\$/sqft	2.4	0.10	0.09
RTU - Maintenance	49%	90%	18	29,436.2	\$/bldg	354,125.1	2.98	0.05
Gas Boiler - High Efficiency Hot Water Circulation	1%	34%	10	0.4	\$/sqft	3.5	0.39	0.07
Gas Boiler - Hot Water Reset	30%	75%	3	992.7	\$/sqft	1,983,400.0	> 10	0.00
Gas Boiler - Maintenance	34%	90%	3	2,039.9	\$/bldg	1,162,600.0	7.00	0.00
Gas Furnace - Maintenance	34%	90%	3	2,057.0	\$/bldg	822,900.0	5.51	0.00
Space Heating - Heat Recovery Ventilator	73%	81%	15	0.0	\$/sqft	9.9	> 10	0.00
Heat Pump - Maintenance	5%	95%	18	3,921.2	\$/bldg	857,590.6	> 10	0.00
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	7.1	6.01	0.02
Ventilation - Variable Speed Control	2%	81%	15	0.0	\$/sqft	4.0	> 10	0.00

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	1%	8%	15	0.2	\$/sqft	7.1	2.47	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	6.5	3.53	0.01
Water Heater - Faucet Aerators	20%	20%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	20%	5%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	3.6	0.45	0.07
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	14.4	8.29	0.00
Water Heater - Solar System	0%	25%	20	0.0	\$/sqft	53.9	> 10	0.00
Water Heater - Install Timer	15%	20%	15	0.3	\$/sqft	6.1	2.12	0.03
Water Heater - Pipe Insulation	15%	20%	12	4,624.8	\$/bldg	435,786.0	5.95	0.01
Water Heater - Tank Blanket/Insulation	0%	0%	10	0.0	\$/sqft	3.6	9.06	0.01
Water Heater - Pre-Rinse Spray Valve	20%	5%	5	100.0	\$/sqft	14,822.0	7.53	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	25.2	2.72	0.03
Interior Lighting - Daylighting Controls	15%	20%	8	0.1	\$/sqft	4.0	1.65	0.02
Interior Lighting - LED Exit Lighting	50%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	5%	56%	8	0.1	\$/sqft	1.3	0.87	0.04
Interior Lighting - Task Lighting	10%	75%	5	0.2	\$/sqft	1.4	0.13	0.11
Interior Lighting - Timeclocks and Timers	7%	56%	8	0.2	\$/sqft	0.7	0.15	0.11
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	2.8	0.25	0.09
Interior Fluorescent - Delamp and Install Reflectors	12%	25%	11	0.5	\$/sqft	1.1	0.16	0.11
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.1	0.01	0.18
Exterior Lighting - Daylighting Controls	11%	38%	8	0.0	\$/sqft	0.2	0.24	0.08
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.2	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	0%	12	250.0	\$/sqft	8,953.8	1.98	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	4.45	0.01
Refrigerator - Decommissioning	50%	0%	8	0.1	\$/sqft	5.9	1.75	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	0.1	0.07	0.10
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	0.2	0.06	0.14
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	0.3	0.00	0.15
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	2.03	0.04
Refrigerator - Floating Head Pressure	38%	45%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.31	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.86	0.01
Grocery - Display Case - LED Lighting	0%	0%	8	378.0	\$/sqft	22,291.7	1.92	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	0.4	0.01	0.18
Grocery - ECMs for Display Cases	0%	0%	15	50.0	\$/sqft	4,570.0	8.65	0.01
Grocery - Open Display Case - Night Covers	0%	0%	8	0.1	\$/sqft	0.1	0.04	0.15
Cooking - Exhaust Hoods with Sensor Control	1%	8%	15	1,494.0	\$/bldg	51,124.9	3.58	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	42%	56%	5	17,073.0	\$/bldg	19,756.8	0.02	0.22
Pool Pump - Timer	2%	34%	10	100.0	\$/bldg	20,513.8	8.82	0.00
Pool Heater - Solar	0%	34%	15	3,500.0	\$/bldg	0.1	0.00	0.11
Non-HVAC Motors - Variable Speed Control	2%	38%	10	199.3	\$/bldg	3,749.5	1.60	0.04
Energy Management System	0%	90%	15	99,608.0	\$/bldg	1,077,215.3	0.96	0.05
Thermostat - Clock/Programmable	63%	68%	11	2,943.6	\$/bldg	9,105.8	0.23	0.10
Lodging - Guest Room Controls	0%	0%	15	260.0	\$/sqft	3,134.1	7.06	0.05
HVAC - Occupancy Sensors	14%	56%	8	0.1	\$/sqft	1.4	0.66	0.06
Commissioning - HVAC	0%	0%	25	0.4	\$/sqft	6.4	2.88	0.04
Commissioning - Lighting	0%	0%	5	0.0	\$/sqft	6.0	2.90	0.01
Retrocommissioning - HVAC	5%	36%	25	0.8	\$/sqft	6.4	1.44	0.05
Retrocommissioning - Lighting	12%	17%	5	0.1	\$/sqft	6.0	1.45	0.01
Advanced New Construction Designs	0%	0%	25	2.0	\$/sqft	17.0	3.13	0.05
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	1.89	0.06
Refrigerator - eCube	5%	75%	12	0.0	\$/sqft	0.2	5.11	0.01
Electronics - Smart Power Strip	42%	56%	7	0.0	\$/sqft	0.0	3.29	0.01
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	0.4	> 10	0.00
Insulation - Foundation	2%	13%	20	1.4	\$/sqft	2.1	0.41	0.08
Water Heating - Booster Water Heater	15%	20%	20	0.0	\$/sqft	1.9	> 10	0.00
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.0	\$/sqft	1.4	> 10	0.00
Boiler O2 Trim Controls	2%	81%	15	0.0	\$/sqft	1.7	> 10	0.00
Boiler Parallel Positioning Control	2%	81%	15	0.1	\$/sqft	1.7	1.95	0.03
Boiler blowdown heat exchanger (steam)	2%	81%	20	0.3	\$/sqft	4.7	2.03	0.04
Repair malfunctioning steam traps	34%	90%	6	77.0	\$/sqft	13,880.0	4.85	0.01
Insulate steam lines/condensate tank	15%	20%	12	1,302.0	\$/bldg	1.7	0.00	0.13
Destratification Fans (HVLS)	2%	33%	12	0.1	\$/sqft	10.1	6.27	0.01

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	8%	10	0.1	\$/sqft	11.2	> 10	0.00
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-69 Energy Efficiency Non-Equipment Data-Electric Health, New Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	2%	13%	20	92,807.8	\$/bldg	154,895.2	0.15	0.08
Insulation - Ducting	9%	50%	20	0.8	\$/sqft	-	0.00	-
Insulation - Radiant Barrier	5%	13%	20	23,713.7	\$/bldg	51,141.2	0.20	0.08
Insulation - Wall Cavity	2%	13%	20	77,544.0	\$/bldg	20,033.1	0.01	0.09
HVAC - Duct Repair and Sealing	25%	25%	18	56.0	\$/bldg	46,691.7	> 10	0.00
Doors - High Efficiency	100%	100%	10	0.2	\$/sqft	3.5	1.43	0.03
Windows - High Efficiency	91%	100%	20	95,051.0	\$/bldg	167,597.7	0.40	0.08
Roof - High Reflectivity	45%	95%	15	3,639.5	\$/bldg	94,055.8	5.52	0.03
Air-Cooled Chiller - Condenser Air Temperature Reset	60%	75%	10	814.4	\$/sqft	311,775.5	> 10	0.00
Air-Cooled Chiller - Economizer	61%	81%	10	813.6	\$/sqft	1,025,553.0	> 10	0.00
Air-Cooled Chiller - VSD on fans	3%	75%	15	2,114.1	\$/bldg	1,287.8	1.49	0.11
Air-Cooled Chiller - Chilled Water Reset	50%	75%	10	814.4	\$/sqft	536,401.6	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	155,585.7	0.45	0.07
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	25%	37%	15	1,407.1	\$/sqft	18,188.9	1.94	0.05
Air-Cooled Chiller - Maintenance	73%	90%	18	29,436.2	\$/bldg	372,336.8	2.68	0.04
Water-Cooled Chiller - Condenser Water Temperature Reset	60%	75%	4	0.0	\$/sqft	2.7	> 10	0.00
Water-Cooled Chiller - Economizer	61%	81%	10	81.4	\$/sqft	-	0.00	-
Water-Cooled Chiller - VSD on Fans	3%	75%	15	1.2	\$/bldg	24.0	2.31	0.03
Water-Cooled Chiller - Chilled Water Reset	50%	75%	10	814.4	\$/sqft	311,775.5	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	134,798.4	0.43	0.07
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	25%	37%	15	1,407.1	\$/sqft	12,866.7	1.10	0.06
Water-Cooled Chiller - Maintenance	73%	90%	18	29,436.2	\$/bldg	350,466.8	2.85	0.05
RTU - Evaporative Precooler	0%	1%	20	3.0	\$/sqft	3.1	0.12	0.09
RTU - Maintenance	73%	90%	18	29,436.2	\$/bldg	350,466.8	2.85	0.05
Gas Boiler - High Efficiency Hot Water Circulation	1%	34%	10	0.4	\$/sqft	1.4	0.02	0.10
Gas Boiler - Hot Water Reset	60%	75%	3	992.7	\$/sqft	1,414,400.0	1.60	0.00
Gas Boiler - Maintenance	34%	90%	3	2,039.9	\$/bldg	877,300.0	0.48	0.00
Gas Furnace - Maintenance	36%	90%	3	2,057.0	\$/bldg	549,600.0	0.30	0.00
Space Heating - Heat Recovery Ventilator	73%	81%	15	0.0	\$/sqft	6.8	> 10	0.00
Heat Pump - Maintenance	9%	95%	18	3,921.2	\$/bldg	597,122.4	> 10	0.01
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	10.2	8.61	0.01
Ventilation - Variable Speed Control	0%	81%	15	0.0	\$/sqft	5.8	> 10	0.00

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	6%	8%	15	0.2	\$/sqft	7.1	2.46	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	6.1	1.15	0.01
Water Heater - Faucet Aerators	27%	20%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	27%	5%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	3.4	0.18	0.07
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	13.6	2.98	0.00
Water Heater - Solar System	0%	25%	20	0.0	\$/sqft	51.2	> 10	0.00
Water Heater - Install Timer	14%	14%	15	0.3	\$/sqft	5.8	0.86	0.03
Water Heater - Pipe Insulation	14%	14%	12	4,624.8	\$/bldg	434,858.0	4.36	0.01
Water Heater - Tank Blanket/Insulation	0%	0%	10	0.0	\$/sqft	3.4	3.03	0.01
Water Heater - Pre-Rinse Spray Valve	27%	5%	5	100.0	\$/sqft	14,822.0	6.55	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	10.4	0.11	0.05
Interior Lighting - Daylighting Controls	32%	32%	8	0.1	\$/sqft	4.0	1.59	0.02
Interior Lighting - LED Exit Lighting	86%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	1.3	0.83	0.04
Interior Lighting - Task Lighting	27%	75%	5	0.2	\$/sqft	1.4	0.12	0.11
Interior Lighting - Timeclocks and Timers	56%	56%	8	0.2	\$/sqft	0.7	0.15	0.11
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	2.8	0.25	0.09
Interior Fluorescent - Delamp and Install Reflectors	18%	25%	11	0.5	\$/sqft	1.1	0.16	0.11
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.1	0.01	0.18
Exterior Lighting - Daylighting Controls	11%	38%	8	0.0	\$/sqft	0.2	0.25	0.08
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.2	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	0%	12	250.0	\$/sqft	8,953.8	1.82	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	4.39	0.01
Refrigerator - Decommissioning	50%	0%	8	0.1	\$/sqft	5.9	1.61	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	0.1	0.03	0.11
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	0.2	0.05	0.14
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	0.3	0.00	0.15
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	1.86	0.04
Refrigerator - Floating Head Pressure	38%	45%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.30	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.13	0.01
Grocery - Display Case - LED Lighting	0%	0%	8	378.0	\$/sqft	22,291.7	1.89	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	0.4	0.01	0.18
Grocery - ECMs for Display Cases	0%	0%	15	50.0	\$/sqft	4,570.0	8.50	0.01
Grocery - Open Display Case - Night Covers	0%	0%	8	0.1	\$/sqft	0.1	0.04	0.15
Cooking - Exhaust Hoods with Sensor Control	1%	8%	15	1,494.0	\$/bldg	51,124.9	3.57	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	42%	56%	5	17,073.0	\$/bldg	19,756.8	0.02	0.22
Pool Pump - Timer	34%	34%	10	100.0	\$/bldg	20,513.8	8.82	0.00
Pool Heater - Solar	0%	34%	15	3,500.0	\$/bldg	0.1	0.00	0.11
Non-HVAC Motors - Variable Speed Control	0%	38%	10	199.3	\$/bldg	3,749.5	1.59	0.04
Energy Management System	0%	90%	15	99,608.0	\$/bldg	1,019,073.7	0.64	0.05
Thermostat - Clock/Programmable	87%	87%	11	2,943.6	\$/bldg	31,614.0	0.80	0.06
Lodging - Guest Room Controls	0%	0%	15	260.0	\$/sqft	3,134.1	7.06	0.05
HVAC - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	1.5	0.69	0.06
Commissioning - HVAC	75%	75%	25	0.4	\$/sqft	6.7	3.02	0.03
Commissioning - Lighting	60%	75%	5	0.0	\$/sqft	6.0	2.81	0.01
Retrocommissioning - HVAC	0%	0%	25	0.8	\$/sqft	6.7	1.51	0.05
Retrocommissioning - Lighting	0%	0%	5	0.1	\$/sqft	6.0	1.40	0.01
Advanced New Construction Designs	5%	75%	25	2.0	\$/sqft	17.8	3.28	0.05
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	2.24	0.06
Refrigerator - eCube	5%	75%	12	0.0	\$/sqft	0.2	4.69	0.01
Electronics - Smart Power Strip	42%	56%	7	0.0	\$/sqft	0.0	3.11	0.01
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	0.4	> 10	0.00
Insulation - Foundation	2%	13%	20	0.3	\$/sqft	2.2	1.81	0.06
Water Heating - Booster Water Heater	14%	14%	20	0.0	\$/sqft	1.8	> 10	0.00
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.0	\$/sqft	1.4	> 10	0.00
Boiler O2 Trim Controls	61%	81%	15	0.0	\$/sqft	0.7	1.17	0.01
Boiler Parallel Positioning Control	61%	81%	15	0.1	\$/sqft	0.7	0.08	0.06
Boiler blowdown heat exchanger (steam)	61%	81%	20	0.3	\$/sqft	1.9	0.09	0.06
Repair malfunctioning steam traps	34%	90%	6	77.0	\$/sqft	13,880.0	0.47	0.01
Insulate steam lines/condensate tank	14%	14%	12	1,302.0	\$/bldg	0.7	0.00	0.13
Destratification Fans (HVLS)	0%	33%	12	0.1	\$/sqft	5.5	0.34	0.02

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	8%	10	0.1	\$/sqft	6.1	0.59	0.01
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-70 Energy Efficiency Non-Equipment Data-Natural Gas Health, New Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	2%	13%	20	92,807.8	\$/bldg	154,895.2	0.15	0.08
Insulation - Ducting	9%	50%	20	0.8	\$/sqft	-	0.00	-
Insulation - Radiant Barrier	5%	13%	20	23,713.7	\$/bldg	51,141.2	0.20	0.08
Insulation - Wall Cavity	2%	13%	20	77,544.0	\$/bldg	20,033.1	0.01	0.09
HVAC - Duct Repair and Sealing	25%	25%	18	56.0	\$/bldg	46,691.7	> 10	0.00
Doors - High Efficiency	100%	100%	10	0.2	\$/sqft	3.5	1.43	0.03
Windows - High Efficiency	91%	100%	20	95,051.0	\$/bldg	167,597.7	0.40	0.08
Roof - High Reflectivity	45%	95%	15	3,639.5	\$/bldg	94,055.8	5.52	0.03
Air-Cooled Chiller - Condenser Air Temperature Reset	60%	75%	10	814.4	\$/sqft	311,775.5	> 10	0.00
Air-Cooled Chiller - Economizer	61%	81%	10	813.6	\$/sqft	1,025,553.0	> 10	0.00
Air-Cooled Chiller - VSD on fans	3%	75%	15	2,114.1	\$/bldg	1,287.8	1.49	0.11
Air-Cooled Chiller - Chilled Water Reset	50%	75%	10	814.4	\$/sqft	536,401.6	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	155,585.7	0.45	0.07
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	25%	37%	15	1,407.1	\$/sqft	18,188.9	1.94	0.05
Air-Cooled Chiller - Maintenance	73%	90%	18	29,436.2	\$/bldg	372,336.8	2.68	0.04
Water-Cooled Chiller - Condenser Water Temperature Reset	60%	75%	4	0.0	\$/sqft	2.7	> 10	0.00
Water-Cooled Chiller - Economizer	61%	81%	10	81.4	\$/sqft	-	0.00	-
Water-Cooled Chiller - VSD on Fans	3%	75%	15	1.2	\$/bldg	24.0	2.31	0.03
Water-Cooled Chiller - Chilled Water Reset	50%	75%	10	814.4	\$/sqft	311,775.5	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	134,798.4	0.43	0.07
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	25%	37%	15	1,407.1	\$/sqft	12,866.7	1.10	0.06
Water-Cooled Chiller - Maintenance	73%	90%	18	29,436.2	\$/bldg	350,466.8	2.85	0.05
RTU - Evaporative Precooler	0%	1%	20	3.0	\$/sqft	3.1	0.12	0.09
RTU - Maintenance	73%	90%	18	29,436.2	\$/bldg	350,466.8	2.85	0.05
Gas Boiler - High Efficiency Hot Water Circulation	1%	34%	10	0.4	\$/sqft	1.4	0.02	0.10
Gas Boiler - Hot Water Reset	60%	75%	3	992.7	\$/sqft	1,414,400.0	1.60	0.00
Gas Boiler - Maintenance	34%	90%	3	2,039.9	\$/bldg	877,300.0	0.48	0.00
Gas Furnace - Maintenance	36%	90%	3	2,057.0	\$/bldg	549,600.0	0.30	0.00
Space Heating - Heat Recovery Ventilator	73%	81%	15	0.0	\$/sqft	6.8	> 10	0.00
Heat Pump - Maintenance	9%	95%	18	3,921.2	\$/bldg	597,122.4	> 10	0.01
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	10.2	8.61	0.01

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - Variable Speed Control	0%	81%	15	0.0	\$/sqft	5.8	> 10	0.00
Ventilation - CO2 Controlled	6%	8%	15	0.2	\$/sqft	7.1	2.46	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	6.1	1.15	0.01
Water Heater - Faucet Aerators	27%	20%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	27%	5%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	3.4	0.18	0.07
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	13.6	2.98	0.00
Water Heater - Solar System	0%	25%	20	0.0	\$/sqft	51.2	> 10	0.00
Water Heater - Install Timer	14%	14%	15	0.3	\$/sqft	5.8	0.86	0.03
Water Heater - Pipe Insulation	14%	14%	12	4,624.8	\$/bldg	434,858.0	4.36	0.01
Water Heater - Tank Blanket/Insulation	0%	0%	10	0.0	\$/sqft	3.4	3.03	0.01
Water Heater - Pre-Rinse Spray Valve	27%	5%	5	100.0	\$/sqft	14,822.0	6.55	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	10.4	0.11	0.05
Interior Lighting - Daylighting Controls	32%	32%	8	0.1	\$/sqft	4.0	1.59	0.02
Interior Lighting - LED Exit Lighting	86%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	1.3	0.83	0.04
Interior Lighting - Task Lighting	27%	75%	5	0.2	\$/sqft	1.4	0.12	0.11
Interior Lighting - Timeclocks and Timers	56%	56%	8	0.2	\$/sqft	0.7	0.15	0.11
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	2.8	0.25	0.09
Interior Fluorescent - Delamp and Install Reflectors	18%	25%	11	0.5	\$/sqft	1.1	0.16	0.11
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.1	0.01	0.18
Exterior Lighting - Daylighting Controls	11%	38%	8	0.0	\$/sqft	0.2	0.25	0.08
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.2	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	0%	12	250.0	\$/sqft	8,953.8	1.82	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	4.39	0.01
Refrigerator - Decommissioning	50%	0%	8	0.1	\$/sqft	5.9	1.61	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	0.1	0.03	0.11
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	0.2	0.05	0.14
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	0.3	0.00	0.15
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	1.86	0.04
Refrigerator - Floating Head Pressure	38%	45%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.30	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.13	0.01
Grocery - Display Case - LED Lighting	0%	0%	8	378.0	\$/sqft	22,291.7	1.89	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	0.4	0.01	0.18
Grocery - ECMs for Display Cases	0%	0%	15	50.0	\$/sqft	4,570.0	8.50	0.01
Grocery - Open Display Case - Night Covers	0%	0%	8	0.1	\$/sqft	0.1	0.04	0.15
Cooking - Exhaust Hoods with Sensor Control	1%	8%	15	1,494.0	\$/bldg	51,124.9	3.57	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	42%	56%	5	17,073.0	\$/bldg	19,756.8	0.02	0.22
Pool Pump - Timer	34%	34%	10	100.0	\$/bldg	20,513.8	8.82	0.00
Pool Heater - Solar	0%	34%	15	3,500.0	\$/bldg	0.1	0.00	0.11
Non-HVAC Motors - Variable Speed Control	0%	38%	10	199.3	\$/bldg	3,749.5	1.59	0.04
Energy Management System	0%	90%	15	99,608.0	\$/bldg	1,019,073.7	0.64	0.05
Thermostat - Clock/Programmable	87%	87%	11	2,943.6	\$/bldg	31,614.0	0.80	0.06
Lodging - Guest Room Controls	0%	0%	15	260.0	\$/sqft	3,134.1	7.06	0.05
HVAC - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	1.5	0.69	0.06
Commissioning - HVAC	75%	75%	25	0.4	\$/sqft	6.7	3.02	0.03
Commissioning - Lighting	60%	75%	5	0.0	\$/sqft	6.0	2.81	0.01
Retrocommissioning - HVAC	0%	0%	25	0.8	\$/sqft	6.7	1.51	0.05
Retrocommissioning - Lighting	0%	0%	5	0.1	\$/sqft	6.0	1.40	0.01
Advanced New Construction Designs	5%	75%	25	2.0	\$/sqft	17.8	3.28	0.05
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	2.24	0.06
Refrigerator - eCube	5%	75%	12	0.0	\$/sqft	0.2	4.69	0.01
Electronics - Smart Power Strip	42%	56%	7	0.0	\$/sqft	0.0	3.11	0.01
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	0.4	> 10	0.00
Insulation - Foundation	2%	13%	20	0.3	\$/sqft	2.2	1.81	0.06
Water Heating - Booster Water Heater	14%	14%	20	0.0	\$/sqft	1.8	> 10	0.00
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.0	\$/sqft	1.4	> 10	0.00
Boiler O2 Trim Controls	61%	81%	15	0.0	\$/sqft	0.7	1.17	0.01
Boiler Parallel Positioning Control	61%	81%	15	0.1	\$/sqft	0.7	0.08	0.06
Boiler blowdown heat exchanger (steam)	61%	81%	20	0.3	\$/sqft	1.9	0.09	0.06
Repair malfunctioning steam traps	34%	90%	6	77.0	\$/sqft	13,880.0	0.47	0.01
Insulate steam lines/condensate tank	14%	14%	12	1,302.0	\$/bldg	0.7	0.00	0.13

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Destratification Fans (HVLS)	0%	33%	12	0.1	\$/sqft	5.5	0.34	0.02
Exhaust Hood Makeup Air	1%	8%	10	0.1	\$/sqft	6.1	0.59	0.01
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-71 Energy Efficiency Non-Equipment Data-Electric Lodging, Existing Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	92,807.8	\$/bldg	267,655.3	0.29	0.08
Insulation - Ducting	5%	50%	20	0.8	\$/sqft	-	0.00	-
Insulation - Radiant Barrier	5%	13%	20	23,713.7	\$/bldg	102,362.2	0.54	0.07
Insulation - Wall Cavity	7%	13%	20	77,544.0	\$/bldg	33,390.7	0.01	0.09
HVAC - Duct Repair and Sealing	5%	25%	18	56.0	\$/bldg	105,158.2	> 10	0.00
Doors - High Efficiency	0%	0%	10	0.2	\$/sqft	1.3	0.57	0.06
Windows - High Efficiency	62%	75%	20	95,051.0	\$/bldg	576,356.8	0.92	0.06
Roof - High Reflectivity	33%	75%	15	3,639.5	\$/bldg	119,276.3	5.95	0.02
Air-Cooled Chiller - Condenser Air Temperature Reset	30%	75%	10	814.4	\$/sqft	723,510.2	> 10	0.00
Air-Cooled Chiller - Economizer	0%	49%	10	813.6	\$/sqft	99,822.4	5.27	0.01
Air-Cooled Chiller - VSD on fans	15%	66%	15	2,114.1	\$/bldg	3,532.9	1.03	0.10
Air-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	712,717.6	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	168,429.7	0.65	0.07
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	16,217.3	1.29	0.05
Air-Cooled Chiller - Maintenance	14%	90%	18	29,436.2	\$/bldg	354,125.1	2.98	0.05
Water-Cooled Chiller - Condenser Water Temperature Reset	30%	75%	4	0.0	\$/sqft	0.9	7.91	0.00
Water-Cooled Chiller - Economizer	0%	49%	10	81.4	\$/sqft	99,822.4	> 10	0.00
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	6.6	0.56	0.07
Water-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	723,510.2	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	168,429.7	0.48	0.07
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	16,217.3	0.94	0.05
Water-Cooled Chiller - Maintenance	14%	90%	18	29,436.2	\$/bldg	354,125.1	2.14	0.05
RTU - Evaporative Precooler	0%	8%	20	3.0	\$/sqft	1.2	0.04	0.09
RTU - Maintenance	14%	90%	18	29,436.2	\$/bldg	354,125.1	2.78	0.05
Gas Boiler - High Efficiency Hot Water Circulation	0%	34%	10	0.4	\$/sqft	0.9	0.01	0.12
Gas Boiler - Hot Water Reset	30%	75%	3	992.7	\$/sqft	1,983,400.0	2.25	0.00
Gas Boiler - Maintenance	14%	90%	3	2,039.9	\$/bldg	1,162,600.0	0.64	0.00
Gas Furnace - Maintenance	14%	90%	3	2,057.0	\$/bldg	822,900.0	0.45	0.00
Space Heating - Heat Recovery Ventilator	44%	49%	15	0.0	\$/sqft	3.4	> 10	0.00
Heat Pump - Maintenance	5%	95%	18	3,921.2	\$/bldg	857,590.6	> 10	0.00
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	2.6	2.05	0.04
Ventilation - Variable Speed Control	0%	81%	15	0.0	\$/sqft	1.5	> 10	0.00

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	1%	15%	15	0.2	\$/sqft	7.1	2.40	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	4.6	1.10	0.01
Water Heater - Faucet Aerators	33%	20%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	33%	45%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	2.6	0.17	0.08
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	10.3	2.81	0.00
Water Heater - Solar System	0%	25%	20	0.0	\$/sqft	38.6	> 10	0.00
Water Heater - Install Timer	24%	29%	15	0.3	\$/sqft	4.4	0.80	0.04
Water Heater - Pipe Insulation	24%	29%	12	4,624.8	\$/bldg	435,786.0	4.24	0.01
Water Heater - Tank Blanket/Insulation	0%	0%	10	0.0	\$/sqft	2.6	2.89	0.01
Water Heater - Pre-Rinse Spray Valve	33%	5%	5	100.0	\$/sqft	14,822.0	6.43	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	6.7	0.07	0.06
Interior Lighting - Daylighting Controls	10%	13%	8	0.1	\$/sqft	2.0	0.55	0.04
Interior Lighting - LED Exit Lighting	50%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	14%	56%	8	0.1	\$/sqft	0.7	0.29	0.07
Interior Lighting - Task Lighting	10%	75%	5	0.2	\$/sqft	0.7	0.04	0.16
Interior Lighting - Timeclocks and Timers	5%	56%	8	0.2	\$/sqft	0.3	0.05	0.14
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	0.3	0.02	0.17
Interior Fluorescent - Delamp and Install Reflectors	0%	56%	11	0.5	\$/sqft	0.6	0.05	0.12
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.1	0.01	0.17
Exterior Lighting - Daylighting Controls	20%	38%	8	0.0	\$/sqft	0.2	0.19	0.07
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.2	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	0%	12	250.0	\$/sqft	8,953.8	1.43	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	3.58	0.01
Refrigerator - Decommissioning	50%	0%	8	0.1	\$/sqft	5.9	1.31	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	0.2	0.07	0.10
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	0.2	0.04	0.14
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	0.4	0.00	0.15
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	1.42	0.04
Refrigerator - Floating Head Pressure	38%	45%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.18	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.01	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.01	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.35	0.01
Grocery - Display Case - LED Lighting	0%	0%	8	378.0	\$/sqft	22,291.7	1.57	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	0.5	0.01	0.18
Grocery - ECMs for Display Cases	0%	0%	15	50.0	\$/sqft	4,570.0	6.84	0.01
Grocery - Open Display Case - Night Covers	0%	0%	8	0.1	\$/sqft	0.1	0.03	0.15
Cooking - Exhaust Hoods with Sensor Control	1%	15%	15	1,494.0	\$/bldg	51,124.9	3.47	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	13%	56%	5	17,073.0	\$/bldg	19,756.8	0.02	0.22
Pool Pump - Timer	43%	48%	10	100.0	\$/bldg	20,513.8	9.00	0.00
Pool Heater - Solar	0%	48%	15	3,500.0	\$/bldg	0.1	0.00	0.11
Non-HVAC Motors - Variable Speed Control	0%	38%	10	199.3	\$/bldg	3,749.5	1.60	0.04
Energy Management System	10%	90%	15	99,608.0	\$/bldg	1,077,215.3	0.69	0.05
Thermostat - Clock/Programmable	52%	57%	11	2,943.6	\$/bldg	144,873.0	3.79	0.02
Lodging - Guest Room Controls	14%	56%	15	260.0	\$/sqft	3,134.1	6.27	0.05
HVAC - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	0.5	0.27	0.11
Commissioning - HVAC	0%	0%	25	0.4	\$/sqft	2.4	0.96	0.06
Commissioning - Lighting	0%	0%	5	0.0	\$/sqft	3.0	1.06	0.01
Retrocommissioning - HVAC	9%	24%	25	0.8	\$/sqft	2.4	0.48	0.07
Retrocommissioning - Lighting	43%	48%	5	0.1	\$/sqft	3.0	0.53	0.02
Advanced New Construction Designs	0%	0%	25	2.0	\$/sqft	6.4	1.28	0.07
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	1.78	0.06
Refrigerator - eCube	5%	75%	12	0.0	\$/sqft	0.2	3.85	0.01
Electronics - Smart Power Strip	13%	56%	7	0.0	\$/sqft	0.0	0.45	0.04
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	0.1	> 10	0.00
Insulation - Foundation	7%	13%	20	1.4	\$/sqft	0.8	0.17	0.09
Water Heating - Booster Water Heater	24%	29%	20	0.0	\$/sqft	1.9	> 10	0.00
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.0	\$/sqft	1.6	> 10	0.00
Boiler O2 Trim Controls	0%	49%	15	0.0	\$/sqft	0.4	0.76	0.01
Boiler Parallel Positioning Control	0%	49%	15	0.1	\$/sqft	0.4	0.05	0.07
Boiler blowdown heat exchanger (steam)	0%	49%	20	0.3	\$/sqft	1.3	0.06	0.07
Repair malfunctioning steam traps	14%	90%	6	77.0	\$/sqft	13,880.0	0.47	0.01
Insulate steam lines/condensate tank	24%	29%	12	1,302.0	\$/bldg	0.4	0.00	0.13
Destratification Fans (HVLS)	0%	0%	12	0.1	\$/sqft	2.9	0.18	0.03

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	15%	10	0.1	\$/sqft	3.2	0.31	0.01
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-72 Energy Efficiency Non-Equipment Data-Natural Gas Lodging, Existing Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	92,807.8	\$/bldg	267,655.3	0.64	0.08
Insulation - Ducting	5%	50%	20	0.8	\$/sqft	-	0.00	-
Insulation - Radiant Barrier	5%	13%	20	23,713.7	\$/bldg	102,362.2	1.08	0.07
Insulation - Wall Cavity	7%	13%	20	77,544.0	\$/bldg	33,390.7	0.06	0.09
HVAC - Duct Repair and Sealing	5%	25%	18	56.0	\$/bldg	105,158.2	> 10	0.00
Doors - High Efficiency	0%	0%	10	0.2	\$/sqft	1.3	0.60	0.06
Windows - High Efficiency	62%	75%	20	95,051.0	\$/bldg	576,356.8	1.15	0.06
Roof - High Reflectivity	33%	75%	15	3,639.5	\$/bldg	119,276.3	6.68	0.02
Air-Cooled Chiller - Condenser Air Temperature Reset	30%	75%	10	814.4	\$/sqft	723,510.2	> 10	0.00
Air-Cooled Chiller - Economizer	0%	49%	10	813.6	\$/sqft	99,822.4	5.27	0.01
Air-Cooled Chiller - VSD on fans	15%	66%	15	2,114.1	\$/bldg	3,532.9	1.03	0.10
Air-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	712,717.6	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	168,429.7	0.65	0.07
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	16,217.3	1.29	0.05
Air-Cooled Chiller - Maintenance	14%	90%	18	29,436.2	\$/bldg	354,125.1	2.98	0.05
Water-Cooled Chiller - Condenser Water Temperature Reset	30%	75%	4	0.0	\$/sqft	0.9	9.57	0.00
Water-Cooled Chiller - Economizer	0%	49%	10	81.4	\$/sqft	99,822.4	> 10	0.00
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	6.6	0.77	0.07
Water-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	723,510.2	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	168,429.7	0.65	0.07
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	16,217.3	1.29	0.05
Water-Cooled Chiller - Maintenance	14%	90%	18	29,436.2	\$/bldg	354,125.1	2.98	0.05
RTU - Evaporative Precooler	0%	8%	20	3.0	\$/sqft	1.2	0.05	0.09
RTU - Maintenance	14%	90%	18	29,436.2	\$/bldg	354,125.1	2.98	0.05
Gas Boiler - High Efficiency Hot Water Circulation	0%	34%	10	0.4	\$/sqft	0.9	0.11	0.12
Gas Boiler - Hot Water Reset	30%	75%	3	992.7	\$/sqft	1,983,400.0	> 10	0.00
Gas Boiler - Maintenance	14%	90%	3	2,039.9	\$/bldg	1,162,600.0	7.33	0.00
Gas Furnace - Maintenance	14%	90%	3	2,057.0	\$/bldg	822,900.0	5.50	0.00
Space Heating - Heat Recovery Ventilator	44%	49%	15	0.0	\$/sqft	3.4	> 10	0.00
Heat Pump - Maintenance	5%	95%	18	3,921.2	\$/bldg	857,590.6	> 10	0.00
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	2.6	2.12	0.04
Ventilation - Variable Speed Control	0%	81%	15	0.0	\$/sqft	1.5	> 10	0.00

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	1%	15%	15	0.2	\$/sqft	7.1	2.47	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	4.6	2.45	0.01
Water Heater - Faucet Aerators	33%	20%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	33%	45%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	2.6	0.32	0.08
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	10.3	5.81	0.00
Water Heater - Solar System	0%	25%	20	0.0	\$/sqft	38.6	> 10	0.00
Water Heater - Install Timer	24%	29%	15	0.3	\$/sqft	4.4	1.51	0.04
Water Heater - Pipe Insulation	24%	29%	12	4,624.8	\$/bldg	435,786.0	5.95	0.01
Water Heater - Tank Blanket/Insulation	0%	0%	10	0.0	\$/sqft	2.6	6.30	0.01
Water Heater - Pre-Rinse Spray Valve	33%	5%	5	100.0	\$/sqft	14,822.0	7.53	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	6.7	0.74	0.06
Interior Lighting - Daylighting Controls	10%	13%	8	0.1	\$/sqft	2.0	0.76	0.04
Interior Lighting - LED Exit Lighting	50%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	14%	56%	8	0.1	\$/sqft	0.7	0.40	0.07
Interior Lighting - Task Lighting	10%	75%	5	0.2	\$/sqft	0.7	0.06	0.16
Interior Lighting - Timeclocks and Timers	5%	56%	8	0.2	\$/sqft	0.3	0.07	0.14
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	0.3	0.02	0.17
Interior Fluorescent - Delamp and Install Reflectors	0%	56%	11	0.5	\$/sqft	0.6	0.07	0.12
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.1	0.01	0.17
Exterior Lighting - Daylighting Controls	20%	38%	8	0.0	\$/sqft	0.2	0.28	0.07
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.2	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	0%	12	250.0	\$/sqft	8,953.8	1.98	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	4.45	0.01
Refrigerator - Decommissioning	50%	0%	8	0.1	\$/sqft	5.9	1.75	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	0.2	0.10	0.10
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	0.2	0.06	0.14
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	0.4	0.00	0.15
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	2.03	0.04
Refrigerator - Floating Head Pressure	38%	45%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.31	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.86	0.01
Grocery - Display Case - LED Lighting	0%	0%	8	378.0	\$/sqft	22,291.7	1.92	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	0.5	0.01	0.18
Grocery - ECMs for Display Cases	0%	0%	15	50.0	\$/sqft	4,570.0	8.65	0.01
Grocery - Open Display Case - Night Covers	0%	0%	8	0.1	\$/sqft	0.1	0.04	0.15
Cooking - Exhaust Hoods with Sensor Control	1%	15%	15	1,494.0	\$/bldg	51,124.9	3.58	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	13%	56%	5	17,073.0	\$/bldg	19,756.8	0.02	0.22
Pool Pump - Timer	43%	48%	10	100.0	\$/bldg	20,513.8	8.82	0.00
Pool Heater - Solar	0%	48%	15	3,500.0	\$/bldg	0.1	0.00	0.11
Non-HVAC Motors - Variable Speed Control	0%	38%	10	199.3	\$/bldg	3,749.5	1.60	0.04
Energy Management System	10%	90%	15	99,608.0	\$/bldg	1,077,215.3	0.95	0.05
Thermostat - Clock/Programmable	52%	57%	11	2,943.6	\$/bldg	144,873.0	4.22	0.02
Lodging - Guest Room Controls	14%	56%	15	260.0	\$/sqft	3,134.1	7.06	0.05
HVAC - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	0.5	0.30	0.11
Commissioning - HVAC	0%	0%	25	0.4	\$/sqft	2.4	1.09	0.06
Commissioning - Lighting	0%	0%	5	0.0	\$/sqft	3.0	1.43	0.01
Retrocommissioning - HVAC	9%	24%	25	0.8	\$/sqft	2.4	0.54	0.07
Retrocommissioning - Lighting	43%	48%	5	0.1	\$/sqft	3.0	0.71	0.02
Advanced New Construction Designs	0%	0%	25	2.0	\$/sqft	6.4	1.45	0.07
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	1.77	0.06
Refrigerator - eCube	5%	75%	12	0.0	\$/sqft	0.2	5.34	0.01
Electronics - Smart Power Strip	13%	56%	7	0.0	\$/sqft	0.0	0.50	0.04
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	0.1	> 10	0.00
Insulation - Foundation	7%	13%	20	1.4	\$/sqft	0.8	0.19	0.09
Water Heating - Booster Water Heater	24%	29%	20	0.0	\$/sqft	1.9	> 10	0.00
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.0	\$/sqft	1.6	> 10	0.00
Boiler O2 Trim Controls	0%	49%	15	0.0	\$/sqft	0.4	7.94	0.01
Boiler Parallel Positioning Control	0%	49%	15	0.1	\$/sqft	0.4	0.55	0.07
Boiler blowdown heat exchanger (steam)	0%	49%	20	0.3	\$/sqft	1.3	0.57	0.07
Repair malfunctioning steam traps	14%	90%	6	77.0	\$/sqft	13,880.0	5.09	0.01
Insulate steam lines/condensate tank	24%	29%	12	1,302.0	\$/bldg	0.4	0.00	0.13
Destratification Fans (HVLS)	0%	0%	12	0.1	\$/sqft	2.9	1.91	0.03

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	15%	10	0.1	\$/sqft	3.2	3.35	0.01
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-73 Energy Efficiency Non-Equipment Data-Electric Lodging, New Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	92,807.8	\$/bldg	154,895.2	0.15	0.08
Insulation - Ducting	0%	50%	20	0.8	\$/sqft	-	0.00	-
Insulation - Radiant Barrier	5%	13%	20	23,713.7	\$/bldg	51,141.2	0.21	0.08
Insulation - Wall Cavity	7%	13%	20	77,544.0	\$/bldg	20,033.1	0.01	0.09
HVAC - Duct Repair and Sealing	25%	25%	18	56.0	\$/bldg	46,691.7	> 10	0.00
Doors - High Efficiency	100%	100%	10	0.2	\$/sqft	1.6	0.67	0.06
Windows - High Efficiency	75%	75%	20	95,051.0	\$/bldg	167,597.7	0.40	0.08
Roof - High Reflectivity	50%	95%	15	3,639.5	\$/bldg	94,055.8	5.57	0.03
Air-Cooled Chiller - Condenser Air Temperature Reset	60%	75%	10	814.4	\$/sqft	311,775.5	> 10	0.00
Air-Cooled Chiller - Economizer	37%	49%	10	813.6	\$/sqft	99,822.4	5.27	0.01
Air-Cooled Chiller - VSD on fans	15%	66%	15	2,114.1	\$/bldg	3,612.7	0.85	0.10
Air-Cooled Chiller - Chilled Water Reset	10%	75%	10	814.4	\$/sqft	536,401.6	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	155,585.7	0.45	0.07
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	12,866.7	1.10	0.06
Air-Cooled Chiller - Maintenance	25%	90%	18	29,436.2	\$/bldg	350,466.8	2.85	0.05
Water-Cooled Chiller - Condenser Water Temperature Reset	60%	75%	4	0.0	\$/sqft	0.8	8.91	0.00
Water-Cooled Chiller - Economizer	37%	49%	10	81.4	\$/sqft	-	0.00	-
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	5.2	0.60	0.08
Water-Cooled Chiller - Chilled Water Reset	10%	75%	10	814.4	\$/sqft	311,775.5	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	155,585.7	0.45	0.07
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	12,866.7	1.10	0.06
Water-Cooled Chiller - Maintenance	25%	90%	18	29,436.2	\$/bldg	350,466.8	2.85	0.05
RTU - Evaporative Precooler	0%	8%	20	3.0	\$/sqft	1.1	0.04	0.09
RTU - Maintenance	25%	90%	18	29,436.2	\$/bldg	350,466.8	2.85	0.05
Gas Boiler - High Efficiency Hot Water Circulation	5%	34%	10	0.4	\$/sqft	0.7	0.01	0.12
Gas Boiler - Hot Water Reset	60%	75%	3	992.7	\$/sqft	1,414,400.0	1.60	0.00
Gas Boiler - Maintenance	25%	90%	3	2,039.9	\$/bldg	877,300.0	0.48	0.00
Gas Furnace - Maintenance	25%	90%	3	2,057.0	\$/bldg	549,600.0	0.30	0.00
Space Heating - Heat Recovery Ventilator	44%	49%	15	0.0	\$/sqft	3.7	> 10	0.00
Heat Pump - Maintenance	0%	95%	18	3,921.2	\$/bldg	597,122.4	> 10	0.01
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	4.2	3.41	0.03
Ventilation - Variable Speed Control	0%	81%	15	0.0	\$/sqft	2.4	> 10	0.00

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	12%	15%	15	0.2	\$/sqft	7.1	2.46	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	4.4	1.08	0.01
Water Heater - Faucet Aerators	33%	20%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	33%	45%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	2.5	0.16	0.08
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	9.8	2.75	0.00
Water Heater - Solar System	0%	25%	20	0.0	\$/sqft	36.9	> 10	0.00
Water Heater - Install Timer	30%	30%	15	0.3	\$/sqft	4.2	0.79	0.04
Water Heater - Pipe Insulation	30%	30%	12	4,624.8	\$/bldg	434,858.0	4.36	0.01
Water Heater - Tank Blanket/Insulation	0%	0%	10	0.0	\$/sqft	2.5	2.83	0.01
Water Heater - Pre-Rinse Spray Valve	33%	5%	5	100.0	\$/sqft	14,822.0	6.55	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	5.0	0.05	0.07
Interior Lighting - Daylighting Controls	19%	19%	8	0.1	\$/sqft	2.0	0.72	0.04
Interior Lighting - LED Exit Lighting	86%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	0.7	0.38	0.07
Interior Lighting - Task Lighting	0%	75%	5	0.2	\$/sqft	0.7	0.06	0.16
Interior Lighting - Timeclocks and Timers	56%	56%	8	0.2	\$/sqft	0.3	0.07	0.14
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	0.3	0.02	0.17
Interior Fluorescent - Delamp and Install Reflectors	0%	56%	11	0.5	\$/sqft	0.6	0.07	0.12
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.1	0.01	0.17
Exterior Lighting - Daylighting Controls	20%	38%	8	0.0	\$/sqft	0.2	0.26	0.07
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.2	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	0%	12	250.0	\$/sqft	8,953.8	1.70	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	4.39	0.01
Refrigerator - Decommissioning	50%	0%	8	0.1	\$/sqft	5.9	1.51	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	0.1	0.04	0.10
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	0.2	0.06	0.14
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	0.4	0.00	0.15
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	1.73	0.04
Refrigerator - Floating Head Pressure	38%	45%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.30	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.12	0.01
Grocery - Display Case - LED Lighting	0%	0%	8	378.0	\$/sqft	22,291.7	1.89	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	0.5	0.01	0.18
Grocery - ECMs for Display Cases	0%	0%	15	50.0	\$/sqft	4,570.0	8.50	0.01
Grocery - Open Display Case - Night Covers	0%	0%	8	0.1	\$/sqft	0.1	0.04	0.15
Cooking - Exhaust Hoods with Sensor Control	1%	15%	15	1,494.0	\$/bldg	51,124.9	3.56	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	13%	56%	5	17,073.0	\$/bldg	19,756.8	0.02	0.22
Pool Pump - Timer	55%	55%	10	100.0	\$/bldg	20,513.8	8.82	0.00
Pool Heater - Solar	0%	55%	15	3,500.0	\$/bldg	0.1	0.00	0.11
Non-HVAC Motors - Variable Speed Control	0%	38%	10	199.3	\$/bldg	3,749.5	1.59	0.04
Energy Management System	0%	90%	15	99,608.0	\$/bldg	1,019,073.7	0.64	0.05
Thermostat - Clock/Programmable	100%	100%	11	2,943.6	\$/bldg	165,158.8	4.85	0.02
Lodging - Guest Room Controls	56%	56%	15	260.0	\$/sqft	3,134.1	7.12	0.05
HVAC - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	0.5	0.28	0.11
Commissioning - HVAC	75%	75%	25	0.4	\$/sqft	2.2	1.02	0.06
Commissioning - Lighting	60%	75%	5	0.0	\$/sqft	3.0	1.38	0.01
Retrocommissioning - HVAC	0%	0%	25	0.8	\$/sqft	2.2	0.51	0.07
Retrocommissioning - Lighting	0%	0%	5	0.1	\$/sqft	3.0	0.69	0.02
Advanced New Construction Designs	5%	75%	25	2.0	\$/sqft	6.0	1.37	0.07
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	2.04	0.06
Refrigerator - eCube	5%	75%	12	0.0	\$/sqft	0.3	4.80	0.01
Electronics - Smart Power Strip	13%	56%	7	0.0	\$/sqft	0.0	0.47	0.04
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	0.1	> 10	0.00
Insulation - Foundation	7%	13%	20	0.3	\$/sqft	0.7	0.75	0.08
Water Heating - Booster Water Heater	30%	30%	20	0.0	\$/sqft	1.9	> 10	0.00
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.0	\$/sqft	1.6	> 10	0.00
Boiler O2 Trim Controls	37%	49%	15	0.0	\$/sqft	0.3	0.56	0.01
Boiler Parallel Positioning Control	37%	49%	15	0.1	\$/sqft	0.3	0.04	0.08
Boiler blowdown heat exchanger (steam)	37%	49%	20	0.3	\$/sqft	0.9	0.04	0.07
Repair malfunctioning steam traps	25%	90%	6	77.0	\$/sqft	13,880.0	0.47	0.01
Insulate steam lines/condensate tank	30%	30%	12	1,302.0	\$/bldg	0.3	0.00	0.13
Destratification Fans (HVLS)	0%	0%	12	0.1	\$/sqft	2.1	0.13	0.04

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	15%	10	0.1	\$/sqft	2.3	0.22	0.02
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-74 Energy Efficiency Non-Equipment Data-Natural Gas Lodging, New Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	92,807.8	\$/bldg	154,895.2	0.34	0.08
Insulation - Ducting	0%	50%	20	0.8	\$/sqft	-	0.00	-
Insulation - Radiant Barrier	5%	13%	20	23,713.7	\$/bldg	51,141.2	0.45	0.08
Insulation - Wall Cavity	7%	13%	20	77,544.0	\$/bldg	20,033.1	0.04	0.09
HVAC - Duct Repair and Sealing	25%	25%	18	56.0	\$/bldg	46,691.7	> 10	0.00
Doors - High Efficiency	100%	100%	10	0.2	\$/sqft	1.6	0.67	0.06
Windows - High Efficiency	75%	75%	20	95,051.0	\$/bldg	167,597.7	0.40	0.08
Roof - High Reflectivity	50%	95%	15	3,639.5	\$/bldg	94,055.8	5.53	0.03
Air-Cooled Chiller - Condenser Air Temperature Reset	60%	75%	10	814.4	\$/sqft	311,775.5	> 10	0.00
Air-Cooled Chiller - Economizer	37%	49%	10	813.6	\$/sqft	99,822.4	5.27	0.01
Air-Cooled Chiller - VSD on fans	15%	66%	15	2,114.1	\$/bldg	3,612.7	0.85	0.10
Air-Cooled Chiller - Chilled Water Reset	10%	75%	10	814.4	\$/sqft	536,401.6	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	155,585.7	0.45	0.07
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	12,866.7	1.10	0.06
Air-Cooled Chiller - Maintenance	25%	90%	18	29,436.2	\$/bldg	350,466.8	2.85	0.05
Water-Cooled Chiller - Condenser Water Temperature Reset	60%	75%	4	0.0	\$/sqft	0.8	8.91	0.00
Water-Cooled Chiller - Economizer	37%	49%	10	81.4	\$/sqft	-	0.00	-
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	5.2	0.60	0.08
Water-Cooled Chiller - Chilled Water Reset	10%	75%	10	814.4	\$/sqft	311,775.5	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	155,585.7	0.45	0.07
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	12,866.7	1.10	0.06
Water-Cooled Chiller - Maintenance	25%	90%	18	29,436.2	\$/bldg	350,466.8	2.85	0.05
RTU - Evaporative Precooler	0%	8%	20	3.0	\$/sqft	1.1	0.04	0.09
RTU - Maintenance	25%	90%	18	29,436.2	\$/bldg	350,466.8	2.85	0.05
Gas Boiler - High Efficiency Hot Water Circulation	5%	34%	10	0.4	\$/sqft	0.7	0.09	0.12
Gas Boiler - Hot Water Reset	60%	75%	3	992.7	\$/sqft	1,414,400.0	> 10	0.00
Gas Boiler - Maintenance	25%	90%	3	2,039.9	\$/bldg	877,300.0	6.04	0.00
Gas Furnace - Maintenance	25%	90%	3	2,057.0	\$/bldg	549,600.0	3.70	0.00
Space Heating - Heat Recovery Ventilator	44%	49%	15	0.0	\$/sqft	3.7	> 10	0.00
Heat Pump - Maintenance	0%	95%	18	3,921.2	\$/bldg	597,122.4	> 10	0.01
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	4.2	3.43	0.03
Ventilation - Variable Speed Control	0%	81%	15	0.0	\$/sqft	2.4	> 10	0.00

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	12%	15%	15	0.2	\$/sqft	7.1	2.47	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	4.4	2.39	0.01
Water Heater - Faucet Aerators	33%	20%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	33%	45%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	2.5	0.32	0.08
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	9.8	5.67	0.00
Water Heater - Solar System	0%	25%	20	0.0	\$/sqft	36.9	> 10	0.00
Water Heater - Install Timer	30%	30%	15	0.3	\$/sqft	4.2	1.49	0.04
Water Heater - Pipe Insulation	30%	30%	12	4,624.8	\$/bldg	434,858.0	6.05	0.01
Water Heater - Tank Blanket/Insulation	0%	0%	10	0.0	\$/sqft	2.5	6.18	0.01
Water Heater - Pre-Rinse Spray Valve	33%	5%	5	100.0	\$/sqft	14,822.0	7.58	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	5.0	0.59	0.07
Interior Lighting - Daylighting Controls	19%	19%	8	0.1	\$/sqft	2.0	0.76	0.04
Interior Lighting - LED Exit Lighting	86%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	0.7	0.40	0.07
Interior Lighting - Task Lighting	0%	75%	5	0.2	\$/sqft	0.7	0.06	0.16
Interior Lighting - Timeclocks and Timers	56%	56%	8	0.2	\$/sqft	0.3	0.07	0.14
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	0.3	0.02	0.17
Interior Fluorescent - Delamp and Install Reflectors	0%	56%	11	0.5	\$/sqft	0.6	0.07	0.12
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.1	0.01	0.17
Exterior Lighting - Daylighting Controls	20%	38%	8	0.0	\$/sqft	0.2	0.28	0.07
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.2	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	0%	12	250.0	\$/sqft	8,953.8	1.98	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	4.45	0.01
Refrigerator - Decommissioning	50%	0%	8	0.1	\$/sqft	5.9	1.75	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	0.1	0.05	0.10
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	0.2	0.06	0.14
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	0.4	0.00	0.15
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	2.03	0.04
Refrigerator - Floating Head Pressure	38%	45%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.31	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.86	0.01
Grocery - Display Case - LED Lighting	0%	0%	8	378.0	\$/sqft	22,291.7	1.92	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	0.5	0.01	0.18
Grocery - ECMs for Display Cases	0%	0%	15	50.0	\$/sqft	4,570.0	8.65	0.01
Grocery - Open Display Case - Night Covers	0%	0%	8	0.1	\$/sqft	0.1	0.04	0.15
Cooking - Exhaust Hoods with Sensor Control	1%	15%	15	1,494.0	\$/bldg	51,124.9	3.58	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	13%	56%	5	17,073.0	\$/bldg	19,756.8	0.02	0.22
Pool Pump - Timer	55%	55%	10	100.0	\$/bldg	20,513.8	8.82	0.00
Pool Heater - Solar	0%	55%	15	3,500.0	\$/bldg	0.1	0.00	0.11
Non-HVAC Motors - Variable Speed Control	0%	38%	10	199.3	\$/bldg	3,749.5	1.60	0.04
Energy Management System	0%	90%	15	99,608.0	\$/bldg	1,019,073.7	0.84	0.05
Thermostat - Clock/Programmable	100%	100%	11	2,943.6	\$/bldg	165,158.8	4.81	0.02
Lodging - Guest Room Controls	56%	56%	15	260.0	\$/sqft	3,134.1	7.06	0.05
HVAC - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	0.5	0.28	0.11
Commissioning - HVAC	75%	75%	25	0.4	\$/sqft	2.2	1.01	0.06
Commissioning - Lighting	60%	75%	5	0.0	\$/sqft	3.0	1.43	0.01
Retrocommissioning - HVAC	0%	0%	25	0.8	\$/sqft	2.2	0.51	0.07
Retrocommissioning - Lighting	0%	0%	5	0.1	\$/sqft	3.0	0.72	0.02
Advanced New Construction Designs	5%	75%	25	2.0	\$/sqft	6.0	1.35	0.07
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	1.76	0.06
Refrigerator - eCube	5%	75%	12	0.0	\$/sqft	0.3	5.61	0.01
Electronics - Smart Power Strip	13%	56%	7	0.0	\$/sqft	0.0	0.50	0.04
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	0.1	> 10	0.00
Insulation - Foundation	7%	13%	20	0.3	\$/sqft	0.7	0.75	0.08
Water Heating - Booster Water Heater	30%	30%	20	0.0	\$/sqft	1.9	> 10	0.00
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.0	\$/sqft	1.6	> 10	0.00
Boiler O2 Trim Controls	37%	49%	15	0.0	\$/sqft	0.3	6.50	0.01
Boiler Parallel Positioning Control	37%	49%	15	0.1	\$/sqft	0.3	0.45	0.08
Boiler blowdown heat exchanger (steam)	37%	49%	20	0.3	\$/sqft	0.9	0.47	0.07
Repair malfunctioning steam traps	25%	90%	6	77.0	\$/sqft	13,880.0	5.60	0.01
Insulate steam lines/condensate tank	30%	30%	12	1,302.0	\$/bldg	0.3	0.00	0.13
Destratification Fans (HVLS)	0%	0%	12	0.1	\$/sqft	2.1	1.53	0.04

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	15%	10	0.1	\$/sqft	2.3	2.67	0.02
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-75 Energy Efficiency Non-Equipment Data-Electric Warehouse, Existing Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	56,202.0	\$/bldg	209,122.3	0.46	0.07
Insulation - Ducting	15%	50%	20	0.8	\$/sqft	0.8	0.15	0.09
Insulation - Radiant Barrier	7%	13%	20	14,360.4	\$/bldg	92,766.4	0.77	0.06
Insulation - Wall Cavity	7%	13%	20	35,615.6	\$/bldg	217,391.3	0.56	0.06
HVAC - Duct Repair and Sealing	5%	25%	18	54.7	\$/bldg	105,158.2	> 10	0.00
Doors - High Efficiency	0%	0%	10	0.2	\$/sqft	2.4	1.79	0.04
Windows - High Efficiency	47%	75%	20	2,181.0	\$/bldg	-	0.00	-
Roof - High Reflectivity	50%	75%	15	2,204.0	\$/bldg	183,780.8	8.12	0.01
Air-Cooled Chiller - Condenser Air Temperature Reset	30%	75%	10	814.4	\$/sqft	723,510.2	> 10	0.00
Air-Cooled Chiller - Economizer	0%	49%	10	813.6	\$/sqft	1,826,138.1	> 10	0.00
Air-Cooled Chiller - VSD on fans	15%	66%	15	2,063.3	\$/bldg	843.3	0.95	0.11
Air-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	836,586.8	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	125,726.8	0.44	0.08
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	44,150.2	3.75	0.02
Air-Cooled Chiller - Maintenance	62%	90%	18	12,397.5	\$/bldg	551,969.2	8.82	0.02
Water-Cooled Chiller - Condenser Water Temperature Reset	30%	75%	4	0.0	\$/sqft	2.2	> 10	0.00
Water-Cooled Chiller - Economizer	0%	49%	10	5,493.8	\$/sqft	1,826,138.1	> 10	0.00
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	12.6	6.30	0.05
Water-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	723,510.2	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	125,726.8	0.44	0.08
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	44,150.2	3.75	0.02
Water-Cooled Chiller - Maintenance	62%	90%	18	12,397.5	\$/bldg	551,969.2	8.82	0.02
RTU - Evaporative Precooler	0%	6%	20	3.0	\$/sqft	1.1	0.03	0.09
RTU - Maintenance	62%	90%	18	12,397.5	\$/bldg	551,969.2	6.73	0.02
Gas Boiler - High Efficiency Hot Water Circulation	0%	34%	10	0.4	\$/sqft	7.4	0.08	0.04
Gas Boiler - Hot Water Reset	30%	75%	3	992.7	\$/sqft	1,440,300.0	1.63	0.00
Gas Boiler - Maintenance	32%	90%	3	2,039.9	\$/bldg	346,700.0	0.19	0.01
Gas Furnace - Maintenance	32%	90%	3	2,007.5	\$/bldg	27,100.0	0.02	0.07
Space Heating - Heat Recovery Ventilator	44%	49%	15	0.0	\$/sqft	12.2	> 10	0.00
Heat Pump - Maintenance	3%	95%	18	3,826.9	\$/bldg	562,750.4	> 10	0.01
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	1.0	0.75	0.06
Ventilation - Variable Speed Control	4%	81%	15	0.0	\$/sqft	0.5	3.05	0.03

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	1%	8%	15	0.2	\$/sqft	7.1	2.36	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	0.5	0.12	0.06
Water Heater - Faucet Aerators	0%	0%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	0%	0%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	0.3	0.02	0.14
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	1.1	0.32	0.03
Water Heater - Solar System	0%	25%	20	0.1	\$/sqft	4.2	6.64	0.01
Water Heater - Install Timer	6%	11%	15	0.3	\$/sqft	0.5	0.09	0.10
Water Heater - Pipe Insulation	6%	11%	12	3,001.4	\$/bldg	35,750.0	0.67	0.05
Water Heater - Tank Blanket/Insulation	0%	0%	10	0.0	\$/sqft	0.3	0.31	0.05
Water Heater - Pre-Rinse Spray Valve	0%	0%	5	100.0	\$/sqft	14,822.0	6.49	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	54.0	0.56	0.01
Interior Lighting - Daylighting Controls	15%	20%	8	0.1	\$/sqft	2.0	0.71	0.04
Interior Lighting - LED Exit Lighting	50%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	6%	56%	8	0.1	\$/sqft	0.7	0.37	0.07
Interior Lighting - Task Lighting	6%	75%	5	0.2	\$/sqft	0.7	0.04	0.16
Interior Lighting - Timeclocks and Timers	3%	56%	8	0.2	\$/sqft	0.3	0.06	0.14
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	1.6	0.13	0.12
Interior Fluorescent - Delamp and Install Reflectors	18%	56%	11	0.5	\$/sqft	0.6	0.07	0.12
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.1	0.01	0.17
Exterior Lighting - Daylighting Controls	18%	38%	8	0.0	\$/sqft	0.2	0.16	0.07
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.2	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	0%	12	250.0	\$/sqft	8,953.8	1.45	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	4.45	0.01
Refrigerator - Decommissioning	50%	0%	8	0.1	\$/sqft	5.9	1.34	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	-	0.00	-
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	0.4	0.13	0.10
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	1.8	0.00	0.15
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	1.43	0.04
Refrigerator - Floating Head Pressure	38%	45%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.30	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.37	0.01
Grocery - Display Case - LED Lighting	0%	0%	8	378.0	\$/sqft	22,291.7	1.92	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	-	0.00	-
Grocery - ECMs for Display Cases	0%	0%	15	50.0	\$/sqft	4,570.0	8.65	0.01
Grocery - Open Display Case - Night Covers	0%	0%	8	0.1	\$/sqft	-	0.00	-
Cooking - Exhaust Hoods with Sensor Control	1%	8%	15	1,494.0	\$/bldg	51,124.9	3.41	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	13%	56%	5	7,190.6	\$/bldg	20,441.7	0.05	0.16
Pool Pump - Timer	0%	34%	10	100.0	\$/bldg	20,513.8	8.82	0.00
Pool Heater - Solar	0%	34%	15	3,500.0	\$/bldg	-	0.00	-
Non-HVAC Motors - Variable Speed Control	0%	38%	10	199.3	\$/bldg	3,749.5	1.60	0.04
Energy Management System	7%	75%	15	41,951.5	\$/bldg	899,536.2	1.42	0.03
Thermostat - Clock/Programmable	32%	50%	11	1,239.8	\$/bldg	9,105.8	1.31	0.07
Lodging - Guest Room Controls	0%	0%	15	260.0	\$/sqft	3,134.1	5.21	0.05
HVAC - Occupancy Sensors	14%	56%	8	0.1	\$/sqft	0.8	1.09	0.09
Commissioning - HVAC	0%	0%	25	0.4	\$/sqft	3.3	1.10	0.05
Commissioning - Lighting	0%	0%	5	0.0	\$/sqft	3.1	1.07	0.01
Retrocommissioning - HVAC	5%	36%	25	0.8	\$/sqft	3.3	0.55	0.06
Retrocommissioning - Lighting	32%	37%	5	0.1	\$/sqft	3.1	0.54	0.02
Advanced New Construction Designs	0%	0%	25	2.0	\$/sqft	8.9	5.21	0.06
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	2.27	0.06
Refrigerator - eCube	5%	75%	12	0.0	\$/sqft	1.0	6.47	0.01
Electronics - Smart Power Strip	13%	56%	7	0.0	\$/sqft	0.0	1.10	0.02
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	0.1	> 10	0.00
Insulation - Foundation	7%	13%	20	1.4	\$/sqft	1.1	0.68	0.09
Water Heating - Booster Water Heater	6%	11%	20	0.0	\$/sqft	0.2	2.92	0.04
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.0	\$/sqft	7.5	> 10	0.00
Boiler O2 Trim Controls	0%	49%	15	0.0	\$/sqft	3.6	2.58	0.00
Boiler Parallel Positioning Control	0%	49%	15	0.2	\$/sqft	3.6	0.18	0.03
Boiler blowdown heat exchanger (steam)	0%	49%	20	0.7	\$/sqft	10.1	0.19	0.04
Repair malfunctioning steam traps	32%	90%	6	77.0	\$/sqft	13,880.0	0.47	0.01
Insulate steam lines/condensate tank	6%	11%	12	1,302.0	\$/bldg	3.6	0.00	0.13
Destratification Fans (HVLS)	4%	33%	12	0.2	\$/sqft	14.7	0.38	0.01

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	8%	10	0.1	\$/sqft	16.3	0.66	0.01
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-76 Energy Efficiency Non-Equipment Data-Natural Gas Warehouse, Existing Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	56,202.0	\$/bldg	209,122.3	0.71	0.07
Insulation - Ducting	15%	50%	20	0.8	\$/sqft	0.8	0.20	0.09
Insulation - Radiant Barrier	7%	13%	20	14,360.4	\$/bldg	92,766.4	1.18	0.06
Insulation - Wall Cavity	7%	13%	20	35,615.6	\$/bldg	217,391.3	0.82	0.06
HVAC - Duct Repair and Sealing	5%	25%	18	54.7	\$/bldg	105,158.2	> 10	0.00
Doors - High Efficiency	0%	0%	10	0.2	\$/sqft	2.4	2.23	0.04
Windows - High Efficiency	47%	75%	20	2,181.0	\$/bldg	-	0.00	-
Roof - High Reflectivity	50%	75%	15	2,204.0	\$/bldg	183,780.8	> 10	0.01
Air-Cooled Chiller - Condenser Air Temperature Reset	30%	75%	10	814.4	\$/sqft	723,510.2	> 10	0.00
Air-Cooled Chiller - Economizer	0%	49%	10	813.6	\$/sqft	1,826,138.1	> 10	0.00
Air-Cooled Chiller - VSD on fans	15%	66%	15	2,063.3	\$/bldg	843.3	0.95	0.11
Air-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	836,586.8	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	125,726.8	0.44	0.08
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	44,150.2	3.75	0.02
Air-Cooled Chiller - Maintenance	62%	90%	18	12,397.5	\$/bldg	551,969.2	8.82	0.02
Water-Cooled Chiller - Condenser Water Temperature Reset	30%	75%	4	0.0	\$/sqft	2.2	> 10	0.00
Water-Cooled Chiller - Economizer	0%	49%	10	5,493.8	\$/sqft	1,826,138.1	> 10	0.00
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	12.6	6.30	0.05
Water-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	723,510.2	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	125,726.8	0.44	0.08
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	44,150.2	3.75	0.02
Water-Cooled Chiller - Maintenance	62%	90%	18	12,397.5	\$/bldg	551,969.2	8.82	0.02
RTU - Evaporative Precooler	0%	6%	20	3.0	\$/sqft	1.1	0.05	0.09
RTU - Maintenance	62%	90%	18	12,397.5	\$/bldg	551,969.2	8.82	0.02
Gas Boiler - High Efficiency Hot Water Circulation	0%	34%	10	0.4	\$/sqft	7.4	0.84	0.04
Gas Boiler - Hot Water Reset	30%	75%	3	992.7	\$/sqft	1,440,300.0	> 10	0.00
Gas Boiler - Maintenance	32%	90%	3	2,039.9	\$/bldg	346,700.0	2.09	0.01
Gas Furnace - Maintenance	32%	90%	3	2,007.5	\$/bldg	27,100.0	0.19	0.07
Space Heating - Heat Recovery Ventilator	44%	49%	15	0.0	\$/sqft	12.2	> 10	0.00
Heat Pump - Maintenance	3%	95%	18	3,826.9	\$/bldg	562,750.4	> 10	0.01
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	1.0	0.79	0.06
Ventilation - Variable Speed Control	4%	81%	15	0.0	\$/sqft	0.5	3.21	0.03

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	1%	8%	15	0.2	\$/sqft	7.1	2.47	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	0.5	0.27	0.06
Water Heater - Faucet Aerators	0%	0%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	0%	0%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	0.3	0.04	0.14
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	1.1	0.65	0.03
Water Heater - Solar System	0%	25%	20	0.1	\$/sqft	4.2	> 10	0.01
Water Heater - Install Timer	6%	11%	15	0.3	\$/sqft	0.5	0.17	0.10
Water Heater - Pipe Insulation	6%	11%	12	3,001.4	\$/bldg	35,750.0	0.88	0.05
Water Heater - Tank Blanket/Insulation	0%	0%	10	0.0	\$/sqft	0.3	0.68	0.05
Water Heater - Pre-Rinse Spray Valve	0%	0%	5	100.0	\$/sqft	14,822.0	7.53	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	54.0	5.83	0.01
Interior Lighting - Daylighting Controls	15%	20%	8	0.1	\$/sqft	2.0	1.02	0.04
Interior Lighting - LED Exit Lighting	50%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	6%	56%	8	0.1	\$/sqft	0.7	0.54	0.07
Interior Lighting - Task Lighting	6%	75%	5	0.2	\$/sqft	0.7	0.08	0.16
Interior Lighting - Timeclocks and Timers	3%	56%	8	0.2	\$/sqft	0.3	0.09	0.14
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	1.6	0.17	0.12
Interior Fluorescent - Delamp and Install Reflectors	18%	56%	11	0.5	\$/sqft	0.6	0.10	0.12
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.1	0.01	0.17
Exterior Lighting - Daylighting Controls	18%	38%	8	0.0	\$/sqft	0.2	0.28	0.07
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.2	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	0%	12	250.0	\$/sqft	8,953.8	1.98	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	4.45	0.01
Refrigerator - Decommissioning	50%	0%	8	0.1	\$/sqft	5.9	1.75	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	-	0.00	-
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	0.4	0.14	0.10
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	1.8	0.00	0.15
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	2.03	0.04
Refrigerator - Floating Head Pressure	38%	45%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.31	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.86	0.01
Grocery - Display Case - LED Lighting	0%	0%	8	378.0	\$/sqft	22,291.7	1.92	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	-	0.00	-
Grocery - ECMs for Display Cases	0%	0%	15	50.0	\$/sqft	4,570.0	8.65	0.01
Grocery - Open Display Case - Night Covers	0%	0%	8	0.1	\$/sqft	-	0.00	-
Cooking - Exhaust Hoods with Sensor Control	1%	8%	15	1,494.0	\$/bldg	51,124.9	3.58	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	13%	56%	5	7,190.6	\$/bldg	20,441.7	0.05	0.16
Pool Pump - Timer	0%	34%	10	100.0	\$/bldg	20,513.8	8.82	0.00
Pool Heater - Solar	0%	34%	15	3,500.0	\$/bldg	-	0.00	-
Non-HVAC Motors - Variable Speed Control	0%	38%	10	199.3	\$/bldg	3,749.5	1.60	0.04
Energy Management System	7%	75%	15	41,951.5	\$/bldg	899,536.2	1.90	0.03
Thermostat - Clock/Programmable	32%	50%	11	1,239.8	\$/bldg	9,105.8	1.75	0.07
Lodging - Guest Room Controls	0%	0%	15	260.0	\$/sqft	3,134.1	7.06	0.05
HVAC - Occupancy Sensors	14%	56%	8	0.1	\$/sqft	0.8	1.42	0.09
Commissioning - HVAC	0%	0%	25	0.4	\$/sqft	3.3	1.50	0.05
Commissioning - Lighting	0%	0%	5	0.0	\$/sqft	3.1	1.49	0.01
Retrocommissioning - HVAC	5%	36%	25	0.8	\$/sqft	3.3	0.75	0.06
Retrocommissioning - Lighting	32%	37%	5	0.1	\$/sqft	3.1	0.74	0.02
Advanced New Construction Designs	0%	0%	25	2.0	\$/sqft	8.9	7.16	0.06
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	2.61	0.06
Refrigerator - eCube	5%	75%	12	0.0	\$/sqft	1.0	8.87	0.01
Electronics - Smart Power Strip	13%	56%	7	0.0	\$/sqft	0.0	1.22	0.02
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	0.1	> 10	0.00
Insulation - Foundation	7%	13%	20	1.4	\$/sqft	1.1	0.93	0.09
Water Heating - Booster Water Heater	6%	11%	20	0.0	\$/sqft	0.2	2.95	0.04
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.0	\$/sqft	7.5	> 10	0.00
Boiler O2 Trim Controls	0%	49%	15	0.0	\$/sqft	3.6	> 10	0.00
Boiler Parallel Positioning Control	0%	49%	15	0.2	\$/sqft	3.6	1.77	0.03
Boiler blowdown heat exchanger (steam)	0%	49%	20	0.7	\$/sqft	10.1	1.83	0.04
Repair malfunctioning steam traps	32%	90%	6	77.0	\$/sqft	13,880.0	4.86	0.01
Insulate steam lines/condensate tank	6%	11%	12	1,302.0	\$/bldg	3.6	0.00	0.13
Destratification Fans (HVLS)	4%	33%	12	0.2	\$/sqft	14.7	3.84	0.01

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	8%	10	0.1	\$/sqft	16.3	6.74	0.01
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-77 Energy Efficiency Non-Equipment Data-Electric Warehouse, New Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	56,202.0	\$/bldg	251,560.1	0.61	0.07
Insulation - Ducting	0%	50%	20	0.8	\$/sqft	0.6	0.12	0.09
Insulation - Radiant Barrier	7%	13%	20	14,360.4	\$/bldg	92,849.9	0.84	0.06
Insulation - Wall Cavity	7%	13%	20	35,615.6	\$/bldg	131,989.3	0.37	0.07
HVAC - Duct Repair and Sealing	25%	25%	18	54.7	\$/bldg	46,691.7	> 10	0.00
Doors - High Efficiency	100%	100%	10	0.2	\$/sqft	4.0	2.36	0.03
Windows - High Efficiency	78%	100%	20	2,181.0	\$/bldg	-	0.00	-
Roof - High Reflectivity	56%	95%	15	2,204.0	\$/bldg	73,416.6	5.77	0.02
Air-Cooled Chiller - Condenser Air Temperature Reset	60%	75%	10	814.4	\$/sqft	311,775.5	> 10	0.00
Air-Cooled Chiller - Economizer	37%	49%	10	813.6	\$/sqft	1,025,553.0	> 10	0.00
Air-Cooled Chiller - VSD on fans	15%	66%	15	2,063.3	\$/bldg	1,253.6	0.78	0.11
Air-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	367,516.0	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	134,798.4	0.43	0.07
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	18,188.9	1.93	0.05
Air-Cooled Chiller - Maintenance	63%	90%	18	12,397.5	\$/bldg	372,336.8	6.36	0.03
Water-Cooled Chiller - Condenser Water Temperature Reset	60%	75%	4	0.0	\$/sqft	1.4	> 10	0.00
Water-Cooled Chiller - Economizer	37%	49%	10	5,493.8	\$/sqft	1,025,553.0	8.02	0.01
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	11.0	5.52	0.06
Water-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	311,775.5	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	134,798.4	0.43	0.07
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	18,188.9	1.93	0.05
Water-Cooled Chiller - Maintenance	63%	90%	18	12,397.5	\$/bldg	372,336.8	6.36	0.03
RTU - Evaporative Precooler	0%	7%	20	3.0	\$/sqft	0.9	0.03	0.09
RTU - Maintenance	63%	90%	18	12,397.5	\$/bldg	372,336.8	6.36	0.03
Gas Boiler - High Efficiency Hot Water Circulation	5%	34%	10	0.4	\$/sqft	5.5	0.06	0.05
Gas Boiler - Hot Water Reset	60%	75%	3	992.7	\$/sqft	978,400.0	1.11	0.00
Gas Boiler - Maintenance	44%	90%	3	2,039.9	\$/bldg	228,900.0	0.13	0.01
Gas Furnace - Maintenance	44%	90%	3	2,007.5	\$/bldg	47,400.0	0.03	0.04
Space Heating - Heat Recovery Ventilator	44%	49%	15	0.0	\$/sqft	16.7	> 10	0.00
Heat Pump - Maintenance	0%	95%	18	3,826.9	\$/bldg	388,656.6	> 10	0.01
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	0.9	0.78	0.07
Ventilation - Variable Speed Control	0%	81%	15	0.0	\$/sqft	0.5	3.15	0.03

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	6%	8%	15	0.2	\$/sqft	7.1	2.47	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	0.5	0.11	0.07
Water Heater - Faucet Aerators	0%	0%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	0%	0%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	0.3	0.02	0.14
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	1.1	0.30	0.03
Water Heater - Solar System	0%	25%	20	0.1	\$/sqft	3.9	6.36	0.01
Water Heater - Install Timer	0%	0%	15	0.3	\$/sqft	0.4	0.09	0.10
Water Heater - Pipe Insulation	0%	0%	12	3,001.4	\$/bldg	32,559.2	0.59	0.05
Water Heater - Tank Blanket/Insulation	0%	0%	10	0.0	\$/sqft	0.3	0.29	0.05
Water Heater - Pre-Rinse Spray Valve	0%	0%	5	100.0	\$/sqft	14,822.0	6.55	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	40.4	0.42	0.02
Interior Lighting - Daylighting Controls	42%	42%	8	0.1	\$/sqft	2.0	1.00	0.04
Interior Lighting - LED Exit Lighting	86%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	0.7	0.52	0.07
Interior Lighting - Task Lighting	0%	75%	5	0.2	\$/sqft	0.7	0.07	0.16
Interior Lighting - Timeclocks and Timers	56%	56%	8	0.2	\$/sqft	0.3	0.09	0.14
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	1.6	0.17	0.12
Interior Fluorescent - Delamp and Install Reflectors	19%	56%	11	0.5	\$/sqft	0.6	0.10	0.12
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.1	0.01	0.17
Exterior Lighting - Daylighting Controls	18%	38%	8	0.0	\$/sqft	0.2	0.28	0.07
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.2	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	0%	12	250.0	\$/sqft	8,953.8	1.75	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	4.45	0.01
Refrigerator - Decommissioning	50%	0%	8	0.1	\$/sqft	5.9	1.55	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	-	0.00	-
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	0.4	0.13	0.10
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	1.8	0.00	0.15
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	1.77	0.04
Refrigerator - Floating Head Pressure	38%	45%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.30	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.42	0.01
Grocery - Display Case - LED Lighting	0%	0%	8	378.0	\$/sqft	22,291.7	1.92	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	-	0.00	-
Grocery - ECMs for Display Cases	0%	0%	15	50.0	\$/sqft	4,570.0	8.65	0.01
Grocery - Open Display Case - Night Covers	0%	0%	8	0.1	\$/sqft	-	0.00	-
Cooking - Exhaust Hoods with Sensor Control	1%	8%	15	1,494.0	\$/bldg	51,124.9	3.58	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	13%	56%	5	7,190.6	\$/bldg	20,441.7	0.05	0.16
Pool Pump - Timer	34%	34%	10	100.0	\$/bldg	20,513.8	8.82	0.00
Pool Heater - Solar	0%	34%	15	3,500.0	\$/bldg	-	0.00	-
Non-HVAC Motors - Variable Speed Control	0%	38%	10	199.3	\$/bldg	3,749.5	1.59	0.04
Energy Management System	0%	75%	15	41,951.5	\$/bldg	531,443.5	0.99	0.05
Thermostat - Clock/Programmable	86%	86%	11	1,239.8	\$/bldg	31,614.0	6.03	0.03
Lodging - Guest Room Controls	0%	0%	15	260.0	\$/sqft	3,134.1	6.99	0.05
HVAC - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	0.6	1.13	0.10
Commissioning - HVAC	40%	75%	25	0.4	\$/sqft	2.7	1.19	0.05
Commissioning - Lighting	30%	75%	5	0.0	\$/sqft	3.1	1.45	0.01
Retrocommissioning - HVAC	0%	0%	25	0.8	\$/sqft	2.7	0.60	0.07
Retrocommissioning - Lighting	0%	0%	5	0.1	\$/sqft	3.1	0.73	0.02
Advanced New Construction Designs	5%	75%	25	2.0	\$/sqft	7.1	5.70	0.07
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	2.75	0.06
Refrigerator - eCube	5%	75%	12	0.0	\$/sqft	1.0	7.67	0.01
Electronics - Smart Power Strip	13%	56%	7	0.0	\$/sqft	0.0	1.15	0.02
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	0.1	> 10	0.00
Insulation - Foundation	7%	13%	20	0.3	\$/sqft	0.9	3.15	0.08
Water Heating - Booster Water Heater	0%	0%	20	0.0	\$/sqft	0.2	2.80	0.04
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.0	\$/sqft	7.5	> 10	0.00
Boiler O2 Trim Controls	37%	49%	15	0.0	\$/sqft	2.7	1.93	0.00
Boiler Parallel Positioning Control	37%	49%	15	0.2	\$/sqft	2.7	0.13	0.04
Boiler blowdown heat exchanger (steam)	37%	49%	20	0.7	\$/sqft	7.5	0.14	0.05
Repair malfunctioning steam traps	44%	90%	6	77.0	\$/sqft	13,880.0	0.47	0.01
Insulate steam lines/condensate tank	0%	0%	12	1,302.0	\$/bldg	2.7	0.00	0.13
Destratification Fans (HVLS)	0%	33%	12	0.2	\$/sqft	12.4	0.32	0.02

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	8%	10	0.1	\$/sqft	13.8	0.56	0.01
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-78 Energy Efficiency Non-Equipment Data-Natural Gas Warehouse, New Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	56,202.0	\$/bldg	251,560.1	0.71	0.07
Insulation - Ducting	0%	50%	20	0.8	\$/sqft	0.6	0.12	0.09
Insulation - Radiant Barrier	7%	13%	20	14,360.4	\$/bldg	92,849.9	0.99	0.06
Insulation - Wall Cavity	7%	13%	20	35,615.6	\$/bldg	131,989.3	0.49	0.07
HVAC - Duct Repair and Sealing	25%	25%	18	54.7	\$/bldg	46,691.7	> 10	0.00
Doors - High Efficiency	100%	100%	10	0.2	\$/sqft	4.0	2.37	0.03
Windows - High Efficiency	78%	100%	20	2,181.0	\$/bldg	-	0.00	-
Roof - High Reflectivity	56%	95%	15	2,204.0	\$/bldg	73,416.6	5.82	0.02
Air-Cooled Chiller - Condenser Air Temperature Reset	60%	75%	10	814.4	\$/sqft	311,775.5	> 10	0.00
Air-Cooled Chiller - Economizer	37%	49%	10	813.6	\$/sqft	1,025,553.0	> 10	0.00
Air-Cooled Chiller - VSD on fans	15%	66%	15	2,063.3	\$/bldg	1,253.6	0.78	0.11
Air-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	367,516.0	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	134,798.4	0.43	0.07
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	18,188.9	1.93	0.05
Air-Cooled Chiller - Maintenance	63%	90%	18	12,397.5	\$/bldg	372,336.8	6.36	0.03
Water-Cooled Chiller - Condenser Water Temperature Reset	60%	75%	4	0.0	\$/sqft	1.4	> 10	0.00
Water-Cooled Chiller - Economizer	37%	49%	10	5,493.8	\$/sqft	1,025,553.0	8.02	0.01
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	11.0	5.52	0.06
Water-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	311,775.5	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	134,798.4	0.43	0.07
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	18,188.9	1.93	0.05
Water-Cooled Chiller - Maintenance	63%	90%	18	12,397.5	\$/bldg	372,336.8	6.36	0.03
RTU - Evaporative Precooler	0%	7%	20	3.0	\$/sqft	0.9	0.03	0.09
RTU - Maintenance	63%	90%	18	12,397.5	\$/bldg	372,336.8	6.36	0.03
Gas Boiler - High Efficiency Hot Water Circulation	5%	34%	10	0.4	\$/sqft	5.5	0.73	0.05
Gas Boiler - Hot Water Reset	60%	75%	3	992.7	\$/sqft	978,400.0	> 10	0.00
Gas Boiler - Maintenance	44%	90%	3	2,039.9	\$/bldg	228,900.0	1.57	0.01
Gas Furnace - Maintenance	44%	90%	3	2,007.5	\$/bldg	47,400.0	0.33	0.04
Space Heating - Heat Recovery Ventilator	44%	49%	15	0.0	\$/sqft	16.7	> 10	0.00
Heat Pump - Maintenance	0%	95%	18	3,826.9	\$/bldg	388,656.6	> 10	0.01
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	0.9	0.78	0.07
Ventilation - Variable Speed Control	0%	81%	15	0.0	\$/sqft	0.5	3.15	0.03

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	6%	8%	15	0.2	\$/sqft	7.1	2.47	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	0.5	0.26	0.07
Water Heater - Faucet Aerators	0%	0%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	0%	0%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	0.3	0.04	0.14
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	1.1	0.63	0.03
Water Heater - Solar System	0%	25%	20	0.1	\$/sqft	3.9	> 10	0.01
Water Heater - Install Timer	0%	0%	15	0.3	\$/sqft	0.4	0.17	0.10
Water Heater - Pipe Insulation	0%	0%	12	3,001.4	\$/bldg	32,559.2	0.78	0.05
Water Heater - Tank Blanket/Insulation	0%	0%	10	0.0	\$/sqft	0.3	0.66	0.05
Water Heater - Pre-Rinse Spray Valve	0%	0%	5	100.0	\$/sqft	14,822.0	7.58	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	40.4	4.81	0.02
Interior Lighting - Daylighting Controls	42%	42%	8	0.1	\$/sqft	2.0	1.02	0.04
Interior Lighting - LED Exit Lighting	86%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	0.7	0.54	0.07
Interior Lighting - Task Lighting	0%	75%	5	0.2	\$/sqft	0.7	0.08	0.16
Interior Lighting - Timeclocks and Timers	56%	56%	8	0.2	\$/sqft	0.3	0.09	0.14
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	1.6	0.17	0.12
Interior Fluorescent - Delamp and Install Reflectors	19%	56%	11	0.5	\$/sqft	0.6	0.10	0.12
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.1	0.01	0.17
Exterior Lighting - Daylighting Controls	18%	38%	8	0.0	\$/sqft	0.2	0.28	0.07
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.2	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	0%	12	250.0	\$/sqft	8,953.8	1.98	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	4.45	0.01
Refrigerator - Decommissioning	50%	0%	8	0.1	\$/sqft	5.9	1.75	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	-	0.00	-
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	0.4	0.14	0.10
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	1.8	0.00	0.15
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	2.03	0.04
Refrigerator - Floating Head Pressure	38%	45%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.31	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.86	0.01
Grocery - Display Case - LED Lighting	0%	0%	8	378.0	\$/sqft	22,291.7	1.92	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	-	0.00	-
Grocery - ECMs for Display Cases	0%	0%	15	50.0	\$/sqft	4,570.0	8.65	0.01
Grocery - Open Display Case - Night Covers	0%	0%	8	0.1	\$/sqft	-	0.00	-
Cooking - Exhaust Hoods with Sensor Control	1%	8%	15	1,494.0	\$/bldg	51,124.9	3.58	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	13%	56%	5	7,190.6	\$/bldg	20,441.7	0.05	0.16
Pool Pump - Timer	34%	34%	10	100.0	\$/bldg	20,513.8	8.82	0.00
Pool Heater - Solar	0%	34%	15	3,500.0	\$/bldg	-	0.00	-
Non-HVAC Motors - Variable Speed Control	0%	38%	10	199.3	\$/bldg	3,749.5	1.60	0.04
Energy Management System	0%	75%	15	41,951.5	\$/bldg	531,443.5	1.02	0.05
Thermostat - Clock/Programmable	86%	86%	11	1,239.8	\$/bldg	31,614.0	6.08	0.03
Lodging - Guest Room Controls	0%	0%	15	260.0	\$/sqft	3,134.1	7.06	0.05
HVAC - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	0.6	1.14	0.10
Commissioning - HVAC	40%	75%	25	0.4	\$/sqft	2.7	1.21	0.05
Commissioning - Lighting	30%	75%	5	0.0	\$/sqft	3.1	1.49	0.01
Retrocommissioning - HVAC	0%	0%	25	0.8	\$/sqft	2.7	0.60	0.07
Retrocommissioning - Lighting	0%	0%	5	0.1	\$/sqft	3.1	0.74	0.02
Advanced New Construction Designs	5%	75%	25	2.0	\$/sqft	7.1	5.76	0.07
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	2.42	0.06
Refrigerator - eCube	5%	75%	12	0.0	\$/sqft	1.0	8.72	0.01
Electronics - Smart Power Strip	13%	56%	7	0.0	\$/sqft	0.0	1.22	0.02
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	0.1	> 10	0.00
Insulation - Foundation	7%	13%	20	0.3	\$/sqft	0.9	3.18	0.08
Water Heating - Booster Water Heater	0%	0%	20	0.0	\$/sqft	0.2	2.80	0.04
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.0	\$/sqft	7.5	> 10	0.00
Boiler O2 Trim Controls	37%	49%	15	0.0	\$/sqft	2.7	> 10	0.00
Boiler Parallel Positioning Control	37%	49%	15	0.2	\$/sqft	2.7	1.53	0.04
Boiler blowdown heat exchanger (steam)	37%	49%	20	0.7	\$/sqft	7.5	1.59	0.05
Repair malfunctioning steam traps	44%	90%	6	77.0	\$/sqft	13,880.0	5.59	0.01
Insulate steam lines/condensate tank	0%	0%	12	1,302.0	\$/bldg	2.7	0.00	0.13
Destratification Fans (HVLS)	0%	33%	12	0.2	\$/sqft	12.4	3.77	0.02

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	8%	10	0.1	\$/sqft	13.8	6.60	0.01
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-79 Energy Efficiency Non-Equipment Data-Electric Miscellaneous, Existing Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	11,311.1	\$/bldg	108,288.9	1.10	0.05
Insulation - Ducting	18%	50%	20	0.8	\$/sqft	1.0	0.30	0.09
Insulation - Radiant Barrier	7%	13%	20	2,890.2	\$/bldg	42,706.0	1.68	0.04
Insulation - Wall Cavity	7%	13%	20	4,892.2	\$/bldg	56,205.6	1.05	0.05
HVAC - Duct Repair and Sealing	5%	25%	18	9.0	\$/bldg	4,102.8	> 10	0.00
Doors - High Efficiency	0%	0%	10	0.2	\$/sqft	1.6	0.84	0.06
Windows - High Efficiency	63%	75%	20	2,181.0	\$/bldg	97,788.4	5.69	0.02
Roof - High Reflectivity	36%	75%	15	443.6	\$/bldg	26,405.8	9.08	0.01
Air-Cooled Chiller - Condenser Air Temperature Reset	30%	75%	10	814.4	\$/sqft	723,510.2	> 10	0.00
Air-Cooled Chiller - Economizer	2%	49%	10	813.6	\$/sqft	27,044.0	1.43	0.03
Air-Cooled Chiller - VSD on fans	15%	66%	15	339.0	\$/bldg	433.1	> 10	0.10
Air-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	836,586.8	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	125,726.8	0.44	0.08
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	44,150.2	3.75	0.02
Air-Cooled Chiller - Maintenance	45%	90%	18	1,247.6	\$/bldg	57,210.7	> 10	0.02
Water-Cooled Chiller - Condenser Water Temperature Reset	30%	75%	4	0.0	\$/sqft	1.9	1.08	0.02
Water-Cooled Chiller - Economizer	2%	49%	10	81.4	\$/sqft	27,044.0	> 10	0.00
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	9.5	1.28	0.06
Water-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	723,510.2	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	125,726.8	0.34	0.08
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	44,150.2	2.91	0.02
Water-Cooled Chiller - Maintenance	45%	90%	18	1,247.6	\$/bldg	57,210.7	8.49	0.02
RTU - Evaporative Precooler	0%	10%	20	3.0	\$/sqft	1.0	0.03	0.09
RTU - Maintenance	45%	90%	18	1,247.6	\$/bldg	57,210.7	8.72	0.02
Gas Boiler - High Efficiency Hot Water Circulation	0%	34%	10	0.4	\$/sqft	0.9	0.01	0.12
Gas Boiler - Hot Water Reset	30%	75%	3	992.7	\$/sqft	1,440,300.0	1.63	0.00
Gas Boiler - Maintenance	25%	90%	3	2,039.9	\$/bldg	346,700.0	0.19	0.01
Gas Furnace - Maintenance	25%	90%	3	337.5	\$/bldg	26,400.0	0.09	0.01
Space Heating - Heat Recovery Ventilator	44%	49%	15	0.1	\$/sqft	4.2	1.76	0.03
Heat Pump - Maintenance	6%	95%	18	628.7	\$/bldg	88,653.8	> 10	0.01
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	1.9	1.42	0.05
Ventilation - Variable Speed Control	1%	81%	15	0.2	\$/sqft	1.1	0.58	0.07

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	1%	15%	15	0.2	\$/sqft	7.1	2.21	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	1.7	0.50	0.02
Water Heater - Faucet Aerators	27%	20%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	0%	0%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	1.0	0.09	0.11
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	3.9	1.47	0.01
Water Heater - Solar System	0%	25%	20	0.5	\$/sqft	14.5	3.27	0.03
Water Heater - Install Timer	24%	29%	15	0.3	\$/sqft	1.6	0.46	0.07
Water Heater - Pipe Insulation	24%	29%	12	952.1	\$/bldg	4,924.1	0.36	0.08
Water Heater - Tank Blanket/Insulation	0%	0%	10	0.0	\$/sqft	1.0	1.30	0.02
Water Heater - Pre-Rinse Spray Valve	0%	0%	5	100.0	\$/sqft	14,822.0	6.49	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	6.3	0.07	0.06
Interior Lighting - Daylighting Controls	8%	13%	8	0.1	\$/sqft	2.3	0.79	0.04
Interior Lighting - LED Exit Lighting	50%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	7%	56%	8	0.1	\$/sqft	0.8	0.42	0.06
Interior Lighting - Task Lighting	18%	75%	5	0.2	\$/sqft	0.8	0.04	0.15
Interior Lighting - Timeclocks and Timers	5%	56%	8	0.2	\$/sqft	0.4	0.07	0.14
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	0.6	0.04	0.15
Interior Fluorescent - Delamp and Install Reflectors	15%	68%	11	0.5	\$/sqft	0.7	0.08	0.12
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.3	0.03	0.15
Exterior Lighting - Daylighting Controls	18%	38%	8	0.0	\$/sqft	0.7	0.74	0.03
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.8	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	0%	12	250.0	\$/sqft	8,953.8	1.31	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	3.58	0.01
Refrigerator - Decommissioning	50%	0%	8	0.1	\$/sqft	5.9	1.21	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	0.2	0.05	0.10
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	0.2	0.04	0.14
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	0.4	0.00	0.15
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	1.30	0.04
Refrigerator - Floating Head Pressure	38%	45%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.18	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.01	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.01	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.38	0.01
Grocery - Display Case - LED Lighting	0%	0%	8	378.0	\$/sqft	22,291.7	1.57	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	0.5	0.01	0.18
Grocery - ECMs for Display Cases	0%	0%	15	50.0	\$/sqft	4,570.0	6.84	0.01
Grocery - Open Display Case - Night Covers	0%	0%	8	0.1	\$/sqft	0.1	0.03	0.15
Cooking - Exhaust Hoods with Sensor Control	1%	15%	15	1,494.0	\$/bldg	51,124.9	3.20	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	13%	56%	5	723.6	\$/bldg	4,922.0	0.11	0.10
Pool Pump - Timer	1%	34%	10	100.0	\$/bldg	20,513.8	9.00	0.00
Pool Heater - Solar	0%	34%	15	3,500.0	\$/bldg	0.0	0.00	0.11
Non-HVAC Motors - Variable Speed Control	1%	38%	10	199.3	\$/bldg	3,749.5	1.60	0.04
Energy Management System	10%	75%	15	4,221.5	\$/bldg	899,536.2	> 10	0.00
Thermostat - Clock/Programmable	45%	50%	11	124.8	\$/bldg	28,160.9	> 10	0.00
Lodging - Guest Room Controls	0%	0%	15	260.0	\$/sqft	3,134.1	5.60	0.05
HVAC - Occupancy Sensors	14%	56%	8	0.1	\$/sqft	0.6	0.46	0.10
Commissioning - HVAC	0%	0%	25	0.4	\$/sqft	2.7	0.97	0.05
Commissioning - Lighting	0%	0%	5	0.0	\$/sqft	3.5	1.36	0.01
Retrocommissioning - HVAC	9%	24%	25	0.8	\$/sqft	2.7	0.48	0.07
Retrocommissioning - Lighting	34%	39%	5	0.1	\$/sqft	3.5	0.68	0.02
Advanced New Construction Designs	0%	0%	25	2.0	\$/sqft	7.3	2.12	0.07
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	1.90	0.06
Refrigerator - eCube	5%	75%	12	0.1	\$/sqft	0.2	0.15	0.09
Electronics - Smart Power Strip	13%	56%	7	0.0	\$/sqft	0.0	2.62	0.01
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	0.3	> 10	0.00
Insulation - Foundation	7%	13%	20	1.4	\$/sqft	0.9	0.28	0.09
Water Heating - Booster Water Heater	24%	29%	20	0.1	\$/sqft	0.9	1.50	0.06
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.0	\$/sqft	1.6	> 10	0.00
Boiler O2 Trim Controls	2%	49%	15	0.1	\$/sqft	0.4	0.03	0.08
Boiler Parallel Positioning Control	2%	49%	15	1.7	\$/sqft	0.4	0.00	0.11
Boiler blowdown heat exchanger (steam)	2%	49%	20	7.2	\$/sqft	1.2	0.00	0.10
Repair malfunctioning steam traps	25%	90%	6	77.0	\$/sqft	13,880.0	0.47	0.01
Insulate steam lines/condensate tank	24%	29%	12	1,302.0	\$/bldg	0.4	0.00	0.13
Destratification Fans (HVLS)	1%	33%	12	2.4	\$/sqft	2.6	0.01	0.12

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	15%	10	1.2	\$/sqft	2.9	0.01	0.11
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-80 Energy Efficiency Non-Equipment Data-Natural Gas Miscellaneous, Existing Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	11,311.1	\$/bldg	108,288.9	1.56	0.05
Insulation - Ducting	18%	50%	20	0.8	\$/sqft	1.0	0.38	0.09
Insulation - Radiant Barrier	7%	13%	20	2,890.2	\$/bldg	42,706.0	2.40	0.04
Insulation - Wall Cavity	7%	13%	20	4,892.2	\$/bldg	56,205.6	1.53	0.05
HVAC - Duct Repair and Sealing	5%	25%	18	9.0	\$/bldg	4,102.8	> 10	0.00
Doors - High Efficiency	0%	0%	10	0.2	\$/sqft	1.6	0.97	0.06
Windows - High Efficiency	63%	75%	20	2,181.0	\$/bldg	97,788.4	7.62	0.02
Roof - High Reflectivity	36%	75%	15	443.6	\$/bldg	26,405.8	> 10	0.01
Air-Cooled Chiller - Condenser Air Temperature Reset	30%	75%	10	814.4	\$/sqft	723,510.2	> 10	0.00
Air-Cooled Chiller - Economizer	2%	49%	10	813.6	\$/sqft	27,044.0	1.43	0.03
Air-Cooled Chiller - VSD on fans	15%	66%	15	339.0	\$/bldg	433.1	> 10	0.10
Air-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	836,586.8	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	125,726.8	0.44	0.08
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	44,150.2	3.75	0.02
Air-Cooled Chiller - Maintenance	45%	90%	18	1,247.6	\$/bldg	57,210.7	> 10	0.02
Water-Cooled Chiller - Condenser Water Temperature Reset	30%	75%	4	0.0	\$/sqft	1.9	1.27	0.02
Water-Cooled Chiller - Economizer	2%	49%	10	81.4	\$/sqft	27,044.0	> 10	0.00
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	9.5	1.65	0.06
Water-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	723,510.2	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	125,726.8	0.44	0.08
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	44,150.2	3.75	0.02
Water-Cooled Chiller - Maintenance	45%	90%	18	1,247.6	\$/bldg	57,210.7	> 10	0.02
RTU - Evaporative Precooler	0%	10%	20	3.0	\$/sqft	1.0	0.04	0.09
RTU - Maintenance	45%	90%	18	1,247.6	\$/bldg	57,210.7	> 10	0.02
Gas Boiler - High Efficiency Hot Water Circulation	0%	34%	10	0.4	\$/sqft	0.9	0.10	0.12
Gas Boiler - Hot Water Reset	30%	75%	3	992.7	\$/sqft	1,440,300.0	> 10	0.00
Gas Boiler - Maintenance	25%	90%	3	2,039.9	\$/bldg	346,700.0	2.07	0.01
Gas Furnace - Maintenance	25%	90%	3	337.5	\$/bldg	26,400.0	1.09	0.01
Space Heating - Heat Recovery Ventilator	44%	49%	15	0.1	\$/sqft	4.2	2.50	0.03
Heat Pump - Maintenance	6%	95%	18	628.7	\$/bldg	88,653.8	> 10	0.01
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	1.9	1.60	0.05
Ventilation - Variable Speed Control	1%	81%	15	0.2	\$/sqft	1.1	0.65	0.07

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	1%	15%	15	0.2	\$/sqft	7.1	2.47	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	1.7	0.89	0.02
Water Heater - Faucet Aerators	27%	20%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	0%	0%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	1.0	0.14	0.11
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	3.9	2.35	0.01
Water Heater - Solar System	0%	25%	20	0.5	\$/sqft	14.5	4.74	0.03
Water Heater - Install Timer	24%	29%	15	0.3	\$/sqft	1.6	0.67	0.07
Water Heater - Pipe Insulation	24%	29%	12	952.1	\$/bldg	4,924.1	0.44	0.08
Water Heater - Tank Blanket/Insulation	0%	0%	10	0.0	\$/sqft	1.0	2.30	0.02
Water Heater - Pre-Rinse Spray Valve	0%	0%	5	100.0	\$/sqft	14,822.0	7.53	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	6.3	0.68	0.06
Interior Lighting - Daylighting Controls	8%	13%	8	0.1	\$/sqft	2.3	1.03	0.04
Interior Lighting - LED Exit Lighting	50%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	7%	56%	8	0.1	\$/sqft	0.8	0.54	0.06
Interior Lighting - Task Lighting	18%	75%	5	0.2	\$/sqft	0.8	0.08	0.15
Interior Lighting - Timeclocks and Timers	5%	56%	8	0.2	\$/sqft	0.4	0.09	0.14
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	0.6	0.05	0.15
Interior Fluorescent - Delamp and Install Reflectors	15%	68%	11	0.5	\$/sqft	0.7	0.10	0.12
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.3	0.05	0.15
Exterior Lighting - Daylighting Controls	18%	38%	8	0.0	\$/sqft	0.7	1.10	0.03
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.8	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	0%	12	250.0	\$/sqft	8,953.8	1.98	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	4.45	0.01
Refrigerator - Decommissioning	50%	0%	8	0.1	\$/sqft	5.9	1.75	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	0.2	0.08	0.10
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	0.2	0.06	0.14
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	0.4	0.00	0.15
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	2.03	0.04
Refrigerator - Floating Head Pressure	38%	45%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.31	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.86	0.01
Grocery - Display Case - LED Lighting	0%	0%	8	378.0	\$/sqft	22,291.7	1.92	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	0.5	0.01	0.18
Grocery - ECMs for Display Cases	0%	0%	15	50.0	\$/sqft	4,570.0	8.65	0.01
Grocery - Open Display Case - Night Covers	0%	0%	8	0.1	\$/sqft	0.1	0.04	0.15
Cooking - Exhaust Hoods with Sensor Control	1%	15%	15	1,494.0	\$/bldg	51,124.9	3.58	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	13%	56%	5	723.6	\$/bldg	4,922.0	0.12	0.10
Pool Pump - Timer	1%	34%	10	100.0	\$/bldg	20,513.8	8.82	0.00
Pool Heater - Solar	0%	34%	15	3,500.0	\$/bldg	0.0	0.00	0.11
Non-HVAC Motors - Variable Speed Control	1%	38%	10	199.3	\$/bldg	3,749.5	1.60	0.04
Energy Management System	10%	75%	15	4,221.5	\$/bldg	899,536.2	> 10	0.00
Thermostat - Clock/Programmable	45%	50%	11	124.8	\$/bldg	28,160.9	> 10	0.00
Lodging - Guest Room Controls	0%	0%	15	260.0	\$/sqft	3,134.1	7.06	0.05
HVAC - Occupancy Sensors	14%	56%	8	0.1	\$/sqft	0.6	0.55	0.10
Commissioning - HVAC	0%	0%	25	0.4	\$/sqft	2.7	1.24	0.05
Commissioning - Lighting	0%	0%	5	0.0	\$/sqft	3.5	1.70	0.01
Retrocommissioning - HVAC	9%	24%	25	0.8	\$/sqft	2.7	0.62	0.07
Retrocommissioning - Lighting	34%	39%	5	0.1	\$/sqft	3.5	0.85	0.02
Advanced New Construction Designs	0%	0%	25	2.0	\$/sqft	7.3	2.72	0.07
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	1.95	0.06
Refrigerator - eCube	5%	75%	12	0.1	\$/sqft	0.2	0.22	0.09
Electronics - Smart Power Strip	13%	56%	7	0.0	\$/sqft	0.0	2.92	0.01
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	0.3	> 10	0.00
Insulation - Foundation	7%	13%	20	1.4	\$/sqft	0.9	0.35	0.09
Water Heating - Booster Water Heater	24%	29%	20	0.1	\$/sqft	0.9	1.51	0.06
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.0	\$/sqft	1.6	> 10	0.00
Boiler O2 Trim Controls	2%	49%	15	0.1	\$/sqft	0.4	0.30	0.08
Boiler Parallel Positioning Control	2%	49%	15	1.7	\$/sqft	0.4	0.02	0.11
Boiler blowdown heat exchanger (steam)	2%	49%	20	7.2	\$/sqft	1.2	0.02	0.10
Repair malfunctioning steam traps	25%	90%	6	77.0	\$/sqft	13,880.0	4.81	0.01
Insulate steam lines/condensate tank	24%	29%	12	1,302.0	\$/bldg	0.4	0.00	0.13
Destratification Fans (HVLS)	1%	33%	12	2.4	\$/sqft	2.6	0.07	0.12

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	15%	10	1.2	\$/sqft	2.9	0.12	0.11
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-81 Energy Efficiency Non-Equipment Data-Electric Miscellaneous, New Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	11,311.1	\$/bldg	181,658.7	1.61	0.04
Insulation - Ducting	8%	50%	20	0.8	\$/sqft	1.0	0.38	0.09
Insulation - Radiant Barrier	7%	13%	20	2,890.2	\$/bldg	75,566.7	2.55	0.03
Insulation - Wall Cavity	7%	13%	20	4,892.2	\$/bldg	86,390.7	1.56	0.04
HVAC - Duct Repair and Sealing	25%	25%	18	9.0	\$/bldg	1,766.5	> 10	0.00
Doors - High Efficiency	100%	100%	10	0.2	\$/sqft	2.6	1.18	0.04
Windows - High Efficiency	78%	83%	20	2,181.0	\$/bldg	118,047.2	6.48	0.02
Roof - High Reflectivity	33%	95%	15	443.6	\$/bldg	18,074.9	7.83	0.02
Air-Cooled Chiller - Condenser Air Temperature Reset	60%	75%	10	814.4	\$/sqft	311,775.5	> 10	0.00
Air-Cooled Chiller - Economizer	38%	49%	10	813.6	\$/sqft	13,459.3	0.71	0.04
Air-Cooled Chiller - VSD on fans	15%	66%	15	339.0	\$/bldg	1,287.8	9.26	0.08
Air-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	367,516.0	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	134,798.4	0.43	0.07
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	18,188.9	1.93	0.05
Air-Cooled Chiller - Maintenance	36%	90%	18	1,247.6	\$/bldg	61,222.3	> 10	0.02
Water-Cooled Chiller - Condenser Water Temperature Reset	60%	75%	4	0.0	\$/sqft	1.2	0.80	0.04
Water-Cooled Chiller - Economizer	38%	49%	10	81.4	\$/sqft	13,459.3	7.11	0.01
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	7.7	1.34	0.07
Water-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	311,775.5	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	134,798.4	0.43	0.07
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	18,188.9	1.93	0.05
Water-Cooled Chiller - Maintenance	36%	90%	18	1,247.6	\$/bldg	61,222.3	> 10	0.02
RTU - Evaporative Precooler	0%	7%	20	3.0	\$/sqft	1.0	0.04	0.09
RTU - Maintenance	36%	90%	18	1,247.6	\$/bldg	61,222.3	> 10	0.02
Gas Boiler - High Efficiency Hot Water Circulation	5%	34%	10	0.4	\$/sqft	0.7	0.01	0.12
Gas Boiler - Hot Water Reset	60%	75%	3	992.7	\$/sqft	978,400.0	1.11	0.00
Gas Boiler - Maintenance	22%	90%	3	2,039.9	\$/bldg	228,900.0	0.13	0.01
Gas Furnace - Maintenance	22%	90%	3	337.5	\$/bldg	57,700.0	0.19	0.01
Space Heating - Heat Recovery Ventilator	44%	49%	15	0.1	\$/sqft	7.7	3.56	0.02
Heat Pump - Maintenance	8%	95%	18	628.7	\$/bldg	82,317.3	> 10	0.01
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	2.5	2.07	0.04
Ventilation - Variable Speed Control	3%	81%	15	0.2	\$/sqft	1.4	0.84	0.06

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	12%	15%	15	0.2	\$/sqft	7.1	2.45	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	1.6	0.48	0.02
Water Heater - Faucet Aerators	31%	20%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	0%	0%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	0.9	0.09	0.12
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	3.7	1.40	0.01
Water Heater - Solar System	0%	25%	20	0.5	\$/sqft	13.7	3.14	0.03
Water Heater - Install Timer	30%	30%	15	0.3	\$/sqft	1.6	0.44	0.07
Water Heater - Pipe Insulation	30%	30%	12	952.1	\$/bldg	5,477.4	0.38	0.08
Water Heater - Tank Blanket/Insulation	0%	0%	10	0.0	\$/sqft	0.9	1.25	0.02
Water Heater - Pre-Rinse Spray Valve	0%	0%	5	100.0	\$/sqft	14,822.0	6.55	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	4.8	0.05	0.07
Interior Lighting - Daylighting Controls	19%	19%	8	0.1	\$/sqft	2.3	0.99	0.04
Interior Lighting - LED Exit Lighting	86%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	0.8	0.52	0.06
Interior Lighting - Task Lighting	17%	75%	5	0.2	\$/sqft	0.8	0.08	0.15
Interior Lighting - Timeclocks and Timers	56%	56%	8	0.2	\$/sqft	0.4	0.09	0.14
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	0.6	0.05	0.15
Interior Fluorescent - Delamp and Install Reflectors	11%	68%	11	0.5	\$/sqft	0.7	0.10	0.12
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.3	0.04	0.15
Exterior Lighting - Daylighting Controls	18%	38%	8	0.0	\$/sqft	0.7	1.07	0.03
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.8	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	0%	12	250.0	\$/sqft	8,953.8	1.85	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	4.39	0.01
Refrigerator - Decommissioning	50%	0%	8	0.1	\$/sqft	5.9	1.64	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	0.1	0.03	0.11
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	0.2	0.06	0.14
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	0.4	0.00	0.15
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	1.89	0.04
Refrigerator - Floating Head Pressure	38%	45%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.30	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.39	0.01
Grocery - Display Case - LED Lighting	0%	0%	8	378.0	\$/sqft	22,291.7	1.89	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	0.5	0.01	0.18
Grocery - ECMs for Display Cases	0%	0%	15	50.0	\$/sqft	4,570.0	8.49	0.01
Grocery - Open Display Case - Night Covers	0%	0%	8	0.1	\$/sqft	0.1	0.04	0.15
Cooking - Exhaust Hoods with Sensor Control	1%	15%	15	1,494.0	\$/bldg	51,124.9	3.54	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	13%	56%	5	723.6	\$/bldg	4,922.0	0.12	0.10
Pool Pump - Timer	34%	34%	10	100.0	\$/bldg	20,513.8	8.82	0.00
Pool Heater - Solar	0%	34%	15	3,500.0	\$/bldg	0.0	0.00	0.11
Non-HVAC Motors - Variable Speed Control	0%	38%	10	199.3	\$/bldg	3,749.5	1.59	0.04
Energy Management System	14%	75%	15	4,221.5	\$/bldg	531,443.5	9.88	0.01
Thermostat - Clock/Programmable	50%	50%	11	124.8	\$/bldg	31,203.8	> 10	0.00
Lodging - Guest Room Controls	0%	0%	15	260.0	\$/sqft	3,134.1	7.06	0.05
HVAC - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	0.5	0.49	0.11
Commissioning - HVAC	75%	75%	25	0.4	\$/sqft	2.4	1.09	0.06
Commissioning - Lighting	60%	75%	5	0.0	\$/sqft	3.5	1.65	0.01
Retrocommissioning - HVAC	0%	0%	25	0.8	\$/sqft	2.4	0.55	0.07
Retrocommissioning - Lighting	0%	0%	5	0.1	\$/sqft	3.5	0.83	0.02
Advanced New Construction Designs	5%	75%	25	2.0	\$/sqft	6.5	2.40	0.07
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	2.24	0.06
Refrigerator - eCube	5%	75%	12	0.1	\$/sqft	0.2	0.21	0.09
Electronics - Smart Power Strip	13%	56%	7	0.0	\$/sqft	0.0	2.71	0.01
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	0.3	> 10	0.00
Insulation - Foundation	7%	13%	20	0.3	\$/sqft	0.8	1.32	0.08
Water Heating - Booster Water Heater	30%	30%	20	0.1	\$/sqft	0.9	1.44	0.06
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.0	\$/sqft	1.6	> 10	0.00
Boiler O2 Trim Controls	38%	49%	15	0.1	\$/sqft	0.3	0.02	0.09
Boiler Parallel Positioning Control	38%	49%	15	1.7	\$/sqft	0.3	0.00	0.11
Boiler blowdown heat exchanger (steam)	38%	49%	20	7.2	\$/sqft	0.9	0.00	0.10
Repair malfunctioning steam traps	22%	90%	6	77.0	\$/sqft	13,880.0	0.47	0.01
Insulate steam lines/condensate tank	30%	30%	12	1,302.0	\$/bldg	0.3	0.00	0.13
Destratification Fans (HVLS)	3%	33%	12	2.4	\$/sqft	3.2	0.01	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	15%	10	1.2	\$/sqft	3.5	0.01	0.11
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

Table C-82 Energy Efficiency Non-Equipment Data-Natural Gas Miscellaneous, New Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	11,311.1	\$/bldg	181,658.7	2.27	0.04
Insulation - Ducting	8%	50%	20	0.8	\$/sqft	1.0	0.38	0.09
Insulation - Radiant Barrier	7%	13%	20	2,890.2	\$/bldg	75,566.7	3.54	0.03
Insulation - Wall Cavity	7%	13%	20	4,892.2	\$/bldg	86,390.7	2.26	0.04
HVAC - Duct Repair and Sealing	25%	25%	18	9.0	\$/bldg	1,766.5	> 10	0.00
Doors - High Efficiency	100%	100%	10	0.2	\$/sqft	2.6	1.18	0.04
Windows - High Efficiency	78%	83%	20	2,181.0	\$/bldg	118,047.2	8.37	0.02
Roof - High Reflectivity	33%	95%	15	443.6	\$/bldg	18,074.9	7.83	0.02
Air-Cooled Chiller - Condenser Air Temperature Reset	60%	75%	10	814.4	\$/sqft	311,775.5	> 10	0.00
Air-Cooled Chiller - Economizer	38%	49%	10	813.6	\$/sqft	13,459.3	0.71	0.04
Air-Cooled Chiller - VSD on fans	15%	66%	15	339.0	\$/bldg	1,287.8	9.26	0.08
Air-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	367,516.0	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	134,798.4	0.43	0.07
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	18,188.9	1.93	0.05
Air-Cooled Chiller - Maintenance	36%	90%	18	1,247.6	\$/bldg	61,222.3	> 10	0.02
Water-Cooled Chiller - Condenser Water Temperature Reset	60%	75%	4	0.0	\$/sqft	1.2	0.80	0.04
Water-Cooled Chiller - Economizer	38%	49%	10	81.4	\$/sqft	13,459.3	7.11	0.01
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	7.7	1.34	0.07
Water-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	311,775.5	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	134,798.4	0.43	0.07
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	18,188.9	1.93	0.05
Water-Cooled Chiller - Maintenance	36%	90%	18	1,247.6	\$/bldg	61,222.3	> 10	0.02
RTU - Evaporative Precooler	0%	7%	20	3.0	\$/sqft	1.0	0.04	0.09
RTU - Maintenance	36%	90%	18	1,247.6	\$/bldg	61,222.3	> 10	0.02
Gas Boiler - High Efficiency Hot Water Circulation	5%	34%	10	0.4	\$/sqft	0.7	0.09	0.12
Gas Boiler - Hot Water Reset	60%	75%	3	992.7	\$/sqft	978,400.0	> 10	0.00
Gas Boiler - Maintenance	22%	90%	3	2,039.9	\$/bldg	228,900.0	1.57	0.01
Gas Furnace - Maintenance	22%	90%	3	337.5	\$/bldg	57,700.0	2.37	0.01
Space Heating - Heat Recovery Ventilator	44%	49%	15	0.1	\$/sqft	7.7	4.47	0.02
Heat Pump - Maintenance	8%	95%	18	628.7	\$/bldg	82,317.3	> 10	0.01
Ventilation - ECM on VAV Boxes	0%	0%	18	0.2	\$/sqft	2.5	2.09	0.04
Ventilation - Variable Speed Control	3%	81%	15	0.2	\$/sqft	1.4	0.85	0.06

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Ventilation - CO2 Controlled	12%	15%	15	0.2	\$/sqft	7.1	2.47	0.02
Water Heater - Drainwater Heat Recovery	0%	50%	5	0.0	\$/sqft	1.6	0.86	0.02
Water Heater - Faucet Aerators	31%	20%	9	8.0	\$/sqft	1,482.2	> 10	0.01
Water Heater - Low Flow Showerheads	0%	0%	10	12.0	\$/sqft	13,382.4	> 10	0.00
Water Heater - High Efficiency Circulation Pump	0%	0%	10	0.4	\$/sqft	0.9	0.14	0.12
Water Heater - Desuperheater	0%	10%	5	0.0	\$/sqft	3.7	2.26	0.01
Water Heater - Solar System	0%	25%	20	0.5	\$/sqft	13.7	4.57	0.03
Water Heater - Install Timer	30%	30%	15	0.3	\$/sqft	1.6	0.65	0.07
Water Heater - Pipe Insulation	30%	30%	12	952.1	\$/bldg	5,477.4	0.48	0.08
Water Heater - Tank Blanket/Insulation	0%	0%	10	0.0	\$/sqft	0.9	2.23	0.02
Water Heater - Pre-Rinse Spray Valve	0%	0%	5	100.0	\$/sqft	14,822.0	7.58	0.01
Combined Boiler & Water Htg. Unit	0%	50%	15	0.8	\$/sqft	4.8	0.57	0.07
Interior Lighting - Daylighting Controls	19%	19%	8	0.1	\$/sqft	2.3	1.03	0.04
Interior Lighting - LED Exit Lighting	86%	86%	16	0.0	\$/sqft	8.4	> 10	0.00
Interior Lighting - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	0.8	0.54	0.06
Interior Lighting - Task Lighting	17%	75%	5	0.2	\$/sqft	0.8	0.08	0.15
Interior Lighting - Timeclocks and Timers	56%	56%	8	0.2	\$/sqft	0.4	0.09	0.14
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	0.6	0.05	0.15
Interior Fluorescent - Delamp and Install Reflectors	11%	68%	11	0.5	\$/sqft	0.7	0.10	0.12
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/sqft	0.3	0.05	0.15
Exterior Lighting - Daylighting Controls	18%	38%	8	0.0	\$/sqft	0.7	1.10	0.03
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.8	0.00	0.10
Refrigerator - Anti-Sweat Door Heater	0%	0%	12	250.0	\$/sqft	8,953.8	1.98	0.02
Refrigerator - Auto Door Closer	0%	75%	8	168.8	\$/bldg	18,519.4	4.45	0.01
Refrigerator - Decommissioning	50%	0%	8	0.1	\$/sqft	5.9	1.75	0.02
Refrigerator - Demand Defrost	0%	75%	16	0.2	\$/sqft	0.1	0.04	0.11
Refrigerator - Door Gasket Replacement	5%	75%	8	0.1	\$/sqft	0.2	0.06	0.14
Refrigerator - Economizer	10%	38%	10	406.8	\$/sqft	0.4	0.00	0.15
Refrigerator - Evaporator Fan Controls	0%	8%	16	291.0	\$/sqft	5,447.6	2.03	0.04
Refrigerator - Floating Head Pressure	38%	45%	16	0.4	\$/sqft	-	0.00	-
Refrigerator - Strip Curtain	5%	56%	6	408.8	\$/sqft	4,809.3	0.31	0.06
Refrigerator - High Efficiency Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11
Refrigerator - Variable Speed Compressor	10%	38%	15	0.3	\$/sqft	0.1	0.02	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Vending Machine - Controller	2%	10%	5	180.0	\$/sqft	18,382.6	1.86	0.01
Grocery - Display Case - LED Lighting	0%	0%	8	378.0	\$/sqft	22,291.7	1.92	0.02
Grocery - Display Case Motion Sensors	0%	0%	8	2.0	\$/sqft	0.5	0.01	0.18
Grocery - ECMs for Display Cases	0%	0%	15	50.0	\$/sqft	4,570.0	8.65	0.01
Grocery - Open Display Case - Night Covers	0%	0%	8	0.1	\$/sqft	0.1	0.04	0.15
Cooking - Exhaust Hoods with Sensor Control	1%	15%	15	1,494.0	\$/bldg	51,124.9	3.58	0.02
Office Equipment - ENERGY STAR Power Supplies	0%	0%	5	100.0	\$/bldg	-	0.00	-
Office Equipment - Plug Load Occupancy Sensors	13%	56%	5	723.6	\$/bldg	4,922.0	0.12	0.10
Pool Pump - Timer	34%	34%	10	100.0	\$/bldg	20,513.8	8.82	0.00
Pool Heater - Solar	0%	34%	15	3,500.0	\$/bldg	0.0	0.00	0.11
Non-HVAC Motors - Variable Speed Control	0%	38%	10	199.3	\$/bldg	3,749.5	1.60	0.04
Energy Management System	14%	75%	15	4,221.5	\$/bldg	531,443.5	> 10	0.01
Thermostat - Clock/Programmable	50%	50%	11	124.8	\$/bldg	31,203.8	> 10	0.00
Lodging - Guest Room Controls	0%	0%	15	260.0	\$/sqft	3,134.1	7.06	0.05
HVAC - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	0.5	0.49	0.11
Commissioning - HVAC	75%	75%	25	0.4	\$/sqft	2.4	1.09	0.06
Commissioning - Lighting	60%	75%	5	0.0	\$/sqft	3.5	1.70	0.01
Retrocommissioning - HVAC	0%	0%	25	0.8	\$/sqft	2.4	0.55	0.07
Retrocommissioning - Lighting	0%	0%	5	0.1	\$/sqft	3.5	0.85	0.02
Advanced New Construction Designs	5%	75%	25	2.0	\$/sqft	6.5	2.40	0.07
Custom Measures	10%	45%	15	1.5	\$/sqft	11.4	1.92	0.06
Refrigerator - eCube	5%	75%	12	0.1	\$/sqft	0.2	0.22	0.09
Electronics - Smart Power Strip	13%	56%	7	0.0	\$/sqft	0.0	2.92	0.01
Electronics - Monitor Power Management	10%	95%	5	0.0	\$/sqft	0.3	> 10	0.00
Insulation - Foundation	7%	13%	20	0.3	\$/sqft	0.8	1.32	0.08
Water Heating - Booster Water Heater	30%	30%	20	0.1	\$/sqft	0.9	1.44	0.06
Refrigeration - High Efficiency Evaporator Fan Motors	0%	8%	15	0.0	\$/sqft	1.6	> 10	0.00
Boiler O2 Trim Controls	38%	49%	15	0.1	\$/sqft	0.3	0.26	0.09
Boiler Parallel Positioning Control	38%	49%	15	1.7	\$/sqft	0.3	0.02	0.11
Boiler blowdown heat exchanger (steam)	38%	49%	20	7.2	\$/sqft	0.9	0.02	0.10
Repair malfunctioning steam traps	22%	90%	6	77.0	\$/sqft	13,880.0	5.58	0.01
Insulate steam lines/condensate tank	30%	30%	12	1,302.0	\$/bldg	0.3	0.00	0.13
Destratification Fans (HVLS)	3%	33%	12	2.4	\$/sqft	3.2	0.10	0.11

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Energy Savings (kBtu/sq ft)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Exhaust Hood Makeup Air	1%	15%	10	1.2	\$/sqft	3.5	0.17	0.11
Optimizing Kitchen Ventilation	0%	0%	1	1.0	\$/sqft	-	0.00	-

INDUSTRIAL ENERGY EFFICIENCY EQUIPMENT AND MEASURE DATA

This appendix presents detailed information for industrial energy-efficiency measures (*equipment* and *other* measures per the LoadMAP taxonomy) that were evaluated in this study.

Table D-1 and Table D-2 provide brief narrative descriptions for the measures.¹

Table D-3 through

¹ Measure Description Source: EnerNOC internal databases

Table D-22 list the detailed unit-level data (including economic screen results) for industrial energy-efficiency equipment measures in existing and new buildings. The column headings and units are the same as described for the corresponding residential sector tables above.

Table D-23 through Table D-42 list the detailed unit-level data (including economic screen results) for industrial energy-efficiency non-equipment measures in existing and new buildings. The column headings and units are the same as described for the corresponding residential sector tables above.

Table D-1 Industrial Energy Efficiency Equipment Measure Descriptions

Cooling	Air-Cooled Chiller	A central chiller plant creates chilled water for distribution throughout the facility. Because of the wide variety of system types and sizes, savings and cost values for efficiency improvements represent an average over screw, reciprocating, and centrifugal technologies. Under this simplified approach, each central system is characterized by an aggregate efficiency value (inclusive of chiller, pumps, and motors), in kW/ton with a further efficiency upgrade through the application of variable refrigerant flow technology.
Cooling	Water-Cooled Chiller	A central chiller plant creates chilled water for distribution throughout the facility. Water source chillers include heat rejection via a condenser loop and cooling tower. Because of the wide variety of system types and sizes, savings and cost values for efficiency improvements represent an average over screw, reciprocating, and centrifugal technologies. Under this simplified approach, each central system is characterized by an aggregate efficiency value (inclusive of chiller, pumps, motors, and condenser loop equipment), in kW/ton with a further efficiency upgrade through the application of variable refrigerant flow technology.
Cooling	Roof Top AC	Packaged cooling systems, such as rooftop units (RTUs), are simple to install and maintain, and are commonly used in small and medium-sized commercial buildings. Applications range from a single supply system with air intake filters, supply fan, and cooling coil, or can become more complex with the addition of a return air duct, return air fan, and various controls to optimize performance. For packaged RTUs, varying Energy Efficiency Ratios (EER) are modeled, as well as a ductless mini-split system.
Cooling	Other Cooling	Miscellaneous Cooling
Cooling / Heating	Air-Source Heat Pump	For heat pumps, units with increasing EER and COP levels are evaluated, as well as a ductless mini-split system.
Cooling / Heating	Geothermal Heat Pump	For heat pumps, units with increasing EER and COP levels are evaluated.
Heating	Electric Furnace	Resistive heating elements are used to convert electricity directly to heat. The heat is then delivered by a supply fan and duct system to the regions that require heating.
Heating	Electric Resistance	Resistive heating elements are used to convert electricity directly to heat. Conductive fins surrounding the element or another mechanism is used to deliver the heat directly to the surrounding room or area. These are typically either baseboard or wall-mounted units.
Ventilation	Ventilation	A variable air volume ventilation system modulates the air flow rate as needed based on the interior conditions of the building to reduce fan load, improve dehumidification, and reduce energy usage.
Interior Lighting	Screw-in	This measure evaluates higher-efficiency alternatives for screw-in interior lamps including halogen, CFL, and LED.
Interior Lighting	High-Bay Fixtures	With the exception of screw-in lighting, industrial lighting efficiency changes typically require more than the simple purchase and installation of alternative lamp restrictions regarding ballasts, fixtures, and circuitry limit the potential for direct substitution of one lamp type for another. Also, during the buildout for a leased office space, management could decide to replace all lamps, ballasts, and fixtures with different configurations. This type of decision-making is modeled on a stock turnover basis because of the time between opportunities for upgrades. For High-Bay fixtures, alternatives include mercury vapor, metal halides, T5 fluorescent high output, and high-pressure sodium.
Interior Lighting	Linear Fluorescent	With the exception of screw-in lighting, industrial lighting efficiency changes typically require more than the simple purchase and installation of alternative lamp restrictions regarding ballasts, fixtures, and circuitry limit the potential for direct substitution of one lamp type for another. Also, during the buildout for a leased office space, management could decide to replace all lamps, ballasts, and fixtures with different configurations. This type of decision-making is

		modeled on a stock turnover basis because of the time between opportunities for upgrades. For linear fluorescent fixtures, alternatives include T12, T8, Super T8, T5, and LED.
Exterior Lighting	Screw-in	This measure evaluates higher-efficiency alternatives for screw-in interior lamps including halogen, CFL, and LED.
Exterior Lighting	HID	Alternatives modeled include metal halides, T8 and T5 high output, high pressure sodium, and LEDs
Exterior Lighting	Linear Fluorescent	For linear fluorescent fixtures, alternatives include T12, T8, Super T8, T5, and LED.
Process	Process Electrochemical	Electrochemical processes deal with chemical reactions in solution driven by electricity applied at a cathode and anode.
Process	Other Process	This category is a "catch all" for the many unique process applications in the broader industrial sector.
Process	Process Cooling	Industrial process where cooling is applied
Process	Process Refrigeration	Industrial refrigeration process
Process	Process Heating	Industrial process where heating is applied
Process	Process Boiler	Boilers heat water, providing either hot water or steam to be distributed around the building for heating. Steam is distributed via pipes to steam radiators, and hot water can be distributed via baseboard radiators or radiant floor systems, or can heat air via a coil. Efficiency improvements can include: exhaust fan controls, electronic ignition (no pilot light), compact size and lighter weight to reduce cycling losses, smaller-diameter flue pipe, and sealed combustion. Very high efficiency units, or condensing units, condense the water vapor produced in the combustion process and also use the heat from this condensation.
Process	Other Process	This category is a "catch all" for the many unique process applications in the broader industrial sector.
Motors	Pumps, Fans & Blowers, Compressed Air, Conveyors, Material Handling, Material Processing	Premium efficiency motors reduce the amount of lost energy going into heat rather than power. Since less heat is generated, less energy is needed to cool the motor with a fan. The initial cost of energy efficient motors is generally higher than for standard motors, however their life-cycle costs can make them far more economical because of savings they generate in operating expense. The fact that energy efficient motors run cooler than their standard counterparts also results in an increase in the life of the motor insulation and bearing. High efficiency units use copper instead of aluminum in the windings and increased conductor cross-sectional area to lower a motor's I ² R losses.
Miscellaneous	Miscellaneous	Improvement of miscellaneous electric uses.

Table D-2 Industrial Energy Efficiency Non-Equipment Measure Descriptions

HVAC (All)	Insulation - Ceiling	Thermal insulation is material or combinations of materials that are used to inhibit the flow of heat energy by conductive, convective, and radiative transfer modes. Thus, thermal insulation can conserve energy by reducing the heat loss or gain of a building. The type of building construction defines insulating possibilities. Typical insulating materials include: loose-fill (blown) cellulose; loose-fill (blown) fiberglass; and rigid polystyrene.
HVAC (All)	Insulation - Ducting	Air distribution ducts can be insulated to reduce heating or cooling losses. Best results can be achieved by covering the entire surface area with insulation. Insulation material inhibits the transfer of heat through the air-supply duct. Several types of ducts and duct insulation are available, including flexible duct, pre-insulated duct, duct board, duct wrap, tacked, or glued rigid insulation, and waterproof hard shell materials for exterior ducts.
HVAC (All)	Insulation - Wall Cavity	Thermal insulation is material or combinations of materials that are used to inhibit the flow of heat energy by conductive, convective, and radiative transfer modes. Thus, thermal insulation can conserve energy by reducing the heat loss or gain of a building. The type of building construction defines insulating possibilities. Typical insulating materials include: loose-fill (blown) cellulose; loose-fill (blown) fiberglass; and rigid polystyrene.
HVAC (All)	HVAC - Duct Repair and Sealing	Leakage in unsealed ducts varies considerably because of the differences in fabricating machinery used, the methods for assembly, installation workmanship, and age of the ductwork. Air leaks from the system to the outdoors result in a direct loss proportional to the amount of leakage and the difference in enthalpy between the outdoor air and the conditioned air. To seal ducts, a wide variety of sealing methods and products exist. Each has a relatively short shelf life, and no documented research has identified the aging characteristics of sealant applications.
Air-Cooled Chiller	Air-Cooled Chiller - Economizer	Economizers allow outside air (when it is cool and dry enough) to be brought into the building space to meet cooling loads instead of using mechanically cooled interior air. A dual enthalpy economizer consists of indoor and outdoor temperature and humidity sensors, dampers, motors, and motor controls. Economizers are most applicable to temperate climates and savings will be smaller in extremely hot or humid areas.
Air-Cooled Chiller	Air-Cooled Chiller - Efficient Mechanical Layout	Improvements to layout and placement of chiller equipment, for example to enable unobstructed access to cooling tower airflow or minimize the length of refrigerant run between cooling tower and chiller head unit.
Air-Cooled Chiller	Air-Cooled Chiller - Maintenance	Filters, coils, and fins require regular cleaning and maintenance for the heat pump or roof top unit to function effectively and efficiently throughout its years of service. Neglecting necessary maintenance leads to a steady decline in performance while energy use increases.
Air-Cooled Chiller	Air-Cooled Chiller - Chilled Water Reset	Chilled water reset controls save energy by improving chiller performance through increasing the supply chilled water temperature, which allows increased suction pressure during low load periods. Raising the chilled water temperature also reduces chilled water piping losses. However, the primary savings from the chilled water reset measure results from chiller efficiency improvement. This is due partly to the smaller temperature difference between chilled water and ambient air, and partly due to the sensitivity of chiller performance to suction temperature.
Air-Cooled Chiller	Air-Cooled Chiller - Chilled Water Variable-Flow System	The part-load efficiency of chilled water loops can be improved substantially by varying the flow speed of the delivered water with the building demand for cooling.
Air-Cooled Chiller	Air-Cooled Chiller - Condenser Water Temperature Reset	Resetting the condenser water temperature to the lowest possible setting allows the cooling tower to generate cooler water whenever possible and decreases the temperature lift between the condenser and the evaporator. This will generally increase chiller part-load efficiency, though it may require

		increased tower fan energy use.
Air-Cooled Chiller	Air-Cooled Chiller - High Efficiency Cooling Tower Fans	High-efficiency cooling fans utilize efficient components and variable frequency drives that improve fan performance by adjusting fan speed and rotation as conditions change.
Air-Cooled Chiller	Air-Cooled Chiller - VSD on Fans	Variable speed drives, which reduce chiller energy use under part load, are modeled for both air-cooled and water-cooled chillers.
Water-Cooled Chiller	Water-Cooled Chiller Economizer	Economizers allow outside air (when it is cool and dry enough) to be brought into the building space to meet cooling loads instead of using mechanically cooled interior air. A dual enthalpy economizer consists of indoor and outdoor temperature and humidity sensors, dampers, motors, and motor controls. Economizers are most applicable to temperate climates and savings will be smaller in extremely hot or humid areas.
Water-Cooled Chiller	Water Cooled Chiller-Efficient Mechanical Layout	Improvements to layout and placement of chiller equipment, for example to enable unobstructed access to cooling tower airflow or minimize the length of refrigerant run between cooling tower and chiller head unit.
Water-Cooled Chiller	Water Cooled Chiller Maintenance	Filters, coils, and fins require regular cleaning and maintenance for the heat pump or roof top unit to function effectively and efficiently throughout its years of service. Neglecting necessary maintenance leads to a steady decline in performance while energy use increases.
Water-Cooled Chiller	Water Cooled Chiller-Chilled Water Reset	Chilled water reset controls save energy by improving chiller performance through increasing the supply chilled water temperature, which allows increased suction pressure during low load periods. Raising the chilled water temperature also reduces chilled water piping losses. However, the primary savings from the chilled water reset measure results from chiller efficiency improvement. This is due partly to the smaller temperature difference between chilled water and ambient air, and partly due to the sensitivity of chiller performance to suction temperature.
Water-Cooled Chiller	Water Cooled Chiller-Variable Flow System	The part-load efficiency of chilled water loops can be improved substantially by varying the flow speed of the delivered water with the building demand for cooling.
Water-Cooled Chiller	Water Cooled Chiller Condenser Water Temperature Reset	Resetting the condenser water temperature to the lowest possible setting allows the cooling tower to generate cooler water whenever possible and decreases the temperature lift between the condenser and the evaporator. This will generally increase chiller part-load efficiency, though it may require increased tower fan energy use.
Water-Cooled Chiller	Water Cooled Chiller High Efficiency Cooling Tower Fans	High-efficiency cooling fans utilize efficient components and variable frequency drives that improve fan performance by adjusting fan speed and rotation as conditions change.
Water-Cooled Chiller	Water Cooled Chiller VSD on Fans	Variable speed drives, which reduce chiller energy use under part load, are modeled for both air-cooled and water-cooled chillers.
Roof Top AC	RTU - Maintenance	Regular cleaning and maintenance enables a roof top unit to function effectively and efficiently throughout its years of service. Neglecting necessary maintenance leads to a steady decline in performance while energy use increases. Maintenance can increase the efficiency of poorly performing equipment by as much as 10%.
Cooling / Heating	Heat Pump - Maintenance	Regular cleaning and maintenance enables a heat pump to function effectively and efficiently throughout its years of service. Neglecting necessary maintenance leads to a steady decline in performance while energy use increases. Maintenance can increase the efficiency of poorly performing equipment by as much as 10%.
Process	Process Boilers- Hot Water Reset	Automatic control algorithm for boilers that varies the water temperature of the supply loop in a manner that is tailored to the heating demand of the process at hand.
Process	Process Boilers- Combustion Controls	Operating your boiler with an optimum amount of excess air will minimize heat loss up the stack and improve combustion efficiency. When fuel composition is

	(O2 Trim)	highly variable (such as refinery gas, hog fuel, or multi-fuel boilers), or where steam flows are highly variable, an online oxygen analyzer should be considered. The oxygen "trim" system provides feedback to the burner controls to automatically minimize excess combustion air and optimize the air-to-fuel ratio.
Process	Process Boiler- Condensate Return Lines	Hot condensate that comes out of the steam being delivered can be returned directly to the boiler, where it is then much easier to reheat than cold makeup water. Other benefits that will accrue from an efficient condensate return system are less make-up water, water related treatment costs, boiler blowdown, and disposal costs.
Process	Process Boiler- Condensing Economizer	A boiler economizer recovers heat from the boiler exhaust gas and is used to pre-heat the boiler feed water. Capturing this heat reduces overall fuel requirements for the boiler. A condensing economizer extracts additional heat from the exhaust gas by taking its water vapor all the way to a liquid water state
Process	Process Boiler- Pipe Insulation	Insulating hot water pipes decreases the amount of energy lost during distribution of hot water throughout the building. Insulating pipes will result in quicker delivery of hot water and allows lowering the water heating set point. There are several different types of insulation, the most common being polyethylene and neoprene.
Process	Process- Boiler Steam Trap Maintenance	Steam transfers its latent heat to a process fluid in a heat exchanger. The steam is held in the heat exchanger by a steam trap until it condenses. Then the trap passes the condensate into the condensate return system. Heat loss through uninsulated or leaky lines and fittings in the steam traps can be significant, and is easily prevented with regular inspections, maintenance, and repair. General experience shows that most facilities, however, do not have such practices.
Heating	Gas Boiler- High Efficiency Hot Water Circulation	Efficiency improvements to the circulation system of a boiler's hot water loop
Heating	Gas Boiler- Hot Water Reset	Automatic control algorithm for boilers that varies the water temperature of the supply loop in an inverse relationship with the measured outside air temperature. If it is warmer outside, the hot water supply loop does not have to be as hot, thereby tailoring boiler heat output to the demand and saving energy.
Heating	Gas Boiler- Maintenance	A boiler's combustion controls, circulation loops, and heat exchanger require regular checks and maintenance for the unit to function effectively and efficiently throughout its life. Neglecting necessary maintenance leads to a steady decline in performance, requiring the unit to use more energy for the same heating load.
Heating	Gas Furnace Maintenance	A furnace's combustion controls, ventilation systems, and heat exchanger require regular checks and maintenance for the unit to function effectively and efficiently throughout its life. Neglecting necessary maintenance leads to a steady decline in performance, requiring the unit to use more energy for the same heating load.
Heating	Boiler Blowdown Heat Exchanger Steam	Recovery of heat from the periodic/continuous flow of outlet waste water (to prevent sludge buildup) to preheat make-up water
Heating	Insulate steam lines/condensate tank	Insulation to prevent heat loss from steam lines and condensate tank
HVAC (All)	Roofs - High Reflectivity	The color and material of a building structure surface will determine the amount of solar radiation absorbed by that surface and subsequently transferred into a building. This is called solar absorptance. By using a living roof or a roofing material with a light color (and a lower solar absorptance), the roof will absorb less solar radiation and consequently reduce the cooling load.

		Living roofs also reduce stormwater runoff.
HVAC (All)	Energy Management System	An energy management system (EMS) allows managers/owners to monitor and control the major energy-consuming systems within a commercial building. At the minimum, the EMS can be used to monitor and record energy consumption of the different end-uses in a building, and can control operation schedules of the HVAC and lighting systems. The monitoring function helps building managers/owners to identify systems that are operating inefficiently so that actions can be taken to correct the problem. The EMS can also provide preventive maintenance scheduling that will reduce the cost of operations and maintenance in the long run. The control functionality of the EMS allows the building manager/owner to operate building systems from one central location. The operation schedules set via the EMS help to prevent building systems from operating during unwanted or unoccupied periods. This analysis assumes that this measure is limited to buildings with a central HVAC system.
HVAC (All)	Thermostat - Clock/Programmable	A programmable thermostat can be added to most heating/cooling systems. They are typically used during winter to lower temperatures at night and in summer to increase temperatures during the afternoon. There are two-setting models, and well as models that allow separate programming for each day of the week. The energy savings from this type of thermostat are identical to those of a "setback" strategy with standard thermostats, but the convenience of a programmable thermostat makes it a much more attractive option. In this analysis, the baseline is assumed to have no thermostat setback.
HVAC (All)	HVAC- Infrared Heater	Infrared heater low intensity - two stage
Interior Lighting	Interior Lighting - Occupancy Sensors	The installation of occupancy sensors allows lights to be turned off during periods when a space is unoccupied, virtually eliminating the wasted energy due to lights being left on. There are several types of occupancy sensors in the market.
Interior Lighting	Interior Lighting - Skylights	Addition of transparent windows/fixtures in the roof to allow daylight to enter and reduce the need for powered lighting.
Interior Lighting	Interior Lighting - Time Clocks and Timers	In many cases lighting remains on at night and during weekends. A simple timer can set a schedule for turning lights off to reduce operating hours.
Interior Lighting	Interior Lighting - LED Exit Lighting	The lamps inside exit signs represent a significant energy end-use, since they usually operate 24 hours per day. Many old exit signs use incandescent lamps, which consume approximately 40 watts per sign. The incandescent lamps can be replaced with LED lamps that are specially designed for this specific purpose. In comparison, the LED lamps consume approximately 2-5 watts.
Interior Lighting	Interior Lighting - Daylighting Controls	Daylighting controls use a photosensor to detect ambient light and adjust or turn off electric lights accordingly.
Interior Lighting	Interior Screw-in - Task Lighting	Individual work areas can use task lighting instead of brightly lighting the entire area. Significant energy savings can be realized by focusing light directly where it is needed and lowering the general lighting level. An example of task lighting is the common desk lamp. A 25W desk lamp can be installed in place of a typical lamp in a fixture.
Interior Lighting	Interior Fluorescent - Bi-Level Fixture	Bi-level fixtures have the ability to reduce light output to a lower level, given a control strategy that is based on a timer, occupancy sensor, motion sensor, or manual switch.
Interior Lighting	Interior Fluorescent - Delamp and Install Reflectors	While sometimes included in lighting retrofit projects, delamping is often performed as a separate energy efficiency measure in which a lighting engineer analyzes the lighting provided by current systems compared to the requirements of building occupants. This often leads to the removal of unnecessary lamps corresponding to an overall reduction in energy usage. In addition, installing a reflector in each fixture can improve light distribution from the remaining lamps.
Exterior	Exterior Lighting - Bi-	Bi-level fixtures have the ability to reduce light output to a lower level, given a

Lighting	Level Fixture	control strategy that is based on a timer, occupancy sensor, motion sensor, or manual switch.
Exterior Lighting	Exterior Lighting - Daylighting Controls	Daylighting controls use a photosensor to detect ambient light and adjust or turn off electric lights accordingly.
Exterior Lighting	Exterior Lighting - Photovoltaic Installation	Solar photovoltaic generation may be used to power exterior lighting and thus eliminate all or part of the electrical energy use.
Process	Process - Conductivity Controls	Automated control of conductivity levels in a process solution, for example by variably injecting CO ₂ into a stream of rinse water, can maintain an optimal solution that increases process effectiveness, decreases impurities, reduces scaling or corrosion, and minimizes required rinse time.
Process	Process - Controls on Fume Hoods	Improved fume hoods involve installing sensors and variable-speed controls to provide ventilation based on actual demand. When the relevant equipment or process is not active, the controls automatically decrease the fan speed accordingly.
Process	Process - Timers and Controls	Significant energy savings can frequently be attained from processes by adding a timer or altering their control algorithms.
Refrigeration	Refrigeration - Floating Head Pressure	Floating head pressure control allows the pressure in the condenser to "float" with ambient temperatures. This method reduces refrigeration compression ratios, improves system efficiency and extends the compressor life. The greatest savings with a floating head pressure approach occurs when the ambient temperatures are low, such as in the winter season. Floating head pressure control is most practical for new installations. However, retrofits installation can be completed with some existing refrigeration systems. Installing floating head pressure control increases the capacity of the compressor when temperatures are low, which may lead to short cycling.
Refrigeration	Refrigeration - System Controls	Refrigeration System Controls would include measures such as temperature sensors, flow/float controls, and pressure controls. These work to improve the refrigeration system by limiting demand and improving overall system efficiency.
Refrigeration	Refrigeration - System Maintenance	This measure includes repairing and recharging refrigerant lines, cleaning condenser coils, and replacing the oil. This reduces energy consumption by improving the rate at which the system can compress and cool refrigerant as it moves through the system.
Refrigeration	Refrigeration - System Optimization	Refrigeration system optimization is a thorough overhaul of the refrigeration system which involves the resizing, sequencing, and controlling of compressors in order to optimize load.
Compressed Air	Compressed Air - Air Usage Reduction	This measure involves a process audit of the facility to determine if the actual application of compressed air can be reduced, reconfigured, consolidated, or otherwise optimized.
Compressed Air	Compressed Air - Compressor Replacement	This measure is the replacement of existing air compressor equipment with more efficient compressors and motors in order to improve energy efficiency.
Compressed Air	Compressed Air - System Controls	Compressed Air System Controls would include measures such as VSDs, centralized controls, and system performance monitoring. These measures work in tandem to reduce energy usage by lowering system demand.
Compressed Air	Compressed Air - System Maintenance	This measure includes repairing holes in air lines, replacing failed nozzles, and lubricating the compressors. This reduces energy consumption by improving compressor efficiency and reducing line loss as gas moves through the system.
Compressed Air	Compressed Air - System Optimization and Improvements	System optimization is a thorough overhaul of the compressed air system which involves the resizing, sequencing, and improving control over all compressors in a system in order to reduce energy consumption to a minimum. This measure may include those from Controls and Maintenance.
Pumps	Pumping System - Controls	Significant energy savings can frequently be attained from processes by adding a timer or altering their control algorithms.

Pumps	Pumping System - Maintenance	This measure includes clearing traps, repairing impellers, and repairing broken seals or valves. This reduces energy consumption by reducing losses incurred by moving fluids through the system.
Pumps	Pumping System - Optimization	Optimization integrates best practices of system analysis, equipment improvements, and operational improvements into a sustaining energy program. A facility that implements such a practice treats its energy program in a similar manner to safety or quality control programs: an individual or team is tasked with developing and enforcing standards, goals are set, regular reports are generated and reported to management, and all plant employees are engaged and held accountable.
Pumps	Pumps - Variable Speed Control	The part-load efficiency of drive systems can be improved by varying the speed of the motor drive. An additional benefit of variable-speed controls is the ability to start and stop the motor and process gradually, thus extending the life of the motor and associated machinery.
Pumps	Pump Equipment Upgrade	Improved design of flow, housing, control valves, impeller trimming, proper sizing, etc to increase productive output per energy input. Moreover, these improved systems could be assessed and managed in accordance with recognized standards such as ASME EA-2-2008.
Fans & Blowers	Fan Equipment Upgrade	Improved design of airflow, blades, housing, sizing, etc to increase productive output per energy input. Fans are widely used in industry for conveyance, drying and ventilation. For example, relatively inefficient centrifugal-radial fans, with efficiency as low as 22%, are commonly used in industry. These fans could be replaced with more efficient centrifugal backwardly inclined fans that increase overall fan efficiency by 20% to 30%. The savings potential for premium-efficiency fans is high, and the costs are relatively low. However, premium-efficiency fans are sometimes not chosen for industrial applications because of concerns about reliable operation in dirty environments.
Fans & Blowers	Fan System - Controls	Significant energy savings can frequently be attained from processes by adding a timer or altering their control algorithms.
Fans & Blowers	Fan System - Maintenance	This measure includes repairing holes in ducts, replacing clogged filters, and lubricating the motors. This reduces energy consumption by improving fan efficiency and reducing system loss as gas moves through the ductwork.
Fans & Blowers	Fan System - Optimization	Optimization integrates best practices of system analysis, equipment improvements, and operational improvements into a sustaining energy program. A facility that implements such a practice treats its energy program in a similar manner to safety or quality control programs: an individual or team is tasked with developing and enforcing standards, goals are set, regular reports are generated and reported to management, and all plant employees are engaged and held accountable.
Fans & Blowers	Fans - Variable Speed Control	The part-load efficiency of drive systems can be improved by varying the speed of the motor drive. An additional benefit of variable-speed controls is the ability to start and stop the motor and process gradually, thus extending the life of the motor and associated machinery.
Motors	Motors - Magnetic Adjustable Speed Drives	To allow for adjustable speed operation, this technology uses magnetic induction to couple a drive to its load. Varying the magnetic slip within the coupling controls the speed of the output shaft. Magnetic drives perform best at the upper end of the speed range due to the energy consumed by the slip. Unlike traditional ASDs, magnetically coupled ASDs create no power distortion on the electrical system. However, magnetically coupled ASD efficiency is best when power needs are greatest. VFDs may show greater efficiency when the average load speed is below 90% of the motor speed, however this occurs when power demands are reduced.
Motors	Motors - Efficient Rewind	When a motor burns out or is in need of repair, the owner may elect to either replace the motor or have it rewind. A typical motor rewind costs less than a replacement motor, but at the cost of efficiency. An efficient rewind, however, attempts to improve the efficiency of the motor by reducing stator losses. If

		the manufacturer has left stator slots open, or not entirely filled, additional copper wire can be included to reduce resistance and increase efficiency.
Motors	Motors - Variable Frequency Drive	The part-load efficiency of drive systems can be improved by varying the speed of the motor drive. An additional benefit of variable-speed controls is the ability to start and stop the motor and process gradually, thus extending the life of the motor and associated machinery.
HVAC, Lighting	Commissioning - HVAC, Lighting	For new construction and major renovations, commissioning ensures that building systems are properly designed, specified, and installed to meet the design intent and provide high-efficiency performance. Commissioning begins during the design process.
HVAC, Lighting	Retrocommissioning - HVAC, Lighting	In existing buildings, the retrocommissioning process identifies low-cost or no cost measures, including controls adjustments, to improve building performance and reduce operating costs. Retrocommissioning addresses HVAC, lighting, DHW, and other major building systems.
Ventilation	Ventilation - CO2 Controlled	Also known as Demand Controlled Ventilation, this measure uses carbon dioxide (CO2) levels to indicate the level of occupancy in a space. Sensors monitor CO2 levels so that air handling controls can adjust the amount of outside air the system needs to intake. Ventilation rates are thereby controlled based on occupancy, rather than a fixed rate, thus saving HVAC energy use.
All	Transformer - High Efficiency	All electric power passes through one or more transformers on its way to service equipment, lighting, and other loads. Currently available materials and designs can considerably reduce both load and no-load losses. The new NEMA TP-1 standard is used as the reference definition for energy-efficient products. Tier-1 represents TP-1 dry-type transformers while Tier-2 reflects a switch to liquid immersed TP-1 products. More efficient transformers with attractive payback periods are estimated to save 40 to 50 percent of the energy lost by a "typical" transformer, which translates into a one to three percent reduction in electric bills for commercial and industrial customers.
All	Custom Measures	Custom measures may be included in the analysis to serve as a "catch all" for measures for which costs and savings are not easily quantified and that could be part of a custom program. Typical costs and energy savings are assumed such that the measures pass the economic screen.
Miscellaneous	Direct Fired Make-up Air System	Heating of make-up air with direct contact with combustion flame in spaces that require high ventilation rates.
Miscellaneous	Direct Contact Water Heater	Incoming water flows downward through a vertical column filled with stainless steel packing rings. As cold water comes into Direct Contact with rising hot combustion air from a gas burner, a very rapid heat transfer occurs, absorbing 99% of the heat energy into the water. Pure, heated water then accumulates in the storage tank for "On Demand" use, and clean CO2 and H2O combustion gas leaves the stack at near ambient temperature.

Table D-3 Energy Efficiency Equipment Data, Electric-Food Products, Existing Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Air-Cooled Chiller	1.5 kw/ton, COP 2.3	-	-	20	1.00	-
Cooling	Air-Cooled Chiller	1.3 kw/ton, COP 2.7	614.19	\$227.87	20	6.32	\$0.03
Cooling	Air-Cooled Chiller	1.26 kw/ton, COP 2.8	737.02	\$257.47	20	6.71	\$0.03
Cooling	Air-Cooled Chiller	1.0 kw/ton, COP 3.5	1,535.46	\$287.08	20	> 10	\$0.02
Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	1,627.59	\$316.68	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.75 kw/ton, COP 4.7	-	-	20	1.00	-
Cooling	Water-Cooled Chiller	0.60 kw/ton, COP 5.9	1,267.56	\$180.24	20	> 10	\$0.01
Cooling	Water-Cooled Chiller	0.58 kw/ton, COP 6.1	1,437.01	\$193.11	20	> 10	\$0.01
Cooling	Water-Cooled Chiller	0.55 kw/Ton, COP 6.4	1,691.39	\$231.74	20	> 10	\$0.01
Cooling	Water-Cooled Chiller	0.51 kw/ton, COP 6.9	2,030.44	\$360.48	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.50 kw/Ton, COP 7.0	2,115.37	\$399.10	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.48 kw/ton, COP 7.3	2,285.29	\$437.73	20	> 10	\$0.02
Cooling	Roof top AC	EER 9.2	-	-	16	-	-
Cooling	Roof top AC	EER 10.1	739.38	\$266.78	16	-	\$0.04
Cooling	Roof top AC	EER 11.2	1,481.67	\$307.82	16	1.00	\$0.02
Cooling	Roof top AC	EER 12.0	1,936.05	\$985.03	16	1.28	\$0.05
Cooling	Roof top AC	Ductless Minisplit	2,425.37	\$3,232.13	16	0.62	\$0.13
Cooling	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	16	-	-
Cooling	Air Source Heat Pump	EER 10.3, COP 3.2	812.78	\$337.72	16	-	\$0.04
Cooling	Air Source Heat Pump	EER 11.0, COP 3.3	1,293.80	\$42.21	16	1.00	\$0.00
Cooling	Air Source Heat Pump	EER 11.7, COP 3.4	1,717.26	\$1,245.33	16	0.71	\$0.07
Cooling	Air Source Heat Pump	EER 12.0, COP 3.4	1,883.61	\$1,846.88	16	0.66	\$0.10
Cooling	Air Source Heat Pump	Ductless Minisplit	2,382.68	\$3,113.31	16	0.72	\$0.13
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	16	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	515.37	\$782.55	16	1.34	\$0.15
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	940.33	\$1,606.29	16	1.19	\$0.17
Cooling	Geothermal Heat Pump	EER 30, COP 5.0	2,300.19	\$2,188.39	16	2.13	\$0.09
Cooling	Other Cooling	EER 9.8	-	-	14	1.00	-
Cooling	Other Cooling	EER 10.2	-	-	14	-	-
Cooling	Other Cooling	EER 10.8	-	-	14	-	-
Cooling	Other Cooling	EER 11	-	-	14	-	-
Cooling	Other Cooling	EER 11.5	-	-	14	-	-
Heating	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	16	-	-
Heating	Air Source Heat Pump	EER 10.3, COP 3.2	135.48	\$3,427.99	16	-	\$2.50
Heating	Air Source Heat Pump	EER 11.0, COP 3.3	210.67	\$428.50	16	1.00	\$0.20
Heating	Air Source Heat Pump	EER 11.7, COP 3.4	272.70	\$12,640.70	16	0.00	\$4.59
Heating	Air Source Heat Pump	EER 12.0, COP 3.4	296.60	\$18,746.80	16	0.00	\$6.26
Heating	Air Source Heat Pump	Ductless Minisplit	362.44	\$31,601.74	16	0.00	\$8.63
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	16	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	476.55	\$7,029.84	16	0.04	\$1.46
Heating	Geothermal Heat Pump	EER 18, COP 3.8	1,097.33	\$14,429.67	16	0.04	\$1.30
Heating	Geothermal Heat Pump	EER 30, COP 5.0	2,009.87	\$19,658.75	16	0.06	\$0.97
Heating	Electric Resistance	Standard	-	-	20	1.00	-
Heating	Electric Furnace	Standard	-	-	20	1.00	-
Ventilation	Ventilation	Constant Volume	-	-	10	1.00	-
Ventilation	Ventilation	Variable Air Volume	-	-	10	-	-
Interior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Interior Lighting	Screw-in	90W Halogen PAR-38	218.52	\$8.25	3	-	\$0.01
Interior Lighting	Screw-in	70W HIR PAR-38	335.72	\$11.35	3	-	\$0.01
Interior Lighting	Screw-in	CFL	628.50	\$4.13	6	> 10	\$0.00

End Use	Technology	Efficiency Definition	Savings (kWh/empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Interior Lighting	Screw-in	LED (2010)	685.39	\$68.23	20	3.56	\$0.01
Interior Lighting	Screw-in	LED (2020)	785.07	\$19.08	20	-	\$0.00
Interior Lighting	High-Bay Fixtures	Metal Halides	-	-	3	1.00	-
Interior Lighting	High-Bay Fixtures	LED (2010)	44.65	\$21.23	15	0.10	\$0.05
Interior Lighting	High-Bay Fixtures	T8	45.46	(\$1.41)	10	1.00	(\$0.00)
Interior Lighting	High-Bay Fixtures	High Pressure Sodium	48.37	\$0.72	6	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	Induction	53.35	\$19.55	15	0.45	\$0.04
Interior Lighting	High-Bay Fixtures	Light Emitting Plasma	56.61	\$1.44	15	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	T5	58.02	\$1.55	10	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	LED (2020)	86.73	\$4.55	15	-	\$0.01
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Interior Lighting	Linear Fluorescent	LED (2010)	335.37	\$907.67	15	1.00	\$0.28
Interior Lighting	Linear Fluorescent	T8	348.99	(\$0.13)	10	1.00	(\$0.00)
Interior Lighting	Linear Fluorescent	Super T8	484.15	\$132.86	10	1.00	\$0.04
Interior Lighting	Linear Fluorescent	T5	561.23	\$100.96	10	1.00	\$0.02
Interior Lighting	Linear Fluorescent	LED (2020)	1,046.30	\$249.72	15	-	\$0.02
Exterior Lighting	Screw-in	Incandescent	-	-	2	-	-
Exterior Lighting	Screw-in	90W Halogen PAR-38	0.34	\$0.01	3	1.00	\$0.01
Exterior Lighting	Screw-in	70W HIR PAR-38	0.52	\$0.02	3	-	\$0.01
Exterior Lighting	Screw-in	CFL	0.97	\$0.01	6	1.00	\$0.00
Exterior Lighting	Screw-in	LED (2010)	1.06	\$0.26	20	1.33	\$0.02
Exterior Lighting	Screw-in	LED (2020)	1.22	\$0.07	20	-	\$0.01
Exterior Lighting	HID	Metal Halides	-	-	3	1.00	-
Exterior Lighting	HID	LED (2010)	149.36	\$190.40	15	0.14	\$0.13
Exterior Lighting	HID	T8	153.45	(\$4.77)	10	1.00	(\$0.00)
Exterior Lighting	HID	High Pressure Sodium	163.28	\$2.42	6	1.00	\$0.00
Exterior Lighting	HID	Light Emitting Plasma	191.09	\$4.87	15	1.00	\$0.00
Exterior Lighting	HID	T5	195.86	\$5.22	10	1.00	\$0.00
Exterior Lighting	HID	LED (2020)	288.07	\$49.07	15	-	\$0.02
Exterior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Exterior Lighting	Linear Fluorescent	LED (2010)	0.03	\$0.07	15	1.00	\$0.28
Exterior Lighting	Linear Fluorescent	T8	0.03	(\$0.00)	10	1.00	(\$0.00)
Exterior Lighting	Linear Fluorescent	Super T8	0.04	\$0.01	10	1.00	\$0.04
Exterior Lighting	Linear Fluorescent	T5	0.04	\$0.01	10	1.00	\$0.02
Exterior Lighting	Linear Fluorescent	LED (2020)	0.08	\$0.02	15	-	\$0.02
Motors	Pumps	Standard	-	-	10	1.00	-
Motors	Pumps	High Efficiency	19.43	\$16.07	10	0.48	\$0.11
Motors	Fans & Blowers	Standard	-	-	10	1.00	-
Motors	Fans & Blowers	High Efficiency	14.35	\$13.71	10	0.42	\$0.13
Motors	Compressed Air	Standard	-	-	10	1.00	-
Motors	Compressed Air	High Efficiency	6.91	\$4.19	10	0.66	\$0.08
Motors	Matl Handling	Standard	-	-	10	1.00	-
Motors	Matl Handling	High Efficiency	12.04	\$12.65	10	0.38	\$0.14
Motors	Matl Processing	Standard	-	-	10	1.00	-
Motors	Matl Processing	High Efficiency	17.10	\$17.97	10	0.38	\$0.14
Motors	Other Motors	Standard	-	-	10	1.00	-
Motors	Other Motors	High Efficiency	-	-	10	-	-
Process	Process Heating	Standard	-	-	15	1.00	-
Process	Process Cooling and Refrig	Standard	-	-	15	1.00	-
Process	Electro-Chemical Processes	Standard	-	-	15	1.00	-
Process	Other Process	Standard	-	-	15	1.00	-

Table D-4 Energy Efficiency Equipment Data, Natural Gas-Food Products, Existing Vintage

End Use	Technology	Efficiency Definition	Savings (therms/empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/therm)
Heating	Furnace	EF .76	-	-	20	1.00	-
Heating	Furnace	EF .80	10.24	\$240.90	20	0.30	\$2.08
Heating	Furnace	EF .82	14.99	\$651.75	20	0.16	\$3.84
Heating	Furnace	EF .90	31.81	\$569.22	20	0.39	\$1.58
Heating	Furnace	EF .96	42.70	\$826.64	20	0.36	\$1.71
Heating	Boiler	EF .76	-	-	25	-	-
Heating	Boiler	EF .80	134.87	\$187.80	25	1.00	\$0.11
Heating	Boiler	EF .83	227.50	\$1,108.03	25	0.84	\$0.39
Heating	Boiler	EF .90	419.60	\$1,690.21	25	1.58	\$0.32
Heating	Boiler	EF .96	485.58	\$2,904.66	25	1.08	\$0.48
Heating	Other Heating	AFUE .74	-	-	15	-	-
Heating	Other Heating	AFUE .75	10.73	\$5.20	15	-	\$0.05
Heating	Other Heating	AFUE .76	13.25	\$7.44	15	1.00	\$0.06
Heating	Other Heating	AFUE .77	15.77	\$11.60	15	3.31	\$0.08
Heating	Other Heating	AFUE .80	22.71	\$23.64	15	3.19	\$0.11
Process	Process Heating	Standard	-	-	15	1.00	-
Process	Process Boiler	EF .76	-	-	25	-	-
Process	Process Boiler	EF .80	78.15	\$108.82	25	1.00	\$0.11
Process	Process Boiler	EF .83	131.82	\$642.04	25	0.84	\$0.39
Process	Process Boiler	EF .90	243.13	\$979.38	25	1.58	\$0.32
Process	Process Boiler	EF .96	281.36	\$1,683.08	25	1.08	\$0.48
Process	Process Cooling	Standard	-	-	15	1.00	-
Process	Other Process	Standard	-	-	15	1.00	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table D-5 Energy Efficiency Equipment Data, Electric-Food Products, New Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Air-Cooled Chiller	1.5 kw/ton, COP 2.3	-	-	20	1.00	-
Cooling	Air-Cooled Chiller	1.3 kw/ton, COP 2.7	549.31	\$323.41	20	3.98	\$0.05
Cooling	Air-Cooled Chiller	1.26 kw/ton, COP 2.8	659.16	\$365.42	20	4.23	\$0.05
Cooling	Air-Cooled Chiller	1.0 kw/ton, COP 3.5	1,373.28	\$407.44	20	7.90	\$0.03
Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	1,455.66	\$449.46	20	7.59	\$0.03
Cooling	Water-Cooled Chiller	0.75 kw/ton, COP 4.7	-	-	20	1.00	-
Cooling	Water-Cooled Chiller	0.60 kw/ton, COP 5.9	1,185.72	\$277.95	20	10.00	\$0.02
Cooling	Water-Cooled Chiller	0.58 kw/ton, COP 6.1	1,344.21	\$297.81	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.55 kw/Ton, COP 6.4	1,582.16	\$357.37	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.51 kw/ton, COP 6.9	1,898.48	\$555.91	20	8.00	\$0.03
Cooling	Water-Cooled Chiller	0.50 kw/Ton, COP 7.0	1,977.93	\$615.47	20	7.53	\$0.03
Cooling	Water-Cooled Chiller	0.48 kw/ton, COP 7.3	2,136.89	\$675.03	20	7.42	\$0.03
Cooling	Roof top AC	EER 9.2	-	-	16	-	-
Cooling	Roof top AC	EER 10.1	711.23	\$296.65	16	-	\$0.04
Cooling	Roof top AC	EER 11.2	1,425.64	\$342.29	16	1.00	\$0.02
Cooling	Roof top AC	EER 12.0	1,862.72	\$1,095.34	16	1.11	\$0.06
Cooling	Roof top AC	Ductless Minisplit	2,333.50	\$3,594.07	16	0.53	\$0.15
Cooling	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	16	-	-
Cooling	Air Source Heat Pump	EER 10.3, COP 3.2	702.63	\$326.86	16	-	\$0.05
Cooling	Air Source Heat Pump	EER 11.0, COP 3.3	1,118.24	\$40.86	16	1.00	\$0.00
Cooling	Air Source Heat Pump	EER 11.7, COP 3.4	1,484.47	\$1,205.30	16	0.64	\$0.08
Cooling	Air Source Heat Pump	EER 12.0, COP 3.4	1,628.26	\$1,787.53	16	0.59	\$0.11
Cooling	Air Source Heat Pump	Ductless Minisplit	2,059.88	\$3,013.26	16	0.64	\$0.14
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	16	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	453.34	\$770.67	16	1.19	\$0.17
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	827.14	\$1,581.90	16	1.06	\$0.19
Cooling	Geothermal Heat Pump	EER 30, COP 5.0	2,023.32	\$2,155.15	16	1.90	\$0.11
Cooling	Other Cooling	EER 9.8	-	-	14	1.00	-
Cooling	Other Cooling	EER 10.2	-	-	14	-	-
Cooling	Other Cooling	EER 10.8	-	-	14	-	-
Cooling	Other Cooling	EER 11	-	-	14	-	-
Cooling	Other Cooling	EER 11.5	-	-	14	-	-
Heating	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	16	-	-
Heating	Air Source Heat Pump	EER 10.3, COP 3.2	121.70	\$1,652.52	16	-	\$1.34
Heating	Air Source Heat Pump	EER 11.0, COP 3.3	189.24	\$206.57	16	1.00	\$0.11
Heating	Air Source Heat Pump	EER 11.7, COP 3.4	244.96	\$6,093.67	16	0.01	\$2.46
Heating	Air Source Heat Pump	EER 12.0, COP 3.4	266.43	\$9,037.23	16	0.00	\$3.36
Heating	Air Source Heat Pump	Ductless Minisplit	325.57	\$15,234.18	16	0.00	\$4.63
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	16	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	443.47	\$3,475.29	16	0.07	\$0.78
Heating	Geothermal Heat Pump	EER 18, COP 3.8	1,021.14	\$7,133.50	16	0.08	\$0.69
Heating	Geothermal Heat Pump	EER 30, COP 5.0	1,925.20	\$9,718.57	16	0.11	\$0.50
Heating	Electric Resistance	Standard	-	-	20	1.00	-
Heating	Electric Furnace	Standard	-	-	20	1.00	-
Ventilation	Ventilation	Constant Volume	-	-	10	1.00	-
Ventilation	Ventilation	Variable Air Volume	-	-	10	-	-
Interior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Interior Lighting	Screw-in	90W Halogen PAR-38	218.52	\$8.25	3	-	\$0.01
Interior Lighting	Screw-in	70W HIR PAR-38	335.72	\$11.35	3	-	\$0.01
Interior Lighting	Screw-in	CFL	628.50	\$4.13	6	> 10	\$0.00

End Use	Technology	Efficiency Definition	Savings (kWh/empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Interior Lighting	Screw-in	LED (2010)	685.39	\$68.23	20	3.56	\$0.01
Interior Lighting	Screw-in	LED (2020)	785.07	\$19.08	20	-	\$0.00
Interior Lighting	High-Bay Fixtures	Metal Halides	-	-	3	1.00	-
Interior Lighting	High-Bay Fixtures	LED (2010)	44.65	\$21.23	15	0.10	\$0.05
Interior Lighting	High-Bay Fixtures	T8	45.46	(\$1.41)	10	1.00	(\$0.00)
Interior Lighting	High-Bay Fixtures	High Pressure Sodium	48.37	\$0.72	6	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	Induction	53.35	\$19.55	15	0.45	\$0.04
Interior Lighting	High-Bay Fixtures	Light Emitting Plasma	56.61	\$1.44	15	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	T5	58.02	\$1.55	10	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	LED (2020)	86.73	\$4.55	15	-	\$0.01
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Interior Lighting	Linear Fluorescent	LED (2010)	335.37	\$907.67	15	1.00	\$0.28
Interior Lighting	Linear Fluorescent	T8	348.99	(\$0.13)	10	1.00	(\$0.00)
Interior Lighting	Linear Fluorescent	Super T8	484.15	\$132.86	10	1.00	\$0.04
Interior Lighting	Linear Fluorescent	T5	561.23	\$100.96	10	1.00	\$0.02
Interior Lighting	Linear Fluorescent	LED (2020)	1,046.30	\$249.72	15	-	\$0.02
Exterior Lighting	Screw-in	Incandescent	-	-	2	-	-
Exterior Lighting	Screw-in	90W Halogen PAR-38	0.34	\$0.01	3	1.00	\$0.01
Exterior Lighting	Screw-in	70W HIR PAR-38	0.52	\$0.02	3	-	\$0.01
Exterior Lighting	Screw-in	CFL	0.97	\$0.01	6	1.00	\$0.00
Exterior Lighting	Screw-in	LED (2010)	1.06	\$0.26	20	1.33	\$0.02
Exterior Lighting	Screw-in	LED (2020)	1.22	\$0.07	20	-	\$0.01
Exterior Lighting	HID	Metal Halides	-	-	3	1.00	-
Exterior Lighting	HID	LED (2010)	149.36	\$190.40	15	0.14	\$0.13
Exterior Lighting	HID	T8	153.45	(\$4.77)	10	1.00	(\$0.00)
Exterior Lighting	HID	High Pressure Sodium	163.28	\$2.42	6	1.00	\$0.00
Exterior Lighting	HID	Light Emitting Plasma	191.09	\$4.87	15	1.00	\$0.00
Exterior Lighting	HID	T5	195.86	\$5.22	10	1.00	\$0.00
Exterior Lighting	HID	LED (2020)	288.07	\$49.07	15	-	\$0.02
Exterior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Exterior Lighting	Linear Fluorescent	LED (2010)	0.03	\$0.07	15	1.00	\$0.28
Exterior Lighting	Linear Fluorescent	T8	0.03	(\$0.00)	10	1.00	(\$0.00)
Exterior Lighting	Linear Fluorescent	Super T8	0.04	\$0.01	10	1.00	\$0.04
Exterior Lighting	Linear Fluorescent	T5	0.04	\$0.01	10	1.00	\$0.02
Exterior Lighting	Linear Fluorescent	LED (2020)	0.08	\$0.02	15	-	\$0.02
Motors	Pumps	Standard	-	-	10	1.00	-
Motors	Pumps	High Efficiency	19.43	\$16.87	10	0.46	\$0.12
Motors	Fans & Blowers	Standard	-	-	10	1.00	-
Motors	Fans & Blowers	High Efficiency	14.35	\$14.39	10	0.40	\$0.13
Motors	Compressed Air	Standard	-	-	10	1.00	-
Motors	Compressed Air	High Efficiency	6.91	\$4.40	10	0.63	\$0.08
Motors	Matl Handling	Standard	-	-	10	1.00	-
Motors	Matl Handling	High Efficiency	12.04	\$13.28	10	0.36	\$0.15
Motors	Matl Processing	Standard	-	-	10	1.00	-
Motors	Matl Processing	High Efficiency	17.10	\$18.86	10	0.36	\$0.15
Motors	Other Motors	Standard	-	-	10	1.00	-
Motors	Other Motors	High Efficiency	-	-	10	-	-
Process	Process Heating	Standard	-	-	15	1.00	-
Process	Process Cooling and Refrig	Standard	-	-	15	1.00	-
Process	Electro-Chemical Processes	Standard	-	-	15	1.00	-

End Use	Technology	Efficiency Definition	Savings (kWh/ empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Process	Other Process	Standard	-	-	15	1.00	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table D-6 Energy Efficiency Equipment Data, Natural Gas-Food Products, New Vintage

End Use	Technology	Efficiency Definition	Savings (therms/empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/therm)
Heating	Furnace	EF .76	-	-	20	1.00	-
Heating	Furnace	EF .80	9.46	\$102.95	20	0.64	\$0.96
Heating	Furnace	EF .82	13.84	\$278.54	20	0.35	\$1.78
Heating	Furnace	EF .90	29.42	\$243.26	20	0.84	\$0.73
Heating	Furnace	EF .96	39.40	\$353.28	20	0.78	\$0.79
Heating	Boiler	EF .76	-	-	25	-	-
Heating	Boiler	EF .80	123.00	\$204.04	25	1.00	\$0.13
Heating	Boiler	EF .83	207.47	\$1,203.83	25	0.71	\$0.47
Heating	Boiler	EF .90	382.67	\$1,836.35	25	1.33	\$0.39
Heating	Boiler	EF .96	442.87	\$3,155.80	25	0.91	\$0.57
Heating	Other Heating	AFUE .74	-	-	15	-	-
Heating	Other Heating	AFUE .75	9.71	\$4.21	15	-	\$0.04
Heating	Other Heating	AFUE .76	11.99	\$6.02	15	1.00	\$0.05
Heating	Other Heating	AFUE .77	14.27	\$9.39	15	3.70	\$0.07
Heating	Other Heating	AFUE .80	20.55	\$19.14	15	3.56	\$0.10
Process	Process Heating	Standard	-	-	15	1.00	-
Process	Process Boiler	EF .76	-	-	25	-	-
Process	Process Boiler	EF .80	71.54	\$118.68	25	1.00	\$0.13
Process	Process Boiler	EF .83	120.68	\$700.21	25	0.71	\$0.47
Process	Process Boiler	EF .90	222.58	\$1,068.12	25	1.33	\$0.39
Process	Process Boiler	EF .96	257.60	\$1,835.58	25	0.91	\$0.57
Process	Process Cooling	Standard	-	-	15	1.00	-
Process	Other Process	Standard	-	-	15	1.00	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table D-7 Energy Efficiency Equipment Data, Electric-Petroleum, Existing Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Air-Cooled Chiller	1.5 kw/ton, COP 2.3	-	-	20	1.00	-
Cooling	Air-Cooled Chiller	1.3 kw/ton, COP 2.7	2,760.39	\$1,024.12	20	6.32	\$0.03
Cooling	Air-Cooled Chiller	1.26 kw/ton, COP 2.8	3,312.46	\$1,157.18	20	6.71	\$0.03
Cooling	Air-Cooled Chiller	1.0 kw/ton, COP 3.5	6,900.94	\$1,290.23	20	> 10	\$0.02
Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	7,314.99	\$1,423.29	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.75 kw/ton, COP 4.7	-	-	20	1.00	-
Cooling	Water-Cooled Chiller	0.60 kw/ton, COP 5.9	5,696.89	\$810.06	20	> 10	\$0.01
Cooling	Water-Cooled Chiller	0.58 kw/ton, COP 6.1	6,458.48	\$867.93	20	> 10	\$0.01
Cooling	Water-Cooled Chiller	0.55 kw/Ton, COP 6.4	7,601.73	\$1,041.51	20	> 10	\$0.01
Cooling	Water-Cooled Chiller	0.51 kw/ton, COP 6.9	9,125.55	\$1,620.13	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.50 kw/Ton, COP 7.0	9,507.26	\$1,793.71	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.48 kw/ton, COP 7.3	10,270.92	\$1,967.30	20	> 10	\$0.02
Cooling	Roof top AC	EER 9.2	-	-	16	-	-
Cooling	Roof top AC	EER 10.1	3,323.03	\$1,199.00	16	-	\$0.04
Cooling	Roof top AC	EER 11.2	6,659.19	\$1,383.47	16	1.00	\$0.02
Cooling	Roof top AC	EER 12.0	8,701.35	\$4,427.09	16	1.28	\$0.05
Cooling	Roof top AC	Ductless Minisplit	10,900.52	\$14,526.39	16	0.62	\$0.13
Cooling	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	16	-	-
Cooling	Air Source Heat Pump	EER 10.3, COP 3.2	3,652.96	\$1,517.82	16	-	\$0.04
Cooling	Air Source Heat Pump	EER 11.0, COP 3.3	5,814.80	\$189.73	16	1.00	\$0.00
Cooling	Air Source Heat Pump	EER 11.7, COP 3.4	7,717.99	\$5,596.96	16	0.71	\$0.07
Cooling	Air Source Heat Pump	EER 12.0, COP 3.4	8,465.66	\$8,300.57	16	0.66	\$0.10
Cooling	Air Source Heat Pump	Ductless Minisplit	10,708.65	\$13,992.39	16	0.72	\$0.13
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	16	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	2,316.28	\$3,517.08	16	1.34	\$0.15
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	4,226.19	\$7,219.28	16	1.19	\$0.17
Cooling	Geothermal Heat Pump	EER 30, COP 5.0	10,337.91	\$9,835.43	16	2.13	\$0.09
Cooling	Other Cooling	EER 9.8	-	-	14	1.00	-
Cooling	Other Cooling	EER 10.2	-	-	14	-	-
Cooling	Other Cooling	EER 10.8	-	-	14	-	-
Cooling	Other Cooling	EER 11	-	-	14	-	-
Cooling	Other Cooling	EER 11.5	-	-	14	-	-
Heating	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	16	-	-
Heating	Air Source Heat Pump	EER 10.3, COP 3.2	608.91	\$15,406.64	16	-	\$2.50
Heating	Air Source Heat Pump	EER 11.0, COP 3.3	946.84	\$1,925.83	16	1.00	\$0.20
Heating	Air Source Heat Pump	EER 11.7, COP 3.4	1,225.60	\$56,812.00	16	0.00	\$4.59
Heating	Air Source Heat Pump	EER 12.0, COP 3.4	1,333.05	\$84,255.08	16	0.00	\$6.26
Heating	Air Source Heat Pump	Ductless Minisplit	1,628.94	\$142,029.99	16	0.00	\$8.63
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	16	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	2,141.81	\$31,594.71	16	0.04	\$1.46
Heating	Geothermal Heat Pump	EER 18, COP 3.8	4,931.80	\$64,852.30	16	0.04	\$1.30
Heating	Geothermal Heat Pump	EER 30, COP 5.0	9,033.08	\$88,353.73	16	0.06	\$0.97
Heating	Electric Resistance	Standard	-	-	20	1.00	-
Heating	Electric Furnace	Standard	-	-	20	1.00	-
Ventilation	Ventilation	Constant Volume	-	-	10	1.00	-
Ventilation	Ventilation	Variable Air Volume	-	-	10	-	-
Interior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Interior Lighting	Screw-in	90W Halogen PAR-38	771.66	\$29.14	3	-	\$0.01
Interior Lighting	Screw-in	70W HIR PAR-38	1,185.54	\$40.07	3	-	\$0.01
Interior Lighting	Screw-in	CFL	2,219.44	\$14.59	6	> 10	\$0.00

End Use	Technology	Efficiency Definition	Savings (kWh/empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Interior Lighting	Screw-in	LED (2010)	2,420.34	\$240.93	20	3.56	\$0.01
Interior Lighting	Screw-in	LED (2020)	2,772.35	\$67.37	20	-	\$0.00
Interior Lighting	High-Bay Fixtures	Metal Halides	-	-	3	1.00	-
Interior Lighting	High-Bay Fixtures	LED (2010)	157.68	\$74.96	15	0.10	\$0.05
Interior Lighting	High-Bay Fixtures	T8	160.53	(\$4.99)	10	1.00	(\$0.00)
Interior Lighting	High-Bay Fixtures	High Pressure Sodium	170.82	\$2.53	6	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	Induction	188.38	\$69.03	15	0.45	\$0.04
Interior Lighting	High-Bay Fixtures	Light Emitting Plasma	199.90	\$5.09	15	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	T5	204.90	\$5.46	10	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	LED (2020)	306.29	\$16.07	15	-	\$0.01
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Interior Lighting	Linear Fluorescent	LED (2010)	1,184.29	\$3,205.26	15	1.00	\$0.28
Interior Lighting	Linear Fluorescent	T8	1,232.40	(\$0.47)	10	1.00	(\$0.00)
Interior Lighting	Linear Fluorescent	Super T8	1,709.68	\$469.19	10	1.00	\$0.04
Interior Lighting	Linear Fluorescent	T5	1,981.90	\$356.52	10	1.00	\$0.02
Interior Lighting	Linear Fluorescent	LED (2020)	3,694.82	\$881.85	15	-	\$0.02
Exterior Lighting	Screw-in	Incandescent	-	-	2	-	-
Exterior Lighting	Screw-in	90W Halogen PAR-38	1.20	\$0.05	3	1.00	\$0.01
Exterior Lighting	Screw-in	70W HIR PAR-38	1.84	\$0.06	3	-	\$0.01
Exterior Lighting	Screw-in	CFL	3.44	\$0.02	6	1.00	\$0.00
Exterior Lighting	Screw-in	LED (2010)	3.73	\$0.94	20	1.33	\$0.02
Exterior Lighting	Screw-in	LED (2020)	4.30	\$0.26	20	-	\$0.01
Exterior Lighting	HID	Metal Halides	-	-	3	1.00	-
Exterior Lighting	HID	LED (2010)	527.44	\$672.38	15	0.14	\$0.13
Exterior Lighting	HID	T8	541.89	(\$16.85)	10	1.00	(\$0.00)
Exterior Lighting	HID	High Pressure Sodium	576.61	\$8.53	6	1.00	\$0.00
Exterior Lighting	HID	Light Emitting Plasma	674.80	\$17.19	15	1.00	\$0.00
Exterior Lighting	HID	T5	691.65	\$18.43	10	1.00	\$0.00
Exterior Lighting	HID	LED (2020)	1,017.27	\$173.26	15	-	\$0.02
Exterior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Exterior Lighting	Linear Fluorescent	LED (2010)	0.09	\$0.25	15	1.00	\$0.28
Exterior Lighting	Linear Fluorescent	T8	0.10	(\$0.00)	10	1.00	(\$0.00)
Exterior Lighting	Linear Fluorescent	Super T8	0.13	\$0.04	10	1.00	\$0.04
Exterior Lighting	Linear Fluorescent	T5	0.15	\$0.03	10	1.00	\$0.02
Exterior Lighting	Linear Fluorescent	LED (2020)	0.29	\$0.07	15	-	\$0.02
Motors	Pumps	Standard	-	-	10	1.00	-
Motors	Pumps	High Efficiency	427.31	\$353.51	10	0.48	\$0.11
Motors	Fans & Blowers	Standard	-	-	10	1.00	-
Motors	Fans & Blowers	High Efficiency	174.54	\$166.74	10	0.42	\$0.13
Motors	Compressed Air	Standard	-	-	10	1.00	-
Motors	Compressed Air	High Efficiency	171.99	\$104.22	10	0.66	\$0.08
Motors	Matl Handling	Standard	-	-	10	1.00	-
Motors	Matl Handling	High Efficiency	-	-	10	-	-
Motors	Matl Processing	Standard	-	-	10	1.00	-
Motors	Matl Processing	High Efficiency	465.94	\$489.59	10	0.38	\$0.14
Motors	Other Motors	Standard	-	-	10	1.00	-
Motors	Other Motors	High Efficiency	93.19	\$97.92	10	0.38	\$0.14
Process	Process Heating	Standard	-	-	15	1.00	-
Process	Process Cooling and Refrig	Standard	-	-	15	1.00	-
Process	Electro-Chemical Processes	Standard	-	-	15	1.00	-

End Use	Technology	Efficiency Definition	Savings (kWh/ empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Process	Other Process	Standard	-	-	15	1.00	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table D-8 Energy Efficiency Equipment Data, Natural Gas-Petroleum, Existing Vintage

End Use	Technology	Efficiency Definition	Savings (therms/empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/therm)
Heating	Furnace	EF .76	-	-	20	1.00	-
Heating	Furnace	EF .80	10.40	\$244.57	20	0.30	\$2.08
Heating	Furnace	EF .82	15.22	\$661.68	20	0.16	\$3.84
Heating	Furnace	EF .90	32.30	\$577.89	20	0.39	\$1.58
Heating	Furnace	EF .96	43.35	\$839.23	20	0.36	\$1.71
Heating	Boiler	EF .76	-	-	25	-	-
Heating	Boiler	EF .80	136.93	\$190.66	25	1.00	\$0.11
Heating	Boiler	EF .83	230.96	\$1,124.91	25	0.84	\$0.39
Heating	Boiler	EF .90	425.99	\$1,715.96	25	1.58	\$0.32
Heating	Boiler	EF .96	492.98	\$2,948.91	25	1.08	\$0.48
Heating	Other Heating	AFUE .74	-	-	15	-	-
Heating	Other Heating	AFUE .75	10.89	\$5.28	15	-	\$0.05
Heating	Other Heating	AFUE .76	13.45	\$7.55	15	1.00	\$0.06
Heating	Other Heating	AFUE .77	16.01	\$11.78	15	3.31	\$0.08
Heating	Other Heating	AFUE .80	23.06	\$24.01	15	3.19	\$0.11
Process	Process Heating	Standard	-	-	15	1.00	-
Process	Process Boiler	EF .76	-	-	25	-	-
Process	Process Boiler	EF .80	202.70	\$282.25	25	1.00	\$0.11
Process	Process Boiler	EF .83	341.91	\$1,665.28	25	0.84	\$0.39
Process	Process Boiler	EF .90	630.63	\$2,540.26	25	1.58	\$0.32
Process	Process Boiler	EF .96	729.79	\$4,365.49	25	1.08	\$0.48
Process	Process Cooling	Standard	-	-	15	1.00	-
Process	Other Process	Standard	-	-	15	1.00	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table D-9 Energy Efficiency Equipment Data, Electric-Petroleum, New Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Air-Cooled Chiller	1.5 kw/ton, COP 2.3	-	-	20	1.00	-
Cooling	Air-Cooled Chiller	1.3 kw/ton, COP 2.7	2,468.80	\$1,453.50	20	3.98	\$0.05
Cooling	Air-Cooled Chiller	1.26 kw/ton, COP 2.8	2,962.53	\$1,642.35	20	4.23	\$0.05
Cooling	Air-Cooled Chiller	1.0 kw/ton, COP 3.5	6,172.02	\$1,831.19	20	7.90	\$0.03
Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	6,542.30	\$2,020.03	20	7.59	\$0.03
Cooling	Water-Cooled Chiller	0.75 kw/ton, COP 4.7	-	-	20	1.00	-
Cooling	Water-Cooled Chiller	0.60 kw/ton, COP 5.9	5,329.05	\$1,249.23	20	10.00	\$0.02
Cooling	Water-Cooled Chiller	0.58 kw/ton, COP 6.1	6,041.38	\$1,338.46	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.55 kw/Ton, COP 6.4	7,110.80	\$1,606.15	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.51 kw/ton, COP 6.9	8,532.47	\$2,498.46	20	8.00	\$0.03
Cooling	Water-Cooled Chiller	0.50 kw/Ton, COP 7.0	8,889.57	\$2,766.15	20	7.53	\$0.03
Cooling	Water-Cooled Chiller	0.48 kw/ton, COP 7.3	9,603.98	\$3,033.84	20	7.42	\$0.03
Cooling	Roof top AC	EER 9.2	-	-	16	-	-
Cooling	Roof top AC	EER 10.1	3,196.53	\$1,333.27	16	-	\$0.04
Cooling	Roof top AC	EER 11.2	6,407.37	\$1,538.39	16	1.00	\$0.02
Cooling	Roof top AC	EER 12.0	8,371.74	\$4,922.85	16	1.11	\$0.06
Cooling	Roof top AC	Ductless Minisplit	10,487.64	\$16,153.09	16	0.53	\$0.15
Cooling	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	16	-	-
Cooling	Air Source Heat Pump	EER 10.3, COP 3.2	3,157.86	\$1,469.04	16	-	\$0.05
Cooling	Air Source Heat Pump	EER 11.0, COP 3.3	5,025.80	\$183.63	16	1.00	\$0.00
Cooling	Air Source Heat Pump	EER 11.7, COP 3.4	6,671.76	\$5,417.08	16	0.64	\$0.08
Cooling	Air Source Heat Pump	EER 12.0, COP 3.4	7,318.01	\$8,033.80	16	0.59	\$0.11
Cooling	Air Source Heat Pump	Ductless Minisplit	9,257.85	\$13,542.69	16	0.64	\$0.14
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	16	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	2,037.47	\$3,463.67	16	1.19	\$0.17
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	3,717.50	\$7,109.65	16	1.06	\$0.19
Cooling	Geothermal Heat Pump	EER 30, COP 5.0	9,093.57	\$9,686.07	16	1.90	\$0.11
Cooling	Other Cooling	EER 9.8	-	-	14	1.00	-
Cooling	Other Cooling	EER 10.2	-	-	14	-	-
Cooling	Other Cooling	EER 10.8	-	-	14	-	-
Cooling	Other Cooling	EER 11	-	-	14	-	-
Cooling	Other Cooling	EER 11.5	-	-	14	-	-
Heating	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	16	-	-
Heating	Air Source Heat Pump	EER 10.3, COP 3.2	546.97	\$7,427.05	16	-	\$1.34
Heating	Air Source Heat Pump	EER 11.0, COP 3.3	850.53	\$928.38	16	1.00	\$0.11
Heating	Air Source Heat Pump	EER 11.7, COP 3.4	1,100.93	\$27,387.23	16	0.01	\$2.46
Heating	Air Source Heat Pump	EER 12.0, COP 3.4	1,197.46	\$40,616.66	16	0.00	\$3.36
Heating	Air Source Heat Pump	Ductless Minisplit	1,463.25	\$68,468.08	16	0.00	\$4.63
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	16	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	1,993.10	\$15,619.27	16	0.07	\$0.78
Heating	Geothermal Heat Pump	EER 18, COP 3.8	4,589.37	\$32,060.60	16	0.08	\$0.69
Heating	Geothermal Heat Pump	EER 30, COP 5.0	8,652.56	\$43,678.85	16	0.11	\$0.50
Heating	Electric Resistance	Standard	-	-	20	1.00	-
Heating	Electric Furnace	Standard	-	-	20	1.00	-
Ventilation	Ventilation	Constant Volume	-	-	10	1.00	-
Ventilation	Ventilation	Variable Air Volume	-	-	10	-	-
Interior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Interior Lighting	Screw-in	90W Halogen PAR-38	771.66	\$29.14	3	-	\$0.01
Interior Lighting	Screw-in	70W HIR PAR-38	1,185.54	\$40.07	3	-	\$0.01
Interior Lighting	Screw-in	CFL	2,219.44	\$14.59	6	> 10	\$0.00

End Use	Technology	Efficiency Definition	Savings (kWh/empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Interior Lighting	Screw-in	LED (2010)	2,420.34	\$240.93	20	3.56	\$0.01
Interior Lighting	Screw-in	LED (2020)	2,772.35	\$67.37	20	-	\$0.00
Interior Lighting	High-Bay Fixtures	Metal Halides	-	-	3	1.00	-
Interior Lighting	High-Bay Fixtures	LED (2010)	157.68	\$74.96	15	0.10	\$0.05
Interior Lighting	High-Bay Fixtures	T8	160.53	(\$4.99)	10	1.00	(\$0.00)
Interior Lighting	High-Bay Fixtures	High Pressure Sodium	170.82	\$2.53	6	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	Induction	188.38	\$69.03	15	0.45	\$0.04
Interior Lighting	High-Bay Fixtures	Light Emitting Plasma	199.90	\$5.09	15	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	T5	204.90	\$5.46	10	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	LED (2020)	306.29	\$16.07	15	-	\$0.01
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Interior Lighting	Linear Fluorescent	LED (2010)	1,184.29	\$3,205.26	15	1.00	\$0.28
Interior Lighting	Linear Fluorescent	T8	1,232.40	(\$0.47)	10	1.00	(\$0.00)
Interior Lighting	Linear Fluorescent	Super T8	1,709.68	\$469.19	10	1.00	\$0.04
Interior Lighting	Linear Fluorescent	T5	1,981.90	\$356.52	10	1.00	\$0.02
Interior Lighting	Linear Fluorescent	LED (2020)	3,694.82	\$881.85	15	-	\$0.02
Exterior Lighting	Screw-in	Incandescent	-	-	2	-	-
Exterior Lighting	Screw-in	90W Halogen PAR-38	1.20	\$0.05	3	1.00	\$0.01
Exterior Lighting	Screw-in	70W HIR PAR-38	1.84	\$0.06	3	-	\$0.01
Exterior Lighting	Screw-in	CFL	3.44	\$0.02	6	1.00	\$0.00
Exterior Lighting	Screw-in	LED (2010)	3.73	\$0.94	20	1.33	\$0.02
Exterior Lighting	Screw-in	LED (2020)	4.30	\$0.26	20	-	\$0.01
Exterior Lighting	HID	Metal Halides	-	-	3	1.00	-
Exterior Lighting	HID	LED (2010)	527.44	\$672.38	15	0.14	\$0.13
Exterior Lighting	HID	T8	541.89	(\$16.85)	10	1.00	(\$0.00)
Exterior Lighting	HID	High Pressure Sodium	576.61	\$8.53	6	1.00	\$0.00
Exterior Lighting	HID	Light Emitting Plasma	674.80	\$17.19	15	1.00	\$0.00
Exterior Lighting	HID	T5	691.65	\$18.43	10	1.00	\$0.00
Exterior Lighting	HID	LED (2020)	1,017.27	\$173.26	15	-	\$0.02
Exterior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Exterior Lighting	Linear Fluorescent	LED (2010)	0.09	\$0.25	15	1.00	\$0.28
Exterior Lighting	Linear Fluorescent	T8	0.10	(\$0.00)	10	1.00	(\$0.00)
Exterior Lighting	Linear Fluorescent	Super T8	0.13	\$0.04	10	1.00	\$0.04
Exterior Lighting	Linear Fluorescent	T5	0.15	\$0.03	10	1.00	\$0.02
Exterior Lighting	Linear Fluorescent	LED (2020)	0.29	\$0.07	15	-	\$0.02
Motors	Pumps	Standard	-	-	10	1.00	-
Motors	Pumps	High Efficiency	427.31	\$371.09	10	0.46	\$0.12
Motors	Fans & Blowers	Standard	-	-	10	1.00	-
Motors	Fans & Blowers	High Efficiency	174.54	\$175.03	10	0.40	\$0.13
Motors	Compressed Air	Standard	-	-	10	1.00	-
Motors	Compressed Air	High Efficiency	171.99	\$109.41	10	0.63	\$0.08
Motors	Matl Handling	Standard	-	-	10	1.00	-
Motors	Matl Handling	High Efficiency	-	-	10	-	-
Motors	Matl Processing	Standard	-	-	10	1.00	-
Motors	Matl Processing	High Efficiency	465.94	\$513.94	10	0.36	\$0.15
Motors	Other Motors	Standard	-	-	10	1.00	-
Motors	Other Motors	High Efficiency	93.19	\$102.79	10	0.36	\$0.15
Process	Process Heating	Standard	-	-	15	1.00	-
Process	Process Cooling and Refrig	Standard	-	-	15	1.00	-
Process	Electro-Chemical Processes	Standard	-	-	15	1.00	-

End Use	Technology	Efficiency Definition	Savings (kWh/ empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Process	Other Process	Standard	-	-	15	1.00	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table D-10 Energy Efficiency Equipment Data, Natural Gas-Petroleum, New Vintage

End Use	Technology	Efficiency Definition	Savings (therms/empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/therm)
Heating	Furnace	EF .76	-	-	20	1.00	-
Heating	Furnace	EF .80	9.60	\$104.52	20	0.64	\$0.96
Heating	Furnace	EF .82	14.05	\$282.78	20	0.35	\$1.78
Heating	Furnace	EF .90	29.87	\$246.97	20	0.84	\$0.73
Heating	Furnace	EF .96	40.00	\$358.66	20	0.78	\$0.79
Heating	Boiler	EF .76	-	-	25	-	-
Heating	Boiler	EF .80	124.87	\$207.15	25	1.00	\$0.13
Heating	Boiler	EF .83	210.63	\$1,222.17	25	0.71	\$0.47
Heating	Boiler	EF .90	388.50	\$1,864.33	25	1.33	\$0.39
Heating	Boiler	EF .96	449.62	\$3,203.88	25	0.91	\$0.57
Heating	Other Heating	AFUE .74	-	-	15	-	-
Heating	Other Heating	AFUE .75	9.85	\$4.28	15	-	\$0.04
Heating	Other Heating	AFUE .76	12.17	\$6.11	15	1.00	\$0.05
Heating	Other Heating	AFUE .77	14.49	\$9.53	15	3.70	\$0.07
Heating	Other Heating	AFUE .80	20.87	\$19.43	15	3.56	\$0.10
Process	Process Heating	Standard	-	-	15	1.00	-
Process	Process Boiler	EF .76	-	-	25	-	-
Process	Process Boiler	EF .80	185.57	\$307.83	25	1.00	\$0.13
Process	Process Boiler	EF .83	313.00	\$1,816.18	25	0.71	\$0.47
Process	Process Boiler	EF .90	577.31	\$2,770.44	25	1.33	\$0.39
Process	Process Boiler	EF .96	668.14	\$4,761.05	25	0.91	\$0.57
Process	Process Cooling	Standard	-	-	15	1.00	-
Process	Other Process	Standard	-	-	15	1.00	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table D-11 Energy Efficiency Equipment Data, Electric-Metals, Existing Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Air-Cooled Chiller	1.5 kw/ton, COP 2.3	-	-	20	1.00	-
Cooling	Air-Cooled Chiller	1.3 kw/ton, COP 2.7	365.05	\$135.44	20	6.32	\$0.03
Cooling	Air-Cooled Chiller	1.26 kw/ton, COP 2.8	438.06	\$153.03	20	6.71	\$0.03
Cooling	Air-Cooled Chiller	1.0 kw/ton, COP 3.5	912.62	\$170.63	20	> 10	\$0.02
Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	967.38	\$188.22	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.75 kw/ton, COP 4.7	-	-	20	1.00	-
Cooling	Water-Cooled Chiller	0.60 kw/ton, COP 5.9	753.39	\$107.13	20	> 10	\$0.01
Cooling	Water-Cooled Chiller	0.58 kw/ton, COP 6.1	854.11	\$114.78	20	> 10	\$0.01
Cooling	Water-Cooled Chiller	0.55 kw/Ton, COP 6.4	1,005.30	\$137.74	20	> 10	\$0.01
Cooling	Water-Cooled Chiller	0.51 kw/ton, COP 6.9	1,206.82	\$214.26	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.50 kw/Ton, COP 7.0	1,257.29	\$237.21	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.48 kw/ton, COP 7.3	1,358.29	\$260.17	20	> 10	\$0.02
Cooling	Roof top AC	EER 9.2	-	-	16	-	-
Cooling	Roof top AC	EER 10.1	439.46	\$158.56	16	-	\$0.04
Cooling	Roof top AC	EER 11.2	880.65	\$182.96	16	1.00	\$0.02
Cooling	Roof top AC	EER 12.0	1,150.72	\$585.46	16	1.28	\$0.05
Cooling	Roof top AC	Ductless Minisplit	1,441.55	\$1,921.05	16	0.62	\$0.13
Cooling	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	16	-	-
Cooling	Air Source Heat Pump	EER 10.3, COP 3.2	483.09	\$200.72	16	-	\$0.04
Cooling	Air Source Heat Pump	EER 11.0, COP 3.3	768.98	\$25.09	16	1.00	\$0.00
Cooling	Air Source Heat Pump	EER 11.7, COP 3.4	1,020.67	\$740.17	16	0.71	\$0.07
Cooling	Air Source Heat Pump	EER 12.0, COP 3.4	1,119.55	\$1,097.71	16	0.66	\$0.10
Cooling	Air Source Heat Pump	Ductless Minisplit	1,416.17	\$1,850.43	16	0.72	\$0.13
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	16	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	306.32	\$465.12	16	1.34	\$0.15
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	558.90	\$954.72	16	1.19	\$0.17
Cooling	Geothermal Heat Pump	EER 30, COP 5.0	1,367.14	\$1,300.69	16	2.13	\$0.09
Cooling	Other Cooling	EER 9.8	-	-	14	1.00	-
Cooling	Other Cooling	EER 10.2	-	-	14	-	-
Cooling	Other Cooling	EER 10.8	-	-	14	-	-
Cooling	Other Cooling	EER 11	-	-	14	-	-
Cooling	Other Cooling	EER 11.5	-	-	14	-	-
Heating	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	16	-	-
Heating	Air Source Heat Pump	EER 10.3, COP 3.2	80.53	\$2,037.46	16	-	\$2.50
Heating	Air Source Heat Pump	EER 11.0, COP 3.3	125.22	\$254.68	16	1.00	\$0.20
Heating	Air Source Heat Pump	EER 11.7, COP 3.4	162.08	\$7,513.14	16	0.00	\$4.59
Heating	Air Source Heat Pump	EER 12.0, COP 3.4	176.29	\$11,142.37	16	0.00	\$6.26
Heating	Air Source Heat Pump	Ductless Minisplit	215.42	\$18,782.86	16	0.00	\$8.63
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	16	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	283.25	\$4,178.27	16	0.04	\$1.46
Heating	Geothermal Heat Pump	EER 18, COP 3.8	652.21	\$8,576.44	16	0.04	\$1.30
Heating	Geothermal Heat Pump	EER 30, COP 5.0	1,194.59	\$11,684.40	16	0.06	\$0.97
Heating	Electric Resistance	Standard	-	-	20	1.00	-
Heating	Electric Furnace	Standard	-	-	20	1.00	-
Ventilation	Ventilation	Constant Volume	-	-	10	1.00	-
Ventilation	Ventilation	Variable Air Volume	-	-	10	-	-
Interior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Interior Lighting	Screw-in	90W Halogen PAR-38	151.76	\$5.73	3	-	\$0.01
Interior Lighting	Screw-in	70W HIR PAR-38	233.15	\$7.88	3	-	\$0.01
Interior Lighting	Screw-in	CFL	436.48	\$2.87	6	> 10	\$0.00

End Use	Technology	Efficiency Definition	Savings (kWh/empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Interior Lighting	Screw-in	LED (2010)	475.99	\$47.38	20	3.56	\$0.01
Interior Lighting	Screw-in	LED (2020)	545.21	\$13.25	20	-	\$0.00
Interior Lighting	High-Bay Fixtures	Metal Halides	-	-	3	1.00	-
Interior Lighting	High-Bay Fixtures	LED (2010)	31.01	\$14.74	15	0.10	\$0.05
Interior Lighting	High-Bay Fixtures	T8	31.57	(\$0.98)	10	1.00	(\$0.00)
Interior Lighting	High-Bay Fixtures	High Pressure Sodium	33.59	\$0.50	6	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	Induction	37.05	\$13.57	15	0.45	\$0.04
Interior Lighting	High-Bay Fixtures	Light Emitting Plasma	39.31	\$1.00	15	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	T5	40.30	\$1.07	10	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	LED (2020)	60.24	\$3.16	15	-	\$0.01
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Interior Lighting	Linear Fluorescent	LED (2010)	232.90	\$630.35	15	1.00	\$0.28
Interior Lighting	Linear Fluorescent	T8	242.37	(\$0.09)	10	1.00	(\$0.00)
Interior Lighting	Linear Fluorescent	Super T8	336.23	\$92.27	10	1.00	\$0.04
Interior Lighting	Linear Fluorescent	T5	389.76	\$70.11	10	1.00	\$0.02
Interior Lighting	Linear Fluorescent	LED (2020)	726.63	\$173.43	15	-	\$0.02
Exterior Lighting	Screw-in	Incandescent	-	-	2	-	-
Exterior Lighting	Screw-in	90W Halogen PAR-38	0.24	\$0.01	3	1.00	\$0.01
Exterior Lighting	Screw-in	70W HIR PAR-38	0.36	\$0.01	3	-	\$0.01
Exterior Lighting	Screw-in	CFL	0.68	\$0.00	6	1.00	\$0.00
Exterior Lighting	Screw-in	LED (2010)	0.73	\$0.18	20	1.33	\$0.02
Exterior Lighting	Screw-in	LED (2020)	0.85	\$0.05	20	-	\$0.01
Exterior Lighting	HID	Metal Halides	-	-	3	1.00	-
Exterior Lighting	HID	LED (2010)	103.73	\$132.23	15	0.14	\$0.13
Exterior Lighting	HID	T8	106.57	(\$3.31)	10	1.00	(\$0.00)
Exterior Lighting	HID	High Pressure Sodium	113.40	\$1.68	6	1.00	\$0.00
Exterior Lighting	HID	Light Emitting Plasma	132.71	\$3.38	15	1.00	\$0.00
Exterior Lighting	HID	T5	136.02	\$3.62	10	1.00	\$0.00
Exterior Lighting	HID	LED (2020)	200.06	\$34.07	15	-	\$0.02
Exterior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Exterior Lighting	Linear Fluorescent	LED (2010)	0.02	\$0.05	15	1.00	\$0.28
Exterior Lighting	Linear Fluorescent	T8	0.02	(\$0.00)	10	1.00	(\$0.00)
Exterior Lighting	Linear Fluorescent	Super T8	0.03	\$0.01	10	1.00	\$0.04
Exterior Lighting	Linear Fluorescent	T5	0.03	\$0.01	10	1.00	\$0.02
Exterior Lighting	Linear Fluorescent	LED (2020)	0.06	\$0.01	15	-	\$0.02
Motors	Pumps	Standard	-	-	10	1.00	-
Motors	Pumps	High Efficiency	6.33	\$5.23	10	0.48	\$0.11
Motors	Fans & Blowers	Standard	-	-	10	1.00	-
Motors	Fans & Blowers	High Efficiency	10.83	\$10.35	10	0.42	\$0.13
Motors	Compressed Air	Standard	-	-	10	1.00	-
Motors	Compressed Air	High Efficiency	9.25	\$5.61	10	0.66	\$0.08
Motors	Matl Handling	Standard	-	-	10	1.00	-
Motors	Matl Handling	High Efficiency	12.79	\$13.44	10	0.38	\$0.14
Motors	Matl Processing	Standard	-	-	10	1.00	-
Motors	Matl Processing	High Efficiency	14.07	\$14.79	10	0.38	\$0.14
Motors	Other Motors	Standard	-	-	10	1.00	-
Motors	Other Motors	High Efficiency	14.93	\$15.68	10	0.38	\$0.14
Process	Process Heating	Standard	-	-	15	1.00	-
Process	Process Cooling and Refrig	Standard	-	-	15	1.00	-
Process	Electro-Chemical Processes	Standard	-	-	15	1.00	-

End Use	Technology	Efficiency Definition	Savings (kWh/ empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Process	Other Process	Standard	-	-	15	1.00	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table D-12 Energy Efficiency Equipment Data, Natural Gas-Metals, Existing Vintage

End Use	Technology	Efficiency Definition	Savings (therms/empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/therm)
Heating	Furnace	EF .76	-	-	20	1.00	-
Heating	Furnace	EF .80	20.79	\$488.98	20	0.30	\$2.08
Heating	Furnace	EF .82	30.43	\$1,322.92	20	0.16	\$3.84
Heating	Furnace	EF .90	64.58	\$1,155.39	20	0.39	\$1.58
Heating	Furnace	EF .96	86.67	\$1,677.90	20	0.36	\$1.71
Heating	Boiler	EF .76	-	-	25	-	-
Heating	Boiler	EF .80	273.76	\$381.20	25	1.00	\$0.11
Heating	Boiler	EF .83	461.77	\$2,249.06	25	0.84	\$0.39
Heating	Boiler	EF .90	851.70	\$3,430.76	25	1.58	\$0.32
Heating	Boiler	EF .96	985.62	\$5,895.83	25	1.08	\$0.48
Heating	Other Heating	AFUE .74	-	-	15	-	-
Heating	Other Heating	AFUE .75	21.77	\$10.56	15	-	\$0.05
Heating	Other Heating	AFUE .76	26.89	\$15.09	15	1.00	\$0.06
Heating	Other Heating	AFUE .77	32.02	\$23.54	15	3.31	\$0.08
Heating	Other Heating	AFUE .80	46.10	\$47.99	15	3.19	\$0.11
Process	Process Heating	Standard	-	-	15	1.00	-
Process	Process Boiler	EF .76	-	-	25	-	-
Process	Process Boiler	EF .80	20.28	\$28.24	25	1.00	\$0.11
Process	Process Boiler	EF .83	34.21	\$166.60	25	0.84	\$0.39
Process	Process Boiler	EF .90	63.09	\$254.14	25	1.58	\$0.32
Process	Process Boiler	EF .96	73.01	\$436.74	25	1.08	\$0.48
Process	Process Cooling	Standard	-	-	15	1.00	-
Process	Other Process	Standard	-	-	15	1.00	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table D-13 Energy Efficiency Equipment Data, Electric-Metals, New Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Air-Cooled Chiller	1.5 kw/ton, COP 2.3	-	-	20	1.00	-
Cooling	Air-Cooled Chiller	1.3 kw/ton, COP 2.7	326.49	\$192.22	20	3.98	\$0.05
Cooling	Air-Cooled Chiller	1.26 kw/ton, COP 2.8	391.78	\$217.19	20	4.23	\$0.05
Cooling	Air-Cooled Chiller	1.0 kw/ton, COP 3.5	816.22	\$242.17	20	7.90	\$0.03
Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	865.19	\$267.14	20	7.59	\$0.03
Cooling	Water-Cooled Chiller	0.75 kw/ton, COP 4.7	-	-	20	1.00	-
Cooling	Water-Cooled Chiller	0.60 kw/ton, COP 5.9	704.74	\$165.21	20	10.00	\$0.02
Cooling	Water-Cooled Chiller	0.58 kw/ton, COP 6.1	798.95	\$177.01	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.55 kw/Ton, COP 6.4	940.37	\$212.41	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.51 kw/ton, COP 6.9	1,128.38	\$330.41	20	8.00	\$0.03
Cooling	Water-Cooled Chiller	0.50 kw/Ton, COP 7.0	1,175.61	\$365.81	20	7.53	\$0.03
Cooling	Water-Cooled Chiller	0.48 kw/ton, COP 7.3	1,270.09	\$401.21	20	7.42	\$0.03
Cooling	Roof top AC	EER 9.2	-	-	16	-	-
Cooling	Roof top AC	EER 10.1	422.73	\$176.32	16	-	\$0.04
Cooling	Roof top AC	EER 11.2	847.35	\$203.45	16	1.00	\$0.02
Cooling	Roof top AC	EER 12.0	1,107.13	\$651.03	16	1.11	\$0.06
Cooling	Roof top AC	Ductless Minisplit	1,386.95	\$2,136.18	16	0.53	\$0.15
Cooling	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	16	-	-
Cooling	Air Source Heat Pump	EER 10.3, COP 3.2	417.61	\$194.27	16	-	\$0.05
Cooling	Air Source Heat Pump	EER 11.0, COP 3.3	664.64	\$24.28	16	1.00	\$0.00
Cooling	Air Source Heat Pump	EER 11.7, COP 3.4	882.31	\$716.39	16	0.64	\$0.08
Cooling	Air Source Heat Pump	EER 12.0, COP 3.4	967.78	\$1,062.44	16	0.59	\$0.11
Cooling	Air Source Heat Pump	Ductless Minisplit	1,224.31	\$1,790.96	16	0.64	\$0.14
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	16	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	269.45	\$458.06	16	1.19	\$0.17
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	491.62	\$940.22	16	1.06	\$0.19
Cooling	Geothermal Heat Pump	EER 30, COP 5.0	1,202.59	\$1,280.94	16	1.90	\$0.11
Cooling	Other Cooling	EER 9.8	-	-	14	1.00	-
Cooling	Other Cooling	EER 10.2	-	-	14	-	-
Cooling	Other Cooling	EER 10.8	-	-	14	-	-
Cooling	Other Cooling	EER 11	-	-	14	-	-
Cooling	Other Cooling	EER 11.5	-	-	14	-	-
Heating	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	16	-	-
Heating	Air Source Heat Pump	EER 10.3, COP 3.2	72.33	\$982.20	16	-	\$1.34
Heating	Air Source Heat Pump	EER 11.0, COP 3.3	112.48	\$122.77	16	1.00	\$0.11
Heating	Air Source Heat Pump	EER 11.7, COP 3.4	145.59	\$3,621.84	16	0.01	\$2.46
Heating	Air Source Heat Pump	EER 12.0, COP 3.4	158.36	\$5,371.38	16	0.00	\$3.36
Heating	Air Source Heat Pump	Ductless Minisplit	193.51	\$9,054.61	16	0.00	\$4.63
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	16	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	263.58	\$2,065.58	16	0.07	\$0.78
Heating	Geothermal Heat Pump	EER 18, COP 3.8	606.92	\$4,239.88	16	0.08	\$0.69
Heating	Geothermal Heat Pump	EER 30, COP 5.0	1,144.26	\$5,776.34	16	0.11	\$0.50
Heating	Electric Resistance	Standard	-	-	20	1.00	-
Heating	Electric Furnace	Standard	-	-	20	1.00	-
Ventilation	Ventilation	Constant Volume	-	-	10	1.00	-

End Use	Technology	Efficiency Definition	Savings (kWh/ empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Ventilation	Ventilation	Variable Air Volume	-	-	10	-	-
Interior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Interior Lighting	Screw-in	90W Halogen PAR-38	151.76	\$5.73	3	-	\$0.01
Interior Lighting	Screw-in	70W HIR PAR-38	233.15	\$7.88	3	-	\$0.01
Interior Lighting	Screw-in	CFL	436.48	\$2.87	6	> 10	\$0.00
Interior Lighting	Screw-in	LED (2010)	475.99	\$47.38	20	3.56	\$0.01
Interior Lighting	Screw-in	LED (2020)	545.21	\$13.25	20	-	\$0.00
Interior Lighting	High-Bay Fixtures	Metal Halides	-	-	3	1.00	-
Interior Lighting	High-Bay Fixtures	LED (2010)	31.01	\$14.74	15	0.10	\$0.05
Interior Lighting	High-Bay Fixtures	T8	31.57	(\$0.98)	10	1.00	(\$0.00)
Interior Lighting	High-Bay Fixtures	High Pressure Sodium	33.59	\$0.50	6	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	Induction	37.05	\$13.57	15	0.45	\$0.04
Interior Lighting	High-Bay Fixtures	Light Emitting Plasma	39.31	\$1.00	15	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	T5	40.30	\$1.07	10	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	LED (2020)	60.24	\$3.16	15	-	\$0.01
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Interior Lighting	Linear Fluorescent	LED (2010)	232.90	\$630.35	15	1.00	\$0.28
Interior Lighting	Linear Fluorescent	T8	242.37	(\$0.09)	10	1.00	(\$0.00)
Interior Lighting	Linear Fluorescent	Super T8	336.23	\$92.27	10	1.00	\$0.04
Interior Lighting	Linear Fluorescent	T5	389.76	\$70.11	10	1.00	\$0.02
Interior Lighting	Linear Fluorescent	LED (2020)	726.63	\$173.43	15	-	\$0.02
Exterior Lighting	Screw-in	Incandescent	-	-	2	-	-
Exterior Lighting	Screw-in	90W Halogen PAR-38	0.24	\$0.01	3	1.00	\$0.01
Exterior Lighting	Screw-in	70W HIR PAR-38	0.36	\$0.01	3	-	\$0.01
Exterior Lighting	Screw-in	CFL	0.68	\$0.00	6	1.00	\$0.00
Exterior Lighting	Screw-in	LED (2010)	0.73	\$0.18	20	1.33	\$0.02
Exterior Lighting	Screw-in	LED (2020)	0.85	\$0.05	20	-	\$0.01
Exterior Lighting	HID	Metal Halides	-	-	3	1.00	-
Exterior Lighting	HID	LED (2010)	103.73	\$132.23	15	0.14	\$0.13
Exterior Lighting	HID	T8	106.57	(\$3.31)	10	1.00	(\$0.00)
Exterior Lighting	HID	High Pressure Sodium	113.40	\$1.68	6	1.00	\$0.00
Exterior Lighting	HID	Light Emitting Plasma	132.71	\$3.38	15	1.00	\$0.00
Exterior Lighting	HID	T5	136.02	\$3.62	10	1.00	\$0.00
Exterior Lighting	HID	LED (2020)	200.06	\$34.07	15	-	\$0.02
Exterior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Exterior Lighting	Linear Fluorescent	LED (2010)	0.02	\$0.05	15	1.00	\$0.28
Exterior Lighting	Linear Fluorescent	T8	0.02	(\$0.00)	10	1.00	(\$0.00)
Exterior Lighting	Linear Fluorescent	Super T8	0.03	\$0.01	10	1.00	\$0.04
Exterior Lighting	Linear Fluorescent	T5	0.03	\$0.01	10	1.00	\$0.02
Exterior Lighting	Linear Fluorescent	LED (2020)	0.06	\$0.01	15	-	\$0.02
Motors	Pumps	Standard	-	-	10	1.00	-
Motors	Pumps	High Efficiency	6.33	\$5.49	10	0.46	\$0.12
Motors	Fans & Blowers	Standard	-	-	10	1.00	-
Motors	Fans & Blowers	High Efficiency	10.83	\$10.86	10	0.40	\$0.13
Motors	Compressed Air	Standard	-	-	10	1.00	-
Motors	Compressed Air	High Efficiency	9.25	\$5.89	10	0.63	\$0.08
Motors	Matl Handling	Standard	-	-	10	1.00	-
Motors	Matl Handling	High Efficiency	12.79	\$14.11	10	0.36	\$0.15
Motors	Matl Processing	Standard	-	-	10	1.00	-
Motors	Matl Processing	High Efficiency	14.07	\$15.52	10	0.36	\$0.15
Motors	Other Motors	Standard	-	-	10	1.00	-

End Use	Technology	Efficiency Definition	Savings (kWh/ empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Motors	Other Motors	High Efficiency	14.93	\$16.46	10	0.36	\$0.15
Process	Process Heating	Standard	-	-	15	1.00	-
Process	Process Cooling and Refrig	Standard	-	-	15	1.00	-
Process	Electro-Chemical Processes	Standard	-	-	15	1.00	-
Process	Other Process	Standard	-	-	15	1.00	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table D-14 Energy Efficiency Equipment Data, Natural Gas-Metals, New Vintage

End Use	Technology	Efficiency Definition	Savings (therms/empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/therm)
Heating	Furnace	EF .76	-	-	20	1.00	-
Heating	Furnace	EF .80	19.20	\$208.97	20	0.64	\$0.96
Heating	Furnace	EF .82	28.10	\$565.37	20	0.35	\$1.78
Heating	Furnace	EF .90	59.72	\$493.77	20	0.84	\$0.73
Heating	Furnace	EF .96	79.98	\$717.08	20	0.78	\$0.79
Heating	Boiler	EF .76	-	-	25	-	-
Heating	Boiler	EF .80	249.66	\$414.15	25	1.00	\$0.13
Heating	Boiler	EF .83	421.12	\$2,443.51	25	0.71	\$0.47
Heating	Boiler	EF .90	776.73	\$3,727.39	25	1.33	\$0.39
Heating	Boiler	EF .96	898.93	\$6,405.59	25	0.91	\$0.57
Heating	Other Heating	AFUE .74	-	-	15	-	-
Heating	Other Heating	AFUE .75	19.70	\$8.55	15	-	\$0.04
Heating	Other Heating	AFUE .76	24.33	\$12.22	15	1.00	\$0.05
Heating	Other Heating	AFUE .77	28.97	\$19.06	15	3.70	\$0.07
Heating	Other Heating	AFUE .80	41.72	\$38.85	15	3.56	\$0.10
Process	Process Heating	Standard	-	-	15	1.00	-
Process	Process Boiler	EF .76	-	-	25	-	-
Process	Process Boiler	EF .80	18.56	\$30.80	25	1.00	\$0.13
Process	Process Boiler	EF .83	31.31	\$181.70	25	0.71	\$0.47
Process	Process Boiler	EF .90	57.76	\$277.17	25	1.33	\$0.39
Process	Process Boiler	EF .96	66.84	\$476.32	25	0.91	\$0.57
Process	Process Cooling	Standard	-	-	15	1.00	-
Process	Other Process	Standard	-	-	15	1.00	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table D-15 Energy Efficiency Equipment Data, Electric-Machinery, Existing Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Air-Cooled Chiller	1.5 kw/ton, COP 2.3	-	-	20	1.00	-
Cooling	Air-Cooled Chiller	1.3 kw/ton, COP 2.7	1,416.14	\$525.40	20	6.32	\$0.03
Cooling	Air-Cooled Chiller	1.26 kw/ton, COP 2.8	1,699.36	\$593.66	20	6.71	\$0.03
Cooling	Air-Cooled Chiller	1.0 kw/ton, COP 3.5	3,540.32	\$661.92	20	> 10	\$0.02
Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	3,752.73	\$730.18	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.75 kw/ton, COP 4.7	-	-	20	1.00	-
Cooling	Water-Cooled Chiller	0.60 kw/ton, COP 5.9	2,922.62	\$415.58	20	> 10	\$0.01
Cooling	Water-Cooled Chiller	0.58 kw/ton, COP 6.1	3,313.33	\$445.26	20	> 10	\$0.01
Cooling	Water-Cooled Chiller	0.55 kw/Ton, COP 6.4	3,899.84	\$534.32	20	> 10	\$0.01
Cooling	Water-Cooled Chiller	0.51 kw/ton, COP 6.9	4,681.59	\$831.16	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.50 kw/Ton, COP 7.0	4,877.41	\$920.21	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.48 kw/ton, COP 7.3	5,269.19	\$1,009.26	20	> 10	\$0.02
Cooling	Roof top AC	EER 9.2	-	-	16	-	-
Cooling	Roof top AC	EER 10.1	1,704.78	\$615.11	16	-	\$0.04
Cooling	Roof top AC	EER 11.2	3,416.30	\$709.75	16	1.00	\$0.02
Cooling	Roof top AC	EER 12.0	4,463.96	\$2,271.18	16	1.28	\$0.05
Cooling	Roof top AC	Ductless Minisplit	5,592.18	\$7,452.32	16	0.62	\$0.13
Cooling	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	16	-	-
Cooling	Air Source Heat Pump	EER 10.3, COP 3.2	1,874.04	\$778.67	16	-	\$0.04
Cooling	Air Source Heat Pump	EER 11.0, COP 3.3	2,983.11	\$97.33	16	1.00	\$0.00
Cooling	Air Source Heat Pump	EER 11.7, COP 3.4	3,959.48	\$2,871.35	16	0.71	\$0.07
Cooling	Air Source Heat Pump	EER 12.0, COP 3.4	4,343.05	\$4,258.36	16	0.66	\$0.10
Cooling	Air Source Heat Pump	Ductless Minisplit	5,493.75	\$7,178.37	16	0.72	\$0.13
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	16	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	1,188.30	\$1,804.33	16	1.34	\$0.15
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	2,168.12	\$3,703.63	16	1.19	\$0.17
Cooling	Geothermal Heat Pump	EER 30, COP 5.0	5,303.55	\$5,045.77	16	2.13	\$0.09
Cooling	Other Cooling	EER 9.8	-	-	14	1.00	-
Cooling	Other Cooling	EER 10.2	-	-	14	-	-
Cooling	Other Cooling	EER 10.8	-	-	14	-	-
Cooling	Other Cooling	EER 11	-	-	14	-	-
Cooling	Other Cooling	EER 11.5	-	-	14	-	-
Heating	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	16	-	-
Heating	Air Source Heat Pump	EER 10.3, COP 3.2	312.38	\$7,903.91	16	-	\$2.50
Heating	Air Source Heat Pump	EER 11.0, COP 3.3	485.75	\$987.99	16	1.00	\$0.20
Heating	Air Source Heat Pump	EER 11.7, COP 3.4	628.76	\$29,145.68	16	0.00	\$4.59
Heating	Air Source Heat Pump	EER 12.0, COP 3.4	683.88	\$43,224.53	16	0.00	\$6.26
Heating	Air Source Heat Pump	Ductless Minisplit	835.68	\$72,864.20	16	0.00	\$8.63
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	16	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	1,098.79	\$16,208.71	16	0.04	\$1.46
Heating	Geothermal Heat Pump	EER 18, COP 3.8	2,530.11	\$33,270.52	16	0.04	\$1.30
Heating	Geothermal Heat Pump	EER 30, COP 5.0	4,634.15	\$45,327.22	16	0.06	\$0.97
Heating	Electric Resistance	Standard	-	-	20	1.00	-
Heating	Electric Furnace	Standard	-	-	20	1.00	-
Ventilation	Ventilation	Constant Volume	-	-	10	1.00	-
Ventilation	Ventilation	Variable Air Volume	-	-	10	-	-
Interior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Interior Lighting	Screw-in	90W Halogen PAR-38	362.70	\$13.69	3	-	\$0.01
Interior Lighting	Screw-in	70W HIR PAR-38	557.23	\$18.83	3	-	\$0.01
Interior Lighting	Screw-in	CFL	1,043.19	\$6.86	6	> 10	\$0.00

End Use	Technology	Efficiency Definition	Savings (kWh/empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Interior Lighting	Screw-in	LED (2010)	1,137.62	\$113.24	20	3.56	\$0.01
Interior Lighting	Screw-in	LED (2020)	1,303.07	\$31.67	20	-	\$0.00
Interior Lighting	High-Bay Fixtures	Metal Halides	-	-	3	1.00	-
Interior Lighting	High-Bay Fixtures	LED (2010)	74.11	\$35.23	15	0.10	\$0.05
Interior Lighting	High-Bay Fixtures	T8	75.45	(\$2.35)	10	1.00	(\$0.00)
Interior Lighting	High-Bay Fixtures	High Pressure Sodium	80.29	\$1.19	6	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	Induction	88.54	\$32.44	15	0.45	\$0.04
Interior Lighting	High-Bay Fixtures	Light Emitting Plasma	93.96	\$2.39	15	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	T5	96.31	\$2.57	10	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	LED (2020)	143.96	\$7.55	15	-	\$0.01
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Interior Lighting	Linear Fluorescent	LED (2010)	556.64	\$1,506.55	15	1.00	\$0.28
Interior Lighting	Linear Fluorescent	T8	579.26	(\$0.22)	10	1.00	(\$0.00)
Interior Lighting	Linear Fluorescent	Super T8	803.59	\$220.53	10	1.00	\$0.04
Interior Lighting	Linear Fluorescent	T5	931.54	\$167.57	10	1.00	\$0.02
Interior Lighting	Linear Fluorescent	LED (2020)	1,736.65	\$414.49	15	-	\$0.02
Exterior Lighting	Screw-in	Incandescent	-	-	2	-	-
Exterior Lighting	Screw-in	90W Halogen PAR-38	0.56	\$0.02	3	1.00	\$0.01
Exterior Lighting	Screw-in	70W HIR PAR-38	0.86	\$0.03	3	-	\$0.01
Exterior Lighting	Screw-in	CFL	1.62	\$0.01	6	1.00	\$0.00
Exterior Lighting	Screw-in	LED (2010)	1.75	\$0.44	20	1.33	\$0.02
Exterior Lighting	Screw-in	LED (2020)	2.02	\$0.12	20	-	\$0.01
Exterior Lighting	HID	Metal Halides	-	-	3	1.00	-
Exterior Lighting	HID	LED (2010)	247.91	\$316.03	15	0.14	\$0.13
Exterior Lighting	HID	T8	254.70	(\$7.92)	10	1.00	(\$0.00)
Exterior Lighting	HID	High Pressure Sodium	271.02	\$4.01	6	1.00	\$0.00
Exterior Lighting	HID	Light Emitting Plasma	317.17	\$8.08	15	1.00	\$0.00
Exterior Lighting	HID	T5	325.09	\$8.66	10	1.00	\$0.00
Exterior Lighting	HID	LED (2020)	478.14	\$81.44	15	-	\$0.02
Exterior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Exterior Lighting	Linear Fluorescent	LED (2010)	0.04	\$0.12	15	1.00	\$0.28
Exterior Lighting	Linear Fluorescent	T8	0.04	(\$0.00)	10	1.00	(\$0.00)
Exterior Lighting	Linear Fluorescent	Super T8	0.06	\$0.02	10	1.00	\$0.04
Exterior Lighting	Linear Fluorescent	T5	0.07	\$0.01	10	1.00	\$0.02
Exterior Lighting	Linear Fluorescent	LED (2020)	0.13	\$0.03	15	-	\$0.02
Motors	Pumps	Standard	-	-	10	1.00	-
Motors	Pumps	High Efficiency	10.76	\$8.90	10	0.48	\$0.11
Motors	Fans & Blowers	Standard	-	-	10	1.00	-
Motors	Fans & Blowers	High Efficiency	13.28	\$12.68	10	0.42	\$0.13
Motors	Compressed Air	Standard	-	-	10	1.00	-
Motors	Compressed Air	High Efficiency	9.17	\$5.56	10	0.66	\$0.08
Motors	Matl Handling	Standard	-	-	10	1.00	-
Motors	Matl Handling	High Efficiency	4.50	\$4.73	10	0.38	\$0.14
Motors	Matl Processing	Standard	-	-	10	1.00	-
Motors	Matl Processing	High Efficiency	17.85	\$18.76	10	0.38	\$0.14
Motors	Other Motors	Standard	-	-	10	1.00	-
Motors	Other Motors	High Efficiency	0.38	\$0.39	10	0.38	\$0.14
Process	Process Heating	Standard	-	-	15	1.00	-
Process	Process Cooling and Refrig	Standard	-	-	15	1.00	-
Process	Electro-Chemical Processes	Standard	-	-	15	1.00	-

End Use	Technology	Efficiency Definition	Savings (kWh/ empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Process	Other Process	Standard	-	-	15	1.00	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table D-16 Energy Efficiency Equipment Data, Natural Gas-Machinery, Existing Vintage

End Use	Technology	Efficiency Definition	Savings (therms/empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/therm)
Heating	Furnace	EF .76	-	-	20	1.00	-
Heating	Furnace	EF .80	52.47	\$1,233.81	20	0.30	\$2.08
Heating	Furnace	EF .82	76.78	\$3,338.04	20	0.16	\$3.84
Heating	Furnace	EF .90	162.94	\$2,915.33	20	0.39	\$1.58
Heating	Furnace	EF .96	218.69	\$4,233.75	20	0.36	\$1.71
Heating	Boiler	EF .76	-	-	25	-	-
Heating	Boiler	EF .80	690.77	\$961.85	25	1.00	\$0.11
Heating	Boiler	EF .83	1,165.15	\$5,674.92	25	0.84	\$0.39
Heating	Boiler	EF .90	2,149.05	\$8,656.65	25	1.58	\$0.32
Heating	Boiler	EF .96	2,486.96	\$14,876.62	25	1.08	\$0.48
Heating	Other Heating	AFUE .74	-	-	15	-	-
Heating	Other Heating	AFUE .75	54.93	\$26.66	15	-	\$0.05
Heating	Other Heating	AFUE .76	67.86	\$38.08	15	1.00	\$0.06
Heating	Other Heating	AFUE .77	80.79	\$59.41	15	3.31	\$0.08
Heating	Other Heating	AFUE .80	116.33	\$121.10	15	3.19	\$0.11
Process	Process Heating	Standard	-	-	15	1.00	-
Process	Process Boiler	EF .76	-	-	25	-	-
Process	Process Boiler	EF .80	23.04	\$32.09	25	1.00	\$0.11
Process	Process Boiler	EF .83	38.87	\$189.32	25	0.84	\$0.39
Process	Process Boiler	EF .90	71.69	\$288.79	25	1.58	\$0.32
Process	Process Boiler	EF .96	82.97	\$496.28	25	1.08	\$0.48
Process	Process Cooling	Standard	-	-	15	1.00	-
Process	Other Process	Standard	-	-	15	1.00	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table D-17 Energy Efficiency Equipment Data, Electric-Machinery, New Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Air-Cooled Chiller	1.5 kw/ton, COP 2.3	-	-	20	1.00	-
Cooling	Air-Cooled Chiller	1.3 kw/ton, COP 2.7	1,266.54	\$745.68	20	3.98	\$0.05
Cooling	Air-Cooled Chiller	1.26 kw/ton, COP 2.8	1,519.84	\$842.56	20	4.23	\$0.05
Cooling	Air-Cooled Chiller	1.0 kw/ton, COP 3.5	3,166.37	\$939.44	20	7.90	\$0.03
Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	3,356.33	\$1,036.31	20	7.59	\$0.03
Cooling	Water-Cooled Chiller	0.75 kw/ton, COP 4.7	-	-	20	1.00	-
Cooling	Water-Cooled Chiller	0.60 kw/ton, COP 5.9	2,733.91	\$640.88	20	10.00	\$0.02
Cooling	Water-Cooled Chiller	0.58 kw/ton, COP 6.1	3,099.35	\$686.66	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.55 kw/Ton, COP 6.4	3,647.98	\$823.99	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.51 kw/ton, COP 6.9	4,377.33	\$1,281.76	20	8.00	\$0.03
Cooling	Water-Cooled Chiller	0.50 kw/Ton, COP 7.0	4,560.52	\$1,419.09	20	7.53	\$0.03
Cooling	Water-Cooled Chiller	0.48 kw/ton, COP 7.3	4,927.03	\$1,556.42	20	7.42	\$0.03
Cooling	Roof top AC	EER 9.2	-	-	16	-	-
Cooling	Roof top AC	EER 10.1	1,639.88	\$683.99	16	-	\$0.04
Cooling	Roof top AC	EER 11.2	3,287.11	\$789.22	16	1.00	\$0.02
Cooling	Roof top AC	EER 12.0	4,294.87	\$2,525.52	16	1.11	\$0.06
Cooling	Roof top AC	Ductless Minisplit	5,380.37	\$8,286.86	16	0.53	\$0.15
Cooling	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	16	-	-
Cooling	Air Source Heat Pump	EER 10.3, COP 3.2	1,620.05	\$753.65	16	-	\$0.05
Cooling	Air Source Heat Pump	EER 11.0, COP 3.3	2,578.33	\$94.21	16	1.00	\$0.00
Cooling	Air Source Heat Pump	EER 11.7, COP 3.4	3,422.74	\$2,779.07	16	0.64	\$0.08
Cooling	Air Source Heat Pump	EER 12.0, COP 3.4	3,754.28	\$4,121.50	16	0.59	\$0.11
Cooling	Air Source Heat Pump	Ductless Minisplit	4,749.46	\$6,947.67	16	0.64	\$0.14
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	16	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	1,045.26	\$1,776.93	16	1.19	\$0.17
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	1,907.15	\$3,647.39	16	1.06	\$0.19
Cooling	Geothermal Heat Pump	EER 30, COP 5.0	4,665.18	\$4,969.14	16	1.90	\$0.11
Cooling	Other Cooling	EER 9.8	-	-	14	1.00	-
Cooling	Other Cooling	EER 10.2	-	-	14	-	-
Cooling	Other Cooling	EER 10.8	-	-	14	-	-
Cooling	Other Cooling	EER 11	-	-	14	-	-
Cooling	Other Cooling	EER 11.5	-	-	14	-	-
Heating	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	16	-	-
Heating	Air Source Heat Pump	EER 10.3, COP 3.2	280.61	\$3,810.22	16	-	\$1.34
Heating	Air Source Heat Pump	EER 11.0, COP 3.3	436.34	\$476.28	16	1.00	\$0.11
Heating	Air Source Heat Pump	EER 11.7, COP 3.4	564.80	\$14,050.19	16	0.01	\$2.46
Heating	Air Source Heat Pump	EER 12.0, COP 3.4	614.32	\$20,837.15	16	0.00	\$3.36
Heating	Air Source Heat Pump	Ductless Minisplit	750.67	\$35,125.49	16	0.00	\$4.63
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	16	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	1,022.50	\$8,012.99	16	0.07	\$0.78
Heating	Geothermal Heat Pump	EER 18, COP 3.8	2,354.44	\$16,447.73	16	0.08	\$0.69
Heating	Geothermal Heat Pump	EER 30, COP 5.0	4,438.94	\$22,408.11	16	0.11	\$0.50
Heating	Electric Resistance	Standard	-	-	20	1.00	-
Heating	Electric Furnace	Standard	-	-	20	1.00	-
Ventilation	Ventilation	Constant Volume	-	-	10	1.00	-
Ventilation	Ventilation	Variable Air Volume	-	-	10	-	-
Interior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Interior Lighting	Screw-in	90W Halogen PAR-38	362.70	\$13.69	3	-	\$0.01
Interior Lighting	Screw-in	70W HIR PAR-38	557.23	\$18.83	3	-	\$0.01
Interior Lighting	Screw-in	CFL	1,043.19	\$6.86	6	> 10	\$0.00

End Use	Technology	Efficiency Definition	Savings (kWh/empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Interior Lighting	Screw-in	LED (2010)	1,137.62	\$113.24	20	3.56	\$0.01
Interior Lighting	Screw-in	LED (2020)	1,303.07	\$31.67	20	-	\$0.00
Interior Lighting	High-Bay Fixtures	Metal Halides	-	-	3	1.00	-
Interior Lighting	High-Bay Fixtures	LED (2010)	74.11	\$35.23	15	0.10	\$0.05
Interior Lighting	High-Bay Fixtures	T8	75.45	(\$2.35)	10	1.00	(\$0.00)
Interior Lighting	High-Bay Fixtures	High Pressure Sodium	80.29	\$1.19	6	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	Induction	88.54	\$32.44	15	0.45	\$0.04
Interior Lighting	High-Bay Fixtures	Light Emitting Plasma	93.96	\$2.39	15	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	T5	96.31	\$2.57	10	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	LED (2020)	143.96	\$7.55	15	-	\$0.01
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Interior Lighting	Linear Fluorescent	LED (2010)	556.64	\$1,506.55	15	1.00	\$0.28
Interior Lighting	Linear Fluorescent	T8	579.26	(\$0.22)	10	1.00	(\$0.00)
Interior Lighting	Linear Fluorescent	Super T8	803.59	\$220.53	10	1.00	\$0.04
Interior Lighting	Linear Fluorescent	T5	931.54	\$167.57	10	1.00	\$0.02
Interior Lighting	Linear Fluorescent	LED (2020)	1,736.65	\$414.49	15	-	\$0.02
Exterior Lighting	Screw-in	Incandescent	-	-	2	-	-
Exterior Lighting	Screw-in	90W Halogen PAR-38	0.56	\$0.02	3	1.00	\$0.01
Exterior Lighting	Screw-in	70W HIR PAR-38	0.86	\$0.03	3	-	\$0.01
Exterior Lighting	Screw-in	CFL	1.62	\$0.01	6	1.00	\$0.00
Exterior Lighting	Screw-in	LED (2010)	1.75	\$0.44	20	1.33	\$0.02
Exterior Lighting	Screw-in	LED (2020)	2.02	\$0.12	20	-	\$0.01
Exterior Lighting	HID	Metal Halides	-	-	3	1.00	-
Exterior Lighting	HID	LED (2010)	247.91	\$316.03	15	0.14	\$0.13
Exterior Lighting	HID	T8	254.70	(\$7.92)	10	1.00	(\$0.00)
Exterior Lighting	HID	High Pressure Sodium	271.02	\$4.01	6	1.00	\$0.00
Exterior Lighting	HID	Light Emitting Plasma	317.17	\$8.08	15	1.00	\$0.00
Exterior Lighting	HID	T5	325.09	\$8.66	10	1.00	\$0.00
Exterior Lighting	HID	LED (2020)	478.14	\$81.44	15	-	\$0.02
Exterior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Exterior Lighting	Linear Fluorescent	LED (2010)	0.04	\$0.12	15	1.00	\$0.28
Exterior Lighting	Linear Fluorescent	T8	0.04	(\$0.00)	10	1.00	(\$0.00)
Exterior Lighting	Linear Fluorescent	Super T8	0.06	\$0.02	10	1.00	\$0.04
Exterior Lighting	Linear Fluorescent	T5	0.07	\$0.01	10	1.00	\$0.02
Exterior Lighting	Linear Fluorescent	LED (2020)	0.13	\$0.03	15	-	\$0.02
Motors	Pumps	Standard	-	-	10	1.00	-
Motors	Pumps	High Efficiency	10.76	\$9.35	10	0.46	\$0.12
Motors	Fans & Blowers	Standard	-	-	10	1.00	-
Motors	Fans & Blowers	High Efficiency	13.28	\$13.32	10	0.40	\$0.13
Motors	Compressed Air	Standard	-	-	10	1.00	-
Motors	Compressed Air	High Efficiency	9.17	\$5.84	10	0.63	\$0.08
Motors	Matl Handling	Standard	-	-	10	1.00	-
Motors	Matl Handling	High Efficiency	4.50	\$4.97	10	0.36	\$0.15
Motors	Matl Processing	Standard	-	-	10	1.00	-
Motors	Matl Processing	High Efficiency	17.85	\$19.69	10	0.36	\$0.15
Motors	Other Motors	Standard	-	-	10	1.00	-
Motors	Other Motors	High Efficiency	0.38	\$0.41	10	0.36	\$0.15
Process	Process Heating	Standard	-	-	15	1.00	-
Process	Process Cooling and Refrig	Standard	-	-	15	1.00	-
Process	Electro-Chemical Processes	Standard	-	-	15	1.00	-

End Use	Technology	Efficiency Definition	Savings (kWh/ empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Process	Other Process	Standard	-	-	15	1.00	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table D-18 Energy Efficiency Equipment Data, Natural Gas-Machinery, New Vintage

End Use	Technology	Efficiency Definition	Savings (therms/empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/therm)
Heating	Furnace	EF .76	-	-	20	1.00	-
Heating	Furnace	EF .80	48.44	\$527.29	20	0.64	\$0.96
Heating	Furnace	EF .82	70.89	\$1,426.57	20	0.35	\$1.78
Heating	Furnace	EF .90	150.69	\$1,245.91	20	0.84	\$0.73
Heating	Furnace	EF .96	201.81	\$1,809.36	20	0.78	\$0.79
Heating	Boiler	EF .76	-	-	25	-	-
Heating	Boiler	EF .80	629.96	\$1,045.01	25	1.00	\$0.13
Heating	Boiler	EF .83	1,062.58	\$6,165.58	25	0.71	\$0.47
Heating	Boiler	EF .90	1,959.87	\$9,405.12	25	1.33	\$0.39
Heating	Boiler	EF .96	2,268.23	\$16,162.87	25	0.91	\$0.57
Heating	Other Heating	AFUE .74	-	-	15	-	-
Heating	Other Heating	AFUE .75	49.71	\$21.58	15	-	\$0.04
Heating	Other Heating	AFUE .76	61.40	\$30.82	15	1.00	\$0.05
Heating	Other Heating	AFUE .77	73.10	\$48.08	15	3.70	\$0.07
Heating	Other Heating	AFUE .80	105.26	\$98.02	15	3.56	\$0.10
Process	Process Heating	Standard	-	-	15	1.00	-
Process	Process Boiler	EF .76	-	-	25	-	-
Process	Process Boiler	EF .80	21.10	\$34.99	25	1.00	\$0.13
Process	Process Boiler	EF .83	35.58	\$206.47	25	0.71	\$0.47
Process	Process Boiler	EF .90	65.63	\$314.95	25	1.33	\$0.39
Process	Process Boiler	EF .96	75.96	\$541.25	25	0.91	\$0.57
Process	Process Cooling	Standard	-	-	15	1.00	-
Process	Other Process	Standard	-	-	15	1.00	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table D-19 Energy Efficiency Equipment Data, Electric-Other Industrial, Existing Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Air-Cooled Chiller	1.5 kw/ton, COP 2.3	-	-	20	1.00	-
Cooling	Air-Cooled Chiller	1.3 kw/ton, COP 2.7	1,199.98	\$445.20	20	6.32	\$0.03
Cooling	Air-Cooled Chiller	1.26 kw/ton, COP 2.8	1,439.97	\$503.04	20	6.71	\$0.03
Cooling	Air-Cooled Chiller	1.0 kw/ton, COP 3.5	2,999.93	\$560.88	20	> 10	\$0.02
Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	3,179.92	\$618.72	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.75 kw/ton, COP 4.7	-	-	20	1.00	-
Cooling	Water-Cooled Chiller	0.60 kw/ton, COP 5.9	2,476.51	\$352.15	20	> 10	\$0.01
Cooling	Water-Cooled Chiller	0.58 kw/ton, COP 6.1	2,807.59	\$377.30	20	> 10	\$0.01
Cooling	Water-Cooled Chiller	0.55 kw/Ton, COP 6.4	3,304.57	\$452.76	20	> 10	\$0.01
Cooling	Water-Cooled Chiller	0.51 kw/ton, COP 6.9	3,967.00	\$704.29	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.50 kw/Ton, COP 7.0	4,132.93	\$779.75	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.48 kw/ton, COP 7.3	4,464.91	\$855.21	20	> 10	\$0.02
Cooling	Roof top AC	EER 9.2	-	-	16	-	-
Cooling	Roof top AC	EER 10.1	1,444.57	\$521.22	16	-	\$0.04
Cooling	Roof top AC	EER 11.2	2,894.84	\$601.41	16	1.00	\$0.02
Cooling	Roof top AC	EER 12.0	3,782.59	\$1,924.51	16	1.28	\$0.05
Cooling	Roof top AC	Ductless Minisplit	4,738.60	\$6,314.81	16	0.62	\$0.13
Cooling	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	16	-	-
Cooling	Air Source Heat Pump	EER 10.3, COP 3.2	1,587.99	\$659.82	16	-	\$0.04
Cooling	Air Source Heat Pump	EER 11.0, COP 3.3	2,527.77	\$82.48	16	1.00	\$0.00
Cooling	Air Source Heat Pump	EER 11.7, COP 3.4	3,355.11	\$2,433.07	16	0.71	\$0.07
Cooling	Air Source Heat Pump	EER 12.0, COP 3.4	3,680.13	\$3,608.37	16	0.66	\$0.10
Cooling	Air Source Heat Pump	Ductless Minisplit	4,655.19	\$6,082.68	16	0.72	\$0.13
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	16	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	1,006.92	\$1,528.92	16	1.34	\$0.15
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	1,837.18	\$3,138.32	16	1.19	\$0.17
Cooling	Geothermal Heat Pump	EER 30, COP 5.0	4,494.03	\$4,275.59	16	2.13	\$0.09
Cooling	Other Cooling	EER 9.8	-	-	14	1.00	-
Cooling	Other Cooling	EER 10.2	-	-	14	-	-
Cooling	Other Cooling	EER 10.8	-	-	14	-	-
Cooling	Other Cooling	EER 11	-	-	14	-	-
Cooling	Other Cooling	EER 11.5	-	-	14	-	-
Heating	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	16	-	-
Heating	Air Source Heat Pump	EER 10.3, COP 3.2	264.70	\$6,697.47	16	-	\$2.50
Heating	Air Source Heat Pump	EER 11.0, COP 3.3	411.60	\$837.18	16	1.00	\$0.20
Heating	Air Source Heat Pump	EER 11.7, COP 3.4	532.78	\$24,696.93	16	0.00	\$4.59
Heating	Air Source Heat Pump	EER 12.0, COP 3.4	579.50	\$36,626.81	16	0.00	\$6.26
Heating	Air Source Heat Pump	Ductless Minisplit	708.12	\$61,742.33	16	0.00	\$8.63
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	16	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	931.07	\$13,734.64	16	0.04	\$1.46
Heating	Geothermal Heat Pump	EER 18, COP 3.8	2,143.92	\$28,192.16	16	0.04	\$1.30
Heating	Geothermal Heat Pump	EER 30, COP 5.0	3,926.80	\$38,408.54	16	0.06	\$0.97
Heating	Electric Resistance	Standard	-	-	20	1.00	-
Heating	Electric Furnace	Standard	-	-	20	1.00	-
Ventilation	Ventilation	Constant Volume	-	-	10	1.00	-
Ventilation	Ventilation	Variable Air Volume	-	-	10	-	-
Interior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Interior Lighting	Screw-in	90W Halogen PAR-38	330.78	\$12.49	3	-	\$0.01
Interior Lighting	Screw-in	70W HIR PAR-38	508.19	\$17.18	3	-	\$0.01
Interior Lighting	Screw-in	CFL	951.39	\$6.25	6	> 10	\$0.00

End Use	Technology	Efficiency Definition	Savings (kWh/ empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Interior Lighting	Screw-in	LED (2010)	1,037.50	\$103.28	20	3.56	\$0.01
Interior Lighting	Screw-in	LED (2020)	1,188.40	\$28.88	20	-	\$0.00
Interior Lighting	High-Bay Fixtures	Metal Halides	-	-	3	1.00	-
Interior Lighting	High-Bay Fixtures	LED (2010)	67.59	\$32.13	15	0.10	\$0.05
Interior Lighting	High-Bay Fixtures	T8	68.81	(\$2.14)	10	1.00	(\$0.00)
Interior Lighting	High-Bay Fixtures	High Pressure Sodium	73.22	\$1.08	6	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	Induction	80.75	\$29.59	15	0.45	\$0.04
Interior Lighting	High-Bay Fixtures	Light Emitting Plasma	85.69	\$2.18	15	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	T5	87.83	\$2.34	10	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	LED (2020)	131.29	\$6.89	15	-	\$0.01
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Interior Lighting	Linear Fluorescent	LED (2010)	507.66	\$1,373.97	15	1.00	\$0.28
Interior Lighting	Linear Fluorescent	T8	528.28	(\$0.20)	10	1.00	(\$0.00)
Interior Lighting	Linear Fluorescent	Super T8	732.87	\$201.12	10	1.00	\$0.04
Interior Lighting	Linear Fluorescent	T5	849.56	\$152.83	10	1.00	\$0.02
Interior Lighting	Linear Fluorescent	LED (2020)	1,583.83	\$378.01	15	-	\$0.02
Exterior Lighting	Screw-in	Incandescent	-	-	2	-	-
Exterior Lighting	Screw-in	90W Halogen PAR-38	0.51	\$0.02	3	1.00	\$0.01
Exterior Lighting	Screw-in	70W HIR PAR-38	0.79	\$0.03	3	-	\$0.01
Exterior Lighting	Screw-in	CFL	1.48	\$0.01	6	1.00	\$0.00
Exterior Lighting	Screw-in	LED (2010)	1.60	\$0.40	20	1.33	\$0.02
Exterior Lighting	Screw-in	LED (2020)	1.84	\$0.11	20	-	\$0.01
Exterior Lighting	HID	Metal Halides	-	-	3	1.00	-
Exterior Lighting	HID	LED (2010)	226.09	\$288.22	15	0.14	\$0.13
Exterior Lighting	HID	T8	232.29	(\$7.22)	10	1.00	(\$0.00)
Exterior Lighting	HID	High Pressure Sodium	247.17	\$3.66	6	1.00	\$0.00
Exterior Lighting	HID	Light Emitting Plasma	289.26	\$7.37	15	1.00	\$0.00
Exterior Lighting	HID	T5	296.48	\$7.90	10	1.00	\$0.00
Exterior Lighting	HID	LED (2020)	436.06	\$74.27	15	-	\$0.02
Exterior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Exterior Lighting	Linear Fluorescent	LED (2010)	0.04	\$0.11	15	1.00	\$0.28
Exterior Lighting	Linear Fluorescent	T8	0.04	(\$0.00)	10	1.00	(\$0.00)
Exterior Lighting	Linear Fluorescent	Super T8	0.06	\$0.02	10	1.00	\$0.04
Exterior Lighting	Linear Fluorescent	T5	0.07	\$0.01	10	1.00	\$0.02
Exterior Lighting	Linear Fluorescent	LED (2020)	0.12	\$0.03	15	-	\$0.02
Motors	Pumps	Standard	-	-	10	1.00	-
Motors	Pumps	High Efficiency	6.48	\$5.36	10	0.48	\$0.11
Motors	Fans & Blowers	Standard	-	-	10	1.00	-
Motors	Fans & Blowers	High Efficiency	8.00	\$7.64	10	0.42	\$0.13
Motors	Compressed Air	Standard	-	-	10	1.00	-
Motors	Compressed Air	High Efficiency	5.53	\$3.35	10	0.66	\$0.08
Motors	Matl Handling	Standard	-	-	10	1.00	-
Motors	Matl Handling	High Efficiency	2.71	\$2.85	10	0.38	\$0.14
Motors	Matl Processing	Standard	-	-	10	1.00	-
Motors	Matl Processing	High Efficiency	10.75	\$11.30	10	0.38	\$0.14
Motors	Other Motors	Standard	-	-	10	1.00	-
Motors	Other Motors	High Efficiency	0.23	\$0.24	10	0.38	\$0.14
Process	Process Heating	Standard	-	-	15	1.00	-
Process	Process Cooling and Refrig	Standard	-	-	15	1.00	-
Process	Electro-Chemical Processes	Standard	-	-	15	1.00	-

Industrial Energy Efficiency Equipment and Measure Data

End Use	Technology	Efficiency Definition	Savings (kWh/ empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Process	Other Process	Standard	-	-	15	1.00	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table D-20 Energy Efficiency Equipment Data, Natural Gas-Other Industrial, Existing Vintage

End Use	Technology	Efficiency Definition	Savings (therms/empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/therm)
Heating	Furnace	EF .76	-	-	20	1.00	-
Heating	Furnace	EF .80	65.04	\$1,529.44	20	0.30	\$2.08
Heating	Furnace	EF .82	95.18	\$4,137.84	20	0.16	\$3.84
Heating	Furnace	EF .90	201.98	\$3,613.84	20	0.39	\$1.58
Heating	Furnace	EF .96	271.09	\$5,248.15	20	0.36	\$1.71
Heating	Boiler	EF .76	-	-	25	-	-
Heating	Boiler	EF .80	856.27	\$1,192.31	25	1.00	\$0.11
Heating	Boiler	EF .83	1,444.32	\$7,034.62	25	0.84	\$0.39
Heating	Boiler	EF .90	2,663.96	\$10,730.78	25	1.58	\$0.32
Heating	Boiler	EF .96	3,082.83	\$18,441.05	25	1.08	\$0.48
Heating	Other Heating	AFUE .74	-	-	15	-	-
Heating	Other Heating	AFUE .75	68.10	\$33.04	15	-	\$0.05
Heating	Other Heating	AFUE .76	84.12	\$47.21	15	1.00	\$0.06
Heating	Other Heating	AFUE .77	100.14	\$73.64	15	3.31	\$0.08
Heating	Other Heating	AFUE .80	144.21	\$150.12	15	3.19	\$0.11
Process	Process Heating	Standard	-	-	15	1.00	-
Process	Process Boiler	EF .76	-	-	25	-	-
Process	Process Boiler	EF .80	12.51	\$17.43	25	1.00	\$0.11
Process	Process Boiler	EF .83	21.11	\$102.81	25	0.84	\$0.39
Process	Process Boiler	EF .90	38.93	\$156.83	25	1.58	\$0.32
Process	Process Boiler	EF .96	45.06	\$269.52	25	1.08	\$0.48
Process	Process Cooling	Standard	-	-	15	1.00	-
Process	Other Process	Standard	-	-	15	1.00	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table D-21 Energy Efficiency Equipment Data, Electrics-Other Industrial, New Vintage

End Use	Technology	Efficiency Definition	Savings (kWh/empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Cooling	Air-Cooled Chiller	1.5 kw/ton, COP 2.3	-	-	20	1.00	-
Cooling	Air-Cooled Chiller	1.3 kw/ton, COP 2.7	1,073.22	\$631.86	20	3.98	\$0.05
Cooling	Air-Cooled Chiller	1.26 kw/ton, COP 2.8	1,287.85	\$713.95	20	4.23	\$0.05
Cooling	Air-Cooled Chiller	1.0 kw/ton, COP 3.5	2,683.06	\$796.04	20	7.90	\$0.03
Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	2,844.02	\$878.13	20	7.59	\$0.03
Cooling	Water-Cooled Chiller	0.75 kw/ton, COP 4.7	-	-	20	1.00	-
Cooling	Water-Cooled Chiller	0.60 kw/ton, COP 5.9	2,316.61	\$543.06	20	10.00	\$0.02
Cooling	Water-Cooled Chiller	0.58 kw/ton, COP 6.1	2,626.27	\$581.85	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.55 kw/Ton, COP 6.4	3,091.16	\$698.21	20	> 10	\$0.02
Cooling	Water-Cooled Chiller	0.51 kw/ton, COP 6.9	3,709.18	\$1,086.11	20	8.00	\$0.03
Cooling	Water-Cooled Chiller	0.50 kw/Ton, COP 7.0	3,864.41	\$1,202.48	20	7.53	\$0.03
Cooling	Water-Cooled Chiller	0.48 kw/ton, COP 7.3	4,174.98	\$1,318.85	20	7.42	\$0.03
Cooling	Roof top AC	EER 9.2	-	-	16	-	-
Cooling	Roof top AC	EER 10.1	1,389.57	\$579.59	16	-	\$0.04
Cooling	Roof top AC	EER 11.2	2,785.37	\$668.76	16	1.00	\$0.02
Cooling	Roof top AC	EER 12.0	3,639.31	\$2,140.03	16	1.11	\$0.06
Cooling	Roof top AC	Ductless Minisplit	4,559.12	\$7,021.96	16	0.53	\$0.15
Cooling	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	16	-	-
Cooling	Air Source Heat Pump	EER 10.3, COP 3.2	1,372.77	\$638.61	16	-	\$0.05
Cooling	Air Source Heat Pump	EER 11.0, COP 3.3	2,184.78	\$79.83	16	1.00	\$0.00
Cooling	Air Source Heat Pump	EER 11.7, COP 3.4	2,900.30	\$2,354.88	16	0.64	\$0.08
Cooling	Air Source Heat Pump	EER 12.0, COP 3.4	3,181.24	\$3,492.40	16	0.59	\$0.11
Cooling	Air Source Heat Pump	Ductless Minisplit	4,024.51	\$5,887.19	16	0.64	\$0.14
Cooling	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	16	1.00	-
Cooling	Geothermal Heat Pump	EER 16, COP 3.5	885.72	\$1,505.71	16	1.19	\$0.17
Cooling	Geothermal Heat Pump	EER 18, COP 3.8	1,616.05	\$3,090.66	16	1.06	\$0.19
Cooling	Geothermal Heat Pump	EER 30, COP 5.0	3,953.09	\$4,210.66	16	1.90	\$0.11
Cooling	Other Cooling	EER 9.8	-	-	14	1.00	-
Cooling	Other Cooling	EER 10.2	-	-	14	-	-
Cooling	Other Cooling	EER 10.8	-	-	14	-	-
Cooling	Other Cooling	EER 11	-	-	14	-	-
Cooling	Other Cooling	EER 11.5	-	-	14	-	-
Heating	Air Source Heat Pump	EER 9.3, COP 3.1	-	-	16	-	-
Heating	Air Source Heat Pump	EER 10.3, COP 3.2	237.77	\$3,228.64	16	-	\$1.34
Heating	Air Source Heat Pump	EER 11.0, COP 3.3	369.74	\$403.58	16	1.00	\$0.11
Heating	Air Source Heat Pump	EER 11.7, COP 3.4	478.59	\$11,905.60	16	0.01	\$2.46
Heating	Air Source Heat Pump	EER 12.0, COP 3.4	520.55	\$17,656.60	16	0.00	\$3.36
Heating	Air Source Heat Pump	Ductless Minisplit	636.09	\$29,763.99	16	0.00	\$4.63
Heating	Geothermal Heat Pump	EER 14.1, COP 3.3	-	-	16	1.00	-
Heating	Geothermal Heat Pump	EER 16, COP 3.5	866.43	\$6,789.90	16	0.07	\$0.78
Heating	Geothermal Heat Pump	EER 18, COP 3.8	1,995.06	\$13,937.17	16	0.08	\$0.69
Heating	Geothermal Heat Pump	EER 30, COP 5.0	3,761.38	\$18,987.78	16	0.11	\$0.50
Heating	Electric Resistance	Standard	-	-	20	1.00	-
Heating	Electric Furnace	Standard	-	-	20	1.00	-
Ventilation	Ventilation	Constant Volume	-	-	10	1.00	-
Ventilation	Ventilation	Variable Air Volume	-	-	10	-	-
Interior Lighting	Screw-in	Incandescent	-	-	2	1.00	-
Interior Lighting	Screw-in	90W Halogen PAR-38	330.78	\$12.49	3	-	\$0.01
Interior Lighting	Screw-in	70W HIR PAR-38	508.19	\$17.18	3	-	\$0.01
Interior Lighting	Screw-in	CFL	951.39	\$6.25	6	> 10	\$0.00

End Use	Technology	Efficiency Definition	Savings (kWh/empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Interior Lighting	Screw-in	LED (2010)	1,037.50	\$103.28	20	3.56	\$0.01
Interior Lighting	Screw-in	LED (2020)	1,188.40	\$28.88	20	-	\$0.00
Interior Lighting	High-Bay Fixtures	Metal Halides	-	-	3	1.00	-
Interior Lighting	High-Bay Fixtures	LED (2010)	67.59	\$32.13	15	0.10	\$0.05
Interior Lighting	High-Bay Fixtures	T8	68.81	(\$2.14)	10	1.00	(\$0.00)
Interior Lighting	High-Bay Fixtures	High Pressure Sodium	73.22	\$1.08	6	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	Induction	80.75	\$29.59	15	0.45	\$0.04
Interior Lighting	High-Bay Fixtures	Light Emitting Plasma	85.69	\$2.18	15	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	T5	87.83	\$2.34	10	1.00	\$0.00
Interior Lighting	High-Bay Fixtures	LED (2020)	131.29	\$6.89	15	-	\$0.01
Interior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Interior Lighting	Linear Fluorescent	LED (2010)	507.66	\$1,373.97	15	1.00	\$0.28
Interior Lighting	Linear Fluorescent	T8	528.28	(\$0.20)	10	1.00	(\$0.00)
Interior Lighting	Linear Fluorescent	Super T8	732.87	\$201.12	10	1.00	\$0.04
Interior Lighting	Linear Fluorescent	T5	849.56	\$152.83	10	1.00	\$0.02
Interior Lighting	Linear Fluorescent	LED (2020)	1,583.83	\$378.01	15	-	\$0.02
Exterior Lighting	Screw-in	Incandescent	-	-	2	-	-
Exterior Lighting	Screw-in	90W Halogen PAR-38	0.51	\$0.02	3	1.00	\$0.01
Exterior Lighting	Screw-in	70W HIR PAR-38	0.79	\$0.03	3	-	\$0.01
Exterior Lighting	Screw-in	CFL	1.48	\$0.01	6	1.00	\$0.00
Exterior Lighting	Screw-in	LED (2010)	1.60	\$0.40	20	1.33	\$0.02
Exterior Lighting	Screw-in	LED (2020)	1.84	\$0.11	20	-	\$0.01
Exterior Lighting	HID	Metal Halides	-	-	3	1.00	-
Exterior Lighting	HID	LED (2010)	226.09	\$288.22	15	0.14	\$0.13
Exterior Lighting	HID	T8	232.29	(\$7.22)	10	1.00	(\$0.00)
Exterior Lighting	HID	High Pressure Sodium	247.17	\$3.66	6	1.00	\$0.00
Exterior Lighting	HID	Light Emitting Plasma	289.26	\$7.37	15	1.00	\$0.00
Exterior Lighting	HID	T5	296.48	\$7.90	10	1.00	\$0.00
Exterior Lighting	HID	LED (2020)	436.06	\$74.27	15	-	\$0.02
Exterior Lighting	Linear Fluorescent	T12	-	-	10	-	-
Exterior Lighting	Linear Fluorescent	LED (2010)	0.04	\$0.11	15	1.00	\$0.28
Exterior Lighting	Linear Fluorescent	T8	0.04	(\$0.00)	10	1.00	(\$0.00)
Exterior Lighting	Linear Fluorescent	Super T8	0.06	\$0.02	10	1.00	\$0.04
Exterior Lighting	Linear Fluorescent	T5	0.07	\$0.01	10	1.00	\$0.02
Exterior Lighting	Linear Fluorescent	LED (2020)	0.12	\$0.03	15	-	\$0.02
Motors	Pumps	Standard	-	-	10	1.00	-
Motors	Pumps	High Efficiency	6.48	\$5.90	10	0.44	\$0.12
Motors	Fans & Blowers	Standard	-	-	10	1.00	-
Motors	Fans & Blowers	High Efficiency	8.00	\$8.40	10	0.38	\$0.14
Motors	Compressed Air	Standard	-	-	10	1.00	-
Motors	Compressed Air	High Efficiency	5.53	\$3.68	10	0.60	\$0.09
Motors	Matl Handling	Standard	-	-	10	1.00	-
Motors	Matl Handling	High Efficiency	2.71	\$3.13	10	0.35	\$0.15
Motors	Matl Processing	Standard	-	-	10	1.00	-
Motors	Matl Processing	High Efficiency	10.75	\$12.43	10	0.35	\$0.15
Motors	Other Motors	Standard	-	-	10	1.00	-
Motors	Other Motors	High Efficiency	0.23	\$0.26	10	0.35	\$0.15
Process	Process Heating	Standard	-	-	15	1.00	-
Process	Process Cooling and Refrig	Standard	-	-	15	1.00	-
Process	Electro-Chemical Processes	Standard	-	-	15	1.00	-

Industrial Energy Efficiency Equipment and Measure Data

End Use	Technology	Efficiency Definition	Savings (kWh/ empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/kWh)
Process	Other Process	Standard	-	-	15	1.00	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table D-22 Energy Efficiency Equipment Data, Natural Gas-Other Industrial, New Vintage

End Use	Technology	Efficiency Definition	Savings (therms/empl/yr)	Incremental Cost (\$/empl)	Lifetime (Years)	BC Ratio (2013)	Levelized Cost of Energy (\$/therm)
Heating	Furnace	EF .76	-	-	20	1.00	-
Heating	Furnace	EF .80	60.05	\$653.63	20	0.64	\$0.96
Heating	Furnace	EF .82	87.88	\$1,768.37	20	0.35	\$1.78
Heating	Furnace	EF .90	186.79	\$1,544.43	20	0.84	\$0.73
Heating	Furnace	EF .96	250.17	\$2,242.88	20	0.78	\$0.79
Heating	Boiler	EF .76	-	-	25	-	-
Heating	Boiler	EF .80	780.90	\$1,295.40	25	1.00	\$0.13
Heating	Boiler	EF .83	1,317.18	\$7,642.85	25	0.71	\$0.47
Heating	Boiler	EF .90	2,429.46	\$11,658.58	25	1.33	\$0.39
Heating	Boiler	EF .96	2,811.69	\$20,035.49	25	0.91	\$0.57
Heating	Other Heating	AFUE .74	-	-	15	-	-
Heating	Other Heating	AFUE .75	61.62	\$26.75	15	-	\$0.04
Heating	Other Heating	AFUE .76	76.11	\$38.21	15	1.00	\$0.05
Heating	Other Heating	AFUE .77	90.61	\$59.61	15	3.70	\$0.07
Heating	Other Heating	AFUE .80	130.48	\$121.50	15	3.56	\$0.10
Process	Process Heating	Standard	-	-	15	1.00	-
Process	Process Boiler	EF .76	-	-	25	-	-
Process	Process Boiler	EF .80	11.46	\$19.00	25	1.00	\$0.13
Process	Process Boiler	EF .83	19.32	\$112.13	25	0.71	\$0.47
Process	Process Boiler	EF .90	35.64	\$171.04	25	1.33	\$0.39
Process	Process Boiler	EF .96	41.25	\$293.94	25	0.91	\$0.57
Process	Process Cooling	Standard	-	-	15	1.00	-
Process	Other Process	Standard	-	-	15	1.00	-
Miscellaneous	Miscellaneous	Standard	-	-	5	1.00	-

Table D-23 Energy Efficiency Non-Equipment Data- Electric Food Products, Existing Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	56,202.0	\$/bldg	209,122.3	0.68	0.07
Insulation - Ducting	15%	50%	20	0.8	\$/sqft	0.8	0.19	0.09
Insulation - Wall Cavity	7%	13%	20	35,615.6	\$/bldg	181,366.8	0.69	0.06
HVAC - Duct Repair and Sealing	5%	25%	18	54.7	\$/bldg	40,562.6	> 10	0.00
Air-Cooled Chiller - Economizer	0%	49%	10	813.6	\$/sqft	1,826,138.1	> 10	0.00
Air-Cooled Chiller - Efficient Mechanical Layout	62%	90%	4	0.1	\$/empl	5.7	1.77	0.01
Air-Cooled Chiller - Maintenance	62%	90%	18	12,397.5	\$/bldg	551,969.2	8.22	0.02
Air-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	836,586.8	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	125,726.8	0.41	0.08
Air-Cooled Chiller - Condenser Water Temperature Reset	30%	75%	4	0.2	\$/empl	3.5	0.37	0.05
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	44,150.2	3.50	0.02
Air-Cooled Chiller - VSD on Fans	15%	66%	15	2,063.3	\$/bldg	843.3	0.89	0.11
Water-Cooled Chiller - Economizer	0%	49%	10	5,493.8	\$/sqft	1,826,138.1	> 10	0.00
Water-Cooled Chiller - Efficient Mechanical Layout	62%	90%	4	0.1	\$/empl	5.5	1.75	0.01
Water-Cooled Chiller - Maintenance	62%	90%	18	12,397.5	\$/bldg	551,969.2	8.32	0.02
Water-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	723,510.2	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	125,726.8	0.41	0.08
Water-Cooled Chiller - Condenser Water Temperature Reset	30%	75%	4	0.0	\$/sqft	2.2	> 10	0.00
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	44,150.2	3.54	0.02
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	12.6	5.95	0.05
RTU - Maintenance	62%	90%	18	12,397.5	\$/bldg	551,969.2	7.55	0.02
Heat Pump - Maintenance	3%	95%	18	3,826.9	\$/bldg	562,755.3	> 10	0.01
Process Boilers - Hot Water Reset	30%	75%	4	0.2	\$/empl	4.5	0.46	0.04
Process Boiler - Combustion Controls (O2 Trim)	0%	49%	25	0.8	\$/empl	0.6	0.16	0.08
Process Boiler - Condensate Return Lines	0%	50%	5	0.0	\$/empl	1.8	1.11	0.02
Process Boiler - Condensing Economizer	0%	49%	25	2.0	\$/empl	2.0	0.22	0.08
Process Boiler - Pipe Insulation	6%	11%	15	0.3	\$/empl	1.2	0.40	0.08
Process Boiler - Steam Trap Maintenance	32%	90%	6	276.0	\$/empl	24,736.3	2.68	0.01
Roofs - High Reflectivity	50%	75%	15	0.1	\$/empl	6.7	> 10	0.01
Energy Management System	7%	75%	15	41,951.5	\$/bldg	899,536.2	1.74	0.03
Thermostat - Clock/Programmable	32%	50%	11	1,239.8	\$/bldg	4.8	0.00	0.14
Interior Lighting - Occupancy Sensors	6%	56%	8	0.1	\$/sqft	1.4	0.60	0.04
Interior Lighting - Skylights	15%	20%	8	0.3	\$/empl	11.1	0.95	0.02

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Interior Lighting - Time Clocks and Timers	3%	56%	8	0.2	\$/empl	1.9	0.22	0.07
Interior Lighting - LED Exit Lighting	50%	86%	16	0.0	\$/sqft	0.1	> 10	0.01
Interior Lighting - Daylighting Controls	15%	20%	8	0.1	\$/sqft	2.0	0.72	0.04
Interior Screw-in - Task Lighting	6%	75%	5	0.2	\$/empl	0.7	0.03	0.16
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	1.6	0.14	0.12
Interior Fluorescent - Delamp and Install Reflectors	18%	56%	11	0.5	\$/sqft	0.6	0.08	0.12
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/empl	0.8	0.08	0.10
Exterior Lighting - Daylighting Controls	18%	38%	8	0.0	\$/sqft	0.2	0.16	0.07
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.2	0.00	0.10
Process - Conductivity Controls	20%	100%	5	0.5	\$/empl	11.4	0.39	0.04
Process - Controls on Fume Hoods	30%	100%	10	0.1	\$/empl	11.4	3.75	0.01
Process - Timers and Controls	40%	100%	5	0.4	\$/empl	22.8	1.00	0.02
Refrigeration - Floating Head Pressure	30%	90%	18	0.6	\$/empl	11.4	2.06	0.03
Refrigeration - System Controls	40%	56%	18	1.3	\$/empl	11.4	0.88	0.05
Refrigeration - System Maintenance	30%	72%	3	0.2	\$/empl	11.4	0.46	0.02
Refrigeration - System Optimization	40%	56%	15	0.1	\$/empl	11.4	5.90	0.01
Compressed Air - Air Usage Reduction	20%	26%	10	0.1	\$/empl	11.4	6.23	0.01
Compressed Air - Compressor Replacement	15%	17%	10	0.1	\$/empl	11.4	8.03	0.01
Compressed Air - System Controls	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Compressed Air - System Maintenance	5%	34%	3	0.0	\$/empl	11.4	3.36	0.00
Compressed Air - System Optimization and Improvements	25%	36%	10	0.2	\$/empl	11.4	2.62	0.02
Pumping System - Controls	23%	31%	10	0.0	\$/empl	11.4	> 10	0.00
Pumping System - Maintenance	5%	34%	3	0.0	\$/empl	11.4	5.00	0.00
Pumping System - Optimization	22%	30%	10	0.3	\$/empl	11.4	1.91	0.02
Pumps - Variable Speed Control	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Pump Equipment Upgrade	24%	34%	10	0.1	\$/empl	11.4	3.92	0.01
Fan Equipment Upgrade	19%	23%	10	0.1	\$/empl	11.4	5.83	0.01
Fan System - Controls	21%	27%	10	0.0	\$/empl	11.4	> 10	0.00
Fan System - Maintenance	10%	38%	3	0.0	\$/empl	11.4	> 10	0.00
Fan System - Optimization	22%	30%	10	0.1	\$/empl	11.4	3.97	0.01
Fans - Variable Speed Control	10%	38%	15	0.0	\$/empl	11.4	> 10	0.00
Motors - Magnetic Adjustable Speed Drives	5%	15%	20	0.2	\$/empl	11.4	7.76	0.01
Motors - Efficient Rewind	15%	35%	10	0.4	\$/empl	11.4	1.39	0.03
Motors - Variable Frequency Drive	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Commissioning - HVAC	0%	0%	25	0.4	\$/sqft	-	0.00	-
Commissioning - Lighting	0%	0%	5	0.0	\$/sqft	-	0.00	-
Retrocommissioning - HVAC	5%	36%	25	0.8	\$/sqft	6.2	2.27	0.05
Retrocommissioning - Lighting	32%	37%	5	0.1	\$/sqft	3.5	0.60	0.02
Ventilation - CO2 Controlled	1%	8%	15	0.2	\$/sqft	7.1	2.44	0.02
Gas Boiler - High Efficiency Hot Water Circulation	0%	34%	10	0.4	\$/sqft	7.4	0.94	0.04
Gas Boiler - Hot Water Reset	30%	75%	3	992.7	\$/sqft	1,440,300	> 10	0.00
Gas Boiler - Maintenance	32%	90%	3	2,039.9	\$/bldg	346,700	2.31	0.01
Gas Furnace - Maintenance	32%	90%	3	2,007.5	\$/bldg	27,100	0.18	0.07
Custom Measures	10%	45%	15	1.3	\$/sqft	67.1	4.74	0.02
Boiler Blowdown Heat Exchanger (Steam)	0%	49%	20	60,000.0	\$/sqft	141,150	0.35	0.08
Insulate Steam Lines / Condensate Tank	6%	11%	15	1,302.0	\$/empl	9,020	0.67	0.06
Direct Fired Make-up Air System	0%	12%	20	5.4	\$/empl	100.0	2.74	0.03
Direct Contact Water Heater	0%	12%	20	2.3	\$/empl	100.0	6.48	0.02
HVAC - Infrared Heater	7%	13%	20	1.5	\$/empl	100.0	9.51	0.01

Table D-24 Energy Efficiency Non-Equipment Data-Natural Gas Food Products, Existing Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	56,202.0	\$/bldg	209,122	0.69	0.07
Insulation - Ducting	15%	50%	20	0.8	\$/sqft	0.8	0.20	0.09
Insulation - Wall Cavity	7%	13%	20	35,615.6	\$/bldg	181,366	0.68	0.06
HVAC - Duct Repair and Sealing	5%	25%	18	54.7	\$/bldg	40,562	> 10	0.00
Air-Cooled Chiller - Economizer	0%	49%	10	813.6	\$/sqft	1,826,138	> 10	0.00
Air-Cooled Chiller - Efficient Mechanical Layout	62%	90%	4	0.1	\$/empl	5.7	1.84	0.01
Air-Cooled Chiller - Maintenance	62%	90%	18	12,397.5	\$/bldg	551,969	8.71	0.02
Air-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	836,586	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	125,726	0.43	0.08
Air-Cooled Chiller - Condenser Water Temperature Reset	30%	75%	4	0.2	\$/empl	3.5	0.38	0.05
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	44,150	3.70	0.02
Air-Cooled Chiller - VSD on Fans	15%	66%	15	2,063.3	\$/bldg	843.3	0.94	0.11
Water-Cooled Chiller - Economizer	0%	49%	10	5,493.8	\$/sqft	1,826,138	> 10	0.00
Water-Cooled Chiller - Efficient Mechanical Layout	62%	90%	4	0.1	\$/empl	5.5	1.81	0.01
Water-Cooled Chiller - Maintenance	62%	90%	18	12,397.5	\$/bldg	551,969	8.71	0.02
Water-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	723,510	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	125,726	0.43	0.08
Water-Cooled Chiller - Condenser Water Temperature Reset	30%	75%	4	0.0	\$/sqft	2.2	> 10	0.00
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	44,150	3.70	0.02
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	12.6	6.22	0.05
RTU - Maintenance	62%	90%	18	12,397.5	\$/bldg	551,969	8.71	0.02
Heat Pump - Maintenance	3%	95%	18	3,826.9	\$/bldg	562,755	> 10	0.01
Process Boilers - Hot Water Reset	30%	75%	4	0.2	\$/empl	4.5	0.46	0.04
Process Boiler - Combustion Controls (O2 Trim)	0%	49%	25	0.8	\$/empl	0.6	0.15	0.08
Process Boiler - Condensate Return Lines	0%	50%	5	0.0	\$/empl	1.8	1.10	0.02
Process Boiler - Condensing Economizer	0%	49%	25	2.0	\$/empl	2.0	0.20	0.08
Process Boiler - Pipe Insulation	6%	11%	15	0.3	\$/empl	1.2	0.37	0.08
Process Boiler - Steam Trap Maintenance	32%	90%	6	276.0	\$/empl	24,736	2.63	0.01
Roofs - High Reflectivity	50%	75%	15	0.1	\$/empl	6.7	> 10	0.01
Energy Management System	7%	75%	15	41,951.5	\$/bldg	899,536	1.88	0.03
Thermostat - Clock/Programmable	32%	50%	11	1,239.8	\$/bldg	4.8	0.00	0.14
Interior Lighting - Occupancy Sensors	6%	56%	8	0.1	\$/sqft	1.4	0.84	0.04
Interior Lighting - Skylights	15%	20%	8	0.3	\$/empl	11.1	1.32	0.02

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Interior Lighting - Time Clocks and Timers	3%	56%	8	0.2	\$/empl	1.9	0.31	0.07
Interior Lighting - LED Exit Lighting	50%	86%	16	0.0	\$/sqft	0.1	> 10	0.01
Interior Lighting - Daylighting Controls	15%	20%	8	0.1	\$/sqft	2.0	1.01	0.04
Interior Screw-in - Task Lighting	6%	75%	5	0.2	\$/empl	0.7	0.06	0.16
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	1.6	0.17	0.12
Interior Fluorescent - Delamp and Install Reflectors	18%	56%	11	0.5	\$/sqft	0.6	0.10	0.12
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/empl	0.8	0.13	0.10
Exterior Lighting - Daylighting Controls	18%	38%	8	0.0	\$/sqft	0.2	0.28	0.07
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.2	0.00	0.10
Process - Conductivity Controls	20%	100%	5	0.5	\$/empl	11.4	0.39	0.04
Process - Controls on Fume Hoods	30%	100%	10	0.1	\$/empl	11.4	3.75	0.01
Process - Timers and Controls	40%	100%	5	0.4	\$/empl	22.8	1.00	0.02
Refrigeration - Floating Head Pressure	30%	90%	18	0.6	\$/empl	11.4	2.06	0.03
Refrigeration - System Controls	40%	56%	18	1.3	\$/empl	11.4	0.88	0.05
Refrigeration - System Maintenance	30%	72%	3	0.2	\$/empl	11.4	0.46	0.02
Refrigeration - System Optimization	40%	56%	15	0.1	\$/empl	11.4	5.90	0.01
Compressed Air - Air Usage Reduction	20%	26%	10	0.1	\$/empl	11.4	6.23	0.01
Compressed Air - Compressor Replacement	15%	17%	10	0.1	\$/empl	11.4	8.03	0.01
Compressed Air - System Controls	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Compressed Air - System Maintenance	5%	34%	3	0.0	\$/empl	11.4	3.36	0.00
Compressed Air - System Optimization and Improvements	25%	36%	10	0.2	\$/empl	11.4	2.62	0.02
Pumping System - Controls	23%	31%	10	0.0	\$/empl	11.4	> 10	0.00
Pumping System - Maintenance	5%	34%	3	0.0	\$/empl	11.4	5.00	0.00
Pumping System - Optimization	22%	30%	10	0.3	\$/empl	11.4	1.91	0.02
Pumps - Variable Speed Control	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Pump Equipment Upgrade	24%	34%	10	0.1	\$/empl	11.4	3.92	0.01
Fan Equipment Upgrade	19%	23%	10	0.1	\$/empl	11.4	5.84	0.01
Fan System - Controls	21%	27%	10	0.0	\$/empl	11.4	> 10	0.00
Fan System - Maintenance	10%	38%	3	0.0	\$/empl	11.4	> 10	0.00
Fan System - Optimization	22%	30%	10	0.1	\$/empl	11.4	3.97	0.01
Fans - Variable Speed Control	10%	38%	15	0.0	\$/empl	11.4	> 10	0.00
Motors - Magnetic Adjustable Speed Drives	5%	15%	20	0.2	\$/empl	11.4	7.77	0.01
Motors - Efficient Rewind	15%	35%	10	0.4	\$/empl	11.4	1.39	0.03
Motors - Variable Frequency Drive	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Commissioning - HVAC	0%	0%	25	0.4	\$/sqft	-	0.00	-
Commissioning - Lighting	0%	0%	5	0.0	\$/sqft	-	0.00	-
Retrocommissioning - HVAC	5%	36%	25	0.8	\$/sqft	6.2	2.36	0.05
Retrocommissioning - Lighting	32%	37%	5	0.1	\$/sqft	3.5	0.84	0.02
Ventilation - CO2 Controlled	1%	8%	15	0.2	\$/sqft	7.1	2.44	0.02
Gas Boiler - High Efficiency Hot Water Circulation	0%	34%	10	0.4	\$/sqft	7.4	0.90	0.04
Gas Boiler - Hot Water Reset	30%	75%	3	992.7	\$/sqft	1,440,300	> 10	0.00
Gas Boiler - Maintenance	32%	90%	3	2,039.9	\$/bldg	346,700	2.30	0.01
Gas Furnace - Maintenance	32%	90%	3	2,007.5	\$/bldg	27,100	0.18	0.07
Custom Measures	10%	45%	15	1.3	\$/sqft	67.1	4.55	0.02
Boiler Blowdown Heat Exchanger (Steam)	0%	49%	20	60,000.0	\$/sqft	141,150	0.31	0.08
Insulate Steam Lines / Condensate Tank	6%	11%	15	1,302.0	\$/empl	9,020	0.61	0.06
Direct Fired Make-up Air System	0%	12%	20	5.4	\$/empl	100.0	2.49	0.03
Direct Contact Water Heater	0%	12%	20	2.3	\$/empl	100.0	5.88	0.02
HVAC - Infrared Heater	7%	13%	20	1.5	\$/empl	100.0	8.64	0.01

Table D-25 Energy Efficiency Non-Equipment Data-Electric Food Products, New Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	56,202.0	\$/bldg	251,560	0.70	0.07
Insulation - Ducting	0%	50%	20	0.8	\$/sqft	0.6	0.12	0.09
Insulation - Wall Cavity	7%	13%	20	35,615.6	\$/bldg	131,989	0.49	0.07
HVAC - Duct Repair and Sealing	25%	25%	18	54.7	\$/bldg	9,550	> 10	0.01
Air-Cooled Chiller - Economizer	37%	49%	10	813.6	\$/sqft	1,025,553	> 10	0.00
Air-Cooled Chiller - Efficient Mechanical Layout	63%	90%	4	0.1	\$/empl	3.6	1.28	0.02
Air-Cooled Chiller - Maintenance	63%	90%	18	12,397.5	\$/bldg	372,336	6.40	0.03
Air-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	367,516	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	134,798	0.44	0.07
Air-Cooled Chiller - Condenser Water Temperature Reset	60%	75%	4	0.2	\$/empl	2.5	0.30	0.06
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	18,188	1.94	0.05
Air-Cooled Chiller - VSD on Fans	15%	66%	15	2,063.3	\$/bldg	1,253	0.79	0.11
Water-Cooled Chiller - Economizer	37%	49%	10	5,493.8	\$/sqft	1,025,553	7.94	0.01
Water-Cooled Chiller - Efficient Mechanical Layout	63%	90%	4	0.1	\$/empl	3.9	1.32	0.01
Water-Cooled Chiller - Maintenance	63%	90%	18	12,397.5	\$/bldg	372,336	6.28	0.03
Water-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	311,775	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	134,798	0.43	0.07
Water-Cooled Chiller - Condenser Water Temperature Reset	60%	75%	4	0.0	\$/sqft	1.4	> 10	0.00
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	18,188	1.91	0.05
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	11.0	5.45	0.06
RTU - Maintenance	63%	90%	18	12,397.5	\$/bldg	372,336	6.28	0.03
Heat Pump - Maintenance	0%	95%	18	3,826.9	\$/bldg	388,659	> 10	0.01
Process Boilers - Hot Water Reset	60%	75%	4	0.2	\$/empl	2.3	0.24	0.06
Process Boiler - Combustion Controls (O2 Trim)	37%	49%	25	0.8	\$/empl	0.5	0.13	0.08
Process Boiler - Condensate Return Lines	0%	50%	5	0.0	\$/empl	1.4	0.87	0.03
Process Boiler - Condensing Economizer	37%	49%	25	2.0	\$/empl	1.6	0.17	0.08
Process Boiler - Pipe Insulation	0%	0%	15	0.3	\$/empl	0.5	0.17	0.10
Process Boiler - Steam Trap Maintenance	44%	90%	6	276.0	\$/empl	24,736	2.68	0.01
Roofs - High Reflectivity	56%	95%	15	0.1	\$/empl	5.2	> 10	0.01
Energy Management System	0%	75%	15	41,951.5	\$/bldg	531,443	1.01	0.05
Thermostat - Clock/Programmable	86%	86%	11	1,239.8	\$/bldg	6.6	0.00	0.14
Interior Lighting - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	1.4	0.81	0.04
Interior Lighting - Skylights	42%	42%	8	0.2	\$/empl	7.0	1.23	0.02

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Interior Lighting - Time Clocks and Timers	56%	56%	8	0.2	\$/empl	1.2	0.19	0.09
Interior Lighting - LED Exit Lighting	86%	86%	16	0.0	\$/sqft	0.0	> 10	0.02
Interior Lighting - Daylighting Controls	42%	42%	8	0.1	\$/sqft	2.0	0.97	0.04
Interior Screw-in - Task Lighting	0%	75%	5	0.2	\$/empl	0.4	0.04	0.19
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	1.6	0.17	0.12
Interior Fluorescent - Delamp and Install Reflectors	19%	56%	11	0.5	\$/sqft	0.6	0.10	0.12
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/empl	0.6	0.09	0.12
Exterior Lighting - Daylighting Controls	18%	38%	8	0.0	\$/sqft	0.2	0.28	0.07
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.2	0.00	0.10
Process - Conductivity Controls	20%	100%	5	0.5	\$/empl	11.4	0.39	0.04
Process - Controls on Fume Hoods	30%	100%	10	0.1	\$/empl	11.4	3.75	0.01
Process - Timers and Controls	40%	100%	5	0.4	\$/empl	22.8	1.00	0.02
Refrigeration - Floating Head Pressure	30%	90%	18	0.6	\$/empl	11.4	2.06	0.03
Refrigeration - System Controls	40%	56%	18	1.3	\$/empl	11.4	0.88	0.05
Refrigeration - System Maintenance	30%	72%	3	0.2	\$/empl	11.4	0.46	0.02
Refrigeration - System Optimization	40%	56%	15	0.1	\$/empl	11.4	5.90	0.01
Compressed Air - Air Usage Reduction	20%	26%	10	0.1	\$/empl	11.4	6.23	0.01
Compressed Air - Compressor Replacement	15%	17%	10	0.1	\$/empl	11.4	8.03	0.01
Compressed Air - System Controls	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Compressed Air - System Maintenance	5%	34%	3	0.0	\$/empl	11.4	3.36	0.00
Compressed Air - System Optimization and Improvements	25%	36%	10	0.2	\$/empl	11.4	2.62	0.02
Pumping System - Controls	23%	31%	10	0.0	\$/empl	11.4	> 10	0.00
Pumping System - Maintenance	5%	34%	3	0.0	\$/empl	11.4	5.00	0.00
Pumping System - Optimization	22%	30%	10	0.3	\$/empl	11.4	1.91	0.02
Pumps - Variable Speed Control	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Pump Equipment Upgrade	24%	34%	10	0.1	\$/empl	11.4	3.92	0.01
Fan Equipment Upgrade	19%	23%	10	0.1	\$/empl	11.4	5.84	0.01
Fan System - Controls	21%	27%	10	0.0	\$/empl	11.4	> 10	0.00
Fan System - Maintenance	10%	38%	3	0.0	\$/empl	11.4	> 10	0.00
Fan System - Optimization	22%	30%	10	0.1	\$/empl	11.4	3.97	0.01
Fans - Variable Speed Control	10%	38%	15	0.0	\$/empl	11.4	> 10	0.00
Motors - Magnetic Adjustable Speed Drives	5%	15%	20	0.2	\$/empl	11.4	7.77	0.01
Motors - Efficient Rewind	15%	35%	10	0.4	\$/empl	11.4	1.39	0.03
Motors - Variable Frequency Drive	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Commissioning - HVAC	40%	75%	25	0.4	\$/sqft	4.9	4.20	0.04
Commissioning - Lighting	30%	75%	5	0.0	\$/sqft	3.4	1.57	0.01
Retrocommissioning - HVAC	0%	0%	25	0.8	\$/sqft	-	0.00	-
Retrocommissioning - Lighting	0%	0%	5	0.1	\$/sqft	-	0.00	-
Ventilation - CO2 Controlled	6%	8%	15	0.2	\$/sqft	7.1	2.44	0.02
Gas Boiler - High Efficiency Hot Water Circulation	5%	34%	10	0.4	\$/sqft	5.5	0.70	0.05
Gas Boiler - Hot Water Reset	60%	75%	3	992.7	\$/sqft	978,400	> 10	0.00
Gas Boiler - Maintenance	44%	90%	3	2,039.9	\$/bldg	228,900	1.52	0.01
Gas Furnace - Maintenance	44%	90%	3	2,007.5	\$/bldg	47,400	0.32	0.04
Custom Measures	10%	45%	15	1.3	\$/sqft	67.1	4.87	0.02
Boiler Blowdown Heat Exchanger (Steam)	37%	49%	20	60,000.0	\$/sqft	141,150	0.35	0.08
Insulate Steam Lines / Condensate Tank	0%	0%	15	1,302.0	\$/empl	9,020	0.67	0.06
Direct Fired Make-up Air System	0%	12%	20	5.4	\$/empl	100.0	2.74	0.03
Direct Contact Water Heater	0%	12%	20	2.3	\$/empl	100.0	6.48	0.02
HVAC - Infrared Heater	7%	13%	20	1.5	\$/empl	100.0	9.51	0.01

Table D-26 Energy Efficiency Non-Equipment Data-Natural Gas Food Products, New Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	56,202.0	\$/bldg	251,560	0.70	0.07
Insulation - Ducting	0%	50%	20	0.8	\$/sqft	0.6	0.12	0.09
Insulation - Wall Cavity	7%	13%	20	35,615.6	\$/bldg	131,989	0.49	0.07
HVAC - Duct Repair and Sealing	25%	25%	18	54.7	\$/bldg	9,550	> 10	0.01
Air-Cooled Chiller - Economizer	37%	49%	10	813.6	\$/sqft	1,025,553	> 10	0.00
Air-Cooled Chiller - Efficient Mechanical Layout	63%	90%	4	0.1	\$/empl	3.6	1.26	0.02
Air-Cooled Chiller - Maintenance	63%	90%	18	12,397.5	\$/bldg	372,336	6.28	0.03
Air-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	367,516	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	134,798	0.43	0.07
Air-Cooled Chiller - Condenser Water Temperature Reset	60%	75%	4	0.2	\$/empl	2.5	0.30	0.06
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	18,188	1.91	0.05
Air-Cooled Chiller - VSD on Fans	15%	66%	15	2,063.3	\$/bldg	1,253	0.77	0.11
Water-Cooled Chiller - Economizer	37%	49%	10	5,493.8	\$/sqft	1,025,553	7.94	0.01
Water-Cooled Chiller - Efficient Mechanical Layout	63%	90%	4	0.1	\$/empl	3.9	1.32	0.01
Water-Cooled Chiller - Maintenance	63%	90%	18	12,397.5	\$/bldg	372,336	6.28	0.03
Water-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	311,775	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	134,798	0.43	0.07
Water-Cooled Chiller - Condenser Water Temperature Reset	60%	75%	4	0.0	\$/sqft	1.4	> 10	0.00
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	18,188	1.91	0.05
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	11.0	5.45	0.06
RTU - Maintenance	63%	90%	18	12,397.5	\$/bldg	372,336	6.28	0.03
Heat Pump - Maintenance	0%	95%	18	3,826.9	\$/bldg	388,659	> 10	0.01
Process Boilers - Hot Water Reset	60%	75%	4	0.2	\$/empl	2.3	0.24	0.06
Process Boiler - Combustion Controls (O2 Trim)	37%	49%	25	0.8	\$/empl	0.5	0.13	0.08
Process Boiler - Condensate Return Lines	0%	50%	5	0.0	\$/empl	1.4	0.88	0.03
Process Boiler - Condensing Economizer	37%	49%	25	2.0	\$/empl	1.6	0.17	0.08
Process Boiler - Pipe Insulation	0%	0%	15	0.3	\$/empl	0.5	0.17	0.10
Process Boiler - Steam Trap Maintenance	44%	90%	6	276.0	\$/empl	24,736	2.72	0.01
Roofs - High Reflectivity	56%	95%	15	0.1	\$/empl	5.2	> 10	0.01
Energy Management System	0%	75%	15	41,951.5	\$/bldg	531,443	1.01	0.05
Thermostat - Clock/Programmable	86%	86%	11	1,239.8	\$/bldg	6.6	0.00	0.14
Interior Lighting - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	1.4	0.84	0.04
Interior Lighting - Skylights	42%	42%	8	0.2	\$/empl	7.0	1.28	0.02

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Interior Lighting - Time Clocks and Timers	56%	56%	8	0.2	\$/empl	1.2	0.20	0.09
Interior Lighting - LED Exit Lighting	86%	86%	16	0.0	\$/sqft	0.0	> 10	0.02
Interior Lighting - Daylighting Controls	42%	42%	8	0.1	\$/sqft	2.0	1.01	0.04
Interior Screw-in - Task Lighting	0%	75%	5	0.2	\$/empl	0.4	0.04	0.19
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	1.6	0.17	0.12
Interior Fluorescent - Delamp and Install Reflectors	19%	56%	11	0.5	\$/sqft	0.6	0.10	0.12
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/empl	0.6	0.09	0.12
Exterior Lighting - Daylighting Controls	18%	38%	8	0.0	\$/sqft	0.2	0.28	0.07
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.2	0.00	0.10
Process - Conductivity Controls	20%	100%	5	0.5	\$/empl	11.4	0.39	0.04
Process - Controls on Fume Hoods	30%	100%	10	0.1	\$/empl	11.4	3.75	0.01
Process - Timers and Controls	40%	100%	5	0.4	\$/empl	22.8	1.00	0.02
Refrigeration - Floating Head Pressure	30%	90%	18	0.6	\$/empl	11.4	2.06	0.03
Refrigeration - System Controls	40%	56%	18	1.3	\$/empl	11.4	0.88	0.05
Refrigeration - System Maintenance	30%	72%	3	0.2	\$/empl	11.4	0.46	0.02
Refrigeration - System Optimization	40%	56%	15	0.1	\$/empl	11.4	5.90	0.01
Compressed Air - Air Usage Reduction	20%	26%	10	0.1	\$/empl	11.4	6.23	0.01
Compressed Air - Compressor Replacement	15%	17%	10	0.1	\$/empl	11.4	8.03	0.01
Compressed Air - System Controls	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Compressed Air - System Maintenance	5%	34%	3	0.0	\$/empl	11.4	3.36	0.00
Compressed Air - System Optimization and Improvements	25%	36%	10	0.2	\$/empl	11.4	2.62	0.02
Pumping System - Controls	23%	31%	10	0.0	\$/empl	11.4	> 10	0.00
Pumping System - Maintenance	5%	34%	3	0.0	\$/empl	11.4	5.00	0.00
Pumping System - Optimization	22%	30%	10	0.3	\$/empl	11.4	1.91	0.02
Pumps - Variable Speed Control	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Pump Equipment Upgrade	24%	34%	10	0.1	\$/empl	11.4	3.92	0.01
Fan Equipment Upgrade	19%	23%	10	0.1	\$/empl	11.4	5.84	0.01
Fan System - Controls	21%	27%	10	0.0	\$/empl	11.4	> 10	0.00
Fan System - Maintenance	10%	38%	3	0.0	\$/empl	11.4	> 10	0.00
Fan System - Optimization	22%	30%	10	0.1	\$/empl	11.4	3.97	0.01
Fans - Variable Speed Control	10%	38%	15	0.0	\$/empl	11.4	> 10	0.00
Motors - Magnetic Adjustable Speed Drives	5%	15%	20	0.2	\$/empl	11.4	7.77	0.01
Motors - Efficient Rewind	15%	35%	10	0.4	\$/empl	11.4	1.39	0.03
Motors - Variable Frequency Drive	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Commissioning - HVAC	40%	75%	25	0.4	\$/sqft	4.9	4.19	0.04
Commissioning - Lighting	30%	75%	5	0.0	\$/sqft	3.4	1.62	0.01
Retrocommissioning - HVAC	0%	0%	25	0.8	\$/sqft	-	0.00	-
Retrocommissioning - Lighting	0%	0%	5	0.1	\$/sqft	-	0.00	-
Ventilation - CO2 Controlled	6%	8%	15	0.2	\$/sqft	7.1	2.44	0.02
Gas Boiler - High Efficiency Hot Water Circulation	5%	34%	10	0.4	\$/sqft	5.5	0.72	0.05
Gas Boiler - Hot Water Reset	60%	75%	3	992.7	\$/sqft	978,400	> 10	0.00
Gas Boiler - Maintenance	44%	90%	3	2,039.9	\$/bldg	228,900	1.55	0.01
Gas Furnace - Maintenance	44%	90%	3	2,007.5	\$/bldg	47,400	0.32	0.04
Custom Measures	10%	45%	15	1.3	\$/sqft	67.1	4.89	0.02
Boiler Blowdown Heat Exchanger (Steam)	37%	49%	20	60,000.0	\$/sqft	141,150	0.35	0.08
Insulate Steam Lines / Condensate Tank	0%	0%	15	1,302.0	\$/empl	9,020	0.67	0.06
Direct Fired Make-up Air System	0%	12%	20	5.4	\$/empl	100.0	2.77	0.03
Direct Contact Water Heater	0%	12%	20	2.3	\$/empl	100.0	6.53	0.02
HVAC - Infrared Heater	7%	13%	20	1.5	\$/empl	100.0	9.51	0.01

Table D-27 Energy Efficiency Non-Equipment Data-Electric Petroleum, Existing Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	56,202.0	\$/bldg	209,122	0.68	0.07
Insulation - Ducting	15%	50%	20	0.8	\$/sqft	0.8	0.19	0.09
Insulation - Wall Cavity	7%	13%	20	35,615.6	\$/bldg	181,366	0.69	0.06
HVAC - Duct Repair and Sealing	5%	25%	18	54.7	\$/bldg	40,562	> 10	0.00
Air-Cooled Chiller - Economizer	0%	49%	10	813.6	\$/sqft	1,826,138	> 10	0.00
Air-Cooled Chiller - Efficient Mechanical Layout	62%	90%	4	0.1	\$/empl	5.7	1.77	0.01
Air-Cooled Chiller - Maintenance	62%	90%	18	12,397.5	\$/bldg	551,969	8.22	0.02
Air-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	836,586	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	125,726	0.41	0.08
Air-Cooled Chiller - Condenser Water Temperature Reset	30%	75%	4	0.2	\$/empl	3.5	0.37	0.05
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	44,150	3.50	0.02
Air-Cooled Chiller - VSD on Fans	15%	66%	15	2,063.3	\$/bldg	843.3	0.89	0.11
Water-Cooled Chiller - Economizer	0%	49%	10	5,493.8	\$/sqft	1,826,138	> 10	0.00
Water-Cooled Chiller - Efficient Mechanical Layout	62%	90%	4	0.1	\$/empl	5.5	1.75	0.01
Water-Cooled Chiller - Maintenance	62%	90%	18	12,397.5	\$/bldg	551,969	8.32	0.02
Water-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	723,510	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	125,726	0.41	0.08
Water-Cooled Chiller - Condenser Water Temperature Reset	30%	75%	4	0.0	\$/sqft	2.2	> 10	0.00
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	44,150	3.54	0.02
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	12.6	5.95	0.05
RTU - Maintenance	62%	90%	18	12,397.5	\$/bldg	551,969	7.55	0.02
Heat Pump - Maintenance	3%	95%	18	3,826.9	\$/bldg	562,755	> 10	0.01
Process Boilers - Hot Water Reset	30%	75%	4	0.2	\$/empl	4.5	0.46	0.04
Process Boiler - Combustion Controls (O2 Trim)	0%	49%	25	0.8	\$/empl	0.6	0.16	0.08
Process Boiler - Condensate Return Lines	0%	50%	5	0.0	\$/empl	1.8	1.11	0.02
Process Boiler - Condensing Economizer	0%	49%	25	2.0	\$/empl	2.0	0.22	0.08
Process Boiler - Pipe Insulation	6%	11%	15	0.3	\$/empl	1.2	0.40	0.08
Process Boiler - Steam Trap Maintenance	32%	90%	6	276.0	\$/empl	24,736	2.68	0.01
Roofs - High Reflectivity	50%	75%	15	0.1	\$/empl	6.7	> 10	0.01
Energy Management System	7%	75%	15	41,951.5	\$/bldg	899,536	1.74	0.03
Thermostat - Clock/Programmable	32%	50%	11	1,239.8	\$/bldg	4.8	0.00	0.14
Interior Lighting - Occupancy Sensors	6%	56%	8	0.1	\$/sqft	1.4	0.60	0.04
Interior Lighting - Skylights	15%	20%	8	0.3	\$/empl	11.1	0.95	0.02

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Interior Lighting - Time Clocks and Timers	3%	56%	8	0.2	\$/empl	1.9	0.22	0.07
Interior Lighting - LED Exit Lighting	50%	86%	16	0.0	\$/sqft	0.1	> 10	0.01
Interior Lighting - Daylighting Controls	15%	20%	8	0.1	\$/sqft	2.0	0.72	0.04
Interior Screw-in - Task Lighting	6%	75%	5	0.2	\$/empl	0.7	0.03	0.16
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	1.6	0.14	0.12
Interior Fluorescent - Delamp and Install Reflectors	18%	56%	11	0.5	\$/sqft	0.6	0.08	0.12
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/empl	0.8	0.08	0.10
Exterior Lighting - Daylighting Controls	18%	38%	8	0.0	\$/sqft	0.2	0.16	0.07
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.2	0.00	0.10
Process - Conductivity Controls	20%	100%	5	0.5	\$/empl	11.4	0.39	0.04
Process - Controls on Fume Hoods	30%	100%	10	0.1	\$/empl	11.4	3.75	0.01
Process - Timers and Controls	40%	100%	5	0.4	\$/empl	22.8	1.00	0.02
Refrigeration - Floating Head Pressure	30%	90%	18	0.6	\$/empl	11.4	2.06	0.03
Refrigeration - System Controls	40%	56%	18	1.3	\$/empl	11.4	0.88	0.05
Refrigeration - System Maintenance	30%	72%	3	0.2	\$/empl	11.4	0.46	0.02
Refrigeration - System Optimization	40%	56%	15	0.1	\$/empl	11.4	5.90	0.01
Compressed Air - Air Usage Reduction	20%	26%	10	0.1	\$/empl	11.4	6.23	0.01
Compressed Air - Compressor Replacement	15%	17%	10	0.1	\$/empl	11.4	8.03	0.01
Compressed Air - System Controls	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Compressed Air - System Maintenance	5%	34%	3	0.0	\$/empl	11.4	3.36	0.00
Compressed Air - System Optimization and Improvements	25%	36%	10	0.2	\$/empl	11.4	2.62	0.02
Pumping System - Controls	23%	31%	10	0.0	\$/empl	11.4	> 10	0.00
Pumping System - Maintenance	5%	34%	3	0.0	\$/empl	11.4	5.00	0.00
Pumping System - Optimization	22%	30%	10	0.3	\$/empl	11.4	1.91	0.02
Pumps - Variable Speed Control	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Pump Equipment Upgrade	24%	34%	10	0.1	\$/empl	11.4	3.92	0.01
Fan Equipment Upgrade	19%	23%	10	0.1	\$/empl	11.4	5.83	0.01
Fan System - Controls	21%	27%	10	0.0	\$/empl	11.4	> 10	0.00
Fan System - Maintenance	10%	38%	3	0.0	\$/empl	11.4	> 10	0.00
Fan System - Optimization	22%	30%	10	0.1	\$/empl	11.4	3.97	0.01
Fans - Variable Speed Control	10%	38%	15	0.0	\$/empl	11.4	> 10	0.00
Motors - Magnetic Adjustable Speed Drives	5%	15%	20	0.2	\$/empl	11.4	7.76	0.01
Motors - Efficient Rewind	15%	35%	10	0.4	\$/empl	11.4	1.39	0.03
Motors - Variable Frequency Drive	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Commissioning - HVAC	0%	0%	25	0.4	\$/sqft	-	0.00	-
Commissioning - Lighting	0%	0%	5	0.0	\$/sqft	-	0.00	-
Retrocommissioning - HVAC	5%	36%	25	0.8	\$/sqft	6.2	2.27	0.05
Retrocommissioning - Lighting	32%	37%	5	0.1	\$/sqft	3.5	0.60	0.02
Ventilation - CO2 Controlled	1%	8%	15	0.2	\$/sqft	7.1	2.44	0.02
Gas Boiler - High Efficiency Hot Water Circulation	0%	34%	10	0.4	\$/sqft	7.4	0.94	0.04
Gas Boiler - Hot Water Reset	30%	75%	3	992.7	\$/sqft	1,440,300	> 10	0.00
Gas Boiler - Maintenance	32%	90%	3	2,039.9	\$/bldg	346,700	2.31	0.01
Gas Furnace - Maintenance	32%	90%	3	2,007.5	\$/bldg	27,100	0.18	0.07
Custom Measures	10%	45%	15	1.3	\$/sqft	67.1	4.74	0.02
Boiler Blowdown Heat Exchanger (Steam)	0%	49%	20	60,000.0	\$/sqft	141,150	0.35	0.08
Insulate Steam Lines / Condensate Tank	6%	11%	15	1,302.0	\$/empl	9,020	0.67	0.06
Direct Fired Make-up Air System	0%	12%	20	5.4	\$/empl	100.0	2.74	0.03
Direct Contact Water Heater	0%	12%	20	2.3	\$/empl	100.0	6.48	0.02
HVAC - Infrared Heater	7%	13%	20	1.5	\$/empl	100.0	9.51	0.01

Table D-28 Energy Efficiency Non-Equipment Data-Natural Gas Petroleum, Existing Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	56,202.0	\$/bldg	209,122	0.69	0.07
Insulation - Ducting	15%	50%	20	0.8	\$/sqft	0.8	0.20	0.09
Insulation - Wall Cavity	7%	13%	20	35,615.6	\$/bldg	181,366	0.68	0.06
HVAC - Duct Repair and Sealing	5%	25%	18	54.7	\$/bldg	40,562	> 10	0.00
Air-Cooled Chiller - Economizer	0%	49%	10	813.6	\$/sqft	1,826,138	> 10	0.00
Air-Cooled Chiller - Efficient Mechanical Layout	62%	90%	4	0.1	\$/empl	5.7	1.84	0.01
Air-Cooled Chiller - Maintenance	62%	90%	18	12,397.5	\$/bldg	551,969	8.71	0.02
Air-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	836,586	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	125,726	0.43	0.08
Air-Cooled Chiller - Condenser Water Temperature Reset	30%	75%	4	0.2	\$/empl	3.5	0.38	0.05
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	44,150	3.70	0.02
Air-Cooled Chiller - VSD on Fans	15%	66%	15	2,063.3	\$/bldg	843.3	0.94	0.11
Water-Cooled Chiller - Economizer	0%	49%	10	5,493.8	\$/sqft	1,826,138	> 10	0.00
Water-Cooled Chiller - Efficient Mechanical Layout	62%	90%	4	0.1	\$/empl	5.5	1.81	0.01
Water-Cooled Chiller - Maintenance	62%	90%	18	12,397.5	\$/bldg	551,969	8.71	0.02
Water-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	723,510	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	125,726	0.43	0.08
Water-Cooled Chiller - Condenser Water Temperature Reset	30%	75%	4	0.0	\$/sqft	2.2	> 10	0.00
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	44,150	3.70	0.02
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	12.6	6.22	0.05
RTU - Maintenance	62%	90%	18	12,397.5	\$/bldg	551,969	8.71	0.02
Heat Pump - Maintenance	3%	95%	18	3,826.9	\$/bldg	562,755	> 10	0.01
Process Boilers - Hot Water Reset	30%	75%	4	0.2	\$/empl	4.5	0.46	0.04
Process Boiler - Combustion Controls (O2 Trim)	0%	49%	25	0.8	\$/empl	0.6	0.15	0.08
Process Boiler - Condensate Return Lines	0%	50%	5	0.0	\$/empl	1.8	1.10	0.02
Process Boiler - Condensing Economizer	0%	49%	25	2.0	\$/empl	2.0	0.20	0.08
Process Boiler - Pipe Insulation	6%	11%	15	0.3	\$/empl	1.2	0.37	0.08
Process Boiler - Steam Trap Maintenance	32%	90%	6	276.0	\$/empl	24,736	2.63	0.01
Roofs - High Reflectivity	50%	75%	15	0.1	\$/empl	6.7	> 10	0.01
Energy Management System	7%	75%	15	41,951.5	\$/bldg	899,536	1.88	0.03
Thermostat - Clock/Programmable	32%	50%	11	1,239.8	\$/bldg	4.8	0.00	0.14
Interior Lighting - Occupancy Sensors	6%	56%	8	0.1	\$/sqft	1.4	0.84	0.04
Interior Lighting - Skylights	15%	20%	8	0.3	\$/empl	11.1	1.32	0.02

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Interior Lighting - Time Clocks and Timers	3%	56%	8	0.2	\$/empl	1.9	0.31	0.07
Interior Lighting - LED Exit Lighting	50%	86%	16	0.0	\$/sqft	0.1	> 10	0.01
Interior Lighting - Daylighting Controls	15%	20%	8	0.1	\$/sqft	2.0	1.01	0.04
Interior Screw-in - Task Lighting	6%	75%	5	0.2	\$/empl	0.7	0.06	0.16
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	1.6	0.17	0.12
Interior Fluorescent - Delamp and Install Reflectors	18%	56%	11	0.5	\$/sqft	0.6	0.10	0.12
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/empl	0.8	0.13	0.10
Exterior Lighting - Daylighting Controls	18%	38%	8	0.0	\$/sqft	0.2	0.28	0.07
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.2	0.00	0.10
Process - Conductivity Controls	20%	100%	5	0.5	\$/empl	11.4	0.39	0.04
Process - Controls on Fume Hoods	30%	100%	10	0.1	\$/empl	11.4	3.75	0.01
Process - Timers and Controls	40%	100%	5	0.4	\$/empl	22.8	1.00	0.02
Refrigeration - Floating Head Pressure	30%	90%	18	0.6	\$/empl	11.4	2.06	0.03
Refrigeration - System Controls	40%	56%	18	1.3	\$/empl	11.4	0.88	0.05
Refrigeration - System Maintenance	30%	72%	3	0.2	\$/empl	11.4	0.46	0.02
Refrigeration - System Optimization	40%	56%	15	0.1	\$/empl	11.4	5.90	0.01
Compressed Air - Air Usage Reduction	20%	26%	10	0.1	\$/empl	11.4	6.23	0.01
Compressed Air - Compressor Replacement	15%	17%	10	0.1	\$/empl	11.4	8.03	0.01
Compressed Air - System Controls	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Compressed Air - System Maintenance	5%	34%	3	0.0	\$/empl	11.4	3.36	0.00
Compressed Air - System Optimization and Improvements	25%	36%	10	0.2	\$/empl	11.4	2.62	0.02
Pumping System - Controls	23%	31%	10	0.0	\$/empl	11.4	> 10	0.00
Pumping System - Maintenance	5%	34%	3	0.0	\$/empl	11.4	5.00	0.00
Pumping System - Optimization	22%	30%	10	0.3	\$/empl	11.4	1.91	0.02
Pumps - Variable Speed Control	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Pump Equipment Upgrade	24%	34%	10	0.1	\$/empl	11.4	3.92	0.01
Fan Equipment Upgrade	19%	23%	10	0.1	\$/empl	11.4	5.84	0.01
Fan System - Controls	21%	27%	10	0.0	\$/empl	11.4	> 10	0.00
Fan System - Maintenance	10%	38%	3	0.0	\$/empl	11.4	> 10	0.00
Fan System - Optimization	22%	30%	10	0.1	\$/empl	11.4	3.97	0.01
Fans - Variable Speed Control	10%	38%	15	0.0	\$/empl	11.4	> 10	0.00
Motors - Magnetic Adjustable Speed Drives	5%	15%	20	0.2	\$/empl	11.4	7.77	0.01
Motors - Efficient Rewind	15%	35%	10	0.4	\$/empl	11.4	1.39	0.03
Motors - Variable Frequency Drive	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Commissioning - HVAC	0%	0%	25	0.4	\$/sqft	-	0.00	-
Commissioning - Lighting	0%	0%	5	0.0	\$/sqft	-	0.00	-
Retrocommissioning - HVAC	5%	36%	25	0.8	\$/sqft	6.2	2.36	0.05
Retrocommissioning - Lighting	32%	37%	5	0.1	\$/sqft	3.5	0.84	0.02
Ventilation - CO2 Controlled	1%	8%	15	0.2	\$/sqft	7.1	2.44	0.02
Gas Boiler - High Efficiency Hot Water Circulation	0%	34%	10	0.4	\$/sqft	7.4	0.90	0.04
Gas Boiler - Hot Water Reset	30%	75%	3	992.7	\$/sqft	1,440,300	> 10	0.00
Gas Boiler - Maintenance	32%	90%	3	2,039.9	\$/bldg	346,700	2.30	0.01
Gas Furnace - Maintenance	32%	90%	3	2,007.5	\$/bldg	27,100	0.18	0.07
Custom Measures	10%	45%	15	1.3	\$/sqft	67.1	4.52	0.02
Boiler Blowdown Heat Exchanger (Steam)	0%	49%	20	60,000.0	\$/sqft	141,150	0.31	0.08
Insulate Steam Lines / Condensate Tank	6%	11%	15	1,302.0	\$/empl	9,020	0.60	0.06
Direct Fired Make-up Air System	0%	12%	20	5.4	\$/empl	100.0	2.45	0.03
Direct Contact Water Heater	0%	12%	20	2.3	\$/empl	100.0	5.78	0.02
HVAC - Infrared Heater	7%	13%	20	1.5	\$/empl	100.0	8.64	0.01

Table D-29 Energy Efficiency Non-Equipment Data-Electric Petroleum, New Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	56,202.0	\$/bldg	251,560	0.70	0.07
Insulation - Ducting	0%	50%	20	0.8	\$/sqft	0.6	0.12	0.09
Insulation - Wall Cavity	7%	13%	20	35,615.6	\$/bldg	131,989	0.49	0.07
HVAC - Duct Repair and Sealing	25%	25%	18	54.7	\$/bldg	9,550	> 10	0.01
Air-Cooled Chiller - Economizer	37%	49%	10	813.6	\$/sqft	1,025,553	> 10	0.00
Air-Cooled Chiller - Efficient Mechanical Layout	63%	90%	4	0.1	\$/empl	3.6	1.28	0.02
Air-Cooled Chiller - Maintenance	63%	90%	18	12,397.5	\$/bldg	372,336	6.40	0.03
Air-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	367,516	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	134,798	0.44	0.07
Air-Cooled Chiller - Condenser Water Temperature Reset	60%	75%	4	0.2	\$/empl	2.5	0.30	0.06
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	18,188	1.94	0.05
Air-Cooled Chiller - VSD on Fans	15%	66%	15	2,063.3	\$/bldg	1,253	0.79	0.11
Water-Cooled Chiller - Economizer	37%	49%	10	5,493.8	\$/sqft	1,025,553	7.94	0.01
Water-Cooled Chiller - Efficient Mechanical Layout	63%	90%	4	0.1	\$/empl	3.9	1.32	0.01
Water-Cooled Chiller - Maintenance	63%	90%	18	12,397.5	\$/bldg	372,336	6.28	0.03
Water-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	311,775	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	134,798	0.43	0.07
Water-Cooled Chiller - Condenser Water Temperature Reset	60%	75%	4	0.0	\$/sqft	1.4	> 10	0.00
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	18,188	1.91	0.05
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	11.0	5.45	0.06
RTU - Maintenance	63%	90%	18	12,397.5	\$/bldg	372,336	6.28	0.03
Heat Pump - Maintenance	0%	95%	18	3,826.9	\$/bldg	388,659	> 10	0.01
Process Boilers - Hot Water Reset	60%	75%	4	0.2	\$/empl	2.3	0.24	0.06
Process Boiler - Combustion Controls (O2 Trim)	37%	49%	25	0.8	\$/empl	0.5	0.13	0.08
Process Boiler - Condensate Return Lines	0%	50%	5	0.0	\$/empl	1.4	0.87	0.03
Process Boiler - Condensing Economizer	37%	49%	25	2.0	\$/empl	1.6	0.17	0.08
Process Boiler - Pipe Insulation	0%	0%	15	0.3	\$/empl	0.5	0.17	0.10
Process Boiler - Steam Trap Maintenance	44%	90%	6	276.0	\$/empl	24,736	2.68	0.01
Roofs - High Reflectivity	56%	95%	15	0.1	\$/empl	5.2	> 10	0.01
Energy Management System	0%	75%	15	41,951.5	\$/bldg	531,443	1.01	0.05
Thermostat - Clock/Programmable	86%	86%	11	1,239.8	\$/bldg	6.6	0.00	0.14
Interior Lighting - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	1.4	0.81	0.04
Interior Lighting - Skylights	42%	42%	8	0.2	\$/empl	7.0	1.23	0.02

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Interior Lighting - Time Clocks and Timers	56%	56%	8	0.2	\$/empl	1.2	0.19	0.09
Interior Lighting - LED Exit Lighting	86%	86%	16	0.0	\$/sqft	0.0	> 10	0.02
Interior Lighting - Daylighting Controls	42%	42%	8	0.1	\$/sqft	2.0	0.97	0.04
Interior Screw-in - Task Lighting	0%	75%	5	0.2	\$/empl	0.4	0.04	0.19
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	1.6	0.17	0.12
Interior Fluorescent - Delamp and Install Reflectors	19%	56%	11	0.5	\$/sqft	0.6	0.10	0.12
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/empl	0.6	0.09	0.12
Exterior Lighting - Daylighting Controls	18%	38%	8	0.0	\$/sqft	0.2	0.28	0.07
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.2	0.00	0.10
Process - Conductivity Controls	20%	100%	5	0.5	\$/empl	11.4	0.39	0.04
Process - Controls on Fume Hoods	30%	100%	10	0.1	\$/empl	11.4	3.75	0.01
Process - Timers and Controls	40%	100%	5	0.4	\$/empl	22.8	1.00	0.02
Refrigeration - Floating Head Pressure	30%	90%	18	0.6	\$/empl	11.4	2.06	0.03
Refrigeration - System Controls	40%	56%	18	1.3	\$/empl	11.4	0.88	0.05
Refrigeration - System Maintenance	30%	72%	3	0.2	\$/empl	11.4	0.46	0.02
Refrigeration - System Optimization	40%	56%	15	0.1	\$/empl	11.4	5.90	0.01
Compressed Air - Air Usage Reduction	20%	26%	10	0.1	\$/empl	11.4	6.23	0.01
Compressed Air - Compressor Replacement	15%	17%	10	0.1	\$/empl	11.4	8.03	0.01
Compressed Air - System Controls	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Compressed Air - System Maintenance	5%	34%	3	0.0	\$/empl	11.4	3.36	0.00
Compressed Air - System Optimization and Improvements	25%	36%	10	0.2	\$/empl	11.4	2.62	0.02
Pumping System - Controls	23%	31%	10	0.0	\$/empl	11.4	> 10	0.00
Pumping System - Maintenance	5%	34%	3	0.0	\$/empl	11.4	5.00	0.00
Pumping System - Optimization	22%	30%	10	0.3	\$/empl	11.4	1.91	0.02
Pumps - Variable Speed Control	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Pump Equipment Upgrade	24%	34%	10	0.1	\$/empl	11.4	3.92	0.01
Fan Equipment Upgrade	19%	23%	10	0.1	\$/empl	11.4	5.84	0.01
Fan System - Controls	21%	27%	10	0.0	\$/empl	11.4	> 10	0.00
Fan System - Maintenance	10%	38%	3	0.0	\$/empl	11.4	> 10	0.00
Fan System - Optimization	22%	30%	10	0.1	\$/empl	11.4	3.97	0.01
Fans - Variable Speed Control	10%	38%	15	0.0	\$/empl	11.4	> 10	0.00
Motors - Magnetic Adjustable Speed Drives	5%	15%	20	0.2	\$/empl	11.4	7.77	0.01
Motors - Efficient Rewind	15%	35%	10	0.4	\$/empl	11.4	1.39	0.03
Motors - Variable Frequency Drive	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Commissioning - HVAC	40%	75%	25	0.4	\$/sqft	4.9	4.20	0.04
Commissioning - Lighting	30%	75%	5	0.0	\$/sqft	3.4	1.57	0.01
Retrocommissioning - HVAC	0%	0%	25	0.8	\$/sqft	-	0.00	-
Retrocommissioning - Lighting	0%	0%	5	0.1	\$/sqft	-	0.00	-
Ventilation - CO2 Controlled	6%	8%	15	0.2	\$/sqft	7.1	2.44	0.02
Gas Boiler - High Efficiency Hot Water Circulation	5%	34%	10	0.4	\$/sqft	5.5	0.70	0.05
Gas Boiler - Hot Water Reset	60%	75%	3	992.7	\$/sqft	978,400	> 10	0.00
Gas Boiler - Maintenance	44%	90%	3	2,039.9	\$/bldg	228,900	1.52	0.01
Gas Furnace - Maintenance	44%	90%	3	2,007.5	\$/bldg	47,400	0.32	0.04
Custom Measures	10%	45%	15	1.3	\$/sqft	67.1	4.87	0.02
Boiler Blowdown Heat Exchanger (Steam)	37%	49%	20	60,000.0	\$/sqft	141,150	0.35	0.08
Insulate Steam Lines / Condensate Tank	0%	0%	15	1,302.0	\$/empl	9,020	0.67	0.06
Direct Fired Make-up Air System	0%	12%	20	5.4	\$/empl	100.0	2.74	0.03
Direct Contact Water Heater	0%	12%	20	2.3	\$/empl	100.0	6.48	0.02
HVAC - Infrared Heater	7%	13%	20	1.5	\$/empl	100.0	9.51	0.01

Table D-30 Energy Efficiency Non-Equipment Data-Natural Gas Petroleum, New Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	56,202.0	\$/bldg	251,560	0.70	0.07
Insulation - Ducting	0%	50%	20	0.8	\$/sqft	0.6	0.12	0.09
Insulation - Wall Cavity	7%	13%	20	35,615.6	\$/bldg	131,989	0.49	0.07
HVAC - Duct Repair and Sealing	25%	25%	18	54.7	\$/bldg	9,550	> 10	0.01
Air-Cooled Chiller - Economizer	37%	49%	10	813.6	\$/sqft	1,025,553	> 10	0.00
Air-Cooled Chiller - Efficient Mechanical Layout	63%	90%	4	0.1	\$/empl	3.6	1.26	0.02
Air-Cooled Chiller - Maintenance	63%	90%	18	12,397.5	\$/bldg	372,336	6.28	0.03
Air-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	367,516	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	134,798	0.43	0.07
Air-Cooled Chiller - Condenser Water Temperature Reset	60%	75%	4	0.2	\$/empl	2.5	0.30	0.06
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	18,188	1.91	0.05
Air-Cooled Chiller - VSD on Fans	15%	66%	15	2,063.3	\$/bldg	1,253.6	0.77	0.11
Water-Cooled Chiller - Economizer	37%	49%	10	5,493.8	\$/sqft	1,025,553	7.94	0.01
Water-Cooled Chiller - Efficient Mechanical Layout	63%	90%	4	0.1	\$/empl	3.9	1.32	0.01
Water-Cooled Chiller - Maintenance	63%	90%	18	12,397.5	\$/bldg	372,336	6.28	0.03
Water-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	311,775	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	134,798	0.43	0.07
Water-Cooled Chiller - Condenser Water Temperature Reset	60%	75%	4	0.0	\$/sqft	1.4	> 10	0.00
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	18,188	1.91	0.05
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	11.0	5.45	0.06
RTU - Maintenance	63%	90%	18	12,397.5	\$/bldg	372,336	6.28	0.03
Heat Pump - Maintenance	0%	95%	18	3,826.9	\$/bldg	388,659	> 10	0.01
Process Boilers - Hot Water Reset	60%	75%	4	0.2	\$/empl	2.3	0.24	0.06
Process Boiler - Combustion Controls (O2 Trim)	37%	49%	25	0.8	\$/empl	0.5	0.13	0.08
Process Boiler - Condensate Return Lines	0%	50%	5	0.0	\$/empl	1.4	0.88	0.03
Process Boiler - Condensing Economizer	37%	49%	25	2.0	\$/empl	1.6	0.17	0.08
Process Boiler - Pipe Insulation	0%	0%	15	0.3	\$/empl	0.5	0.17	0.10
Process Boiler - Steam Trap Maintenance	44%	90%	6	276.0	\$/empl	24,736	2.72	0.01
Roofs - High Reflectivity	56%	95%	15	0.1	\$/empl	5.2	> 10	0.01
Energy Management System	0%	75%	15	41,951.5	\$/bldg	531,443	1.01	0.05
Thermostat - Clock/Programmable	86%	86%	11	1,239.8	\$/bldg	6.6	0.00	0.14
Interior Lighting - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	1.4	0.84	0.04
Interior Lighting - Skylights	42%	42%	8	0.2	\$/empl	7.0	1.28	0.02

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Interior Lighting - Time Clocks and Timers	56%	56%	8	0.2	\$/empl	1.2	0.20	0.09
Interior Lighting - LED Exit Lighting	86%	86%	16	0.0	\$/sqft	0.0	> 10	0.02
Interior Lighting - Daylighting Controls	42%	42%	8	0.1	\$/sqft	2.0	1.01	0.04
Interior Screw-in - Task Lighting	0%	75%	5	0.2	\$/empl	0.4	0.04	0.19
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	1.6	0.17	0.12
Interior Fluorescent - Delamp and Install Reflectors	19%	56%	11	0.5	\$/sqft	0.6	0.10	0.12
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/empl	0.6	0.09	0.12
Exterior Lighting - Daylighting Controls	18%	38%	8	0.0	\$/sqft	0.2	0.28	0.07
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.2	0.00	0.10
Process - Conductivity Controls	20%	100%	5	0.5	\$/empl	11.4	0.39	0.04
Process - Controls on Fume Hoods	30%	100%	10	0.1	\$/empl	11.4	3.75	0.01
Process - Timers and Controls	40%	100%	5	0.4	\$/empl	22.8	1.00	0.02
Refrigeration - Floating Head Pressure	30%	90%	18	0.6	\$/empl	11.4	2.06	0.03
Refrigeration - System Controls	40%	56%	18	1.3	\$/empl	11.4	0.88	0.05
Refrigeration - System Maintenance	30%	72%	3	0.2	\$/empl	11.4	0.46	0.02
Refrigeration - System Optimization	40%	56%	15	0.1	\$/empl	11.4	5.90	0.01
Compressed Air - Air Usage Reduction	20%	26%	10	0.1	\$/empl	11.4	6.23	0.01
Compressed Air - Compressor Replacement	15%	17%	10	0.1	\$/empl	11.4	8.03	0.01
Compressed Air - System Controls	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Compressed Air - System Maintenance	5%	34%	3	0.0	\$/empl	11.4	3.36	0.00
Compressed Air - System Optimization and Improvements	25%	36%	10	0.2	\$/empl	11.4	2.62	0.02
Pumping System - Controls	23%	31%	10	0.0	\$/empl	11.4	> 10	0.00
Pumping System - Maintenance	5%	34%	3	0.0	\$/empl	11.4	5.00	0.00
Pumping System - Optimization	22%	30%	10	0.3	\$/empl	11.4	1.91	0.02
Pumps - Variable Speed Control	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Pump Equipment Upgrade	24%	34%	10	0.1	\$/empl	11.4	3.92	0.01
Fan Equipment Upgrade	19%	23%	10	0.1	\$/empl	11.4	5.84	0.01
Fan System - Controls	21%	27%	10	0.0	\$/empl	11.4	> 10	0.00
Fan System - Maintenance	10%	38%	3	0.0	\$/empl	11.4	> 10	0.00
Fan System - Optimization	22%	30%	10	0.1	\$/empl	11.4	3.97	0.01
Fans - Variable Speed Control	10%	38%	15	0.0	\$/empl	11.4	> 10	0.00
Motors - Magnetic Adjustable Speed Drives	5%	15%	20	0.2	\$/empl	11.4	7.77	0.01
Motors - Efficient Rewind	15%	35%	10	0.4	\$/empl	11.4	1.39	0.03
Motors - Variable Frequency Drive	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Commissioning - HVAC	40%	75%	25	0.4	\$/sqft	4.9	4.19	0.04
Commissioning - Lighting	30%	75%	5	0.0	\$/sqft	3.4	1.62	0.01
Retrocommissioning - HVAC	0%	0%	25	0.8	\$/sqft	-	0.00	-
Retrocommissioning - Lighting	0%	0%	5	0.1	\$/sqft	-	0.00	-
Ventilation - CO2 Controlled	6%	8%	15	0.2	\$/sqft	7.1	2.44	0.02
Gas Boiler - High Efficiency Hot Water Circulation	5%	34%	10	0.4	\$/sqft	5.5	0.72	0.05
Gas Boiler - Hot Water Reset	60%	75%	3	992.7	\$/sqft	978,400	> 10	0.00
Gas Boiler - Maintenance	44%	90%	3	2,039.9	\$/bldg	228,900	1.55	0.01
Gas Furnace - Maintenance	44%	90%	3	2,007.5	\$/bldg	47,400	0.32	0.04
Custom Measures	10%	45%	15	1.3	\$/sqft	67.1	4.88	0.02
Boiler Blowdown Heat Exchanger (Steam)	37%	49%	20	60,000.0	\$/sqft	141,150	0.35	0.08
Insulate Steam Lines / Condensate Tank	0%	0%	15	1,302.0	\$/empl	9,020	0.67	0.06
Direct Fired Make-up Air System	0%	12%	20	5.4	\$/empl	100.0	2.76	0.03
Direct Contact Water Heater	0%	12%	20	2.3	\$/empl	100.0	6.51	0.02
HVAC - Infrared Heater	7%	13%	20	1.5	\$/empl	100.0	9.51	0.01

Table D-31 Energy Efficiency Non-Equipment Data-Electric Metals, Existing Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	56,202.0	\$/bldg	209,122	0.68	0.07
Insulation - Ducting	15%	50%	20	0.8	\$/sqft	0.8	0.19	0.09
Insulation - Wall Cavity	7%	13%	20	35,615.6	\$/bldg	181,366	0.69	0.06
HVAC - Duct Repair and Sealing	5%	25%	18	54.7	\$/bldg	40,562	> 10	0.00
Air-Cooled Chiller - Economizer	0%	49%	10	813.6	\$/sqft	1,826,138	> 10	0.00
Air-Cooled Chiller - Efficient Mechanical Layout	62%	90%	4	0.1	\$/empl	5.7	1.77	0.01
Air-Cooled Chiller - Maintenance	62%	90%	18	12,397.5	\$/bldg	551,969	8.22	0.02
Air-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	836,586	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	125,726	0.41	0.08
Air-Cooled Chiller - Condenser Water Temperature Reset	30%	75%	4	0.2	\$/empl	3.5	0.37	0.05
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	44,150	3.50	0.02
Air-Cooled Chiller - VSD on Fans	15%	66%	15	2,063.3	\$/bldg	843.3	0.89	0.11
Water-Cooled Chiller - Economizer	0%	49%	10	5,493.8	\$/sqft	1,826,138	> 10	0.00
Water-Cooled Chiller - Efficient Mechanical Layout	62%	90%	4	0.1	\$/empl	5.5	1.75	0.01
Water-Cooled Chiller - Maintenance	62%	90%	18	12,397.5	\$/bldg	551,969	8.32	0.02
Water-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	723,510	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	125,726	0.41	0.08
Water-Cooled Chiller - Condenser Water Temperature Reset	30%	75%	4	0.0	\$/sqft	2.2	> 10	0.00
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	44,150	3.54	0.02
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	12.6	5.95	0.05
RTU - Maintenance	62%	90%	18	12,397.5	\$/bldg	551,969	7.55	0.02
Heat Pump - Maintenance	3%	95%	18	3,826.9	\$/bldg	562,755	> 10	0.01
Process Boilers - Hot Water Reset	30%	75%	4	0.2	\$/empl	4.5	0.46	0.04
Process Boiler - Combustion Controls (O2 Trim)	0%	49%	25	0.8	\$/empl	0.6	0.16	0.08
Process Boiler - Condensate Return Lines	0%	50%	5	0.0	\$/empl	1.8	1.11	0.02
Process Boiler - Condensing Economizer	0%	49%	25	2.0	\$/empl	2.0	0.22	0.08
Process Boiler - Pipe Insulation	6%	11%	15	0.3	\$/empl	1.2	0.40	0.08
Process Boiler - Steam Trap Maintenance	32%	90%	6	276.0	\$/empl	24,736	2.68	0.01
Roofs - High Reflectivity	50%	75%	15	0.1	\$/empl	6.7	> 10	0.01
Energy Management System	7%	75%	15	41,951.5	\$/bldg	899,536	1.74	0.03
Thermostat - Clock/Programmable	32%	50%	11	1,239.8	\$/bldg	4.8	0.00	0.14
Interior Lighting - Occupancy Sensors	6%	56%	8	0.1	\$/sqft	1.4	0.60	0.04
Interior Lighting - Skylights	15%	20%	8	0.3	\$/empl	11.1	0.95	0.02

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Interior Lighting - Time Clocks and Timers	3%	56%	8	0.2	\$/empl	1.9	0.22	0.07
Interior Lighting - LED Exit Lighting	50%	86%	16	0.0	\$/sqft	0.1	> 10	0.01
Interior Lighting - Daylighting Controls	15%	20%	8	0.1	\$/sqft	2.0	0.72	0.04
Interior Screw-in - Task Lighting	6%	75%	5	0.2	\$/empl	0.7	0.03	0.16
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	1.6	0.14	0.12
Interior Fluorescent - Delamp and Install Reflectors	18%	56%	11	0.5	\$/sqft	0.6	0.08	0.12
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/empl	0.8	0.08	0.10
Exterior Lighting - Daylighting Controls	18%	38%	8	0.0	\$/sqft	0.2	0.16	0.07
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.2	0.00	0.10
Process - Conductivity Controls	20%	100%	5	0.5	\$/empl	11.4	0.39	0.04
Process - Controls on Fume Hoods	30%	100%	10	0.1	\$/empl	11.4	3.75	0.01
Process - Timers and Controls	40%	100%	5	0.4	\$/empl	22.8	1.00	0.02
Refrigeration - Floating Head Pressure	30%	90%	18	0.6	\$/empl	11.4	2.06	0.03
Refrigeration - System Controls	40%	56%	18	1.3	\$/empl	11.4	0.88	0.05
Refrigeration - System Maintenance	30%	72%	3	0.2	\$/empl	11.4	0.46	0.02
Refrigeration - System Optimization	40%	56%	15	0.1	\$/empl	11.4	5.90	0.01
Compressed Air - Air Usage Reduction	20%	26%	10	0.1	\$/empl	11.4	6.23	0.01
Compressed Air - Compressor Replacement	15%	17%	10	0.1	\$/empl	11.4	8.03	0.01
Compressed Air - System Controls	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Compressed Air - System Maintenance	5%	34%	3	0.0	\$/empl	11.4	3.36	0.00
Compressed Air - System Optimization and Improvements	25%	36%	10	0.2	\$/empl	11.4	2.62	0.02
Pumping System - Controls	23%	31%	10	0.0	\$/empl	11.4	> 10	0.00
Pumping System - Maintenance	5%	34%	3	0.0	\$/empl	11.4	5.00	0.00
Pumping System - Optimization	22%	30%	10	0.3	\$/empl	11.4	1.91	0.02
Pumps - Variable Speed Control	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Pump Equipment Upgrade	24%	34%	10	0.1	\$/empl	11.4	3.92	0.01
Fan Equipment Upgrade	19%	23%	10	0.1	\$/empl	11.4	5.83	0.01
Fan System - Controls	21%	27%	10	0.0	\$/empl	11.4	> 10	0.00
Fan System - Maintenance	10%	38%	3	0.0	\$/empl	11.4	> 10	0.00
Fan System - Optimization	22%	30%	10	0.1	\$/empl	11.4	3.97	0.01
Fans - Variable Speed Control	10%	38%	15	0.0	\$/empl	11.4	> 10	0.00
Motors - Magnetic Adjustable Speed Drives	5%	15%	20	0.2	\$/empl	11.4	7.76	0.01
Motors - Efficient Rewind	15%	35%	10	0.4	\$/empl	11.4	1.39	0.03
Motors - Variable Frequency Drive	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Commissioning - HVAC	0%	0%	25	0.4	\$/sqft	-	0.00	-
Commissioning - Lighting	0%	0%	5	0.0	\$/sqft	-	0.00	-
Retrocommissioning - HVAC	5%	36%	25	0.8	\$/sqft	6.2	2.27	0.05
Retrocommissioning - Lighting	32%	37%	5	0.1	\$/sqft	3.5	0.60	0.02
Ventilation - CO2 Controlled	1%	8%	15	0.2	\$/sqft	7.1	2.44	0.02
Gas Boiler - High Efficiency Hot Water Circulation	0%	34%	10	0.4	\$/sqft	7.4	0.94	0.04
Gas Boiler - Hot Water Reset	30%	75%	3	992.7	\$/sqft	1,440,300	> 10	0.00
Gas Boiler - Maintenance	32%	90%	3	2,039.9	\$/bldg	346,700	2.31	0.01
Gas Furnace - Maintenance	32%	90%	3	2,007.5	\$/bldg	27,100	0.18	0.07
Custom Measures	10%	45%	15	1.3	\$/sqft	67.1	4.74	0.02
Boiler Blowdown Heat Exchanger (Steam)	0%	49%	20	60,000.0	\$/sqft	141,150	0.35	0.08
Insulate Steam Lines / Condensate Tank	6%	11%	15	1,302.0	\$/empl	9,020	0.67	0.06
Direct Fired Make-up Air System	0%	12%	20	5.4	\$/empl	100.0	2.74	0.03
Direct Contact Water Heater	0%	12%	20	2.3	\$/empl	100.0	6.48	0.02
HVAC - Infrared Heater	7%	13%	20	1.5	\$/empl	100.0	9.51	0.01

Table D-32 Energy Efficiency Non-Equipment Data-Natural Gas Metals, Existing Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	56,202.0	\$/bldg	209,122	0.69	0.07
Insulation - Ducting	15%	50%	20	0.8	\$/sqft	0.8	0.20	0.09
Insulation - Wall Cavity	7%	13%	20	35,615.6	\$/bldg	181,366	0.68	0.06
HVAC - Duct Repair and Sealing	5%	25%	18	54.7	\$/bldg	40,562	> 10	0.00
Air-Cooled Chiller - Economizer	0%	49%	10	813.6	\$/sqft	1,826,138	> 10	0.00
Air-Cooled Chiller - Efficient Mechanical Layout	62%	90%	4	0.1	\$/empl	5.7	1.84	0.01
Air-Cooled Chiller - Maintenance	62%	90%	18	12,397.5	\$/bldg	551,969	8.71	0.02
Air-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	836,586	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	125,726	0.43	0.08
Air-Cooled Chiller - Condenser Water Temperature Reset	30%	75%	4	0.2	\$/empl	3.5	0.38	0.05
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	44,150	3.70	0.02
Air-Cooled Chiller - VSD on Fans	15%	66%	15	2,063.3	\$/bldg	843.3	0.94	0.11
Water-Cooled Chiller - Economizer	0%	49%	10	5,493.8	\$/sqft	1,826,138	> 10	0.00
Water-Cooled Chiller - Efficient Mechanical Layout	62%	90%	4	0.1	\$/empl	5.5	1.81	0.01
Water-Cooled Chiller - Maintenance	62%	90%	18	12,397.5	\$/bldg	551,969	8.71	0.02
Water-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	723,510	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	125,726	0.43	0.08
Water-Cooled Chiller - Condenser Water Temperature Reset	30%	75%	4	0.0	\$/sqft	2.2	> 10	0.00
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	44,150	3.70	0.02
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	12.6	6.22	0.05
RTU - Maintenance	62%	90%	18	12,397.5	\$/bldg	551,969	8.71	0.02
Heat Pump - Maintenance	3%	95%	18	3,826.9	\$/bldg	562,755	> 10	0.01
Process Boilers - Hot Water Reset	30%	75%	4	0.2	\$/empl	4.5	0.46	0.04
Process Boiler - Combustion Controls (O2 Trim)	0%	49%	25	0.8	\$/empl	0.6	0.15	0.08
Process Boiler - Condensate Return Lines	0%	50%	5	0.0	\$/empl	1.8	1.10	0.02
Process Boiler - Condensing Economizer	0%	49%	25	2.0	\$/empl	2.0	0.20	0.08
Process Boiler - Pipe Insulation	6%	11%	15	0.3	\$/empl	1.2	0.37	0.08
Process Boiler - Steam Trap Maintenance	32%	90%	6	276.0	\$/empl	24,736	2.63	0.01
Roofs - High Reflectivity	50%	75%	15	0.1	\$/empl	6.7	> 10	0.01
Energy Management System	7%	75%	15	41,951.5	\$/bldg	899,536	1.88	0.03
Thermostat - Clock/Programmable	32%	50%	11	1,239.8	\$/bldg	4.8	0.00	0.14
Interior Lighting - Occupancy Sensors	6%	56%	8	0.1	\$/sqft	1.4	0.84	0.04
Interior Lighting - Skylights	15%	20%	8	0.3	\$/empl	11.1	1.32	0.02

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Interior Lighting - Time Clocks and Timers	3%	56%	8	0.2	\$/empl	1.9	0.31	0.07
Interior Lighting - LED Exit Lighting	50%	86%	16	0.0	\$/sqft	0.1	> 10	0.01
Interior Lighting - Daylighting Controls	15%	20%	8	0.1	\$/sqft	2.0	1.01	0.04
Interior Screw-in - Task Lighting	6%	75%	5	0.2	\$/empl	0.7	0.06	0.16
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	1.6	0.17	0.12
Interior Fluorescent - Delamp and Install Reflectors	18%	56%	11	0.5	\$/sqft	0.6	0.10	0.12
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/empl	0.8	0.13	0.10
Exterior Lighting - Daylighting Controls	18%	38%	8	0.0	\$/sqft	0.2	0.28	0.07
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.2	0.00	0.10
Process - Conductivity Controls	20%	100%	5	0.5	\$/empl	11.4	0.39	0.04
Process - Controls on Fume Hoods	30%	100%	10	0.1	\$/empl	11.4	3.75	0.01
Process - Timers and Controls	40%	100%	5	0.4	\$/empl	22.8	1.00	0.02
Refrigeration - Floating Head Pressure	30%	90%	18	0.6	\$/empl	11.4	2.06	0.03
Refrigeration - System Controls	40%	56%	18	1.3	\$/empl	11.4	0.88	0.05
Refrigeration - System Maintenance	30%	72%	3	0.2	\$/empl	11.4	0.46	0.02
Refrigeration - System Optimization	40%	56%	15	0.1	\$/empl	11.4	5.90	0.01
Compressed Air - Air Usage Reduction	20%	26%	10	0.1	\$/empl	11.4	6.23	0.01
Compressed Air - Compressor Replacement	15%	17%	10	0.1	\$/empl	11.4	8.03	0.01
Compressed Air - System Controls	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Compressed Air - System Maintenance	5%	34%	3	0.0	\$/empl	11.4	3.36	0.00
Compressed Air - System Optimization and Improvements	25%	36%	10	0.2	\$/empl	11.4	2.62	0.02
Pumping System - Controls	23%	31%	10	0.0	\$/empl	11.4	> 10	0.00
Pumping System - Maintenance	5%	34%	3	0.0	\$/empl	11.4	5.00	0.00
Pumping System - Optimization	22%	30%	10	0.3	\$/empl	11.4	1.91	0.02
Pumps - Variable Speed Control	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Pump Equipment Upgrade	24%	34%	10	0.1	\$/empl	11.4	3.92	0.01
Fan Equipment Upgrade	19%	23%	10	0.1	\$/empl	11.4	5.84	0.01
Fan System - Controls	21%	27%	10	0.0	\$/empl	11.4	> 10	0.00
Fan System - Maintenance	10%	38%	3	0.0	\$/empl	11.4	> 10	0.00
Fan System - Optimization	22%	30%	10	0.1	\$/empl	11.4	3.97	0.01
Fans - Variable Speed Control	10%	38%	15	0.0	\$/empl	11.4	> 10	0.00
Motors - Magnetic Adjustable Speed Drives	5%	15%	20	0.2	\$/empl	11.4	7.77	0.01
Motors - Efficient Rewind	15%	35%	10	0.4	\$/empl	11.4	1.39	0.03
Motors - Variable Frequency Drive	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Commissioning - HVAC	0%	0%	25	0.4	\$/sqft	-	0.00	-
Commissioning - Lighting	0%	0%	5	0.0	\$/sqft	-	0.00	-
Retrocommissioning - HVAC	5%	36%	25	0.8	\$/sqft	6.2	2.36	0.05
Retrocommissioning - Lighting	32%	37%	5	0.1	\$/sqft	3.5	0.84	0.02
Ventilation - CO2 Controlled	1%	8%	15	0.2	\$/sqft	7.1	2.44	0.02
Gas Boiler - High Efficiency Hot Water Circulation	0%	34%	10	0.4	\$/sqft	7.4	0.90	0.04
Gas Boiler - Hot Water Reset	30%	75%	3	992.7	\$/sqft	1,440,300	> 10	0.00
Gas Boiler - Maintenance	32%	90%	3	2,039.9	\$/bldg	346,700	2.30	0.01
Gas Furnace - Maintenance	32%	90%	3	2,007.5	\$/bldg	27,100	0.18	0.07
Custom Measures	10%	45%	15	1.3	\$/sqft	67.1	4.50	0.02
Boiler Blowdown Heat Exchanger (Steam)	0%	49%	20	60,000.0	\$/sqft	141,150	0.31	0.08
Insulate Steam Lines / Condensate Tank	6%	11%	15	1,302.0	\$/empl	9,020	0.59	0.06
Direct Fired Make-up Air System	0%	12%	20	5.4	\$/empl	100.0	2.42	0.03
Direct Contact Water Heater	0%	12%	20	2.3	\$/empl	100.0	5.71	0.02
HVAC - Infrared Heater	7%	13%	20	1.5	\$/empl	100.0	8.64	0.01

Table D-33 Energy Efficiency Non-Equipment Data-Electric Metals, New Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	56,202.0	\$/bldg	251,560	0.70	0.07
Insulation - Ducting	0%	50%	20	0.8	\$/sqft	0.6	0.12	0.09
Insulation - Wall Cavity	7%	13%	20	35,615.6	\$/bldg	131,989	0.49	0.07
HVAC - Duct Repair and Sealing	25%	25%	18	54.7	\$/bldg	9,550	> 10	0.01
Air-Cooled Chiller - Economizer	37%	49%	10	813.6	\$/sqft	1,025,553	> 10	0.00
Air-Cooled Chiller - Efficient Mechanical Layout	63%	90%	4	0.1	\$/empl	3.6	1.28	0.02
Air-Cooled Chiller - Maintenance	63%	90%	18	12,397.5	\$/bldg	372,336	6.40	0.03
Air-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	367,516	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	134,798	0.44	0.07
Air-Cooled Chiller - Condenser Water Temperature Reset	60%	75%	4	0.2	\$/empl	2.5	0.30	0.06
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	18,188	1.94	0.05
Air-Cooled Chiller - VSD on Fans	15%	66%	15	2,063.3	\$/bldg	1,253	0.79	0.11
Water-Cooled Chiller - Economizer	37%	49%	10	5,493.8	\$/sqft	1,025,553	7.94	0.01
Water-Cooled Chiller - Efficient Mechanical Layout	63%	90%	4	0.1	\$/empl	3.9	1.32	0.01
Water-Cooled Chiller - Maintenance	63%	90%	18	12,397.5	\$/bldg	372,336	6.28	0.03
Water-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	311,775	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	134,798	0.43	0.07
Water-Cooled Chiller - Condenser Water Temperature Reset	60%	75%	4	0.0	\$/sqft	1.4	> 10	0.00
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	18,188	1.91	0.05
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	11.0	5.45	0.06
RTU - Maintenance	63%	90%	18	12,397.5	\$/bldg	372,336	6.28	0.03
Heat Pump - Maintenance	0%	95%	18	3,826.9	\$/bldg	388,659	> 10	0.01
Process Boilers - Hot Water Reset	60%	75%	4	0.2	\$/empl	2.3	0.24	0.06
Process Boiler - Combustion Controls (O2 Trim)	37%	49%	25	0.8	\$/empl	0.5	0.13	0.08
Process Boiler - Condensate Return Lines	0%	50%	5	0.0	\$/empl	1.4	0.87	0.03
Process Boiler - Condensing Economizer	37%	49%	25	2.0	\$/empl	1.6	0.17	0.08
Process Boiler - Pipe Insulation	0%	0%	15	0.3	\$/empl	0.5	0.17	0.10
Process Boiler - Steam Trap Maintenance	44%	90%	6	276.0	\$/empl	24,736	2.68	0.01
Roofs - High Reflectivity	56%	95%	15	0.1	\$/empl	5.2	> 10	0.01
Energy Management System	0%	75%	15	41,951.5	\$/bldg	531,443	1.01	0.05
Thermostat - Clock/Programmable	86%	86%	11	1,239.8	\$/bldg	6.6	0.00	0.14
Interior Lighting - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	1.4	0.81	0.04
Interior Lighting - Skylights	42%	42%	8	0.2	\$/empl	7.0	1.23	0.02

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Interior Lighting - Time Clocks and Timers	56%	56%	8	0.2	\$/empl	1.2	0.19	0.09
Interior Lighting - LED Exit Lighting	86%	86%	16	0.0	\$/sqft	0.0	> 10	0.02
Interior Lighting - Daylighting Controls	42%	42%	8	0.1	\$/sqft	2.0	0.97	0.04
Interior Screw-in - Task Lighting	0%	75%	5	0.2	\$/empl	0.4	0.04	0.19
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	1.6	0.17	0.12
Interior Fluorescent - Delamp and Install Reflectors	19%	56%	11	0.5	\$/sqft	0.6	0.10	0.12
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/empl	0.6	0.09	0.12
Exterior Lighting - Daylighting Controls	18%	38%	8	0.0	\$/sqft	0.2	0.28	0.07
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.2	0.00	0.10
Process - Conductivity Controls	20%	100%	5	0.5	\$/empl	11.4	0.39	0.04
Process - Controls on Fume Hoods	30%	100%	10	0.1	\$/empl	11.4	3.75	0.01
Process - Timers and Controls	40%	100%	5	0.4	\$/empl	22.8	1.00	0.02
Refrigeration - Floating Head Pressure	30%	90%	18	0.6	\$/empl	11.4	2.06	0.03
Refrigeration - System Controls	40%	56%	18	1.3	\$/empl	11.4	0.88	0.05
Refrigeration - System Maintenance	30%	72%	3	0.2	\$/empl	11.4	0.46	0.02
Refrigeration - System Optimization	40%	56%	15	0.1	\$/empl	11.4	5.90	0.01
Compressed Air - Air Usage Reduction	20%	26%	10	0.1	\$/empl	11.4	6.23	0.01
Compressed Air - Compressor Replacement	15%	17%	10	0.1	\$/empl	11.4	8.03	0.01
Compressed Air - System Controls	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Compressed Air - System Maintenance	5%	34%	3	0.0	\$/empl	11.4	3.36	0.00
Compressed Air - System Optimization and Improvements	25%	36%	10	0.2	\$/empl	11.4	2.62	0.02
Pumping System - Controls	23%	31%	10	0.0	\$/empl	11.4	> 10	0.00
Pumping System - Maintenance	5%	34%	3	0.0	\$/empl	11.4	5.00	0.00
Pumping System - Optimization	22%	30%	10	0.3	\$/empl	11.4	1.91	0.02
Pumps - Variable Speed Control	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Pump Equipment Upgrade	24%	34%	10	0.1	\$/empl	11.4	3.92	0.01
Fan Equipment Upgrade	19%	23%	10	0.1	\$/empl	11.4	5.84	0.01
Fan System - Controls	21%	27%	10	0.0	\$/empl	11.4	> 10	0.00
Fan System - Maintenance	10%	38%	3	0.0	\$/empl	11.4	> 10	0.00
Fan System - Optimization	22%	30%	10	0.1	\$/empl	11.4	3.97	0.01
Fans - Variable Speed Control	10%	38%	15	0.0	\$/empl	11.4	> 10	0.00
Motors - Magnetic Adjustable Speed Drives	5%	15%	20	0.2	\$/empl	11.4	7.77	0.01
Motors - Efficient Rewind	15%	35%	10	0.4	\$/empl	11.4	1.39	0.03
Motors - Variable Frequency Drive	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Commissioning - HVAC	40%	75%	25	0.4	\$/sqft	4.9	4.20	0.04
Commissioning - Lighting	30%	75%	5	0.0	\$/sqft	3.4	1.57	0.01
Retrocommissioning - HVAC	0%	0%	25	0.8	\$/sqft	-	0.00	-
Retrocommissioning - Lighting	0%	0%	5	0.1	\$/sqft	-	0.00	-
Ventilation - CO2 Controlled	6%	8%	15	0.2	\$/sqft	7.1	2.44	0.02
Gas Boiler - High Efficiency Hot Water Circulation	5%	34%	10	0.4	\$/sqft	5.5	0.70	0.05
Gas Boiler - Hot Water Reset	60%	75%	3	992.7	\$/sqft	978,400	> 10	0.00
Gas Boiler - Maintenance	44%	90%	3	2,039.9	\$/bldg	228,900	1.52	0.01
Gas Furnace - Maintenance	44%	90%	3	2,007.5	\$/bldg	47,400	0.32	0.04
Custom Measures	10%	45%	15	1.3	\$/sqft	67.1	4.87	0.02
Boiler Blowdown Heat Exchanger (Steam)	37%	49%	20	60,000.0	\$/sqft	141,150	0.35	0.08
Insulate Steam Lines / Condensate Tank	0%	0%	15	1,302.0	\$/empl	9,020	0.67	0.06
Direct Fired Make-up Air System	0%	12%	20	5.4	\$/empl	100.0	2.74	0.03
Direct Contact Water Heater	0%	12%	20	2.3	\$/empl	100.0	6.48	0.02
HVAC - Infrared Heater	7%	13%	20	1.5	\$/empl	100.0	9.51	0.01

Table D-34 Energy Efficiency Non-Equipment Data-Natural Gas Metals, New Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	56,202.0	\$/bldg	251,560	0.70	0.07
Insulation - Ducting	0%	50%	20	0.8	\$/sqft	0.6	0.12	0.09
Insulation - Wall Cavity	7%	13%	20	35,615.6	\$/bldg	131,989	0.49	0.07
HVAC - Duct Repair and Sealing	25%	25%	18	54.7	\$/bldg	9,550	> 10	0.01
Air-Cooled Chiller - Economizer	37%	49%	10	813.6	\$/sqft	1,025,553	> 10	0.00
Air-Cooled Chiller - Efficient Mechanical Layout	63%	90%	4	0.1	\$/empl	3.6	1.26	0.02
Air-Cooled Chiller - Maintenance	63%	90%	18	12,397.5	\$/bldg	372,336	6.28	0.03
Air-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	367,516	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	134,798	0.43	0.07
Air-Cooled Chiller - Condenser Water Temperature Reset	60%	75%	4	0.2	\$/empl	2.5	0.30	0.06
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	18,188	1.91	0.05
Air-Cooled Chiller - VSD on Fans	15%	66%	15	2,063.3	\$/bldg	1,253	0.77	0.11
Water-Cooled Chiller - Economizer	37%	49%	10	5,493.8	\$/sqft	1,025,553	7.94	0.01
Water-Cooled Chiller - Efficient Mechanical Layout	63%	90%	4	0.1	\$/empl	3.9	1.32	0.01
Water-Cooled Chiller - Maintenance	63%	90%	18	12,397.5	\$/bldg	372,336	6.28	0.03
Water-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	311,775	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	134,798	0.43	0.07
Water-Cooled Chiller - Condenser Water Temperature Reset	60%	75%	4	0.0	\$/sqft	1.4	> 10	0.00
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	18,188	1.91	0.05
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	11.0	5.45	0.06
RTU - Maintenance	63%	90%	18	12,397.5	\$/bldg	372,336	6.28	0.03
Heat Pump - Maintenance	0%	95%	18	3,826.9	\$/bldg	388,659	> 10	0.01
Process Boilers - Hot Water Reset	60%	75%	4	0.2	\$/empl	2.3	0.24	0.06
Process Boiler - Combustion Controls (O2 Trim)	37%	49%	25	0.8	\$/empl	0.5	0.13	0.08
Process Boiler - Condensate Return Lines	0%	50%	5	0.0	\$/empl	1.4	0.88	0.03
Process Boiler - Condensing Economizer	37%	49%	25	2.0	\$/empl	1.6	0.17	0.08
Process Boiler - Pipe Insulation	0%	0%	15	0.3	\$/empl	0.5	0.17	0.10
Process Boiler - Steam Trap Maintenance	44%	90%	6	276.0	\$/empl	24,736	2.72	0.01
Roofs - High Reflectivity	56%	95%	15	0.1	\$/empl	5.2	> 10	0.01
Energy Management System	0%	75%	15	41,951.5	\$/bldg	531,443	1.01	0.05
Thermostat - Clock/Programmable	86%	86%	11	1,239.8	\$/bldg	6.6	0.00	0.14
Interior Lighting - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	1.4	0.84	0.04
Interior Lighting - Skylights	42%	42%	8	0.2	\$/empl	7.0	1.28	0.02

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Interior Lighting - Time Clocks and Timers	56%	56%	8	0.2	\$/empl	1.2	0.20	0.09
Interior Lighting - LED Exit Lighting	86%	86%	16	0.0	\$/sqft	0.0	> 10	0.02
Interior Lighting - Daylighting Controls	42%	42%	8	0.1	\$/sqft	2.0	1.01	0.04
Interior Screw-in - Task Lighting	0%	75%	5	0.2	\$/empl	0.4	0.04	0.19
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	1.6	0.17	0.12
Interior Fluorescent - Delamp and Install Reflectors	19%	56%	11	0.5	\$/sqft	0.6	0.10	0.12
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/empl	0.6	0.09	0.12
Exterior Lighting - Daylighting Controls	18%	38%	8	0.0	\$/sqft	0.2	0.28	0.07
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.2	0.00	0.10
Process - Conductivity Controls	20%	100%	5	0.5	\$/empl	11.4	0.39	0.04
Process - Controls on Fume Hoods	30%	100%	10	0.1	\$/empl	11.4	3.75	0.01
Process - Timers and Controls	40%	100%	5	0.4	\$/empl	22.8	1.00	0.02
Refrigeration - Floating Head Pressure	30%	90%	18	0.6	\$/empl	11.4	2.06	0.03
Refrigeration - System Controls	40%	56%	18	1.3	\$/empl	11.4	0.88	0.05
Refrigeration - System Maintenance	30%	72%	3	0.2	\$/empl	11.4	0.46	0.02
Refrigeration - System Optimization	40%	56%	15	0.1	\$/empl	11.4	5.90	0.01
Compressed Air - Air Usage Reduction	20%	26%	10	0.1	\$/empl	11.4	6.23	0.01
Compressed Air - Compressor Replacement	15%	17%	10	0.1	\$/empl	11.4	8.03	0.01
Compressed Air - System Controls	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Compressed Air - System Maintenance	5%	34%	3	0.0	\$/empl	11.4	3.36	0.00
Compressed Air - System Optimization and Improvements	25%	36%	10	0.2	\$/empl	11.4	2.62	0.02
Pumping System - Controls	23%	31%	10	0.0	\$/empl	11.4	> 10	0.00
Pumping System - Maintenance	5%	34%	3	0.0	\$/empl	11.4	5.00	0.00
Pumping System - Optimization	22%	30%	10	0.3	\$/empl	11.4	1.91	0.02
Pumps - Variable Speed Control	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Pump Equipment Upgrade	24%	34%	10	0.1	\$/empl	11.4	3.92	0.01
Fan Equipment Upgrade	19%	23%	10	0.1	\$/empl	11.4	5.84	0.01
Fan System - Controls	21%	27%	10	0.0	\$/empl	11.4	> 10	0.00
Fan System - Maintenance	10%	38%	3	0.0	\$/empl	11.4	> 10	0.00
Fan System - Optimization	22%	30%	10	0.1	\$/empl	11.4	3.97	0.01
Fans - Variable Speed Control	10%	38%	15	0.0	\$/empl	11.4	> 10	0.00
Motors - Magnetic Adjustable Speed Drives	5%	15%	20	0.2	\$/empl	11.4	7.77	0.01
Motors - Efficient Rewind	15%	35%	10	0.4	\$/empl	11.4	1.39	0.03
Motors - Variable Frequency Drive	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Commissioning - HVAC	40%	75%	25	0.4	\$/sqft	4.9	4.19	0.04
Commissioning - Lighting	30%	75%	5	0.0	\$/sqft	3.4	1.62	0.01
Retrocommissioning - HVAC	0%	0%	25	0.8	\$/sqft	-	0.00	-
Retrocommissioning - Lighting	0%	0%	5	0.1	\$/sqft	-	0.00	-
Ventilation - CO2 Controlled	6%	8%	15	0.2	\$/sqft	7.1	2.44	0.02
Gas Boiler - High Efficiency Hot Water Circulation	5%	34%	10	0.4	\$/sqft	5.5	0.72	0.05
Gas Boiler - Hot Water Reset	60%	75%	3	992.7	\$/sqft	978,400	> 10	0.00
Gas Boiler - Maintenance	44%	90%	3	2,039.9	\$/bldg	228,900	1.55	0.01
Gas Furnace - Maintenance	44%	90%	3	2,007.5	\$/bldg	47,400	0.32	0.04
Custom Measures	10%	45%	15	1.3	\$/sqft	67.1	4.88	0.02
Boiler Blowdown Heat Exchanger (Steam)	37%	49%	20	60,000.0	\$/sqft	141,150	0.35	0.08
Insulate Steam Lines / Condensate Tank	0%	0%	15	1,302.0	\$/empl	9,020	0.67	0.06
Direct Fired Make-up Air System	0%	12%	20	5.4	\$/empl	100.0	2.75	0.03
Direct Contact Water Heater	0%	12%	20	2.3	\$/empl	100.0	6.49	0.02
HVAC - Infrared Heater	7%	13%	20	1.5	\$/empl	100.0	9.51	0.01

Table D-35 Energy Efficiency Non-Equipment Data-Electric Machinery, Existing Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	56,202.0	\$/bldg	209,122.3	0.68	0.07
Insulation - Ducting	15%	50%	20	0.8	\$/sqft	0.8	0.19	0.09
Insulation - Wall Cavity	7%	13%	20	35,615.6	\$/bldg	181,366.8	0.69	0.06
HVAC - Duct Repair and Sealing	5%	25%	18	54.7	\$/bldg	40,562.6	> 10	0.00
Air-Cooled Chiller - Economizer	0%	49%	10	813.6	\$/sqft	1,826,138.1	> 10	0.00
Air-Cooled Chiller - Efficient Mechanical Layout	62%	90%	4	0.1	\$/empl	5.7	1.77	0.01
Air-Cooled Chiller - Maintenance	62%	90%	18	12,397.5	\$/bldg	551,969	8.22	0.02
Air-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	836,586	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	125,726	0.41	0.08
Air-Cooled Chiller - Condenser Water Temperature Reset	30%	75%	4	0.2	\$/empl	3.5	0.37	0.05
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	44,150	3.50	0.02
Air-Cooled Chiller - VSD on Fans	15%	66%	15	2,063.3	\$/bldg	843.3	0.89	0.11
Water-Cooled Chiller - Economizer	0%	49%	10	5,493.8	\$/sqft	1,826,138	> 10	0.00
Water-Cooled Chiller - Efficient Mechanical Layout	62%	90%	4	0.1	\$/empl	5.5	1.75	0.01
Water-Cooled Chiller - Maintenance	62%	90%	18	12,397.5	\$/bldg	551,969	8.32	0.02
Water-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	723,510	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	125,726	0.41	0.08
Water-Cooled Chiller - Condenser Water Temperature Reset	30%	75%	4	0.0	\$/sqft	2.2	> 10	0.00
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	44,150	3.54	0.02
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	12.6	5.95	0.05
RTU - Maintenance	62%	90%	18	12,397.5	\$/bldg	551,969	7.55	0.02
Heat Pump - Maintenance	3%	95%	18	3,826.9	\$/bldg	562,755	> 10	0.01
Process Boilers - Hot Water Reset	30%	75%	4	0.2	\$/empl	4.5	0.46	0.04
Process Boiler - Combustion Controls (O2 Trim)	0%	49%	25	0.8	\$/empl	0.6	0.16	0.08
Process Boiler - Condensate Return Lines	0%	50%	5	0.0	\$/empl	1.8	1.11	0.02
Process Boiler - Condensing Economizer	0%	49%	25	2.0	\$/empl	2.0	0.22	0.08
Process Boiler - Pipe Insulation	6%	11%	15	0.3	\$/empl	1.2	0.40	0.08
Process Boiler - Steam Trap Maintenance	32%	90%	6	276.0	\$/empl	24,736	2.68	0.01
Roofs - High Reflectivity	50%	75%	15	0.1	\$/empl	6.7	> 10	0.01
Energy Management System	7%	75%	15	41,951.5	\$/bldg	899,536	1.74	0.03
Thermostat - Clock/Programmable	32%	50%	11	1,239.8	\$/bldg	4.8	0.00	0.14
Interior Lighting - Occupancy Sensors	6%	56%	8	0.1	\$/sqft	1.4	0.60	0.04
Interior Lighting - Skylights	15%	20%	8	0.3	\$/empl	11.1	0.95	0.02

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Interior Lighting - Time Clocks and Timers	3%	56%	8	0.2	\$/empl	1.9	0.22	0.07
Interior Lighting - LED Exit Lighting	50%	86%	16	0.0	\$/sqft	0.1	> 10	0.01
Interior Lighting - Daylighting Controls	15%	20%	8	0.1	\$/sqft	2.0	0.72	0.04
Interior Screw-in - Task Lighting	6%	75%	5	0.2	\$/empl	0.7	0.03	0.16
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	1.6	0.14	0.12
Interior Fluorescent - Delamp and Install Reflectors	18%	56%	11	0.5	\$/sqft	0.6	0.08	0.12
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/empl	0.8	0.08	0.10
Exterior Lighting - Daylighting Controls	18%	38%	8	0.0	\$/sqft	0.2	0.16	0.07
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.2	0.00	0.10
Process - Conductivity Controls	20%	100%	5	0.5	\$/empl	11.4	0.39	0.04
Process - Controls on Fume Hoods	30%	100%	10	0.1	\$/empl	11.4	3.75	0.01
Process - Timers and Controls	40%	100%	5	0.4	\$/empl	22.8	1.00	0.02
Refrigeration - Floating Head Pressure	30%	90%	18	0.6	\$/empl	11.4	2.06	0.03
Refrigeration - System Controls	40%	56%	18	1.3	\$/empl	11.4	0.88	0.05
Refrigeration - System Maintenance	30%	72%	3	0.2	\$/empl	11.4	0.46	0.02
Refrigeration - System Optimization	40%	56%	15	0.1	\$/empl	11.4	5.90	0.01
Compressed Air - Air Usage Reduction	20%	26%	10	0.1	\$/empl	11.4	6.23	0.01
Compressed Air - Compressor Replacement	15%	17%	10	0.1	\$/empl	11.4	8.03	0.01
Compressed Air - System Controls	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Compressed Air - System Maintenance	5%	34%	3	0.0	\$/empl	11.4	3.36	0.00
Compressed Air - System Optimization and Improvements	25%	36%	10	0.2	\$/empl	11.4	2.62	0.02
Pumping System - Controls	23%	31%	10	0.0	\$/empl	11.4	> 10	0.00
Pumping System - Maintenance	5%	34%	3	0.0	\$/empl	11.4	5.00	0.00
Pumping System - Optimization	22%	30%	10	0.3	\$/empl	11.4	1.91	0.02
Pumps - Variable Speed Control	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Pump Equipment Upgrade	24%	34%	10	0.1	\$/empl	11.4	3.92	0.01
Fan Equipment Upgrade	19%	23%	10	0.1	\$/empl	11.4	5.83	0.01
Fan System - Controls	21%	27%	10	0.0	\$/empl	11.4	> 10	0.00
Fan System - Maintenance	10%	38%	3	0.0	\$/empl	11.4	> 10	0.00
Fan System - Optimization	22%	30%	10	0.1	\$/empl	11.4	3.97	0.01
Fans - Variable Speed Control	10%	38%	15	0.0	\$/empl	11.4	> 10	0.00
Motors - Magnetic Adjustable Speed Drives	5%	15%	20	0.2	\$/empl	11.4	7.76	0.01
Motors - Efficient Rewind	15%	35%	10	0.4	\$/empl	11.4	1.39	0.03
Motors - Variable Frequency Drive	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Commissioning - HVAC	0%	0%	25	0.4	\$/sqft	-	0.00	-
Commissioning - Lighting	0%	0%	5	0.0	\$/sqft	-	0.00	-
Retrocommissioning - HVAC	5%	36%	25	0.8	\$/sqft	6.2	2.27	0.05
Retrocommissioning - Lighting	32%	37%	5	0.1	\$/sqft	3.5	0.60	0.02
Ventilation - CO2 Controlled	1%	8%	15	0.2	\$/sqft	7.1	2.44	0.02
Gas Boiler - High Efficiency Hot Water Circulation	0%	34%	10	0.4	\$/sqft	7.4	0.94	0.04
Gas Boiler - Hot Water Reset	30%	75%	3	992.7	\$/sqft	1,440,300	> 10	0.00
Gas Boiler - Maintenance	32%	90%	3	2,039.9	\$/bldg	346,700	2.31	0.01
Gas Furnace - Maintenance	32%	90%	3	2,007.5	\$/bldg	27,100	0.18	0.07
Custom Measures	10%	45%	15	1.3	\$/sqft	67.1	4.74	0.02
Boiler Blowdown Heat Exchanger (Steam)	0%	49%	20	60,000.0	\$/sqft	141,150	0.35	0.08
Insulate Steam Lines / Condensate Tank	6%	11%	15	1,302.0	\$/empl	9,020	0.67	0.06
Direct Fired Make-up Air System	0%	12%	20	5.4	\$/empl	100.0	2.74	0.03
Direct Contact Water Heater	0%	12%	20	2.3	\$/empl	100.0	6.48	0.02
HVAC - Infrared Heater	7%	13%	20	1.5	\$/empl	100.0	9.51	0.01

Table D-36 Energy Efficiency Non-Equipment Data-Natural Gas Machinery, Existing Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	56,202.0	\$/bldg	209,122	0.69	0.07
Insulation - Ducting	15%	50%	20	0.8	\$/sqft	0.8	0.20	0.09
Insulation - Wall Cavity	7%	13%	20	35,615.6	\$/bldg	181,366	0.68	0.06
HVAC - Duct Repair and Sealing	5%	25%	18	54.7	\$/bldg	40,562	> 10	0.00
Air-Cooled Chiller - Economizer	0%	49%	10	813.6	\$/sqft	1,826,138	> 10	0.00
Air-Cooled Chiller - Efficient Mechanical Layout	62%	90%	4	0.1	\$/empl	5.7	1.84	0.01
Air-Cooled Chiller - Maintenance	62%	90%	18	12,397.5	\$/bldg	551,969	8.71	0.02
Air-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	836,586	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	125,726	0.43	0.08
Air-Cooled Chiller - Condenser Water Temperature Reset	30%	75%	4	0.2	\$/empl	3.5	0.38	0.05
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	44,150	3.70	0.02
Air-Cooled Chiller - VSD on Fans	15%	66%	15	2,063.3	\$/bldg	843.3	0.94	0.11
Water-Cooled Chiller - Economizer	0%	49%	10	5,493.8	\$/sqft	1,826,138	> 10	0.00
Water-Cooled Chiller - Efficient Mechanical Layout	62%	90%	4	0.1	\$/empl	5.5	1.81	0.01
Water-Cooled Chiller - Maintenance	62%	90%	18	12,397.5	\$/bldg	551,969	8.71	0.02
Water-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	723,510	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	125,726	0.43	0.08
Water-Cooled Chiller - Condenser Water Temperature Reset	30%	75%	4	0.0	\$/sqft	2.2	> 10	0.00
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	44,150	3.70	0.02
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	12.6	6.22	0.05
RTU - Maintenance	62%	90%	18	12,397.5	\$/bldg	551,969	8.71	0.02
Heat Pump - Maintenance	3%	95%	18	3,826.9	\$/bldg	562,755	> 10	0.01
Process Boilers - Hot Water Reset	30%	75%	4	0.2	\$/empl	4.5	0.46	0.04
Process Boiler - Combustion Controls (O2 Trim)	0%	49%	25	0.8	\$/empl	0.6	0.15	0.08
Process Boiler - Condensate Return Lines	0%	50%	5	0.0	\$/empl	1.8	1.10	0.02
Process Boiler - Condensing Economizer	0%	49%	25	2.0	\$/empl	2.0	0.20	0.08
Process Boiler - Pipe Insulation	6%	11%	15	0.3	\$/empl	1.2	0.37	0.08
Process Boiler - Steam Trap Maintenance	32%	90%	6	276.0	\$/empl	24,736	2.63	0.01
Roofs - High Reflectivity	50%	75%	15	0.1	\$/empl	6.7	> 10	0.01
Energy Management System	7%	75%	15	41,951.5	\$/bldg	899,536	1.88	0.03
Thermostat - Clock/Programmable	32%	50%	11	1,239.8	\$/bldg	4.8	0.00	0.14
Interior Lighting - Occupancy Sensors	6%	56%	8	0.1	\$/sqft	1.4	0.84	0.04
Interior Lighting - Skylights	15%	20%	8	0.3	\$/empl	11.1	1.32	0.02

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Interior Lighting - Time Clocks and Timers	3%	56%	8	0.2	\$/empl	1.9	0.31	0.07
Interior Lighting - LED Exit Lighting	50%	86%	16	0.0	\$/sqft	0.1	> 10	0.01
Interior Lighting - Daylighting Controls	15%	20%	8	0.1	\$/sqft	2.0	1.01	0.04
Interior Screw-in - Task Lighting	6%	75%	5	0.2	\$/empl	0.7	0.06	0.16
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	1.6	0.17	0.12
Interior Fluorescent - Delamp and Install Reflectors	18%	56%	11	0.5	\$/sqft	0.6	0.10	0.12
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/empl	0.8	0.13	0.10
Exterior Lighting - Daylighting Controls	18%	38%	8	0.0	\$/sqft	0.2	0.28	0.07
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.2	0.00	0.10
Process - Conductivity Controls	20%	100%	5	0.5	\$/empl	11.4	0.39	0.04
Process - Controls on Fume Hoods	30%	100%	10	0.1	\$/empl	11.4	3.75	0.01
Process - Timers and Controls	40%	100%	5	0.4	\$/empl	22.8	1.00	0.02
Refrigeration - Floating Head Pressure	30%	90%	18	0.6	\$/empl	11.4	2.06	0.03
Refrigeration - System Controls	40%	56%	18	1.3	\$/empl	11.4	0.88	0.05
Refrigeration - System Maintenance	30%	72%	3	0.2	\$/empl	11.4	0.46	0.02
Refrigeration - System Optimization	40%	56%	15	0.1	\$/empl	11.4	5.90	0.01
Compressed Air - Air Usage Reduction	20%	26%	10	0.1	\$/empl	11.4	6.23	0.01
Compressed Air - Compressor Replacement	15%	17%	10	0.1	\$/empl	11.4	8.03	0.01
Compressed Air - System Controls	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Compressed Air - System Maintenance	5%	34%	3	0.0	\$/empl	11.4	3.36	0.00
Compressed Air - System Optimization and Improvements	25%	36%	10	0.2	\$/empl	11.4	2.62	0.02
Pumping System - Controls	23%	31%	10	0.0	\$/empl	11.4	> 10	0.00
Pumping System - Maintenance	5%	34%	3	0.0	\$/empl	11.4	5.00	0.00
Pumping System - Optimization	22%	30%	10	0.3	\$/empl	11.4	1.91	0.02
Pumps - Variable Speed Control	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Pump Equipment Upgrade	24%	34%	10	0.1	\$/empl	11.4	3.92	0.01
Fan Equipment Upgrade	19%	23%	10	0.1	\$/empl	11.4	5.84	0.01
Fan System - Controls	21%	27%	10	0.0	\$/empl	11.4	> 10	0.00
Fan System - Maintenance	10%	38%	3	0.0	\$/empl	11.4	> 10	0.00
Fan System - Optimization	22%	30%	10	0.1	\$/empl	11.4	3.97	0.01
Fans - Variable Speed Control	10%	38%	15	0.0	\$/empl	11.4	> 10	0.00
Motors - Magnetic Adjustable Speed Drives	5%	15%	20	0.2	\$/empl	11.4	7.77	0.01
Motors - Efficient Rewind	15%	35%	10	0.4	\$/empl	11.4	1.39	0.03
Motors - Variable Frequency Drive	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Commissioning - HVAC	0%	0%	25	0.4	\$/sqft	-	0.00	-
Commissioning - Lighting	0%	0%	5	0.0	\$/sqft	-	0.00	-
Retrocommissioning - HVAC	5%	36%	25	0.8	\$/sqft	6.2	2.36	0.05
Retrocommissioning - Lighting	32%	37%	5	0.1	\$/sqft	3.5	0.84	0.02
Ventilation - CO2 Controlled	1%	8%	15	0.2	\$/sqft	7.1	2.44	0.02
Gas Boiler - High Efficiency Hot Water Circulation	0%	34%	10	0.4	\$/sqft	7.4	0.90	0.04
Gas Boiler - Hot Water Reset	30%	75%	3	992.7	\$/sqft	1,440,300	> 10	0.00
Gas Boiler - Maintenance	32%	90%	3	2,039.9	\$/bldg	346,700	2.30	0.01
Gas Furnace - Maintenance	32%	90%	3	2,007.5	\$/bldg	27,100	0.18	0.07
Custom Measures	10%	45%	15	1.3	\$/sqft	67.1	4.53	0.02
Boiler Blowdown Heat Exchanger (Steam)	0%	49%	20	60,000.0	\$/sqft	141,150	0.31	0.08
Insulate Steam Lines / Condensate Tank	6%	11%	15	1,302.0	\$/empl	9,020	0.60	0.06
Direct Fired Make-up Air System	0%	12%	20	5.4	\$/empl	100.0	2.46	0.03
Direct Contact Water Heater	0%	12%	20	2.3	\$/empl	100.0	5.81	0.02
HVAC - Infrared Heater	7%	13%	20	1.5	\$/empl	100.0	8.64	0.01

Table D-37 Energy Efficiency Non-Equipment Data-Electric Machinery, New Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	56,202.0	\$/bldg	251,560	0.70	0.07
Insulation - Ducting	0%	50%	20	0.8	\$/sqft	0.6	0.12	0.09
Insulation - Wall Cavity	7%	13%	20	35,615.6	\$/bldg	131,989	0.49	0.07
HVAC - Duct Repair and Sealing	25%	25%	18	54.7	\$/bldg	9,550	> 10	0.01
Air-Cooled Chiller - Economizer	37%	49%	10	813.6	\$/sqft	1,025,553	> 10	0.00
Air-Cooled Chiller - Efficient Mechanical Layout	63%	90%	4	0.1	\$/empl	3.6	1.28	0.02
Air-Cooled Chiller - Maintenance	63%	90%	18	12,397.5	\$/bldg	372,336	6.40	0.03
Air-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	367,516	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	134,798	0.44	0.07
Air-Cooled Chiller - Condenser Water Temperature Reset	60%	75%	4	0.2	\$/empl	2.5	0.30	0.06
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	18,188	1.94	0.05
Air-Cooled Chiller - VSD on Fans	15%	66%	15	2,063.3	\$/bldg	1,253	0.79	0.11
Water-Cooled Chiller - Economizer	37%	49%	10	5,493.8	\$/sqft	1,025,553	7.94	0.01
Water-Cooled Chiller - Efficient Mechanical Layout	63%	90%	4	0.1	\$/empl	3.9	1.32	0.01
Water-Cooled Chiller - Maintenance	63%	90%	18	12,397.5	\$/bldg	372,336	6.28	0.03
Water-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	311,775	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	134,798	0.43	0.07
Water-Cooled Chiller - Condenser Water Temperature Reset	60%	75%	4	0.0	\$/sqft	1.4	> 10	0.00
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	18,188	1.91	0.05
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	11.0	5.45	0.06
RTU - Maintenance	63%	90%	18	12,397.5	\$/bldg	372,336	6.28	0.03
Heat Pump - Maintenance	0%	95%	18	3,826.9	\$/bldg	388,659	> 10	0.01
Process Boilers - Hot Water Reset	60%	75%	4	0.2	\$/empl	2.3	0.24	0.06
Process Boiler - Combustion Controls (O2 Trim)	37%	49%	25	0.8	\$/empl	0.5	0.13	0.08
Process Boiler - Condensate Return Lines	0%	50%	5	0.0	\$/empl	1.4	0.87	0.03
Process Boiler - Condensing Economizer	37%	49%	25	2.0	\$/empl	1.6	0.17	0.08
Process Boiler - Pipe Insulation	0%	0%	15	0.3	\$/empl	0.5	0.17	0.10
Process Boiler - Steam Trap Maintenance	44%	90%	6	276.0	\$/empl	24,736	2.68	0.01
Roofs - High Reflectivity	56%	95%	15	0.1	\$/empl	5.2	> 10	0.01
Energy Management System	0%	75%	15	41,951.5	\$/bldg	531,443	1.01	0.05
Thermostat - Clock/Programmable	86%	86%	11	1,239.8	\$/bldg	6.6	0.00	0.14
Interior Lighting - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	1.4	0.81	0.04
Interior Lighting - Skylights	42%	42%	8	0.2	\$/empl	7.0	1.23	0.02

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Interior Lighting - Time Clocks and Timers	56%	56%	8	0.2	\$/empl	1.2	0.19	0.09
Interior Lighting - LED Exit Lighting	86%	86%	16	0.0	\$/sqft	0.0	> 10	0.02
Interior Lighting - Daylighting Controls	42%	42%	8	0.1	\$/sqft	2.0	0.97	0.04
Interior Screw-in - Task Lighting	0%	75%	5	0.2	\$/empl	0.4	0.04	0.19
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	1.6	0.17	0.12
Interior Fluorescent - Delamp and Install Reflectors	19%	56%	11	0.5	\$/sqft	0.6	0.10	0.12
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/empl	0.6	0.09	0.12
Exterior Lighting - Daylighting Controls	18%	38%	8	0.0	\$/sqft	0.2	0.28	0.07
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.2	0.00	0.10
Process - Conductivity Controls	20%	100%	5	0.5	\$/empl	11.4	0.39	0.04
Process - Controls on Fume Hoods	30%	100%	10	0.1	\$/empl	11.4	3.75	0.01
Process - Timers and Controls	40%	100%	5	0.4	\$/empl	22.8	1.00	0.02
Refrigeration - Floating Head Pressure	30%	90%	18	0.6	\$/empl	11.4	2.06	0.03
Refrigeration - System Controls	40%	56%	18	1.3	\$/empl	11.4	0.88	0.05
Refrigeration - System Maintenance	30%	72%	3	0.2	\$/empl	11.4	0.46	0.02
Refrigeration - System Optimization	40%	56%	15	0.1	\$/empl	11.4	5.90	0.01
Compressed Air - Air Usage Reduction	20%	26%	10	0.1	\$/empl	11.4	6.23	0.01
Compressed Air - Compressor Replacement	15%	17%	10	0.1	\$/empl	11.4	8.03	0.01
Compressed Air - System Controls	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Compressed Air - System Maintenance	5%	34%	3	0.0	\$/empl	11.4	3.36	0.00
Compressed Air - System Optimization and Improvements	25%	36%	10	0.2	\$/empl	11.4	2.62	0.02
Pumping System - Controls	23%	31%	10	0.0	\$/empl	11.4	> 10	0.00
Pumping System - Maintenance	5%	34%	3	0.0	\$/empl	11.4	5.00	0.00
Pumping System - Optimization	22%	30%	10	0.3	\$/empl	11.4	1.91	0.02
Pumps - Variable Speed Control	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Pump Equipment Upgrade	24%	34%	10	0.1	\$/empl	11.4	3.92	0.01
Fan Equipment Upgrade	19%	23%	10	0.1	\$/empl	11.4	5.84	0.01
Fan System - Controls	21%	27%	10	0.0	\$/empl	11.4	> 10	0.00
Fan System - Maintenance	10%	38%	3	0.0	\$/empl	11.4	> 10	0.00
Fan System - Optimization	22%	30%	10	0.1	\$/empl	11.4	3.97	0.01
Fans - Variable Speed Control	10%	38%	15	0.0	\$/empl	11.4	> 10	0.00
Motors - Magnetic Adjustable Speed Drives	5%	15%	20	0.2	\$/empl	11.4	7.77	0.01
Motors - Efficient Rewind	15%	35%	10	0.4	\$/empl	11.4	1.39	0.03
Motors - Variable Frequency Drive	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Commissioning - HVAC	40%	75%	25	0.4	\$/sqft	4.9	4.20	0.04
Commissioning - Lighting	30%	75%	5	0.0	\$/sqft	3.4	1.57	0.01
Retrocommissioning - HVAC	0%	0%	25	0.8	\$/sqft	-	0.00	-
Retrocommissioning - Lighting	0%	0%	5	0.1	\$/sqft	-	0.00	-
Ventilation - CO2 Controlled	6%	8%	15	0.2	\$/sqft	7.1	2.44	0.02
Gas Boiler - High Efficiency Hot Water Circulation	5%	34%	10	0.4	\$/sqft	5.5	0.70	0.05
Gas Boiler - Hot Water Reset	60%	75%	3	992.7	\$/sqft	978,400	> 10	0.00
Gas Boiler - Maintenance	44%	90%	3	2,039.9	\$/bldg	228,900	1.52	0.01
Gas Furnace - Maintenance	44%	90%	3	2,007.5	\$/bldg	47,400	0.32	0.04
Custom Measures	10%	45%	15	1.3	\$/sqft	67.1	4.87	0.02
Boiler Blowdown Heat Exchanger (Steam)	37%	49%	20	60,000.0	\$/sqft	141,150	0.35	0.08
Insulate Steam Lines / Condensate Tank	0%	0%	15	1,302.0	\$/empl	9,020	0.67	0.06
Direct Fired Make-up Air System	0%	12%	20	5.4	\$/empl	100.0	2.74	0.03
Direct Contact Water Heater	0%	12%	20	2.3	\$/empl	100.0	6.48	0.02
HVAC - Infrared Heater	7%	13%	20	1.5	\$/empl	100.0	9.51	0.01

Table D-38 Energy Efficiency Non-Equipment Data-Natural Gas Machinery, New Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	56,202.0	\$/bldg	251,560	0.70	0.07
Insulation - Ducting	0%	50%	20	0.8	\$/sqft	0.6	0.12	0.09
Insulation - Wall Cavity	7%	13%	20	35,615.6	\$/bldg	131,989	0.49	0.07
HVAC - Duct Repair and Sealing	25%	25%	18	54.7	\$/bldg	9,550	> 10	0.01
Air-Cooled Chiller - Economizer	37%	49%	10	813.6	\$/sqft	1,025,553	> 10	0.00
Air-Cooled Chiller - Efficient Mechanical Layout	63%	90%	4	0.1	\$/empl	3.6	1.26	0.02
Air-Cooled Chiller - Maintenance	63%	90%	18	12,397.5	\$/bldg	372,336	6.28	0.03
Air-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	367,516	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	134,798	0.43	0.07
Air-Cooled Chiller - Condenser Water Temperature Reset	60%	75%	4	0.2	\$/empl	2.5	0.30	0.06
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	18,188	1.91	0.05
Air-Cooled Chiller - VSD on Fans	15%	66%	15	2,063.3	\$/bldg	1,253	0.77	0.11
Water-Cooled Chiller - Economizer	37%	49%	10	5,493.8	\$/sqft	1,025,553	7.94	0.01
Water-Cooled Chiller - Efficient Mechanical Layout	63%	90%	4	0.1	\$/empl	3.9	1.32	0.01
Water-Cooled Chiller - Maintenance	63%	90%	18	12,397.5	\$/bldg	372,336	6.28	0.03
Water-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	311,775	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	134,798	0.43	0.07
Water-Cooled Chiller - Condenser Water Temperature Reset	60%	75%	4	0.0	\$/sqft	1.4	> 10	0.00
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	18,188	1.91	0.05
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	11.0	5.45	0.06
RTU - Maintenance	63%	90%	18	12,397.5	\$/bldg	372,336	6.28	0.03
Heat Pump - Maintenance	0%	95%	18	3,826.9	\$/bldg	388,659	> 10	0.01
Process Boilers - Hot Water Reset	60%	75%	4	0.2	\$/empl	2.3	0.24	0.06
Process Boiler - Combustion Controls (O2 Trim)	37%	49%	25	0.8	\$/empl	0.5	0.13	0.08
Process Boiler - Condensate Return Lines	0%	50%	5	0.0	\$/empl	1.4	0.88	0.03
Process Boiler - Condensing Economizer	37%	49%	25	2.0	\$/empl	1.6	0.17	0.08
Process Boiler - Pipe Insulation	0%	0%	15	0.3	\$/empl	0.5	0.17	0.10
Process Boiler - Steam Trap Maintenance	44%	90%	6	276.0	\$/empl	24,736	2.72	0.01
Roofs - High Reflectivity	56%	95%	15	0.1	\$/empl	5.2	> 10	0.01
Energy Management System	0%	75%	15	41,951.5	\$/bldg	531,443	1.01	0.05
Thermostat - Clock/Programmable	86%	86%	11	1,239.8	\$/bldg	6.6	0.00	0.14
Interior Lighting - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	1.4	0.84	0.04
Interior Lighting - Skylights	42%	42%	8	0.2	\$/empl	7.0	1.28	0.02

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Interior Lighting - Time Clocks and Timers	56%	56%	8	0.2	\$/empl	1.2	0.20	0.09
Interior Lighting - LED Exit Lighting	86%	86%	16	0.0	\$/sqft	0.0	> 10	0.02
Interior Lighting - Daylighting Controls	42%	42%	8	0.1	\$/sqft	2.0	1.01	0.04
Interior Screw-in - Task Lighting	0%	75%	5	0.2	\$/empl	0.4	0.04	0.19
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	1.6	0.17	0.12
Interior Fluorescent - Delamp and Install Reflectors	19%	56%	11	0.5	\$/sqft	0.6	0.10	0.12
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/empl	0.6	0.09	0.12
Exterior Lighting - Daylighting Controls	18%	38%	8	0.0	\$/sqft	0.2	0.28	0.07
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.2	0.00	0.10
Process - Conductivity Controls	20%	100%	5	0.5	\$/empl	11.4	0.39	0.04
Process - Controls on Fume Hoods	30%	100%	10	0.1	\$/empl	11.4	3.75	0.01
Process - Timers and Controls	40%	100%	5	0.4	\$/empl	22.8	1.00	0.02
Refrigeration - Floating Head Pressure	30%	90%	18	0.6	\$/empl	11.4	2.06	0.03
Refrigeration - System Controls	40%	56%	18	1.3	\$/empl	11.4	0.88	0.05
Refrigeration - System Maintenance	30%	72%	3	0.2	\$/empl	11.4	0.46	0.02
Refrigeration - System Optimization	40%	56%	15	0.1	\$/empl	11.4	5.90	0.01
Compressed Air - Air Usage Reduction	20%	26%	10	0.1	\$/empl	11.4	6.23	0.01
Compressed Air - Compressor Replacement	15%	17%	10	0.1	\$/empl	11.4	8.03	0.01
Compressed Air - System Controls	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Compressed Air - System Maintenance	5%	34%	3	0.0	\$/empl	11.4	3.36	0.00
Compressed Air - System Optimization and Improvements	25%	36%	10	0.2	\$/empl	11.4	2.62	0.02
Pumping System - Controls	23%	31%	10	0.0	\$/empl	11.4	> 10	0.00
Pumping System - Maintenance	5%	34%	3	0.0	\$/empl	11.4	5.00	0.00
Pumping System - Optimization	22%	30%	10	0.3	\$/empl	11.4	1.91	0.02
Pumps - Variable Speed Control	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Pump Equipment Upgrade	24%	34%	10	0.1	\$/empl	11.4	3.92	0.01
Fan Equipment Upgrade	19%	23%	10	0.1	\$/empl	11.4	5.84	0.01
Fan System - Controls	21%	27%	10	0.0	\$/empl	11.4	> 10	0.00
Fan System - Maintenance	10%	38%	3	0.0	\$/empl	11.4	> 10	0.00
Fan System - Optimization	22%	30%	10	0.1	\$/empl	11.4	3.97	0.01
Fans - Variable Speed Control	10%	38%	15	0.0	\$/empl	11.4	> 10	0.00
Motors - Magnetic Adjustable Speed Drives	5%	15%	20	0.2	\$/empl	11.4	7.77	0.01
Motors - Efficient Rewind	15%	35%	10	0.4	\$/empl	11.4	1.39	0.03
Motors - Variable Frequency Drive	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Commissioning - HVAC	40%	75%	25	0.4	\$/sqft	4.9	4.19	0.04
Commissioning - Lighting	30%	75%	5	0.0	\$/sqft	3.4	1.62	0.01
Retrocommissioning - HVAC	0%	0%	25	0.8	\$/sqft	-	0.00	-
Retrocommissioning - Lighting	0%	0%	5	0.1	\$/sqft	-	0.00	-
Ventilation - CO2 Controlled	6%	8%	15	0.2	\$/sqft	7.1	2.44	0.02
Gas Boiler - High Efficiency Hot Water Circulation	5%	34%	10	0.4	\$/sqft	5.5	0.72	0.05
Gas Boiler - Hot Water Reset	60%	75%	3	992.7	\$/sqft	978,400	> 10	0.00
Gas Boiler - Maintenance	44%	90%	3	2,039.9	\$/bldg	228,900	1.55	0.01
Gas Furnace - Maintenance	44%	90%	3	2,007.5	\$/bldg	47,400	0.32	0.04
Custom Measures	10%	45%	15	1.3	\$/sqft	67.1	4.88	0.02
Boiler Blowdown Heat Exchanger (Steam)	37%	49%	20	60,000.0	\$/sqft	141,150	0.35	0.08
Insulate Steam Lines / Condensate Tank	0%	0%	15	1,302.0	\$/empl	9,020	0.67	0.06
Direct Fired Make-up Air System	0%	12%	20	5.4	\$/empl	100.0	2.76	0.03
Direct Contact Water Heater	0%	12%	20	2.3	\$/empl	100.0	6.52	0.02
HVAC - Infrared Heater	7%	13%	20	1.5	\$/empl	100.0	9.51	0.01

Table D-39 Energy Efficiency Non-Equipment Data-Electric Other Industrial, Existing Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	56,202.0	\$/bldg	209,122	0.68	0.07
Insulation - Ducting	15%	50%	20	0.8	\$/sqft	0.8	0.19	0.09
Insulation - Wall Cavity	7%	13%	20	35,615.6	\$/bldg	181,366	0.69	0.06
HVAC - Duct Repair and Sealing	5%	25%	18	54.7	\$/bldg	40,562	> 10	0.00
Air-Cooled Chiller - Economizer	0%	49%	10	813.6	\$/sqft	1,826,138	> 10	0.00
Air-Cooled Chiller - Efficient Mechanical Layout	62%	90%	4	0.1	\$/empl	5.7	1.77	0.01
Air-Cooled Chiller - Maintenance	62%	90%	18	12,397.5	\$/bldg	551,969	8.22	0.02
Air-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	836,586	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	125,726	0.41	0.08
Air-Cooled Chiller - Condenser Water Temperature Reset	30%	75%	4	0.2	\$/empl	3.5	0.37	0.05
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	44,150	3.50	0.02
Air-Cooled Chiller - VSD on Fans	15%	66%	15	2,063.3	\$/bldg	843.3	0.89	0.11
Water-Cooled Chiller - Economizer	0%	49%	10	5,493.8	\$/sqft	1,826,138	> 10	0.00
Water-Cooled Chiller - Efficient Mechanical Layout	62%	90%	4	0.1	\$/empl	5.5	1.75	0.01
Water-Cooled Chiller - Maintenance	62%	90%	18	12,397.5	\$/bldg	551,969	8.32	0.02
Water-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	723,510	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	125,726	0.41	0.08
Water-Cooled Chiller - Condenser Water Temperature Reset	30%	75%	4	0.0	\$/sqft	2.2	> 10	0.00
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	44,150	3.54	0.02
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	12.6	5.95	0.05
RTU - Maintenance	62%	90%	18	12,397.5	\$/bldg	551,969	7.55	0.02
Heat Pump - Maintenance	3%	95%	18	3,826.9	\$/bldg	562,755	> 10	0.01
Process Boilers - Hot Water Reset	30%	75%	4	0.2	\$/empl	4.5	0.46	0.04
Process Boiler - Combustion Controls (O2 Trim)	0%	49%	25	0.8	\$/empl	0.6	0.16	0.08
Process Boiler - Condensate Return Lines	0%	50%	5	0.0	\$/empl	1.8	1.11	0.02
Process Boiler - Condensing Economizer	0%	49%	25	2.0	\$/empl	2.0	0.22	0.08
Process Boiler - Pipe Insulation	6%	11%	15	0.3	\$/empl	1.2	0.40	0.08
Process Boiler - Steam Trap Maintenance	32%	90%	6	276.0	\$/empl	24,736	2.68	0.01
Roofs - High Reflectivity	50%	75%	15	0.1	\$/empl	6.7	> 10	0.01
Energy Management System	7%	75%	15	41,951.5	\$/bldg	899,536	1.74	0.03
Thermostat - Clock/Programmable	32%	50%	11	1,239.8	\$/bldg	4.8	0.00	0.14
Interior Lighting - Occupancy Sensors	6%	56%	8	0.1	\$/sqft	1.4	0.60	0.04
Interior Lighting - Skylights	15%	20%	8	0.3	\$/empl	11.1	0.95	0.02

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Interior Lighting - Time Clocks and Timers	3%	56%	8	0.2	\$/empl	1.9	0.22	0.07
Interior Lighting - LED Exit Lighting	50%	86%	16	0.0	\$/sqft	0.1	> 10	0.01
Interior Lighting - Daylighting Controls	15%	20%	8	0.1	\$/sqft	2.0	0.72	0.04
Interior Screw-in - Task Lighting	6%	75%	5	0.2	\$/empl	0.7	0.03	0.16
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	1.6	0.14	0.12
Interior Fluorescent - Delamp and Install Reflectors	18%	56%	11	0.5	\$/sqft	0.6	0.08	0.12
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/empl	0.8	0.08	0.10
Exterior Lighting - Daylighting Controls	18%	38%	8	0.0	\$/sqft	0.2	0.16	0.07
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.2	0.00	0.10
Process - Conductivity Controls	20%	100%	5	0.5	\$/empl	11.4	0.39	0.04
Process - Controls on Fume Hoods	30%	100%	10	0.1	\$/empl	11.4	3.75	0.01
Process - Timers and Controls	40%	100%	5	0.4	\$/empl	22.8	1.00	0.02
Refrigeration - Floating Head Pressure	30%	90%	18	0.6	\$/empl	11.4	2.06	0.03
Refrigeration - System Controls	40%	56%	18	1.3	\$/empl	11.4	0.88	0.05
Refrigeration - System Maintenance	30%	72%	3	0.2	\$/empl	11.4	0.46	0.02
Refrigeration - System Optimization	40%	56%	15	0.1	\$/empl	11.4	5.90	0.01
Compressed Air - Air Usage Reduction	20%	26%	10	0.1	\$/empl	11.4	6.23	0.01
Compressed Air - Compressor Replacement	15%	17%	10	0.1	\$/empl	11.4	8.03	0.01
Compressed Air - System Controls	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Compressed Air - System Maintenance	5%	34%	3	0.0	\$/empl	11.4	3.36	0.00
Compressed Air - System Optimization and Improvements	25%	36%	10	0.2	\$/empl	11.4	2.62	0.02
Pumping System - Controls	23%	31%	10	0.0	\$/empl	11.4	> 10	0.00
Pumping System - Maintenance	5%	34%	3	0.0	\$/empl	11.4	5.00	0.00
Pumping System - Optimization	22%	30%	10	0.3	\$/empl	11.4	1.91	0.02
Pumps - Variable Speed Control	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Pump Equipment Upgrade	24%	34%	10	0.1	\$/empl	11.4	3.92	0.01
Fan Equipment Upgrade	19%	23%	10	0.1	\$/empl	11.4	5.83	0.01
Fan System - Controls	21%	27%	10	0.0	\$/empl	11.4	> 10	0.00
Fan System - Maintenance	10%	38%	3	0.0	\$/empl	11.4	> 10	0.00
Fan System - Optimization	22%	30%	10	0.1	\$/empl	11.4	3.97	0.01
Fans - Variable Speed Control	10%	38%	15	0.0	\$/empl	11.4	> 10	0.00
Motors - Magnetic Adjustable Speed Drives	5%	15%	20	0.2	\$/empl	11.4	7.76	0.01
Motors - Efficient Rewind	15%	35%	10	0.4	\$/empl	11.4	1.39	0.03
Motors - Variable Frequency Drive	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Commissioning - HVAC	0%	0%	25	0.4	\$/sqft	-	0.00	-
Commissioning - Lighting	0%	0%	5	0.0	\$/sqft	-	0.00	-
Retrocommissioning - HVAC	5%	36%	25	0.8	\$/sqft	6.2	2.27	0.05
Retrocommissioning - Lighting	32%	37%	5	0.1	\$/sqft	3.5	0.60	0.02
Ventilation - CO2 Controlled	1%	8%	15	0.2	\$/sqft	7.1	2.44	0.02
Gas Boiler - High Efficiency Hot Water Circulation	0%	34%	10	0.4	\$/sqft	7.4	0.94	0.04
Gas Boiler - Hot Water Reset	30%	75%	3	992.7	\$/sqft	1,440,300	> 10	0.00
Gas Boiler - Maintenance	32%	90%	3	2,039.9	\$/bldg	346,700	2.31	0.01
Gas Furnace - Maintenance	32%	90%	3	2,007.5	\$/bldg	27,100	0.18	0.07
Custom Measures	10%	45%	15	1.3	\$/sqft	67.1	4.74	0.02
Boiler Blowdown Heat Exchanger (Steam)	0%	49%	20	60,000.0	\$/sqft	141,150	0.35	0.08
Insulate Steam Lines / Condensate Tank	6%	11%	15	1,302.0	\$/empl	9,020	0.67	0.06
Direct Fired Make-up Air System	0%	12%	20	5.4	\$/empl	100.0	2.74	0.03
Direct Contact Water Heater	0%	12%	20	2.3	\$/empl	100.0	6.48	0.02
HVAC - Infrared Heater	7%	13%	20	1.5	\$/empl	100.0	9.51	0.01

Table D-40 Energy Efficiency Non-Equipment Data-Natural Gas Other Industrial, Existing Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	56,202.0	\$/bldg	209,122	0.69	0.07
Insulation - Ducting	15%	50%	20	0.8	\$/sqft	0.8	0.20	0.09
Insulation - Wall Cavity	7%	13%	20	35,615.6	\$/bldg	181,366	0.68	0.06
HVAC - Duct Repair and Sealing	5%	25%	18	54.7	\$/bldg	40,562	> 10	0.00
Air-Cooled Chiller - Economizer	0%	49%	10	813.6	\$/sqft	1,826,138	> 10	0.00
Air-Cooled Chiller - Efficient Mechanical Layout	62%	90%	4	0.1	\$/empl	5.7	1.84	0.01
Air-Cooled Chiller - Maintenance	62%	90%	18	12,397.5	\$/bldg	551,969	8.71	0.02
Air-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	836,586	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	125,726	0.43	0.08
Air-Cooled Chiller - Condenser Water Temperature Reset	30%	75%	4	0.2	\$/empl	3.5	0.38	0.05
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	44,150	3.70	0.02
Air-Cooled Chiller - VSD on Fans	15%	66%	15	2,063.3	\$/bldg	843.3	0.94	0.11
Water-Cooled Chiller - Economizer	0%	49%	10	5,493.8	\$/sqft	1,826,138	> 10	0.00
Water-Cooled Chiller - Efficient Mechanical Layout	62%	90%	4	0.1	\$/empl	5.5	1.81	0.01
Water-Cooled Chiller - Maintenance	62%	90%	18	12,397.5	\$/bldg	551,969	8.71	0.02
Water-Cooled Chiller - Chilled Water Reset	5%	75%	10	814.4	\$/sqft	723,510	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	125,726	0.43	0.08
Water-Cooled Chiller - Condenser Water Temperature Reset	30%	75%	4	0.0	\$/sqft	2.2	> 10	0.00
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	44,150	3.70	0.02
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	12.6	6.22	0.05
RTU - Maintenance	62%	90%	18	12,397.5	\$/bldg	551,969	8.71	0.02
Heat Pump - Maintenance	3%	95%	18	3,826.9	\$/bldg	562,755	> 10	0.01
Process Boilers - Hot Water Reset	30%	75%	4	0.2	\$/empl	4.5	0.46	0.04
Process Boiler - Combustion Controls (O2 Trim)	0%	49%	25	0.8	\$/empl	0.6	0.15	0.08
Process Boiler - Condensate Return Lines	0%	50%	5	0.0	\$/empl	1.8	1.10	0.02
Process Boiler - Condensing Economizer	0%	49%	25	2.0	\$/empl	2.0	0.20	0.08
Process Boiler - Pipe Insulation	6%	11%	15	0.3	\$/empl	1.2	0.37	0.08
Process Boiler - Steam Trap Maintenance	32%	90%	6	276.0	\$/empl	24,736	2.63	0.01
Roofs - High Reflectivity	50%	75%	15	0.1	\$/empl	6.7	> 10	0.01
Energy Management System	7%	75%	15	41,951.5	\$/bldg	899,536	1.88	0.03
Thermostat - Clock/Programmable	32%	50%	11	1,239.8	\$/bldg	4.8	0.00	0.14
Interior Lighting - Occupancy Sensors	6%	56%	8	0.1	\$/sqft	1.4	0.84	0.04
Interior Lighting - Skylights	15%	20%	8	0.3	\$/empl	11.1	1.32	0.02

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Interior Lighting - Time Clocks and Timers	3%	56%	8	0.2	\$/empl	1.9	0.31	0.07
Interior Lighting - LED Exit Lighting	50%	86%	16	0.0	\$/sqft	0.1	> 10	0.01
Interior Lighting - Daylighting Controls	15%	20%	8	0.1	\$/sqft	2.0	1.01	0.04
Interior Screw-in - Task Lighting	6%	75%	5	0.2	\$/empl	0.7	0.06	0.16
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	1.6	0.17	0.12
Interior Fluorescent - Delamp and Install Reflectors	18%	56%	11	0.5	\$/sqft	0.6	0.10	0.12
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/empl	0.8	0.13	0.10
Exterior Lighting - Daylighting Controls	18%	38%	8	0.0	\$/sqft	0.2	0.28	0.07
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.2	0.00	0.10
Process - Conductivity Controls	20%	100%	5	0.5	\$/empl	11.4	0.39	0.04
Process - Controls on Fume Hoods	30%	100%	10	0.1	\$/empl	11.4	3.75	0.01
Process - Timers and Controls	40%	100%	5	0.4	\$/empl	22.8	1.00	0.02
Refrigeration - Floating Head Pressure	30%	90%	18	0.6	\$/empl	11.4	2.06	0.03
Refrigeration - System Controls	40%	56%	18	1.3	\$/empl	11.4	0.88	0.05
Refrigeration - System Maintenance	30%	72%	3	0.2	\$/empl	11.4	0.46	0.02
Refrigeration - System Optimization	40%	56%	15	0.1	\$/empl	11.4	5.90	0.01
Compressed Air - Air Usage Reduction	20%	26%	10	0.1	\$/empl	11.4	6.23	0.01
Compressed Air - Compressor Replacement	15%	17%	10	0.1	\$/empl	11.4	8.03	0.01
Compressed Air - System Controls	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Compressed Air - System Maintenance	5%	34%	3	0.0	\$/empl	11.4	3.36	0.00
Compressed Air - System Optimization and Improvements	25%	36%	10	0.2	\$/empl	11.4	2.62	0.02
Pumping System - Controls	23%	31%	10	0.0	\$/empl	11.4	> 10	0.00
Pumping System - Maintenance	5%	34%	3	0.0	\$/empl	11.4	5.00	0.00
Pumping System - Optimization	22%	30%	10	0.3	\$/empl	11.4	1.91	0.02
Pumps - Variable Speed Control	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Pump Equipment Upgrade	24%	34%	10	0.1	\$/empl	11.4	3.92	0.01
Fan Equipment Upgrade	19%	23%	10	0.1	\$/empl	11.4	5.84	0.01
Fan System - Controls	21%	27%	10	0.0	\$/empl	11.4	> 10	0.00
Fan System - Maintenance	10%	38%	3	0.0	\$/empl	11.4	> 10	0.00
Fan System - Optimization	22%	30%	10	0.1	\$/empl	11.4	3.97	0.01
Fans - Variable Speed Control	10%	38%	15	0.0	\$/empl	11.4	> 10	0.00
Motors - Magnetic Adjustable Speed Drives	5%	15%	20	0.2	\$/empl	11.4	7.77	0.01
Motors - Efficient Rewind	15%	35%	10	0.4	\$/empl	11.4	1.39	0.03
Motors - Variable Frequency Drive	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Commissioning - HVAC	0%	0%	25	0.4	\$/sqft	-	0.00	-
Commissioning - Lighting	0%	0%	5	0.0	\$/sqft	-	0.00	-
Retrocommissioning - HVAC	5%	36%	25	0.8	\$/sqft	6.2	2.36	0.05
Retrocommissioning - Lighting	32%	37%	5	0.1	\$/sqft	3.5	0.84	0.02
Ventilation - CO2 Controlled	1%	8%	15	0.2	\$/sqft	7.1	2.44	0.02
Gas Boiler - High Efficiency Hot Water Circulation	0%	34%	10	0.4	\$/sqft	7.4	0.90	0.04
Gas Boiler - Hot Water Reset	30%	75%	3	992.7	\$/sqft	1,440,300	> 10	0.00
Gas Boiler - Maintenance	32%	90%	3	2,039.9	\$/bldg	346,700	2.30	0.01
Gas Furnace - Maintenance	32%	90%	3	2,007.5	\$/bldg	27,100	0.18	0.07
Custom Measures	10%	45%	15	1.3	\$/sqft	67.1	4.53	0.02
Boiler Blowdown Heat Exchanger (Steam)	0%	49%	20	60,000.0	\$/sqft	141,150	0.31	0.08
Insulate Steam Lines / Condensate Tank	6%	11%	15	1,302.0	\$/empl	9,020	0.60	0.06
Direct Fired Make-up Air System	0%	12%	20	5.4	\$/empl	100.0	2.45	0.03
Direct Contact Water Heater	0%	12%	20	2.3	\$/empl	100.0	5.80	0.02
HVAC - Infrared Heater	7%	13%	20	1.5	\$/empl	100.0	8.64	0.01

Table D-41 Energy Efficiency Non-Equipment Data-Electric Other Industrial, New Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	56,202.0	\$/bldg	251,560	0.70	0.07
Insulation - Ducting	0%	50%	20	0.8	\$/sqft	0.6	0.12	0.09
Insulation - Wall Cavity	7%	13%	20	35,615.6	\$/bldg	131,989	0.49	0.07
HVAC - Duct Repair and Sealing	25%	25%	18	54.7	\$/bldg	9,550	> 10	0.01
Air-Cooled Chiller - Economizer	37%	49%	10	813.6	\$/sqft	1,025,553	> 10	0.00
Air-Cooled Chiller - Efficient Mechanical Layout	63%	90%	4	0.1	\$/empl	3.6	1.28	0.02
Air-Cooled Chiller - Maintenance	63%	90%	18	12,397.5	\$/bldg	372,336	6.40	0.03
Air-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	367,516	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	134,798	0.44	0.07
Air-Cooled Chiller - Condenser Water Temperature Reset	60%	75%	4	0.2	\$/empl	2.5	0.30	0.06
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	18,188	1.94	0.05
Air-Cooled Chiller - VSD on Fans	15%	66%	15	2,063.3	\$/bldg	1,253	0.79	0.11
Water-Cooled Chiller - Economizer	37%	49%	10	5,493.8	\$/sqft	1,025,553	7.94	0.01
Water-Cooled Chiller - Efficient Mechanical Layout	63%	90%	4	0.1	\$/empl	3.9	1.32	0.01
Water-Cooled Chiller - Maintenance	63%	90%	18	12,397.5	\$/bldg	372,336	6.28	0.03
Water-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	311,775	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	134,798	0.43	0.07
Water-Cooled Chiller - Condenser Water Temperature Reset	60%	75%	4	0.0	\$/sqft	1.4	> 10	0.00
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	18,188	1.91	0.05
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	11.0	5.45	0.06
RTU - Maintenance	63%	90%	18	12,397.5	\$/bldg	372,336	6.28	0.03
Heat Pump - Maintenance	0%	95%	18	3,826.9	\$/bldg	388,659	> 10	0.01
Process Boilers - Hot Water Reset	60%	75%	4	0.2	\$/empl	2.3	0.24	0.06
Process Boiler - Combustion Controls (O2 Trim)	37%	49%	25	0.8	\$/empl	0.5	0.13	0.08
Process Boiler - Condensate Return Lines	0%	50%	5	0.0	\$/empl	1.4	0.87	0.03
Process Boiler - Condensing Economizer	37%	49%	25	2.0	\$/empl	1.6	0.17	0.08
Process Boiler - Pipe Insulation	0%	0%	15	0.3	\$/empl	0.5	0.17	0.10
Process Boiler - Steam Trap Maintenance	44%	90%	6	276.0	\$/empl	24,736	2.68	0.01
Roofs - High Reflectivity	56%	95%	15	0.1	\$/empl	5.2	> 10	0.01
Energy Management System	0%	75%	15	41,951.5	\$/bldg	531,443	1.01	0.05
Thermostat - Clock/Programmable	86%	86%	11	1,239.8	\$/bldg	6.6	0.00	0.14
Interior Lighting - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	1.4	0.81	0.04
Interior Lighting - Skylights	42%	42%	8	0.2	\$/empl	7.0	1.23	0.02

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Interior Lighting - Time Clocks and Timers	56%	56%	8	0.2	\$/empl	1.2	0.19	0.09
Interior Lighting - LED Exit Lighting	86%	86%	16	0.0	\$/sqft	0.0	> 10	0.02
Interior Lighting - Daylighting Controls	42%	42%	8	0.1	\$/sqft	2.0	0.97	0.04
Interior Screw-in - Task Lighting	0%	75%	5	0.2	\$/empl	0.4	0.04	0.19
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	1.6	0.17	0.12
Interior Fluorescent - Delamp and Install Reflectors	19%	56%	11	0.5	\$/sqft	0.6	0.10	0.12
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/empl	0.6	0.09	0.12
Exterior Lighting - Daylighting Controls	18%	38%	8	0.0	\$/sqft	0.2	0.28	0.07
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.2	0.00	0.10
Process - Conductivity Controls	20%	100%	5	0.5	\$/empl	11.4	0.39	0.04
Process - Controls on Fume Hoods	30%	100%	10	0.1	\$/empl	11.4	3.75	0.01
Process - Timers and Controls	40%	100%	5	0.4	\$/empl	22.8	1.00	0.02
Refrigeration - Floating Head Pressure	30%	90%	18	0.6	\$/empl	11.4	2.06	0.03
Refrigeration - System Controls	40%	56%	18	1.3	\$/empl	11.4	0.88	0.05
Refrigeration - System Maintenance	30%	72%	3	0.2	\$/empl	11.4	0.46	0.02
Refrigeration - System Optimization	40%	56%	15	0.1	\$/empl	11.4	5.90	0.01
Compressed Air - Air Usage Reduction	20%	26%	10	0.1	\$/empl	11.4	6.23	0.01
Compressed Air - Compressor Replacement	15%	17%	10	0.1	\$/empl	11.4	8.03	0.01
Compressed Air - System Controls	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Compressed Air - System Maintenance	5%	34%	3	0.0	\$/empl	11.4	3.36	0.00
Compressed Air - System Optimization and Improvements	25%	36%	10	0.2	\$/empl	11.4	2.62	0.02
Pumping System - Controls	23%	31%	10	0.0	\$/empl	11.4	> 10	0.00
Pumping System - Maintenance	5%	34%	3	0.0	\$/empl	11.4	5.00	0.00
Pumping System - Optimization	22%	30%	10	0.3	\$/empl	11.4	1.91	0.02
Pumps - Variable Speed Control	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Pump Equipment Upgrade	24%	34%	10	0.1	\$/empl	11.4	3.92	0.01
Fan Equipment Upgrade	19%	23%	10	0.1	\$/empl	11.4	5.84	0.01
Fan System - Controls	21%	27%	10	0.0	\$/empl	11.4	> 10	0.00
Fan System - Maintenance	10%	38%	3	0.0	\$/empl	11.4	> 10	0.00
Fan System - Optimization	22%	30%	10	0.1	\$/empl	11.4	3.97	0.01
Fans - Variable Speed Control	10%	38%	15	0.0	\$/empl	11.4	> 10	0.00
Motors - Magnetic Adjustable Speed Drives	5%	15%	20	0.2	\$/empl	11.4	7.77	0.01
Motors - Efficient Rewind	15%	35%	10	0.4	\$/empl	11.4	1.39	0.03
Motors - Variable Frequency Drive	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Commissioning - HVAC	40%	75%	25	0.4	\$/sqft	4.9	4.20	0.04
Commissioning - Lighting	30%	75%	5	0.0	\$/sqft	3.4	1.57	0.01
Retrocommissioning - HVAC	0%	0%	25	0.8	\$/sqft	-	0.00	-
Retrocommissioning - Lighting	0%	0%	5	0.1	\$/sqft	-	0.00	-
Ventilation - CO2 Controlled	6%	8%	15	0.2	\$/sqft	7.1	2.44	0.02
Gas Boiler - High Efficiency Hot Water Circulation	5%	34%	10	0.4	\$/sqft	5.5	0.70	0.05
Gas Boiler - Hot Water Reset	60%	75%	3	992.7	\$/sqft	978,400	> 10	0.00
Gas Boiler - Maintenance	44%	90%	3	2,039.9	\$/bldg	228,900	1.52	0.01
Gas Furnace - Maintenance	44%	90%	3	2,007.5	\$/bldg	47,400	0.32	0.04
Custom Measures	10%	45%	15	1.3	\$/sqft	67.1	4.87	0.02
Boiler Blowdown Heat Exchanger (Steam)	37%	49%	20	60,000.0	\$/sqft	141,150	0.35	0.08
Insulate Steam Lines / Condensate Tank	0%	0%	15	1,302.0	\$/empl	9,020	0.67	0.06
Direct Fired Make-up Air System	0%	12%	20	5.4	\$/empl	100.0	2.74	0.03
Direct Contact Water Heater	0%	12%	20	2.3	\$/empl	100.0	6.48	0.02
HVAC - Infrared Heater	7%	13%	20	1.5	\$/empl	100.0	9.51	0.01

Table D-42 Energy Efficiency Non-Equipment Data-Natural Gas Other Industrial, New Vintage

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Insulation - Ceiling	7%	13%	20	56,202.0	\$/bldg	251,560	0.70	0.07
Insulation - Ducting	0%	50%	20	0.8	\$/sqft	0.6	0.12	0.09
Insulation - Wall Cavity	7%	13%	20	35,615.6	\$/bldg	131,989	0.49	0.07
HVAC - Duct Repair and Sealing	25%	25%	18	54.7	\$/bldg	9,550	> 10	0.01
Air-Cooled Chiller - Economizer	37%	49%	10	813.6	\$/sqft	1,025,553	> 10	0.00
Air-Cooled Chiller - Efficient Mechanical Layout	63%	90%	4	0.1	\$/empl	3.6	1.26	0.02
Air-Cooled Chiller - Maintenance	63%	90%	18	12,397.5	\$/bldg	372,336	6.28	0.03
Air-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	367,516	> 10	0.00
Air-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	134,798	0.43	0.07
Air-Cooled Chiller - Condenser Water Temperature Reset	60%	75%	4	0.2	\$/empl	2.5	0.30	0.06
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	18,188	1.91	0.05
Air-Cooled Chiller - VSD on Fans	15%	66%	15	2,063.3	\$/bldg	1,253	0.77	0.11
Water-Cooled Chiller - Economizer	37%	49%	10	5,493.8	\$/sqft	1,025,553	7.94	0.01
Water-Cooled Chiller - Efficient Mechanical Layout	63%	90%	4	0.1	\$/empl	3.9	1.32	0.01
Water-Cooled Chiller - Maintenance	63%	90%	18	12,397.5	\$/bldg	372,336	6.28	0.03
Water-Cooled Chiller - Chilled Water Reset	25%	75%	10	814.4	\$/sqft	311,775	> 10	0.00
Water-Cooled Chiller - Chilled Water Variable-Flow System	30%	75%	15	27,671.0	\$/bldg	134,798	0.43	0.07
Water-Cooled Chiller - Condenser Water Temperature Reset	60%	75%	4	0.0	\$/sqft	1.4	> 10	0.00
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	15%	41%	15	1,407.1	\$/sqft	18,188	1.91	0.05
Water-Cooled Chiller - VSD on Fans	15%	66%	15	1.2	\$/bldg	11.0	5.45	0.06
RTU - Maintenance	63%	90%	18	12,397.5	\$/bldg	372,336	6.28	0.03
Heat Pump - Maintenance	0%	95%	18	3,826.9	\$/bldg	388,659	> 10	0.01
Process Boilers - Hot Water Reset	60%	75%	4	0.2	\$/empl	2.3	0.24	0.06
Process Boiler - Combustion Controls (O2 Trim)	37%	49%	25	0.8	\$/empl	0.5	0.13	0.08
Process Boiler - Condensate Return Lines	0%	50%	5	0.0	\$/empl	1.4	0.88	0.03
Process Boiler - Condensing Economizer	37%	49%	25	2.0	\$/empl	1.6	0.17	0.08
Process Boiler - Pipe Insulation	0%	0%	15	0.3	\$/empl	0.5	0.17	0.10
Process Boiler - Steam Trap Maintenance	44%	90%	6	276.0	\$/empl	24,736	2.72	0.01
Roofs - High Reflectivity	56%	95%	15	0.1	\$/empl	5.2	> 10	0.01
Energy Management System	0%	75%	15	41,951.5	\$/bldg	531,443	1.01	0.05
Thermostat - Clock/Programmable	86%	86%	11	1,239.8	\$/bldg	6.6	0.00	0.14
Interior Lighting - Occupancy Sensors	56%	56%	8	0.1	\$/sqft	1.4	0.84	0.04
Interior Lighting - Skylights	42%	42%	8	0.2	\$/empl	7.0	1.28	0.02

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Interior Lighting - Time Clocks and Timers	56%	56%	8	0.2	\$/empl	1.2	0.20	0.09
Interior Lighting - LED Exit Lighting	86%	86%	16	0.0	\$/sqft	0.0	> 10	0.02
Interior Lighting - Daylighting Controls	42%	42%	8	0.1	\$/sqft	2.0	1.01	0.04
Interior Screw-in - Task Lighting	0%	75%	5	0.2	\$/empl	0.4	0.04	0.19
Interior Fluorescent - Bi-Level Fixture	10%	23%	8	0.5	\$/sqft	1.6	0.17	0.12
Interior Fluorescent - Delamp and Install Reflectors	19%	56%	11	0.5	\$/sqft	0.6	0.10	0.12
Exterior Lighting - Bi-Level Fixture	10%	30%	8	0.2	\$/empl	0.6	0.09	0.12
Exterior Lighting - Daylighting Controls	18%	38%	8	0.0	\$/sqft	0.2	0.28	0.07
Exterior Lighting - Photovoltaic Installation	0%	13%	20	43,500.0	\$/bldg	0.2	0.00	0.10
Process - Conductivity Controls	20%	100%	5	0.5	\$/empl	11.4	0.39	0.04
Process - Controls on Fume Hoods	30%	100%	10	0.1	\$/empl	11.4	3.75	0.01
Process - Timers and Controls	40%	100%	5	0.4	\$/empl	22.8	1.00	0.02
Refrigeration - Floating Head Pressure	30%	90%	18	0.6	\$/empl	11.4	2.06	0.03
Refrigeration - System Controls	40%	56%	18	1.3	\$/empl	11.4	0.88	0.05
Refrigeration - System Maintenance	30%	72%	3	0.2	\$/empl	11.4	0.46	0.02
Refrigeration - System Optimization	40%	56%	15	0.1	\$/empl	11.4	5.90	0.01
Compressed Air - Air Usage Reduction	20%	26%	10	0.1	\$/empl	11.4	6.23	0.01
Compressed Air - Compressor Replacement	15%	17%	10	0.1	\$/empl	11.4	8.03	0.01
Compressed Air - System Controls	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Compressed Air - System Maintenance	5%	34%	3	0.0	\$/empl	11.4	3.36	0.00
Compressed Air - System Optimization and Improvements	25%	36%	10	0.2	\$/empl	11.4	2.62	0.02
Pumping System - Controls	23%	31%	10	0.0	\$/empl	11.4	> 10	0.00
Pumping System - Maintenance	5%	34%	3	0.0	\$/empl	11.4	5.00	0.00
Pumping System - Optimization	22%	30%	10	0.3	\$/empl	11.4	1.91	0.02
Pumps - Variable Speed Control	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00
Pump Equipment Upgrade	24%	34%	10	0.1	\$/empl	11.4	3.92	0.01
Fan Equipment Upgrade	19%	23%	10	0.1	\$/empl	11.4	5.84	0.01
Fan System - Controls	21%	27%	10	0.0	\$/empl	11.4	> 10	0.00
Fan System - Maintenance	10%	38%	3	0.0	\$/empl	11.4	> 10	0.00
Fan System - Optimization	22%	30%	10	0.1	\$/empl	11.4	3.97	0.01
Fans - Variable Speed Control	10%	38%	15	0.0	\$/empl	11.4	> 10	0.00
Motors - Magnetic Adjustable Speed Drives	5%	15%	20	0.2	\$/empl	11.4	7.77	0.01
Motors - Efficient Rewind	15%	35%	10	0.4	\$/empl	11.4	1.39	0.03
Motors - Variable Frequency Drive	5%	34%	15	0.0	\$/empl	11.4	> 10	0.00

Measure	Base Saturation	Applicability	Life time (Years)	Incremental Cost	Unit	Savings (kBtu/empl)	BC Ratio (2013)	Levelized Cost of Energy (\$/kBtu)
Commissioning - HVAC	40%	75%	25	0.4	\$/sqft	4.9	4.19	0.04
Commissioning - Lighting	30%	75%	5	0.0	\$/sqft	3.4	1.62	0.01
Retrocommissioning - HVAC	0%	0%	25	0.8	\$/sqft	-	0.00	-
Retrocommissioning - Lighting	0%	0%	5	0.1	\$/sqft	-	0.00	-
Ventilation - CO2 Controlled	6%	8%	15	0.2	\$/sqft	7.1	2.44	0.02
Gas Boiler - High Efficiency Hot Water Circulation	5%	34%	10	0.4	\$/sqft	5.5	0.72	0.05
Gas Boiler - Hot Water Reset	60%	75%	3	992.7	\$/sqft	978,400	> 10	0.00
Gas Boiler - Maintenance	44%	90%	3	2,039.9	\$/bldg	228,900	1.55	0.01
Gas Furnace - Maintenance	44%	90%	3	2,007.5	\$/bldg	47,400	0.32	0.04
Custom Measures	10%	45%	15	1.3	\$/sqft	67.1	4.88	0.02
Boiler Blowdown Heat Exchanger (Steam)	37%	49%	20	60,000.0	\$/sqft	141,150	0.35	0.08
Insulate Steam Lines / Condensate Tank	0%	0%	15	1,302.0	\$/empl	9,020	0.67	0.06
Direct Fired Make-up Air System	0%	12%	20	5.4	\$/empl	100.0	2.76	0.03
Direct Contact Water Heater	0%	12%	20	2.3	\$/empl	100.0	6.51	0.02
HVAC - Infrared Heater	7%	13%	20	1.5	\$/empl	100.0	9.51	0.01

MARKET ADOPTION FACTORS

To calculate achievable potential, we apply a set of market adoption factors to economic potential. These parameters are described below, followed by a discussion of how they are applied to calculate achievable potential. Finally, we present the three sets of factors at the end of this section.

Maximum Achievable Potential Adoption Rates

These factors are applied to Economic potential to estimate the upper bound of achievable potential: Maximum Achievable Potential. These estimate customer adoption of economic measures when delivered through efficiency programs under ideal market, implementation, and customer preference conditions. Information channels are assumed to be established and efficient for marketing, educating consumers, and coordinating with trade allies and delivery partners. The Maximum Achievable Potential adoption rates are based on the take rates from the program interest surveys. For Maximum Achievable Potential we used the 1-year payback take rate for the customer segment that is most inclined to adopt energy efficiency measures. This reflects what the best practice could achieve in the Ameren Illinois service territory.

The Maximum Achievable Potential adoption rates are applied directly to economic potential to calculate the Maximum Achievable Potential estimates.

Realistic Achievable Potential Adoption Rates

These factors are applied to Maximum Achievable Potential to calculate Realistic Achievable Potential. They reflect expected program participation given current barriers to customer acceptance, non-ideal implementation conditions, and limited program budgets. This represents a lower bound on achievable potential and are also developed using the results of the program interest survey of Ameren Illinois customers. The Realistic Achievable Potential adoption rates are based on the average take rate across all segments at the 3-year payback level.

Like the Maximum Achievable Potential rates, these rates increase over time.

To review the take rates from the program interest surveys, please see Volume 2: Market Research.

Estimates of Achievable Potential

Table E-1 through Table E-28 present the Residential Potential Factors. Maximum Achievable Potential Factors as well as the product of Maximum Achievable Potential factors and Realistic Achievable Potential factors (High x Low) are used to demonstrate how Economic potential is changed to reach Realistic Achievable Potential for residential equipment and non-equipment measures.

Table E-29 through Table E-36 present the same data for the Commercial Sector and Table E-37 through Table E-42 for the Industrial sector.

Table E-1 Single Family Electric Only Customer Equipment Measures—(Maximum Achievable Potential factor)

End Use	Fuel	Technology	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cooling	Electric	Central AC	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Cooling	Electric	Room AC	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Cooling	Electric	Air-Source Heat Pump	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Cooling	Electric	Geothermal Heat Pump	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Cooling	Electric	PTHP	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Heating	Electric	Electric Room Heat	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Heating	Electric	Furnace	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Heating	Electric	Air-Source Heat Pump	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Heating	Electric	Geothermal Heat Pump	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Heating	Electric	PTHP	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Water Heating	Electric	Water Heater <= 55 gal	48%	48%	49%	49%	50%	50%	51%	51%	52%	52%	53%
Water Heating	Electric	Water Heater > 55 gal	48%	48%	49%	49%	50%	50%	51%	51%	52%	52%	53%
Interior Lighting	Electric	Screw-in	48%	48%	49%	49%	50%	50%	51%	51%	52%	52%	53%
Interior Lighting	Electric	Linear Fluorescent	48%	48%	49%	49%	50%	50%	51%	51%	52%	52%	53%
Interior Lighting	Electric	Specialty	12%	12%	12%	12%	12%	13%	13%	13%	13%	13%	13%
Exterior Lighting	Electric	Screw-in	48%	48%	49%	49%	50%	50%	51%	51%	52%	52%	53%
Appliances	Electric	Refrigerator	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Appliances	Electric	Second Refrigerator	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Appliances	Electric	Freezer	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Appliances	Electric	Clothes Washer	50%	51%	51%	52%	52%	53%	53%	54%	54%	55%	55%
Appliances	Electric	Clothes Dryer	50%	51%	51%	52%	52%	53%	53%	54%	54%	55%	55%
Appliances	Electric	Dishwasher	39%	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%
Appliances	Electric	Stove	39%	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%
Appliances	Electric	Microwave	39%	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%
Electronics	Electric	Personal Computers	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Electronics	Electric	Monitor	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Electronics	Electric	Laptops	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Electronics	Electric	TVs	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%
Electronics	Electric	Printer/Fax/Copier	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Electronics	Electric	Set-top Boxes/DVR	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Electronics	Electric	Devices and Gadgets	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Miscellaneous	Electric	Air Purifier/Cleaner	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Miscellaneous	Electric	Dehumidifier	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Miscellaneous	Electric	Pool Heater	49%	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%
Miscellaneous	Electric	Pool Pump	49%	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%

End Use	Fuel	Technology	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Miscellaneous	Electric	Hot Tub / Spa	49%	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%
Miscellaneous	Electric	Well Pump	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Miscellaneous	Electric	Furnace Fan	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Miscellaneous	Electric	Bathroom Exhaust Fan	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Miscellaneous	Electric	Miscellaneous	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%

Table E-2 Single Family Electric Only Customer Non-Equipment Measures—(Maximum Achievable Potential factor)

Measures	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Insulation - Ceiling	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%
Insulation - Ducting	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%
Insulation - Foundation	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%
Insulation - Infiltration Control	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%
Insulation - Radiant Barrier	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%
Insulation - Wall Cavity	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%
Insulation - Wall Sheathing	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%
Ducting - Repair and Sealing	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Windows - High Efficiency/ENERGY STAR	50%	51%	51%	52%	52%	53%	53%	54%	54%	55%	55%
Windows - Install Reflective Film	50%	51%	51%	52%	52%	53%	53%	54%	54%	55%	55%
Doors - Storm and Thermal	50%	51%	51%	52%	52%	53%	53%	54%	54%	55%	55%
Roofs - High Reflectivity	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%
Attic Fan - Installation	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Attic Fan - Photovoltaic - Installation	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Whole-House Fan - Installation	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Ceiling Fan - Installation	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Thermostat - Clock/Programmable	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Home Energy Management System	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Central AC - Early Replacement	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Central AC - Maintenance and Tune-Up	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%	44%
Central Heat Pump - Maintenance	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%	44%
Room AC - Removal of Second Unit	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Boiler - Hot Water Reset	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Boiler - Pipe Insulation	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%
Boiler - Maintenance	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%
Furnace - Maintenance	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%
Water Heater - Drainwater Heat Recovery	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%
Water Heater - Faucet Aerators	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%
Water Heater - Low-Flow Showerheads	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%
Water Heater - Pipe Insulation	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%
Water Heater - Tank Blanket/Insulation	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%
Water Heater - Thermostat Setback	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Water Heater - Timer	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Water Heater - Desuperheater	48%	48%	49%	49%	50%	50%	51%	51%	52%	52%	53%
Water Heater - Solar System	48%	48%	49%	49%	50%	50%	51%	51%	52%	52%	53%

Measures	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Interior Lighting - Occupancy Sensors	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Exterior Lighting - Photosensor Control	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Exterior Lighting - Photovoltaic Installation	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Exterior Lighting - Timeclock Installation	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Refrigerator - Early Replacement	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Refrigerator - Maintenance	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Refrigerator - Remove Second Unit	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Freezer - Remove Second Unit	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Freezer - Early Replacement	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Freezer - Maintenance	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Electronics - Smart Power Strip	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Pool Pump - Timer	49%	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%
Pool Heater - Solar System	49%	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%
ENERGY STAR Home Design	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%
Information Based Energy Efficiency Programs	48%	48%	49%	49%	50%	50%	51%	51%	52%	52%	53%
Combined Boiler & Water Htg. Unit	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Pool/Spa cover	49%	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%

Table E-3 **Single Family Electric Only Equipment Customer Measures—(Maximum Achievable Potential factor x Realistic Achievable Potential factor)**

End Use	Fuel	Technology	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cooling	Electric	Central AC	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%
Cooling	Electric	Room AC	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%
Cooling	Electric	Air-Source Heat Pump	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%
Cooling	Electric	Geothermal Heat Pump	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%
Cooling	Electric	PTHP	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%
Heating	Electric	Electric Room Heat	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Heating	Electric	Furnace	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Heating	Electric	Air-Source Heat Pump	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%
Heating	Electric	Geothermal Heat Pump	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%
Heating	Electric	PTHP	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%
Water Heating	Electric	Water Heater <= 55 gal	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%
Water Heating	Electric	Water Heater > 55 gal	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%
Interior Lighting	Electric	Screw-in	39%	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%
Interior Lighting	Electric	Linear Fluorescent	39%	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%
Interior Lighting	Electric	Specialty	10%	10%	10%	10%	10%	10%	11%	11%	11%	11%	11%
Exterior Lighting	Electric	Screw-in	39%	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%
Appliances	Electric	Refrigerator	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%
Appliances	Electric	Second Refrigerator	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%
Appliances	Electric	Freezer	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%
Appliances	Electric	Clothes Washer	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%
Appliances	Electric	Clothes Dryer	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%
Appliances	Electric	Dishwasher	35%	35%	36%	36%	37%	37%	38%	38%	39%	39%	40%
Appliances	Electric	Stove	35%	35%	36%	36%	37%	37%	38%	38%	39%	39%	40%
Appliances	Electric	Microwave	35%	35%	36%	36%	37%	37%	38%	38%	39%	39%	40%
Electronics	Electric	Personal Computers	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Electronics	Electric	Monitor	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Electronics	Electric	Laptops	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Electronics	Electric	TVs	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Electronics	Electric	Printer/Fax/Copier	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Electronics	Electric	Set-top Boxes/DVR	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%
Electronics	Electric	Devices and Gadgets	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Miscellaneous	Electric	Air Purifier/Cleaner	27%	27%	28%	28%	29%	29%	30%	30%	31%	31%	32%
Miscellaneous	Electric	Dehumidifier	27%	27%	28%	28%	29%	29%	30%	30%	31%	31%	32%

End Use	Fuel	Technology	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Miscellaneous	Electric	Pool Heater	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%
Miscellaneous	Electric	Pool Pump	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%
Miscellaneous	Electric	Hot Tub / Spa	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%
Miscellaneous	Electric	Well Pump	24%	24%	25%	25%	26%	26%	27%	27%	28%	28%	29%
Miscellaneous	Electric	Furnace Fan	24%	24%	25%	25%	26%	26%	27%	27%	28%	28%	29%
Miscellaneous	Electric	Bathroom Exhaust Fan	24%	24%	25%	25%	26%	26%	27%	27%	28%	28%	29%
Miscellaneous	Electric	Miscellaneous	24%	24%	25%	25%	26%	26%	27%	27%	28%	28%	29%

Table E-4 Single Family Electric Only Customer Non-Equipment Measures—(Maximum Achievable Potential factor x Realistic Achievable Potential factor)

Measures	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Insulation - Ceiling	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%
Insulation - Ducting	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%
Insulation - Foundation	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%
Insulation - Infiltration Control	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%
Insulation - Radiant Barrier	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%
Insulation - Wall Cavity	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%
Insulation - Wall Sheathing	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%
Ducting - Repair and Sealing	30%	30%	31%	31%	32%	32%	33%	33%	34%	34%	35%
Windows - High Efficiency/ENERGY STAR	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%
Windows - Install Reflective Film	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%
Doors - Storm and Thermal	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%
Roofs - High Reflectivity	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%
Attic Fan - Installation	24%	24%	25%	25%	26%	26%	27%	27%	28%	28%	29%
Attic Fan - Photovoltaic - Installation	24%	24%	25%	25%	26%	26%	27%	27%	28%	28%	29%
Whole-House Fan - Installation	24%	24%	25%	25%	26%	26%	27%	27%	28%	28%	29%
Ceiling Fan - Installation	24%	24%	25%	25%	26%	26%	27%	27%	28%	28%	29%
Thermostat - Clock/Programmable	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Home Energy Management System	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%
Central AC - Early Replacement	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%
Central AC - Maintenance and Tune-Up	33%	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%
Central Heat Pump - Maintenance	33%	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%
Room AC - Removal of Second Unit	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%
Boiler - Hot Water Reset	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Boiler - Pipe Insulation	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%
Boiler - Maintenance	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%	39%
Furnace - Maintenance	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%	39%
Water Heater - Drainwater Heat Recovery	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%
Water Heater - Faucet Aerators	27%	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%
Water Heater - Low-Flow Showerheads	27%	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%
Water Heater - Pipe Insulation	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%
Water Heater - Tank Blanket/Insulation	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%
Water Heater - Thermostat Setback	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Water Heater - Timer	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Water Heater - Desuperheater	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%

Measures	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Water Heater - Solar System	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%
Interior Lighting - Occupancy Sensors	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%
Exterior Lighting - Photosensor Control	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%
Exterior Lighting - Photovoltaic Installation	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%
Exterior Lighting - Timeclock Installation	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%
Refrigerator - Early Replacement	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%
Refrigerator - Maintenance	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%
Refrigerator - Remove Second Unit	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%
Freezer - Remove Second Unit	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%
Freezer - Early Replacement	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%
Freezer - Maintenance	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%
Electronics - Smart Power Strip	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%
Pool Pump - Timer	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%
Pool Heater - Solar System	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%
ENERGY STAR Home Design	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%
Information Based Energy Efficiency Programs	39%	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%
Combined Boiler & Water Htg. Unit	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Pool/Spa cover	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%

Table E-5 Multi Family Electric Only Customer Equipment Measures—(Maximum Achievable Potential factor)

End Use	Fuel	Technology	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cooling	Electric	Central AC	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Cooling	Electric	Room AC	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Cooling	Electric	Air-Source Heat Pump	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Cooling	Electric	Geothermal Heat Pump	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Cooling	Electric	PTHP	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Heating	Electric	Electric Room Heat	48%	48%	49%	49%	50%	50%	51%	51%	52%	52%	53%
Heating	Electric	Furnace	48%	48%	49%	49%	50%	50%	51%	51%	52%	52%	53%
Heating	Electric	Air-Source Heat Pump	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Heating	Electric	Geothermal Heat Pump	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Heating	Electric	PTHP	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Water Heating	Electric	Water Heater <= 55 gal	41%	41%	42%	42%	43%	43%	44%	44%	45%	45%	46%
Water Heating	Electric	Water Heater > 55 gal	41%	41%	42%	42%	43%	43%	44%	44%	45%	45%	46%
Interior Lighting	Electric	Screw-in	49%	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%
Interior Lighting	Electric	Linear Fluorescent	49%	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%
Interior Lighting	Electric	Specialty	12%	12%	12%	13%	13%	13%	13%	13%	13%	13%	13%
Exterior Lighting	Electric	Screw-in	49%	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%
Appliances	Electric	Refrigerator	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Appliances	Electric	Second Refrigerator	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Appliances	Electric	Freezer	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Appliances	Electric	Clothes Washer	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%	48%
Appliances	Electric	Clothes Dryer	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%	48%
Appliances	Electric	Dishwasher	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Appliances	Electric	Stove	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Appliances	Electric	Microwave	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Electronics	Electric	Personal Computers	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%
Electronics	Electric	Monitor	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%
Electronics	Electric	Laptops	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%
Electronics	Electric	TVs	41%	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%
Electronics	Electric	Printer/Fax/Copier	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%
Electronics	Electric	Set-top Boxes/DVR	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Electronics	Electric	Devices and Gadgets	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%
Miscellaneous	Electric	Air Purifier/Cleaner	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Miscellaneous	Electric	Dehumidifier	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Miscellaneous	Electric	Pool Heater	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Miscellaneous	Electric	Pool Pump	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%

End Use	Fuel	Technology	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Miscellaneous	Electric	Hot Tub / Spa	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Miscellaneous	Electric	Well Pump	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Miscellaneous	Electric	Furnace Fan	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Miscellaneous	Electric	Bathroom Exhaust Fan	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Miscellaneous	Electric	Miscellaneous	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%

Table E-6 Multi Family Electric Only Customer Non-Equipment Measures—(Maximum Achievable Potential factor)

Measures	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Insulation - Ceiling	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Insulation - Ducting	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%
Insulation - Foundation	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Insulation - Infiltration Control	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Insulation - Radiant Barrier	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Insulation - Wall Cavity	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Insulation - Wall Sheathing	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Ducting - Repair and Sealing	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%
Windows - High Efficiency/ENERGY STAR	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Windows - Install Reflective Film	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Doors - Storm and Thermal	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Roofs - High Reflectivity	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Attic Fan - Installation	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Attic Fan - Photovoltaic - Installation	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Whole-House Fan - Installation	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Ceiling Fan - Installation	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Thermostat - Clock/Programmable	30%	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%
Home Energy Management System	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Central AC - Early Replacement	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Central AC - Maintenance and Tune-Up	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%
Central Heat Pump - Maintenance	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%
Room AC - Removal of Second Unit	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Boiler - Hot Water Reset	30%	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%
Boiler - Pipe Insulation	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%
Boiler - Maintenance	24%	25%	25%	26%	26%	27%	27%	28%	28%	29%	29%
Furnace - Maintenance	24%	25%	25%	26%	26%	27%	27%	28%	28%	29%	29%
Water Heater - Drainwater Heat Recovery	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%
Water Heater - Faucet Aerators	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%
Water Heater - Low-Flow Showerheads	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%
Water Heater - Pipe Insulation	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%
Water Heater - Tank Blanket/Insulation	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%
Water Heater - Thermostat Setback	30%	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%
Water Heater - Timer	30%	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%
Water Heater - Desuperheater	41%	41%	42%	42%	43%	43%	44%	44%	45%	45%	46%

Measures	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Water Heater - Solar System	41%	41%	42%	42%	43%	43%	44%	44%	45%	45%	46%
Interior Lighting - Occupancy Sensors	27%	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%
Exterior Lighting - Photosensor Control	27%	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%
Exterior Lighting - Photovoltaic Installation	27%	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%
Exterior Lighting - Timeclock Installation	27%	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%
Refrigerator - Early Replacement	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Refrigerator - Maintenance	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Refrigerator - Remove Second Unit	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Freezer - Remove Second Unit	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Freezer - Early Replacement	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Freezer - Maintenance	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Electronics - Smart Power Strip	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Pool Pump - Timer	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Pool Heater - Solar System	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
ENERGY STAR Home Design	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Information Based Energy Efficiency Programs	49%	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%
Combined Boiler & Water Htg. Unit	48%	48%	49%	49%	50%	50%	51%	51%	52%	52%	53%
Pool/Spa cover	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%

Table E-7 Multi Family Electric Only Customer Equipment Measures—(Maximum Achievable Potential factor x Realistic Achievable Potential factor)

End Use	Fuel	Technology	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cooling	Electric	Central AC	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Cooling	Electric	Room AC	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Cooling	Electric	Air-Source Heat Pump	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Cooling	Electric	Geothermal Heat Pump	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Cooling	Electric	PTHP	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Heating	Electric	Electric Room Heat	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Heating	Electric	Furnace	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Heating	Electric	Air-Source Heat Pump	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Heating	Electric	Geothermal Heat Pump	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Heating	Electric	PTHP	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Water Heating	Electric	Water Heater <= 55 gal	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Water Heating	Electric	Water Heater > 55 gal	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Interior Lighting	Electric	Screw-in	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%	45%
Interior Lighting	Electric	Linear Fluorescent	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%	45%
Interior Lighting	Electric	Specialty	10%	10%	10%	10%	11%	11%	11%	11%	11%	11%	11%
Exterior Lighting	Electric	Screw-in	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%	45%
Appliances	Electric	Refrigerator	35%	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%
Appliances	Electric	Second Refrigerator	35%	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%
Appliances	Electric	Freezer	35%	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%
Appliances	Electric	Clothes Washer	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Appliances	Electric	Clothes Dryer	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Appliances	Electric	Dishwasher	27%	27%	28%	28%	29%	29%	30%	30%	31%	31%	32%
Appliances	Electric	Stove	27%	27%	28%	28%	29%	29%	30%	30%	31%	31%	32%
Appliances	Electric	Microwave	27%	27%	28%	28%	29%	29%	30%	30%	31%	31%	32%
Electronics	Electric	Personal Computers	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%
Electronics	Electric	Monitor	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%
Electronics	Electric	Laptops	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%
Electronics	Electric	TVs	30%	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%
Electronics	Electric	Printer/Fax/Copier	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%
Electronics	Electric	Set-top Boxes/DVR	33%	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%
Electronics	Electric	Devices and Gadgets	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%
Miscellaneous	Electric	Air Purifier/Cleaner	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%	28%
Miscellaneous	Electric	Dehumidifier	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%	28%

End Use	Fuel	Technology	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Miscellaneous	Electric	Pool Heater	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
Miscellaneous	Electric	Pool Pump	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
Miscellaneous	Electric	Hot Tub / Spa	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
Miscellaneous	Electric	Well Pump	18%	19%	19%	20%	20%	21%	21%	22%	22%	23%	23%
Miscellaneous	Electric	Furnace Fan	18%	19%	19%	20%	20%	21%	21%	22%	22%	23%	23%
Miscellaneous	Electric	Bathroom Exhaust Fan	18%	19%	19%	20%	20%	21%	21%	22%	22%	23%	23%
Miscellaneous	Electric	Miscellaneous	18%	19%	19%	20%	20%	21%	21%	22%	22%	23%	23%

Table E-8 Multi Family Electric Only Customer Non-Equipment Measures—(Maximum Achievable Potential factor x Realistic Achievable Potential factor)

Measures	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Insulation - Ceiling	21%	21%	22%	22%	23%	23%	24%	24%	25%	25%	26%
Insulation - Ducting	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
Insulation - Foundation	21%	21%	22%	22%	23%	23%	24%	24%	25%	25%	26%
Insulation - Infiltration Control	21%	21%	22%	22%	23%	23%	24%	24%	25%	25%	26%
Insulation - Radiant Barrier	21%	21%	22%	22%	23%	23%	24%	24%	25%	25%	26%
Insulation - Wall Cavity	21%	21%	22%	22%	23%	23%	24%	24%	25%	25%	26%
Insulation - Wall Sheathing	21%	21%	22%	22%	23%	23%	24%	24%	25%	25%	26%
Ducting - Repair and Sealing	27%	27%	28%	28%	29%	29%	30%	30%	31%	31%	32%
Windows - High Efficiency/ENERGY STAR	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%	28%
Windows - Install Reflective Film	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%	28%
Doors - Storm and Thermal	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%	28%
Roofs - High Reflectivity	21%	21%	22%	22%	23%	23%	24%	24%	25%	25%	26%
Attic Fan - Installation	18%	19%	19%	20%	20%	21%	21%	22%	22%	23%	23%
Attic Fan - Photovoltaic - Installation	18%	19%	19%	20%	20%	21%	21%	22%	22%	23%	23%
Whole-House Fan - Installation	18%	19%	19%	20%	20%	21%	21%	22%	22%	23%	23%
Ceiling Fan - Installation	18%	19%	19%	20%	20%	21%	21%	22%	22%	23%	23%
Thermostat - Clock/Programmable	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
Home Energy Management System	33%	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%
Central AC - Early Replacement	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Central AC - Maintenance and Tune-Up	26%	27%	27%	28%	28%	29%	29%	30%	30%	31%	31%
Central Heat Pump - Maintenance	26%	27%	27%	28%	28%	29%	29%	30%	30%	31%	31%
Room AC - Removal of Second Unit	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Boiler - Hot Water Reset	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
Boiler - Pipe Insulation	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
Boiler - Maintenance	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%	28%
Furnace - Maintenance	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%	28%
Water Heater - Drainwater Heat Recovery	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
Water Heater - Faucet Aerators	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%
Water Heater - Low-Flow Showerheads	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%
Water Heater - Pipe Insulation	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
Water Heater - Tank Blanket/Insulation	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
Water Heater - Thermostat Setback	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
Water Heater - Timer	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
Water Heater - Desuperheater	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%

Measures	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Water Heater - Solar System	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Interior Lighting - Occupancy Sensors	20%	20%	21%	21%	22%	22%	23%	23%	24%	24%	25%
Exterior Lighting - Photosensor Control	20%	20%	21%	21%	22%	22%	23%	23%	24%	24%	25%
Exterior Lighting - Photovoltaic Installation	20%	20%	21%	21%	22%	22%	23%	23%	24%	24%	25%
Exterior Lighting - Timeclock Installation	20%	20%	21%	21%	22%	22%	23%	23%	24%	24%	25%
Refrigerator - Early Replacement	35%	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%
Refrigerator - Maintenance	35%	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%
Refrigerator - Remove Second Unit	35%	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%
Freezer - Remove Second Unit	35%	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%
Freezer - Early Replacement	35%	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%
Freezer - Maintenance	35%	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%
Electronics - Smart Power Strip	33%	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%
Pool Pump - Timer	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
Pool Heater - Solar System	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
ENERGY STAR Home Design	21%	21%	22%	22%	23%	23%	24%	24%	25%	25%	26%
Information Based Energy Efficiency Programs	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%	45%
Combined Boiler & Water Htg. Unit	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Pool/Spa cover	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%

Table E-9 Single Family Gas/Electric Customer Equipment Measures— Electric (Maximum Achievable Potential factor)

End Use	Fuel	Technology	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cooling	Electric	Central AC	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Cooling	Electric	Room AC	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Cooling	Electric	Air-Source Heat Pump	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Cooling	Electric	Geothermal Heat Pump	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Cooling	Electric	PTHP	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Heating	Electric	Electric Room Heat	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Heating	Electric	Furnace	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Heating	Electric	Air-Source Heat Pump	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Heating	Electric	Geothermal Heat Pump	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Heating	Electric	PTHP	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Water Heating	Electric	Water Heater <= 55 gal	48%	48%	49%	49%	50%	50%	51%	51%	52%	52%	53%
Water Heating	Electric	Water Heater > 55 gal	48%	48%	49%	49%	50%	50%	51%	51%	52%	52%	53%
Interior Lighting	Electric	Screw-in	48%	48%	49%	49%	50%	50%	51%	51%	52%	52%	53%
Interior Lighting	Electric	Linear Fluorescent	48%	48%	49%	49%	50%	50%	51%	51%	52%	52%	53%
Interior Lighting	Electric	Specialty	12%	12%	12%	12%	12%	13%	13%	13%	13%	13%	13%
Exterior Lighting	Electric	Screw-in	48%	48%	49%	49%	50%	50%	51%	51%	52%	52%	53%
Appliances	Electric	Refrigerator	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Appliances	Electric	Second Refrigerator	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Appliances	Electric	Freezer	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Appliances	Electric	Clothes Washer	50%	51%	51%	52%	52%	53%	53%	54%	54%	55%	55%
Appliances	Electric	Clothes Dryer	50%	51%	51%	52%	52%	53%	53%	54%	54%	55%	55%
Appliances	Electric	Dishwasher	39%	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%
Appliances	Electric	Stove	39%	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%
Appliances	Electric	Microwave	39%	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%
Electronics	Electric	Personal Computers	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Electronics	Electric	Monitor	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Electronics	Electric	Laptops	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Electronics	Electric	TVs	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%
Electronics	Electric	Printer/Fax/Copier	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Electronics	Electric	Set-top Boxes/DVR	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Electronics	Electric	Devices and Gadgets	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Miscellaneous	Electric	Air Purifier/Cleaner	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Miscellaneous	Electric	Dehumidifier	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Miscellaneous	Electric	Pool Heater	49%	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%
Miscellaneous	Electric	Pool Pump	49%	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%

End Use	Fuel	Technology	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Miscellaneous	Electric	Hot Tub / Spa	49%	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%
Miscellaneous	Electric	Well Pump	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Miscellaneous	Electric	Furnace Fan	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Miscellaneous	Electric	Bathroom Exhaust Fan	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Miscellaneous	Electric	Miscellaneous	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%

Table E-10 **Single Family Gas/Electric Customer Equipment Measures — Gas (Maximum Achievable Potential factor)**

End Use	Fuel	Technology	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Heating	Natural Gas	Furnace	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Heating	Natural Gas	Boiler	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Heating	Natural Gas	Other Heating	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Water Heating	Natural Gas	Water Heater <= 55 gal	48%	48%	49%	49%	50%	50%	51%	51%	52%	52%	53%
Water Heating	Natural Gas	Water Heater > 55 gal	48%	48%	49%	49%	50%	50%	51%	51%	52%	52%	53%
Appliances	Natural Gas	Clothes Dryer	50%	51%	51%	52%	52%	53%	53%	54%	54%	55%	55%
Appliances	Natural Gas	Stove	39%	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%
Miscellaneous	Natural Gas	Pool Heater	49%	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%
Miscellaneous	Natural Gas	Hot Tub / Spa	49%	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%
Miscellaneous	Natural Gas	Miscellaneous	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%

Table E-11 Single Family Gas/Electric Customer Non-Equipment Measures—(Maximum Achievable Potential factor)

Measure	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Insulation - Ceiling	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%
Insulation - Ducting	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%
Insulation - Foundation	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%
Insulation - Infiltration Control	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%
Insulation - Radiant Barrier	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%
Insulation - Wall Cavity	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%
Insulation - Wall Sheathing	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%
Ducting - Repair and Sealing	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Windows - High Efficiency/ENERGY STAR	50%	51%	51%	52%	52%	53%	53%	54%	54%	55%	55%
Windows - Install Reflective Film	50%	51%	51%	52%	52%	53%	53%	54%	54%	55%	55%
Doors - Storm and Thermal	50%	51%	51%	52%	52%	53%	53%	54%	54%	55%	55%
Roofs - High Reflectivity	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%
Attic Fan - Installation	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Attic Fan - Photovoltaic - Installation	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Whole-House Fan - Installation	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Ceiling Fan - Installation	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Thermostat - Clock/Programmable	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Home Energy Management System	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Central AC - Early Replacement	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Central AC - Maintenance and Tune-Up	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%	44%
Central Heat Pump - Maintenance	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%	44%
Room AC - Removal of Second Unit	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Boiler - Hot Water Reset	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Boiler - Pipe Insulation	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%
Boiler - Maintenance	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%
Furnace - Maintenance	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%
Water Heater - Drainwater Heat Recovery	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%
Water Heater - Faucet Aerators	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%
Water Heater - Low-Flow Showerheads	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%
Water Heater - Pipe Insulation	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%
Water Heater - Tank Blanket/Insulation	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%
Water Heater - Thermostat Setback	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Water Heater - Timer	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Water Heater - Desuperheater	48%	48%	49%	49%	50%	50%	51%	51%	52%	52%	53%
Water Heater - Solar System	48%	48%	49%	49%	50%	50%	51%	51%	52%	52%	53%

Measure	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Interior Lighting - Occupancy Sensors	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Exterior Lighting - Photosensor Control	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Exterior Lighting - Photovoltaic Installation	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Exterior Lighting - Timeclock Installation	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Refrigerator - Early Replacement	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Refrigerator - Maintenance	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Refrigerator - Remove Second Unit	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Freezer - Remove Second Unit	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Freezer - Early Replacement	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Freezer - Maintenance	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Electronics - Smart Power Strip	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Pool Pump - Timer	49%	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%
Pool Heater - Solar System	49%	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%
ENERGY STAR Home Design	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%
Information Based Energy Efficiency Programs	48%	48%	49%	49%	50%	50%	51%	51%	52%	52%	53%
Combined Boiler & Water Htg. Unit	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Pool/Spa cover	49%	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%

Table E-12 Single Family Gas/Electric Customer Equipment Measures— Electric (Maximum Achievable Potential factor x Realistic Achievable Potential factor)

End Use	Fuel	Technology	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cooling	Electric	Central AC	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%
Cooling	Electric	Room AC	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%
Cooling	Electric	Air-Source Heat Pump	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%
Cooling	Electric	Geothermal Heat Pump	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%
Cooling	Electric	PTHP	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%
Heating	Electric	Electric Room Heat	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Heating	Electric	Furnace	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Heating	Electric	Air-Source Heat Pump	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%
Heating	Electric	Geothermal Heat Pump	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%
Heating	Electric	PTHP	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%
Water Heating	Electric	Water Heater <= 55 gal	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%
Water Heating	Electric	Water Heater > 55 gal	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%
Interior Lighting	Electric	Screw-in	39%	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%
Interior Lighting	Electric	Linear Fluorescent	39%	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%
Interior Lighting	Electric	Specialty	10%	10%	10%	10%	10%	10%	11%	11%	11%	11%	11%
Exterior Lighting	Electric	Screw-in	39%	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%
Appliances	Electric	Refrigerator	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%
Appliances	Electric	Second Refrigerator	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%
Appliances	Electric	Freezer	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%
Appliances	Electric	Clothes Washer	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%
Appliances	Electric	Clothes Dryer	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%
Appliances	Electric	Dishwasher	35%	35%	36%	36%	37%	37%	38%	38%	39%	39%	40%
Appliances	Electric	Stove	35%	35%	36%	36%	37%	37%	38%	38%	39%	39%	40%
Appliances	Electric	Microwave	35%	35%	36%	36%	37%	37%	38%	38%	39%	39%	40%
Electronics	Electric	Personal Computers	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Electronics	Electric	Monitor	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Electronics	Electric	Laptops	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Electronics	Electric	TVs	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Electronics	Electric	Printer/Fax/Copier	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Electronics	Electric	Set-top Boxes/DVR	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%
Electronics	Electric	Devices and Gadgets	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Miscellaneous	Electric	Air Purifier/Cleaner	27%	27%	28%	28%	29%	29%	30%	30%	31%	31%	32%
Miscellaneous	Electric	Dehumidifier	27%	27%	28%	28%	29%	29%	30%	30%	31%	31%	32%

End Use	Fuel	Technology	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Miscellaneous	Electric	Pool Heater	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%
Miscellaneous	Electric	Pool Pump	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%
Miscellaneous	Electric	Hot Tub / Spa	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%
Miscellaneous	Electric	Well Pump	24%	24%	25%	25%	26%	26%	27%	27%	28%	28%	29%
Miscellaneous	Electric	Furnace Fan	24%	24%	25%	25%	26%	26%	27%	27%	28%	28%	29%
Miscellaneous	Electric	Bathroom Exhaust Fan	24%	24%	25%	25%	26%	26%	27%	27%	28%	28%	29%
Miscellaneous	Electric	Miscellaneous	24%	24%	25%	25%	26%	26%	27%	27%	28%	28%	29%

Table E-13 Single Family Gas/Electric Customer Equipment Measures— Gas (Maximum Achievable Potential factor x Realistic Achievable Potential factor)

End Use	Fuel	Technology	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Heating	Natural Gas	Furnace	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Heating	Natural Gas	Boiler	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Heating	Natural Gas	Other Heating	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Water Heating	Natural Gas	Water Heater <= 55 gal	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%
Water Heating	Natural Gas	Water Heater > 55 gal	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%
Appliances	Natural Gas	Clothes Dryer	33%	33%	34%	34%	35%	35%	35%	36%	36%	37%	37%
Appliances	Natural Gas	Stove	26%	26%	27%	27%	27%	28%	28%	29%	29%	30%	30%
Miscellaneous	Natural Gas	Pool Heater	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Miscellaneous	Natural Gas	Hot Tub / Spa	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Miscellaneous	Natural Gas	Miscellaneous	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%
Heating	Natural Gas	Furnace	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Heating	Natural Gas	Boiler	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Heating	Natural Gas	Other Heating	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Water Heating	Natural Gas	Water Heater <= 55 gal	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%
Water Heating	Natural Gas	Water Heater > 55 gal	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%
Appliances	Natural Gas	Clothes Dryer	33%	33%	34%	34%	35%	35%	35%	36%	36%	37%	37%
Appliances	Natural Gas	Stove	26%	26%	27%	27%	27%	28%	28%	29%	29%	30%	30%
Miscellaneous	Natural Gas	Pool Heater	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Miscellaneous	Natural Gas	Hot Tub / Spa	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%

Table E-14 Single Family Gas/Electric Customer Non-Equipment Measures—(Maximum Achievable Potential factor x Realistic Achievable Potential factor)

Measure	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Insulation - Ceiling	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%
Insulation - Ducting	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%
Insulation - Foundation	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%
Insulation - Infiltration Control	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%
Insulation - Radiant Barrier	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%
Insulation - Wall Cavity	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%
Insulation - Wall Sheathing	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%
Ducting - Repair and Sealing	30%	30%	31%	31%	32%	32%	33%	33%	34%	34%	35%
Windows - High Efficiency/ENERGY STAR	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%
Windows - Install Reflective Film	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%
Doors - Storm and Thermal	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%
Roofs - High Reflectivity	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%
Attic Fan - Installation	24%	24%	25%	25%	26%	26%	27%	27%	28%	28%	29%
Attic Fan - Photovoltaic - Installation	24%	24%	25%	25%	26%	26%	27%	27%	28%	28%	29%
Whole-House Fan - Installation	24%	24%	25%	25%	26%	26%	27%	27%	28%	28%	29%
Ceiling Fan - Installation	24%	24%	25%	25%	26%	26%	27%	27%	28%	28%	29%
Thermostat - Clock/Programmable	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Home Energy Management System	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%
Central AC - Early Replacement	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%
Central AC - Maintenance and Tune-Up	33%	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%
Central Heat Pump - Maintenance	33%	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%
Room AC - Removal of Second Unit	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%
Boiler - Hot Water Reset	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Boiler - Pipe Insulation	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%
Boiler - Maintenance	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%	39%
Furnace - Maintenance	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%	39%
Water Heater - Drainwater Heat Recovery	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%
Water Heater - Faucet Aerators	27%	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%
Water Heater - Low-Flow Showerheads	27%	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%
Water Heater - Pipe Insulation	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%
Water Heater - Tank Blanket/Insulation	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%
Water Heater - Thermostat Setback	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Water Heater - Timer	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Water Heater - Desuperheater	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%

Measure	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Water Heater - Solar System	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%
Interior Lighting - Occupancy Sensors	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%
Exterior Lighting - Photosensor Control	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%
Exterior Lighting - Photovoltaic Installation	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%
Exterior Lighting - Timeclock Installation	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%
Refrigerator - Early Replacement	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%
Refrigerator - Maintenance	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%
Refrigerator - Remove Second Unit	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%
Freezer - Remove Second Unit	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%
Freezer - Early Replacement	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%
Freezer - Maintenance	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%
Electronics - Smart Power Strip	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%
Pool Pump - Timer	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%
Pool Heater - Solar System	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%
ENERGY STAR Home Design	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%
Information Based Energy Efficiency Programs	39%	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%
Combined Boiler & Water Htg. Unit	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Pool/Spa cover	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%

Table E-15 Multi Family Gas/Electric Customer Equipment Measures—Electric (Maximum Achievable Potential factor)

End Use	Fuel	Technology	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cooling	Electric	Central AC	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Cooling	Electric	Room AC	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Cooling	Electric	Air-Source Heat Pump	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Cooling	Electric	Geothermal Heat Pump	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Cooling	Electric	PTHP	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Heating	Electric	Electric Room Heat	48%	48%	49%	49%	50%	50%	51%	51%	52%	52%	53%
Heating	Electric	Furnace	48%	48%	49%	49%	50%	50%	51%	51%	52%	52%	53%
Heating	Electric	Air-Source Heat Pump	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Heating	Electric	Geothermal Heat Pump	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Heating	Electric	PTHP	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Water Heating	Electric	Water Heater <= 55 gal	41%	41%	42%	42%	43%	43%	44%	44%	45%	45%	46%
Water Heating	Electric	Water Heater > 55 gal	41%	41%	42%	42%	43%	43%	44%	44%	45%	45%	46%
Interior Lighting	Electric	Screw-in	49%	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%
Interior Lighting	Electric	Linear Fluorescent	49%	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%
Interior Lighting	Electric	Specialty	12%	12%	12%	13%	13%	13%	13%	13%	13%	13%	13%
Exterior Lighting	Electric	Screw-in	49%	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%
Appliances	Electric	Refrigerator	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Appliances	Electric	Second Refrigerator	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Appliances	Electric	Freezer	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Appliances	Electric	Clothes Washer	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%	48%
Appliances	Electric	Clothes Dryer	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%	48%
Appliances	Electric	Dishwasher	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Appliances	Electric	Stove	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Appliances	Electric	Microwave	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Electronics	Electric	Personal Computers	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%
Electronics	Electric	Monitor	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%
Electronics	Electric	Laptops	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%
Electronics	Electric	TVs	41%	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%
Electronics	Electric	Printer/Fax/Copier	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%
Electronics	Electric	Set-top Boxes/DVR	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Electronics	Electric	Devices and Gadgets	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%
Miscellaneous	Electric	Air Purifier/Cleaner	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Miscellaneous	Electric	Dehumidifier	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Miscellaneous	Electric	Pool Heater	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Miscellaneous	Electric	Pool Pump	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%

End Use	Fuel	Technology	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Miscellaneous	Electric	Hot Tub / Spa	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Miscellaneous	Electric	Well Pump	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Miscellaneous	Electric	Furnace Fan	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Miscellaneous	Electric	Bathroom Exhaust Fan	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Miscellaneous	Electric	Miscellaneous	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%

Table E-16 Multi Family Gas/Electric Customer Equipment Measures — Gas (Maximum Achievable Potential factor)

End Use	Fuel	Technology	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Heating	Natural Gas	Furnace	48%	48%	49%	49%	50%	50%	51%	51%	52%	52%	53%
Heating	Natural Gas	Boiler	48%	48%	49%	49%	50%	50%	51%	51%	52%	52%	53%
Heating	Natural Gas	Other Heating	48%	48%	49%	49%	50%	50%	51%	51%	52%	52%	53%
Water Heating	Natural Gas	Water Heater <= 55 gal	41%	41%	42%	42%	43%	43%	44%	44%	45%	45%	46%
Water Heating	Natural Gas	Water Heater > 55 gal	41%	41%	42%	42%	43%	43%	44%	44%	45%	45%	46%
Appliances	Natural Gas	Clothes Dryer	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%	48%
Appliances	Natural Gas	Stove	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Miscellaneous	Natural Gas	Pool Heater	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Miscellaneous	Natural Gas	Hot Tub / Spa	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Miscellaneous	Natural Gas	Miscellaneous	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%

Table E-17 Multi Family Gas/Electric Customer Non-Equipment Measures— (Maximum Achievable Potential factor)

Measure	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Insulation - Ceiling	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Insulation - Ducting	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%
Insulation - Foundation	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Insulation - Infiltration Control	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Insulation - Radiant Barrier	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Insulation - Wall Cavity	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Insulation - Wall Sheathing	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Ducting - Repair and Sealing	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%
Windows - High Efficiency/ENERGY STAR	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Windows - Install Reflective Film	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Doors - Storm and Thermal	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Roofs - High Reflectivity	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Attic Fan - Installation	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Attic Fan - Photovoltaic - Installation	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Whole-House Fan - Installation	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Ceiling Fan - Installation	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Thermostat - Clock/Programmable	30%	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%
Home Energy Management System	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Central AC - Early Replacement	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Central AC - Maintenance and Tune-Up	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%
Central Heat Pump - Maintenance	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%
Room AC - Removal of Second Unit	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Boiler - Hot Water Reset	30%	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%
Boiler - Pipe Insulation	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%
Boiler - Maintenance	24%	25%	25%	26%	26%	27%	27%	28%	28%	29%	29%
Furnace - Maintenance	24%	25%	25%	26%	26%	27%	27%	28%	28%	29%	29%
Water Heater - Drainwater Heat Recovery	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%
Water Heater - Faucet Aerators	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%
Water Heater - Low-Flow Showerheads	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%
Water Heater - Pipe Insulation	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%
Water Heater - Tank Blanket/Insulation	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%
Water Heater - Thermostat Setback	30%	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%
Water Heater - Timer	30%	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%
Water Heater - Desuperheater	41%	41%	42%	42%	43%	43%	44%	44%	45%	45%	46%
Water Heater - Solar System	41%	41%	42%	42%	43%	43%	44%	44%	45%	45%	46%

Measure	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Interior Lighting - Occupancy Sensors	27%	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%
Exterior Lighting - Photosensor Control	27%	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%
Exterior Lighting - Photovoltaic Installation	27%	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%
Exterior Lighting - Timeclock Installation	27%	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%
Refrigerator - Early Replacement	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Refrigerator - Maintenance	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Refrigerator - Remove Second Unit	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Freezer - Remove Second Unit	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Freezer - Early Replacement	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Freezer - Maintenance	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Electronics - Smart Power Strip	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Pool Pump - Timer	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Pool Heater - Solar System	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
ENERGY STAR Home Design	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Information Based Energy Efficiency Programs	49%	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%
Combined Boiler & Water Htg. Unit	48%	48%	49%	49%	50%	50%	51%	51%	52%	52%	53%
Pool/Spa cover	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%

Table E-18 Multi Family Gas/Electric Customer Equipment Measures— Electric (Maximum Achievable Potential factor x Realistic Achievable Potential factor)

End Use	Fuel	Technology	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cooling	Electric	Central AC	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Cooling	Electric	Room AC	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Cooling	Electric	Air-Source Heat Pump	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Cooling	Electric	Geothermal Heat Pump	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Cooling	Electric	PTHP	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Heating	Electric	Electric Room Heat	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Heating	Electric	Furnace	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Heating	Electric	Air-Source Heat Pump	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Heating	Electric	Geothermal Heat Pump	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Heating	Electric	PTHP	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Water Heating	Electric	Water Heater <= 55 gal	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Water Heating	Electric	Water Heater > 55 gal	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Interior Lighting	Electric	Screw-in	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%	45%
Interior Lighting	Electric	Linear Fluorescent	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%	45%
Interior Lighting	Electric	Specialty	10%	10%	10%	10%	11%	11%	11%	11%	11%	11%	11%
Exterior Lighting	Electric	Screw-in	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%	45%
Appliances	Electric	Refrigerator	35%	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%
Appliances	Electric	Second Refrigerator	35%	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%
Appliances	Electric	Freezer	35%	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%
Appliances	Electric	Clothes Washer	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Appliances	Electric	Clothes Dryer	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Appliances	Electric	Dishwasher	27%	27%	28%	28%	29%	29%	30%	30%	31%	31%	32%
Appliances	Electric	Stove	27%	27%	28%	28%	29%	29%	30%	30%	31%	31%	32%
Appliances	Electric	Microwave	27%	27%	28%	28%	29%	29%	30%	30%	31%	31%	32%
Electronics	Electric	Personal Computers	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%
Electronics	Electric	Monitor	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%
Electronics	Electric	Laptops	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%
Electronics	Electric	TVs	30%	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%
Electronics	Electric	Printer/Fax/Copier	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%
Electronics	Electric	Set-top Boxes/DVR	33%	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%
Electronics	Electric	Devices and Gadgets	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%
Miscellaneous	Electric	Air Purifier/Cleaner	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%	28%
Miscellaneous	Electric	Dehumidifier	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%	28%
Miscellaneous	Electric	Pool Heater	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%

End Use	Fuel	Technology	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Miscellaneous	Electric	Pool Pump	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
Miscellaneous	Electric	Hot Tub / Spa	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
Miscellaneous	Electric	Well Pump	18%	19%	19%	20%	20%	21%	21%	22%	22%	23%	23%
Miscellaneous	Electric	Furnace Fan	18%	19%	19%	20%	20%	21%	21%	22%	22%	23%	23%
Miscellaneous	Electric	Bathroom Exhaust Fan	18%	19%	19%	20%	20%	21%	21%	22%	22%	23%	23%
Miscellaneous	Electric	Miscellaneous	18%	19%	19%	20%	20%	21%	21%	22%	22%	23%	23%

Table E-19 Multi Family Gas/Electric Customer Equipment Measures—Gas (Maximum Achievable Potential factor x Realistic Achievable Potential factor)

End Use	Fuel	Technology	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Heating	Natural Gas	Furnace	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%
Heating	Natural Gas	Boiler	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%
Heating	Natural Gas	Other Heating	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%
Water Heating	Natural Gas	Water Heater <= 55 gal	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Water Heating	Natural Gas	Water Heater > 55 gal	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Appliances	Natural Gas	Clothes Dryer	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%
Appliances	Natural Gas	Stove	20%	20%	21%	21%	22%	22%	23%	23%	23%	24%	24%
Miscellaneous	Natural Gas	Pool Heater	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%
Miscellaneous	Natural Gas	Hot Tub / Spa	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%
Miscellaneous	Natural Gas	Miscellaneous	24%	24%	25%	25%	26%	26%	27%	27%	28%	28%	29%

Table E-20 Multi Family Gas/Electric Customer Non-Equipment Measures—(Maximum Achievable Potential factor x Realistic Achievable Potential factor)

Measure	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Insulation - Ceiling	21%	21%	22%	22%	23%	23%	24%	24%	25%	25%	26%
Insulation - Ducting	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
Insulation - Foundation	21%	21%	22%	22%	23%	23%	24%	24%	25%	25%	26%
Insulation - Infiltration Control	21%	21%	22%	22%	23%	23%	24%	24%	25%	25%	26%
Insulation - Radiant Barrier	21%	21%	22%	22%	23%	23%	24%	24%	25%	25%	26%
Insulation - Wall Cavity	21%	21%	22%	22%	23%	23%	24%	24%	25%	25%	26%
Insulation - Wall Sheathing	21%	21%	22%	22%	23%	23%	24%	24%	25%	25%	26%
Ducting - Repair and Sealing	27%	27%	28%	28%	29%	29%	30%	30%	31%	31%	32%
Windows - High Efficiency/ENERGY STAR	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%	28%
Windows - Install Reflective Film	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%	28%
Doors - Storm and Thermal	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%	28%
Roofs - High Reflectivity	21%	21%	22%	22%	23%	23%	24%	24%	25%	25%	26%
Attic Fan - Installation	18%	19%	19%	20%	20%	21%	21%	22%	22%	23%	23%
Attic Fan - Photovoltaic - Installation	18%	19%	19%	20%	20%	21%	21%	22%	22%	23%	23%
Whole-House Fan - Installation	18%	19%	19%	20%	20%	21%	21%	22%	22%	23%	23%
Ceiling Fan - Installation	18%	19%	19%	20%	20%	21%	21%	22%	22%	23%	23%
Thermostat - Clock/Programmable	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
Home Energy Management System	33%	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%
Central AC - Early Replacement	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Central AC - Maintenance and Tune-Up	26%	27%	27%	28%	28%	29%	29%	30%	30%	31%	31%
Central Heat Pump - Maintenance	26%	27%	27%	28%	28%	29%	29%	30%	30%	31%	31%
Room AC - Removal of Second Unit	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Boiler - Hot Water Reset	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
Boiler - Pipe Insulation	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
Boiler - Maintenance	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%	28%
Furnace - Maintenance	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%	28%
Water Heater - Drainwater Heat Recovery	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
Water Heater - Faucet Aerators	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%
Water Heater - Low-Flow Showerheads	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%
Water Heater - Pipe Insulation	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
Water Heater - Tank Blanket/Insulation	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
Water Heater - Thermostat Setback	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
Water Heater - Timer	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
Water Heater - Desuperheater	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%

Measure	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Water Heater - Solar System	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Interior Lighting - Occupancy Sensors	20%	20%	21%	21%	22%	22%	23%	23%	24%	24%	25%
Exterior Lighting - Photosensor Control	20%	20%	21%	21%	22%	22%	23%	23%	24%	24%	25%
Exterior Lighting - Photovoltaic Installation	20%	20%	21%	21%	22%	22%	23%	23%	24%	24%	25%
Exterior Lighting - Timelock Installation	20%	20%	21%	21%	22%	22%	23%	23%	24%	24%	25%
Refrigerator - Early Replacement	35%	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%
Refrigerator - Maintenance	35%	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%
Refrigerator - Remove Second Unit	35%	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%
Freezer - Remove Second Unit	35%	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%
Freezer - Early Replacement	35%	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%
Freezer - Maintenance	35%	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%
Electronics - Smart Power Strip	33%	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%
Pool Pump - Timer	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
Pool Heater - Solar System	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
ENERGY STAR Home Design	21%	21%	22%	22%	23%	23%	24%	24%	25%	25%	26%
Information Based Energy Efficiency Programs	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%	45%
Combined Boiler & Water Htg. Unit	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Pool/Spa cover	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%

Table E-21 *Single Family Gas Only Customer Equipment Measures—(Maximum Achievable Potential factor)*

End Use	Fuel	Technology	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Heating	Natural Gas	Furnace	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Heating	Natural Gas	Boiler	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Heating	Natural Gas	Other Heating	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Water Heating	Natural Gas	Water Heater <= 55 gal	48%	48%	49%	49%	50%	50%	51%	51%	52%	52%	53%
Water Heating	Natural Gas	Water Heater > 55 gal	48%	48%	49%	49%	50%	50%	51%	51%	52%	52%	53%
Appliances	Natural Gas	Clothes Dryer	50%	51%	51%	52%	52%	53%	53%	54%	54%	55%	55%
Appliances	Natural Gas	Stove	39%	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%
Miscellaneous	Natural Gas	Pool Heater	49%	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%
Miscellaneous	Natural Gas	Hot Tub / Spa	49%	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%
Miscellaneous	Natural Gas	Miscellaneous	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%

Table E-22 Single Family Gas Only Customer Non-Equipment Measures—(Maximum Achievable Potential factor)

Measure	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Insulation - Ceiling	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%
Insulation - Ducting	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%
Insulation - Foundation	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%
Insulation - Infiltration Control	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%
Insulation - Radiant Barrier	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%
Insulation - Wall Cavity	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%
Insulation - Wall Sheathing	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%
Ducting - Repair and Sealing	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Windows - High Efficiency/ENERGY STAR	50%	51%	51%	52%	52%	53%	53%	54%	54%	55%	55%
Windows - Install Reflective Film	50%	51%	51%	52%	52%	53%	53%	54%	54%	55%	55%
Doors - Storm and Thermal	50%	51%	51%	52%	52%	53%	53%	54%	54%	55%	55%
Roofs - High Reflectivity	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%
Attic Fan - Installation	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Attic Fan - Photovoltaic - Installation	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Whole-House Fan - Installation	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Ceiling Fan - Installation	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Thermostat - Clock/Programmable	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Home Energy Management System	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Central AC - Early Replacement	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Central AC - Maintenance and Tune-Up	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%	44%
Central Heat Pump - Maintenance	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%	44%
Room AC - Removal of Second Unit	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Boiler - Hot Water Reset	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Boiler - Pipe Insulation	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%
Boiler - Maintenance	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%
Furnace - Maintenance	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%
Water Heater - Drainwater Heat Recovery	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%
Water Heater - Faucet Aerators	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%
Water Heater - Low-Flow Showerheads	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%
Water Heater - Pipe Insulation	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%
Water Heater - Tank Blanket/Insulation	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%
Water Heater - Thermostat Setback	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Water Heater - Timer	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Water Heater - Desuperheater	48%	48%	49%	49%	50%	50%	51%	51%	52%	52%	53%
Water Heater - Solar System	48%	48%	49%	49%	50%	50%	51%	51%	52%	52%	53%

Measure	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Interior Lighting - Occupancy Sensors	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Exterior Lighting - Photosensor Control	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Exterior Lighting - Photovoltaic Installation	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Exterior Lighting - Timedclock Installation	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Refrigerator - Early Replacement	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Refrigerator - Maintenance	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Refrigerator - Remove Second Unit	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Freezer - Remove Second Unit	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Freezer - Early Replacement	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Freezer - Maintenance	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Electronics - Smart Power Strip	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Pool Pump - Timer	49%	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%
Pool Heater - Solar System	49%	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%
ENERGY STAR Home Design	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%
Information Based Energy Efficiency Programs	48%	48%	49%	49%	50%	50%	51%	51%	52%	52%	53%
Combined Boiler & Water Htg. Unit	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Pool/Spa cover	49%	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%

Table E-23 **Single Family Gas Only Customer Equipment Measures—(Maximum Achievable Potential factor x Realistic Achievable Potential factor)**

End Use	Fuel	Technology	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Heating	Natural Gas	Furnace	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Heating	Natural Gas	Boiler	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Heating	Natural Gas	Other Heating	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Water Heating	Natural Gas	Water Heater <= 55 gal	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%
Water Heating	Natural Gas	Water Heater > 55 gal	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%
Appliances	Natural Gas	Clothes Dryer	33%	33%	34%	34%	35%	35%	35%	36%	36%	37%	37%
Appliances	Natural Gas	Stove	26%	26%	27%	27%	27%	28%	28%	29%	29%	30%	30%
Miscellaneous	Natural Gas	Pool Heater	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Miscellaneous	Natural Gas	Hot Tub / Spa	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Miscellaneous	Natural Gas	Miscellaneous	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%

Table E-24 Single Family Gas Only Customer Non-Equipment Measures—(Maximum Achievable Potential factor x Realistic Achievable Potential factor)

Measure	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Insulation - Ceiling	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%
Insulation - Ducting	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%
Insulation - Foundation	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%
Insulation - Infiltration Control	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%
Insulation - Radiant Barrier	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%
Insulation - Wall Cavity	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%
Insulation - Wall Sheathing	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%
Ducting - Repair and Sealing	30%	30%	31%	31%	32%	32%	33%	33%	34%	34%	35%
Windows - High Efficiency/ENERGY STAR	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%
Windows - Install Reflective Film	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%
Doors - Storm and Thermal	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%
Roofs - High Reflectivity	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%
Attic Fan - Installation	24%	24%	25%	25%	26%	26%	27%	27%	28%	28%	29%
Attic Fan - Photovoltaic - Installation	24%	24%	25%	25%	26%	26%	27%	27%	28%	28%	29%
Whole-House Fan - Installation	24%	24%	25%	25%	26%	26%	27%	27%	28%	28%	29%
Ceiling Fan - Installation	24%	24%	25%	25%	26%	26%	27%	27%	28%	28%	29%
Thermostat - Clock/Programmable	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Home Energy Management System	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%
Central AC - Early Replacement	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%
Central AC - Maintenance and Tune-Up	33%	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%
Central Heat Pump - Maintenance	33%	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%
Room AC - Removal of Second Unit	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%
Boiler - Hot Water Reset	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Boiler - Pipe Insulation	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%
Boiler - Maintenance	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%	39%
Furnace - Maintenance	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%	39%
Water Heater - Drainwater Heat Recovery	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%
Water Heater - Faucet Aerators	27%	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%
Water Heater - Low-Flow Showerheads	27%	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%
Water Heater - Pipe Insulation	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%
Water Heater - Tank Blanket/Insulation	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%
Water Heater - Thermostat Setback	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Water Heater - Timer	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Water Heater - Desuperheater	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%

Measure	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Water Heater - Solar System	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%
Interior Lighting - Occupancy Sensors	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%
Exterior Lighting - Photosensor Control	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%
Exterior Lighting - Photovoltaic Installation	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%
Exterior Lighting - Timedclock Installation	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%
Refrigerator - Early Replacement	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%
Refrigerator - Maintenance	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%
Refrigerator - Remove Second Unit	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%
Freezer - Remove Second Unit	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%
Freezer - Early Replacement	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%
Freezer - Maintenance	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%
Electronics - Smart Power Strip	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%
Pool Pump - Timer	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%
Pool Heater - Solar System	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%
ENERGY STAR Home Design	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%
Information Based Energy Efficiency Programs	39%	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%
Combined Boiler & Water Htg. Unit	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Pool/Spa cover	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%	34%

Table E-25 Multi Family Gas Only Customer Equipment Measures—(Maximum Achievable Potential factor)

End Use	Fuel	Technology	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Heating	Natural Gas	Furnace	48%	48%	49%	49%	50%	50%	51%	51%	52%	52%	53%
Heating	Natural Gas	Boiler	48%	48%	49%	49%	50%	50%	51%	51%	52%	52%	53%
Heating	Natural Gas	Other Heating	48%	48%	49%	49%	50%	50%	51%	51%	52%	52%	53%
Water Heating	Natural Gas	Water Heater <= 55 gal	41%	41%	42%	42%	43%	43%	44%	44%	45%	45%	46%
Water Heating	Natural Gas	Water Heater > 55 gal	41%	41%	42%	42%	43%	43%	44%	44%	45%	45%	46%
Appliances	Natural Gas	Clothes Dryer	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%	48%
Appliances	Natural Gas	Stove	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Miscellaneous	Natural Gas	Pool Heater	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Miscellaneous	Natural Gas	Hot Tub / Spa	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Miscellaneous	Natural Gas	Miscellaneous	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%

Table E-26 Multi Family Gas Only Customer Non-Equipment Measures—(Maximum Achievable Potential factor)

Measure	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Insulation - Ceiling	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Insulation - Ducting	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%
Insulation - Foundation	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Insulation - Infiltration Control	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Insulation - Radiant Barrier	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Insulation - Wall Cavity	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Insulation - Wall Sheathing	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Ducting - Repair and Sealing	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%
Windows - High Efficiency/ENERGY STAR	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Windows - Install Reflective Film	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Doors - Storm and Thermal	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Roofs - High Reflectivity	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Attic Fan - Installation	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Attic Fan - Photovoltaic - Installation	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Whole-House Fan - Installation	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Ceiling Fan - Installation	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Thermostat - Clock/Programmable	30%	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%
Home Energy Management System	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Central AC - Early Replacement	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Central AC - Maintenance and Tune-Up	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%
Central Heat Pump - Maintenance	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%
Room AC - Removal of Second Unit	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Boiler - Hot Water Reset	30%	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%
Boiler - Pipe Insulation	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%
Boiler - Maintenance	24%	25%	25%	26%	26%	27%	27%	28%	28%	29%	29%
Furnace - Maintenance	24%	25%	25%	26%	26%	27%	27%	28%	28%	29%	29%
Water Heater - Drainwater Heat Recovery	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%
Water Heater - Faucet Aerators	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%
Water Heater - Low-Flow Showerheads	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%
Water Heater - Pipe Insulation	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%
Water Heater - Tank Blanket/Insulation	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%
Water Heater - Thermostat Setback	30%	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%
Water Heater - Timer	30%	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%
Water Heater - Desuperheater	41%	41%	42%	42%	43%	43%	44%	44%	45%	45%	46%
Water Heater - Solar System	41%	41%	42%	42%	43%	43%	44%	44%	45%	45%	46%

Measure	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Interior Lighting - Occupancy Sensors	27%	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%
Exterior Lighting - Photosensor Control	27%	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%
Exterior Lighting - Photovoltaic Installation	27%	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%
Exterior Lighting - Timedclock Installation	27%	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%
Refrigerator - Early Replacement	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Refrigerator - Maintenance	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Refrigerator - Remove Second Unit	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Freezer - Remove Second Unit	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Freezer - Early Replacement	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Freezer - Maintenance	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Electronics - Smart Power Strip	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Pool Pump - Timer	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Pool Heater - Solar System	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
ENERGY STAR Home Design	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Information Based Energy Efficiency Programs	49%	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%
Combined Boiler & Water Htg. Unit	48%	48%	49%	49%	50%	50%	51%	51%	52%	52%	53%
Pool/Spa cover	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%

Table E-27 Multi Family Gas Only Customer Equipment Measures—(Maximum Achievable Potential factor x Realistic Achievable Potential factor)

End Use	Fuel	Technology	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Heating	Natural Gas	Furnace	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%
Heating	Natural Gas	Boiler	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%
Heating	Natural Gas	Other Heating	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%
Water Heating	Natural Gas	Water Heater <= 55 gal	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Water Heating	Natural Gas	Water Heater > 55 gal	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Appliances	Natural Gas	Clothes Dryer	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%
Appliances	Natural Gas	Stove	20%	20%	21%	21%	22%	22%	23%	23%	23%	24%	24%
Miscellaneous	Natural Gas	Pool Heater	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%
Miscellaneous	Natural Gas	Hot Tub / Spa	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%
Miscellaneous	Natural Gas	Miscellaneous	24%	24%	25%	25%	26%	26%	27%	27%	28%	28%	29%

Table E-28 Multi Family Gas Only Customer Non-Equipment Measures—(Maximum Achievable Potential factor x Realistic Achievable Potential factor)

Measure	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Insulation - Ceiling	21%	21%	22%	22%	23%	23%	24%	24%	25%	25%	26%
Insulation - Ducting	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
Insulation - Foundation	21%	21%	22%	22%	23%	23%	24%	24%	25%	25%	26%
Insulation - Infiltration Control	21%	21%	22%	22%	23%	23%	24%	24%	25%	25%	26%
Insulation - Radiant Barrier	21%	21%	22%	22%	23%	23%	24%	24%	25%	25%	26%
Insulation - Wall Cavity	21%	21%	22%	22%	23%	23%	24%	24%	25%	25%	26%
Insulation - Wall Sheathing	21%	21%	22%	22%	23%	23%	24%	24%	25%	25%	26%
Ducting - Repair and Sealing	27%	27%	28%	28%	29%	29%	30%	30%	31%	31%	32%
Windows - High Efficiency/ENERGY STAR	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%	28%
Windows - Install Reflective Film	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%	28%
Doors - Storm and Thermal	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%	28%
Roofs - High Reflectivity	21%	21%	22%	22%	23%	23%	24%	24%	25%	25%	26%
Attic Fan - Installation	18%	19%	19%	20%	20%	21%	21%	22%	22%	23%	23%
Attic Fan - Photovoltaic - Installation	18%	19%	19%	20%	20%	21%	21%	22%	22%	23%	23%
Whole-House Fan - Installation	18%	19%	19%	20%	20%	21%	21%	22%	22%	23%	23%
Ceiling Fan - Installation	18%	19%	19%	20%	20%	21%	21%	22%	22%	23%	23%
Thermostat - Clock/Programmable	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
Home Energy Management System	33%	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%
Central AC - Early Replacement	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Central AC - Maintenance and Tune-Up	26%	27%	27%	28%	28%	29%	29%	30%	30%	31%	31%
Central Heat Pump - Maintenance	26%	27%	27%	28%	28%	29%	29%	30%	30%	31%	31%
Room AC - Removal of Second Unit	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Boiler - Hot Water Reset	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
Boiler - Pipe Insulation	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
Boiler - Maintenance	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%	28%
Furnace - Maintenance	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%	28%
Water Heater - Drainwater Heat Recovery	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
Water Heater - Faucet Aerators	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%
Water Heater - Low-Flow Showerheads	28%	29%	29%	30%	30%	31%	31%	32%	32%	33%	33%
Water Heater - Pipe Insulation	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
Water Heater - Tank Blanket/Insulation	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
Water Heater - Thermostat Setback	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
Water Heater - Timer	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
Water Heater - Desuperheater	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%

Measure	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Water Heater - Solar System	32%	32%	33%	33%	34%	34%	35%	35%	36%	36%	37%
Interior Lighting - Occupancy Sensors	20%	20%	21%	21%	22%	22%	23%	23%	24%	24%	25%
Exterior Lighting - Photosensor Control	20%	20%	21%	21%	22%	22%	23%	23%	24%	24%	25%
Exterior Lighting - Photovoltaic Installation	20%	20%	21%	21%	22%	22%	23%	23%	24%	24%	25%
Exterior Lighting - Timeclock Installation	20%	20%	21%	21%	22%	22%	23%	23%	24%	24%	25%
Refrigerator - Early Replacement	35%	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%
Refrigerator - Maintenance	35%	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%
Refrigerator - Remove Second Unit	35%	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%
Freezer - Remove Second Unit	35%	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%
Freezer - Early Replacement	35%	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%
Freezer - Maintenance	35%	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%
Electronics - Smart Power Strip	33%	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%
Pool Pump - Timer	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
Pool Heater - Solar System	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%
ENERGY STAR Home Design	21%	21%	22%	22%	23%	23%	24%	24%	25%	25%	26%
Information Based Energy Efficiency Programs	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%	45%
Combined Boiler & Water Htg. Unit	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Pool/Spa cover	22%	23%	23%	24%	24%	25%	25%	26%	26%	27%	27%

Table E-29 Commercial Electric Equipment Measures (Maximum Achievable Potential factor)

End Use	Fuel	Technology	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cooling	Electric	Air-Cooled Chiller	64%	65%	65%	66%	66%	67%	67%	68%	68%	69%	69%
Cooling	Electric	Water-Cooled Chiller	64%	65%	65%	66%	66%	67%	67%	68%	68%	69%	69%
Cooling	Electric	Roof top AC	64%	65%	65%	66%	66%	67%	67%	68%	68%	69%	69%
Cooling	Electric	Air Source Heat Pump	64%	65%	65%	66%	66%	67%	67%	68%	68%	69%	69%
Cooling	Electric	Geothermal Heat Pump	64%	65%	65%	66%	66%	67%	67%	68%	68%	69%	69%
Cooling	Electric	PTAC	64%	65%	65%	66%	66%	67%	67%	68%	68%	69%	69%
Cooling	Electric	PTHP	64%	65%	65%	66%	66%	67%	67%	68%	68%	69%	69%
Cooling	Electric	Evaporative AC	64%	65%	65%	66%	66%	67%	67%	68%	68%	69%	69%
Heating	Electric	Air Source Heat Pump	64%	65%	65%	66%	66%	67%	67%	68%	68%	69%	69%
Heating	Electric	Geothermal Heat Pump	64%	65%	65%	66%	66%	67%	67%	68%	68%	69%	69%
Heating	Electric	Electric Room Heat	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Heating	Electric	Electric Furnace	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Heating	Electric	PTAC	64%	65%	65%	66%	66%	67%	67%	68%	68%	69%	69%
Heating	Electric	PTHP	64%	65%	65%	66%	66%	67%	67%	68%	68%	69%	69%
Ventilation	Electric	Ventilation	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%	63%
Water Heating	Electric	Water Heating	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Interior Lighting	Electric	Screw-in	71%	71%	72%	72%	73%	73%	74%	74%	75%	75%	76%
Interior Lighting	Electric	High-Bay Fixtures	71%	71%	72%	72%	73%	73%	74%	74%	75%	75%	76%
Interior Lighting	Electric	Linear Fluorescent	71%	71%	72%	72%	73%	73%	74%	74%	75%	75%	76%
Exterior Lighting	Electric	Screw-in	71%	71%	72%	72%	73%	73%	74%	74%	75%	75%	76%
Exterior Lighting	Electric	HID	71%	71%	72%	72%	73%	73%	74%	74%	75%	75%	76%
Exterior Lighting	Electric	Linear Fluorescent	71%	71%	72%	72%	73%	73%	74%	74%	75%	75%	76%
Refrigeration	Electric	Walk-in Refrigerator	59%	59%	60%	60%	61%	61%	62%	62%	63%	63%	64%
Refrigeration	Electric	Reach-in Refrigerator	59%	59%	60%	60%	61%	61%	62%	62%	63%	63%	64%
Refrigeration	Electric	Glass Door Display	59%	59%	60%	60%	61%	61%	62%	62%	63%	63%	64%
Refrigeration	Electric	Open Display Case	59%	59%	60%	60%	61%	61%	62%	62%	63%	63%	64%
Refrigeration	Electric	Icemaker	59%	59%	60%	60%	61%	61%	62%	62%	63%	63%	64%
Refrigeration	Electric	Vending Machine	59%	59%	60%	60%	61%	61%	62%	62%	63%	63%	64%
Food Preparation	Electric	Oven	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Food Preparation	Electric	Fryer	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Food Preparation	Electric	Dishwasher	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Food Preparation	Electric	Hot Food Container	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Food Preparation	Electric	Other	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Office Equipment	Electric	Desktop Computer	59%	59%	60%	60%	61%	61%	62%	62%	63%	63%	64%
Office Equipment	Electric	Laptop	59%	59%	60%	60%	61%	61%	62%	62%	63%	63%	64%

End Use	Fuel	Technology	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Office Equipment	Electric	Server	55%	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%
Office Equipment	Electric	Monitor	59%	59%	60%	60%	61%	61%	62%	62%	63%	63%	64%
Office Equipment	Electric	Printer/Copier/Fax	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Office Equipment	Electric	POS Terminal	59%	59%	60%	60%	61%	61%	62%	62%	63%	63%	64%
Miscellaneous	Electric	Non-HVAC Motors	57%	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%
Miscellaneous	Electric	Pool Pump	65%	66%	66%	67%	67%	68%	68%	69%	69%	70%	70%
Miscellaneous	Electric	Pool Heater	65%	66%	66%	67%	67%	68%	68%	69%	69%	70%	70%
Miscellaneous	Electric	Miscellaneous	57%	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%

Table E-30 Commercial Electric Non-Equipment Measures (Maximum Achievable Potential factor)

Measure	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Insulation - Ceiling	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%	61%
Insulation - Ducting	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%	61%
Insulation - Radiant Barrier	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%	61%
Insulation - Wall Cavity	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%	61%
HVAC - Duct Repair and Sealing	61%	61%	62%	62%	63%	63%	64%	64%	65%	65%	66%
Doors - High Efficiency	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%	61%
Windows - High Efficiency	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%	61%
Roof - High Reflectivity	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%	61%
Air-Cooled Chiller - Condenser Air Temperature Reset	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Air-Cooled Chiller - Economizer	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Air-Cooled Chiller - Thermal Energy Storage	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Air-Cooled Chiller - VSD on fans	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Air-Cooled Chiller - Chilled Water Reset	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Air-Cooled Chiller - Chilled Water Variable-Flow System	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Air-Cooled Chiller - Maintenance	61%	61%	62%	62%	63%	63%	64%	64%	65%	65%	66%
Water-Cooled Chiller - Condenser Water Temperature Reset	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Water-Cooled Chiller - Economizer	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Water-Cooled Chiller - Thermal Energy Storage	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Water-Cooled Chiller - VSD on Fans	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Water-Cooled Chiller - Chilled Water Reset	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Water-Cooled Chiller - Chilled Water Variable-Flow System	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Water-Cooled Chiller - Maintenance	61%	61%	62%	62%	63%	63%	64%	64%	65%	65%	66%
RTU - Evaporative Precooler	53%	54%	54%	55%	55%	56%	56%	57%	57%	58%	58%
RTU - Maintenance	61%	61%	62%	62%	63%	63%	64%	64%	65%	65%	66%
Gas Boiler - High Efficiency Hot Water Circulation	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Gas Boiler - Hot Water Reset	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Gas Boiler - Maintenance	61%	61%	62%	62%	63%	63%	64%	64%	65%	65%	66%
Gas Furnace - Maintenance	61%	61%	62%	62%	63%	63%	64%	64%	65%	65%	66%
Space Heating - Heat Recovery Ventilator	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Heat Pump - Maintenance	61%	61%	62%	62%	63%	63%	64%	64%	65%	65%	66%
Ventilation - ECM on VAV Boxes	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Ventilation - Variable Speed Control	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Ventilation - CO2 Controlled	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%

Measure	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Water Heater - Drainwater Heat Recovery	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Water Heater - Faucet Aerators	51%	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%
Water Heater - Low Flow Showerheads	51%	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%
Water Heater - High Efficiency Circulation Pump	51%	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%
Water Heater - Desuperheater	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Water Heater - Solar System	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Water Heater - Install Timer	61%	61%	62%	62%	63%	63%	64%	64%	65%	65%	66%
Water Heater - Pipe Insulation	61%	61%	62%	62%	63%	63%	64%	64%	65%	65%	66%
Water Heater - Tank Blanket/Insulation	61%	61%	62%	62%	63%	63%	64%	64%	65%	65%	66%
Water Heater - Pre-Rinse Spray Valve	51%	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%
Combined Boiler & Water Htg. Unit	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Interior Lighting - Daylighting Controls	54%	54%	55%	55%	56%	56%	57%	57%	58%	58%	59%
Interior Lighting - LED Exit Lighting	62%	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%
Interior Lighting - Occupancy Sensors	54%	54%	55%	55%	56%	56%	57%	57%	58%	58%	59%
Interior Lighting - Task Lighting	54%	54%	55%	55%	56%	56%	57%	57%	58%	58%	59%
Interior Lighting - Timers and Clocks	54%	54%	55%	55%	56%	56%	57%	57%	58%	58%	59%
Interior Fluorescent - Bi-Level Fixture	54%	54%	55%	55%	56%	56%	57%	57%	58%	58%	59%
Interior Fluorescent - Delamp and Install Reflectors	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Exterior Lighting - Bi-Level Fixture	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%	61%
Exterior Lighting - Daylighting Controls	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%	61%
Exterior Lighting - Photovoltaic Installation	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%	61%
Refrigerator - Anti-Sweat Door Heater	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Refrigerator - Auto Door Closer	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Refrigerator - Decommissioning	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Refrigerator - Demand Defrost	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Refrigerator - Door Gasket Replacement	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Refrigerator - Economizer	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Refrigerator - Evaporator Fan Controls	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Refrigerator - Floating Head Pressure	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Refrigerator - Strip Curtain	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Refrigerator - High Efficiency Compressor	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Refrigerator - Variable Speed Compressor	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Vending Machine - Controller	54%	54%	55%	55%	56%	56%	57%	57%	58%	58%	59%
Grocery - Display Case - LED Lighting	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Grocery - Display Case Motion Sensors	54%	54%	55%	55%	56%	56%	57%	57%	58%	58%	59%
Grocery - ECMs for Display Cases	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%

Measure	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Grocery - Open Display Case - Night Covers	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Cooking - Exhaust Hoods with Sensor Control	54%	54%	55%	55%	56%	56%	57%	57%	58%	58%	59%
Office Equipment - ENERGY STAR Power Supplies	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Office Equipment - Plug Load Occupancy Sensors	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Pool Pump - Timer	54%	54%	55%	55%	56%	56%	57%	57%	58%	58%	59%
Pool Heater - Solar	54%	54%	55%	55%	56%	56%	57%	57%	58%	58%	59%
Non-HVAC Motors - Variable Speed Control	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Energy Management System	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Thermostat - Clock/Programmable	54%	54%	55%	55%	56%	56%	57%	57%	58%	58%	59%
Lodging - Guest Room Controls	54%	54%	55%	55%	56%	56%	57%	57%	58%	58%	59%
HVAC - Occupancy Sensors	54%	54%	55%	55%	56%	56%	57%	57%	58%	58%	59%
Commissioning - HVAC	61%	61%	62%	62%	63%	63%	64%	64%	65%	65%	66%
Commissioning - Lighting	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Retrocommissioning - HVAC	61%	61%	62%	62%	63%	63%	64%	64%	65%	65%	66%
Retrocommissioning - Lighting	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Advanced New Construction Designs	61%	61%	62%	62%	63%	63%	64%	64%	65%	65%	66%
Custom Measures	61%	61%	62%	62%	63%	63%	64%	64%	65%	65%	66%
Refrigerator - eCube	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Electronics - Smart Power Strip	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Electronics - Monitor Power Management	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Insulation - Foundation	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%	61%
Water Heating - Booster Water Heater	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Refrigeration - High Efficiency Evaporator Fan Motors	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Boiler O2 Trim Controls	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Boiler Parallel Positioning Control	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Boiler blowdown heat exchanger (steam)	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Repair malfunctioning steam traps	61%	61%	62%	62%	63%	63%	64%	64%	65%	65%	66%
Insulate steam lines/condensate tank	61%	61%	62%	62%	63%	63%	64%	64%	65%	65%	66%
Destratification Fans (HVLS)	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Exhaust Hood Makeup Air	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Optimizing Kitchen Ventilation	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%

Table E-31 Commercial Electric Equipment Measures (Maximum Achievable Potential factor x Realistic Achievable Potential factor)

End Use	Fuel	Technology	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cooling	Electric	Air-Cooled Chiller	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Cooling	Electric	Water-Cooled Chiller	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Cooling	Electric	Roof top AC	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Cooling	Electric	Air Source Heat Pump	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Cooling	Electric	Geothermal Heat Pump	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Cooling	Electric	PTAC	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Cooling	Electric	PTHP	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Cooling	Electric	Evaporative AC	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Heating	Electric	Air Source Heat Pump	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Heating	Electric	Geothermal Heat Pump	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Heating	Electric	Electric Room Heat	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Heating	Electric	Electric Furnace	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Heating	Electric	PTAC	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Heating	Electric	PTHP	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Ventilation	Electric	Ventilation	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%	44%
Water Heating	Electric	Water Heating	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Interior Lighting	Electric	Screw-in	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Interior Lighting	Electric	High-Bay Fixtures	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Interior Lighting	Electric	Linear Fluorescent	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Exterior Lighting	Electric	Screw-in	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Exterior Lighting	Electric	HID	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Exterior Lighting	Electric	Linear Fluorescent	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Refrigeration	Electric	Walk-in Refrigerator	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Refrigeration	Electric	Reach-in Refrigerator	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Refrigeration	Electric	Glass Door Display	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Refrigeration	Electric	Open Display Case	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Refrigeration	Electric	Icemaker	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Refrigeration	Electric	Vending Machine	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Food Preparation	Electric	Oven	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Food Preparation	Electric	Fryer	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Food Preparation	Electric	Dishwasher	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Food Preparation	Electric	Hot Food Container	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Food Preparation	Electric	Other	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Office Equipment	Electric	Desktop Computer	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Office Equipment	Electric	Laptop	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%

End Use	Fuel	Technology	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Office Equipment	Electric	Server	33%	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%
Office Equipment	Electric	Monitor	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Office Equipment	Electric	Printer/Copier/Fax	35%	36%	36%	37%	37%	38%	38%	39%	39%	40%	40%
Office Equipment	Electric	POS Terminal	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Miscellaneous	Electric	Non-HVAC Motors	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Miscellaneous	Electric	Pool Pump	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%
Miscellaneous	Electric	Pool Heater	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%
Miscellaneous	Electric	Miscellaneous	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%

Table E-32 Commercial Electric Non-Equipment Measures (Maximum Achievable Potential factor x Realistic Achievable Potential factor)

Measure	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Insulation - Ceiling	45%	45%	46%	46%	47%	47%	48%	49%	49%	50%	50%
Insulation - Ducting	45%	45%	46%	46%	47%	47%	48%	49%	49%	50%	50%
Insulation - Radiant Barrier	45%	45%	46%	46%	47%	47%	48%	49%	49%	50%	50%
Insulation - Wall Cavity	45%	45%	46%	46%	47%	47%	48%	49%	49%	50%	50%
HVAC - Duct Repair and Sealing	35%	35%	36%	36%	37%	37%	38%	38%	39%	39%	40%
Doors - High Efficiency	45%	45%	46%	46%	47%	47%	48%	49%	49%	50%	50%
Windows - High Efficiency	45%	45%	46%	46%	47%	47%	48%	49%	49%	50%	50%
Roof - High Reflectivity	45%	45%	46%	46%	47%	47%	48%	49%	49%	50%	50%
Air-Cooled Chiller - Condenser Air Temperature Reset	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Air-Cooled Chiller - Economizer	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Air-Cooled Chiller - Thermal Energy Storage	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Air-Cooled Chiller - VSD on fans	39%	39%	40%	40%	40%	41%	41%	42%	42%	43%	43%
Air-Cooled Chiller - Chilled Water Reset	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Air-Cooled Chiller - Chilled Water Variable-Flow System	39%	39%	40%	40%	40%	41%	41%	42%	42%	43%	43%
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	37%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Air-Cooled Chiller - Maintenance	35%	35%	36%	36%	37%	37%	38%	38%	39%	39%	40%
Water-Cooled Chiller - Condenser Water Temperature Reset	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Water-Cooled Chiller - Economizer	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Water-Cooled Chiller - Thermal Energy Storage	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Water-Cooled Chiller - VSD on Fans	39%	39%	40%	40%	40%	41%	41%	42%	42%	43%	43%
Water-Cooled Chiller - Chilled Water Reset	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Water-Cooled Chiller - Chilled Water Variable-Flow System	39%	39%	40%	40%	40%	41%	41%	42%	42%	43%	43%
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	37%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Water-Cooled Chiller - Maintenance	35%	35%	36%	36%	37%	37%	38%	38%	39%	39%	40%
RTU - Evaporative Precooler	27%	28%	28%	29%	29%	30%	30%	31%	31%	32%	32%
RTU - Maintenance	35%	35%	36%	36%	37%	37%	38%	38%	39%	39%	40%
Gas Boiler - High Efficiency Hot Water Circulation	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Gas Boiler - Hot Water Reset	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Gas Boiler - Maintenance	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Gas Furnace - Maintenance	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Space Heating - Heat Recovery Ventilator	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Heat Pump - Maintenance	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Ventilation - ECM on VAV Boxes	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%	45%
Ventilation - Variable Speed Control	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Ventilation - CO2 Controlled	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%	45%

Measure	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Water Heater - Drainwater Heat Recovery	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Water Heater - Faucet Aerators	41%	41%	42%	42%	43%	43%	44%	44%	45%	45%	46%
Water Heater - Low Flow Showerheads	41%	41%	42%	42%	43%	43%	44%	44%	45%	45%	46%
Water Heater - High Efficiency Circulation Pump	41%	41%	42%	42%	43%	43%	44%	44%	45%	45%	46%
Water Heater - Desuperheater	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Water Heater - Solar System	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Water Heater - Install Timer	51%	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%
Water Heater - Pipe Insulation	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Water Heater - Tank Blanket/Insulation	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Water Heater - Pre-Rinse Spray Valve	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%
Combined Boiler & Water Htg. Unit	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Interior Lighting - Daylighting Controls	46%	47%	47%	48%	48%	48%	49%	49%	50%	50%	51%
Interior Lighting - LED Exit Lighting	43%	44%	44%	45%	45%	46%	46%	46%	47%	47%	48%
Interior Lighting - Occupancy Sensors	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%
Interior Lighting - Task Lighting	46%	47%	47%	48%	48%	48%	49%	49%	50%	50%	51%
Interior Lighting - Timers and Clocks	46%	47%	47%	48%	48%	48%	49%	49%	50%	50%	51%
Interior Fluorescent - Bi-Level Fixture	46%	47%	47%	48%	48%	48%	49%	49%	50%	50%	51%
Interior Fluorescent - Delamp and Install Reflectors	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%	45%
Exterior Lighting - Bi-Level Fixture	33%	33%	34%	34%	35%	35%	36%	36%	37%	37%	37%
Exterior Lighting - Daylighting Controls	33%	33%	34%	34%	35%	35%	36%	36%	37%	37%	37%
Exterior Lighting - Photovoltaic Installation	33%	33%	34%	34%	35%	35%	36%	36%	37%	37%	37%
Refrigerator - Anti-Sweat Door Heater	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%	52%
Refrigerator - Auto Door Closer	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%	52%
Refrigerator - Decommissioning	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%
Refrigerator - Demand Defrost	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%	52%
Refrigerator - Door Gasket Replacement	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%	52%
Refrigerator - Economizer	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%
Refrigerator - Evaporator Fan Controls	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%	52%
Refrigerator - Floating Head Pressure	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%
Refrigerator - Strip Curtain	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%	52%
Refrigerator - High Efficiency Compressor	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%	52%
Refrigerator - Variable Speed Compressor	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%	52%
Vending Machine - Controller	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%
Grocery - Display Case - LED Lighting	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%
Grocery - Display Case Motion Sensors	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%
Grocery - ECMs for Display Cases	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%

Measure	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Grocery - Open Display Case - Night Covers	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%	42%
Cooking - Exhaust Hoods with Sensor Control	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%
Office Equipment - ENERGY STAR Power Supplies	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%	57%
Office Equipment - Plug Load Occupancy Sensors	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%	57%
Pool Pump - Timer	33%	33%	34%	34%	35%	35%	36%	36%	36%	37%	37%
Pool Heater - Solar	33%	33%	34%	34%	35%	35%	36%	36%	36%	37%	37%
Non-HVAC Motors - Variable Speed Control	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%
Energy Management System	44%	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%
Thermostat - Clock/Programmable	49%	49%	50%	50%	51%	51%	51%	52%	52%	53%	53%
Lodging - Guest Room Controls	46%	47%	47%	48%	48%	48%	49%	49%	50%	50%	51%
HVAC - Occupancy Sensors	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%
Commissioning - HVAC	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%	55%
Commissioning - Lighting	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%	45%
Retrocommissioning - HVAC	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%	55%
Retrocommissioning - Lighting	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%	45%
Advanced New Construction Designs	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%	55%
Custom Measures	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%	55%
Refrigerator - eCube	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%	52%
Electronics - Smart Power Strip	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%	57%
Electronics - Monitor Power Management	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%	57%
Insulation - Foundation	45%	45%	46%	46%	47%	47%	48%	49%	49%	50%	50%
Water Heating - Booster Water Heater	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Refrigeration - High Efficiency Evaporator Fan Motors	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%	52%
Boiler O2 Trim Controls	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Boiler Parallel Positioning Control	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Boiler blowdown heat exchanger (steam)	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Repair malfunctioning steam traps	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Insulate steam lines/condensate tank	31%	31%	32%	32%	33%	33%	34%	34%	35%	35%	36%
Destratification Fans (HVLS)	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Exhaust Hood Makeup Air	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Optimizing Kitchen Ventilation	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%

Table E-33 Commercial Gas Equipment Measures (Maximum Achievable Potential factor)

End Use	Fuel	Technology	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Heating	Natural Gas	Furnace	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Heating	Natural Gas	Boiler	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Heating	Natural Gas	Unit Heater	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Water Heating	Natural Gas	Water Heating	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Food Preparation	Natural Gas	Oven	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Food Preparation	Natural Gas	Fryer	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Food Preparation	Natural Gas	Broiler	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Food Preparation	Natural Gas	Griddle	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Food Preparation	Natural Gas	Range	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Food Preparation	Natural Gas	Steamer	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Food Preparation	Natural Gas	Other	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Miscellaneous	Natural Gas	Pool Heater	65%	66%	66%	67%	67%	68%	68%	69%	69%	70%	70%
Miscellaneous	Natural Gas	Miscellaneous	57%	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%

Table E-34 Commercial Gas Non-Equipment Measures (Maximum Achievable Potential factor)

Measure	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Insulation - Ceiling	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%	57%
Insulation - Ducting	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%	57%
Insulation - Radiant Barrier	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%	57%
Insulation - Wall Cavity	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%	57%
HVAC - Duct Repair and Sealing	67%	67%	68%	68%	69%	69%	70%	70%	71%	71%	72%
Doors - High Efficiency	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%	57%
Windows - High Efficiency	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%	57%
Roof - High Reflectivity	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%	57%
Air-Cooled Chiller - Condenser Air Temperature Reset	77%	77%	78%	78%	79%	79%	80%	80%	81%	81%	82%
Air-Cooled Chiller - Economizer	77%	77%	78%	78%	79%	79%	80%	80%	81%	81%	82%
Air-Cooled Chiller - Thermal Energy Storage	77%	77%	78%	78%	79%	79%	80%	80%	81%	81%	82%
Air-Cooled Chiller - VSD on fans	68%	69%	69%	70%	70%	71%	71%	72%	72%	73%	73%
Air-Cooled Chiller - Chilled Water Reset	77%	77%	78%	78%	79%	79%	80%	80%	81%	81%	82%
Air-Cooled Chiller - Chilled Water Variable-Flow System	68%	69%	69%	70%	70%	71%	71%	72%	72%	73%	73%
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	68%	69%	69%	70%	70%	71%	71%	72%	72%	73%	73%
Air-Cooled Chiller - Maintenance	67%	67%	68%	68%	69%	69%	70%	70%	71%	71%	72%
Water-Cooled Chiller - Condenser Water Temperature Reset	77%	77%	78%	78%	79%	79%	80%	80%	81%	81%	82%
Water-Cooled Chiller - Economizer	77%	77%	78%	78%	79%	79%	80%	80%	81%	81%	82%
Water-Cooled Chiller - Thermal Energy Storage	77%	77%	78%	78%	79%	79%	80%	80%	81%	81%	82%
Water-Cooled Chiller - VSD on Fans	68%	69%	69%	70%	70%	71%	71%	72%	72%	73%	73%
Water-Cooled Chiller - Chilled Water Reset	77%	77%	78%	78%	79%	79%	80%	80%	81%	81%	82%
Water-Cooled Chiller - Chilled Water Variable-Flow System	68%	69%	69%	70%	70%	71%	71%	72%	72%	73%	73%
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	68%	69%	69%	70%	70%	71%	71%	72%	72%	73%	73%
Water-Cooled Chiller - Maintenance	67%	67%	68%	68%	69%	69%	70%	70%	71%	71%	72%
RTU - Evaporative Precooler	64%	65%	65%	66%	66%	67%	67%	68%	68%	69%	69%
RTU - Maintenance	67%	67%	68%	68%	69%	69%	70%	70%	71%	71%	72%
Gas Boiler - High Efficiency Hot Water Circulation	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Gas Boiler - Hot Water Reset	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Gas Boiler - Maintenance	67%	67%	68%	68%	69%	69%	70%	70%	71%	71%	72%
Gas Furnace - Maintenance	67%	67%	68%	68%	69%	69%	70%	70%	71%	71%	72%
Space Heating - Heat Recovery Ventilator	77%	77%	78%	78%	79%	79%	80%	80%	81%	81%	82%
Heat Pump - Maintenance	67%	67%	68%	68%	69%	69%	70%	70%	71%	71%	72%
Ventilation - ECM on VAV Boxes	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Ventilation - Variable Speed Control	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%	63%
Ventilation - CO2 Controlled	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%

Measure	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Water Heater - Drainwater Heat Recovery	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Water Heater - Faucet Aerators	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Water Heater - Low Flow Showerheads	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Water Heater - High Efficiency Circulation Pump	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Water Heater - Desuperheater	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Water Heater - Solar System	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Water Heater - Install Timer	51%	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%
Water Heater - Pipe Insulation	67%	67%	68%	68%	69%	69%	70%	70%	71%	71%	72%
Water Heater - Tank Blanket/Insulation	67%	67%	68%	68%	69%	69%	70%	70%	71%	71%	72%
Water Heater - Pre-Rinse Spray Valve	62%	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%
Combined Boiler & Water Htg. Unit	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Interior Lighting - Daylighting Controls	55%	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%
Interior Lighting - LED Exit Lighting	71%	71%	72%	72%	73%	73%	74%	74%	75%	75%	76%
Interior Lighting - Occupancy Sensors	54%	55%	55%	56%	56%	57%	57%	58%	58%	59%	59%
Interior Lighting - Task Lighting	55%	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%
Interior Lighting - Timers and Clocks	55%	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%
Interior Fluorescent - Bi-Level Fixture	55%	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%
Interior Fluorescent - Delamp and Install Reflectors	64%	65%	65%	66%	66%	67%	67%	68%	68%	69%	69%
Exterior Lighting - Bi-Level Fixture	66%	66%	67%	67%	68%	68%	69%	69%	70%	70%	71%
Exterior Lighting - Daylighting Controls	66%	66%	67%	67%	68%	68%	69%	69%	70%	70%	71%
Exterior Lighting - Photovoltaic Installation	66%	66%	67%	67%	68%	68%	69%	69%	70%	70%	71%
Refrigerator - Anti-Sweat Door Heater	54%	54%	55%	55%	56%	56%	57%	57%	58%	58%	59%
Refrigerator - Auto Door Closer	54%	54%	55%	55%	56%	56%	57%	57%	58%	58%	59%
Refrigerator - Decommissioning	59%	59%	60%	60%	61%	61%	62%	62%	63%	63%	64%
Refrigerator - Demand Defrost	54%	54%	55%	55%	56%	56%	57%	57%	58%	58%	59%
Refrigerator - Door Gasket Replacement	54%	54%	55%	55%	56%	56%	57%	57%	58%	58%	59%
Refrigerator - Economizer	59%	59%	60%	60%	61%	61%	62%	62%	63%	63%	64%
Refrigerator - Evaporator Fan Controls	54%	54%	55%	55%	56%	56%	57%	57%	58%	58%	59%
Refrigerator - Floating Head Pressure	59%	59%	60%	60%	61%	61%	62%	62%	63%	63%	64%
Refrigerator - Strip Curtain	54%	54%	55%	55%	56%	56%	57%	57%	58%	58%	59%
Refrigerator - High Efficiency Compressor	54%	54%	55%	55%	56%	56%	57%	57%	58%	58%	59%
Refrigerator - Variable Speed Compressor	54%	54%	55%	55%	56%	56%	57%	57%	58%	58%	59%
Vending Machine - Controller	54%	55%	55%	56%	56%	57%	57%	58%	58%	59%	59%
Grocery - Display Case - LED Lighting	59%	59%	60%	60%	61%	61%	62%	62%	63%	63%	64%
Grocery - Display Case Motion Sensors	54%	55%	55%	56%	56%	57%	57%	58%	58%	59%	59%
Grocery - ECMs for Display Cases	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%

Measure	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Grocery - Open Display Case - Night Covers	59%	59%	60%	60%	61%	61%	62%	62%	63%	63%	64%
Cooking - Exhaust Hoods with Sensor Control	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Office Equipment - ENERGY STAR Power Supplies	59%	59%	60%	60%	61%	61%	62%	62%	63%	63%	64%
Office Equipment - Plug Load Occupancy Sensors	59%	59%	60%	60%	61%	61%	62%	62%	63%	63%	64%
Pool Pump - Timer	65%	66%	66%	67%	67%	68%	68%	69%	69%	70%	70%
Pool Heater - Solar	65%	66%	66%	67%	67%	68%	68%	69%	69%	70%	70%
Non-HVAC Motors - Variable Speed Control	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%
Energy Management System	51%	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%
Thermostat - Clock/Programmable	73%	74%	74%	75%	75%	76%	76%	77%	77%	78%	78%
Lodging - Guest Room Controls	55%	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%
HVAC - Occupancy Sensors	54%	55%	55%	56%	56%	57%	57%	58%	58%	59%	59%
Commissioning - HVAC	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Commissioning - Lighting	64%	65%	65%	66%	66%	67%	67%	68%	68%	69%	69%
Retrocommissioning - HVAC	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Retrocommissioning - Lighting	64%	65%	65%	66%	66%	67%	67%	68%	68%	69%	69%
Advanced New Construction Designs	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Custom Measures	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Refrigerator - eCube	54%	54%	55%	55%	56%	56%	57%	57%	58%	58%	59%
Electronics - Smart Power Strip	59%	59%	60%	60%	61%	61%	62%	62%	63%	63%	64%
Electronics - Monitor Power Management	59%	59%	60%	60%	61%	61%	62%	62%	63%	63%	64%
Insulation - Foundation	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%	57%
Water Heating - Booster Water Heater	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Refrigeration - High Efficiency Evaporator Fan Motors	54%	54%	55%	55%	56%	56%	57%	57%	58%	58%	59%
Boiler O2 Trim Controls	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Boiler Parallel Positioning Control	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Boiler blowdown heat exchanger (steam)	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Repair malfunctioning steam traps	67%	67%	68%	68%	69%	69%	70%	70%	71%	71%	72%
Insulate steam lines/condensate tank	67%	67%	68%	68%	69%	69%	70%	70%	71%	71%	72%
Destratification Fans (HVLS)	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%	63%
Exhaust Hood Makeup Air	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%	63%
Optimizing Kitchen Ventilation	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%	63%

Table E-35 Commercial Gas Equipment Measures (Maximum Achievable Potential factor x Realistic Achievable Potential factor)

End Use	Fuel	Technology	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Heating	Natural Gas	Furnace	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Heating	Natural Gas	Boiler	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Heating	Natural Gas	Unit Heater	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Water Heating	Natural Gas	Water Heating	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Food Preparation	Natural Gas	Oven	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Food Preparation	Natural Gas	Fryer	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Food Preparation	Natural Gas	Broiler	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Food Preparation	Natural Gas	Griddle	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Food Preparation	Natural Gas	Range	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Food Preparation	Natural Gas	Steamer	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Food Preparation	Natural Gas	Other	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Miscellaneous	Natural Gas	Pool Heater	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%
Miscellaneous	Natural Gas	Miscellaneous	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%

Table E-36 Commercial Gas Non-Equipment Measures (Maximum Achievable Potential factor x Realistic Achievable Potential factor)

Measure	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Insulation - Ceiling	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Insulation - Ducting	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Insulation - Radiant Barrier	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Insulation - Wall Cavity	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
HVAC - Duct Repair and Sealing	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%
Doors - High Efficiency	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Windows - High Efficiency	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Roof - High Reflectivity	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Air-Cooled Chiller - Condenser Air Temperature Reset	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Air-Cooled Chiller - Economizer	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Air-Cooled Chiller - Thermal Energy Storage	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Air-Cooled Chiller - VSD on fans	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%
Air-Cooled Chiller - Chilled Water Reset	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Air-Cooled Chiller - Chilled Water Variable-Flow System	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	44%	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%
Air-Cooled Chiller - Maintenance	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%
Water-Cooled Chiller - Condenser Water Temperature Reset	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Water-Cooled Chiller - Economizer	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Water-Cooled Chiller - Thermal Energy Storage	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Water-Cooled Chiller - VSD on Fans	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%
Water-Cooled Chiller - Chilled Water Reset	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Water-Cooled Chiller - Chilled Water Variable-Flow System	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	44%	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%
Water-Cooled Chiller - Maintenance	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%
RTU - Evaporative Precooler	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
RTU - Maintenance	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%
Gas Boiler - High Efficiency Hot Water Circulation	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Gas Boiler - Hot Water Reset	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Gas Boiler - Maintenance	34%	35%	35%	36%	36%	37%	37%	38%	38%	39%	39%
Gas Furnace - Maintenance	34%	35%	35%	36%	36%	37%	37%	38%	38%	39%	39%
Space Heating - Heat Recovery Ventilator	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Heat Pump - Maintenance	34%	35%	35%	36%	36%	37%	37%	38%	38%	39%	39%
Ventilation - ECM on VAV Boxes	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%	44%
Ventilation - Variable Speed Control	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Ventilation - CO2 Controlled	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%	44%

Measure	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Water Heater - Drainwater Heat Recovery	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Water Heater - Faucet Aerators	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%
Water Heater - Low Flow Showerheads	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%
Water Heater - High Efficiency Circulation Pump	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%
Water Heater - Desuperheater	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Water Heater - Solar System	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Water Heater - Install Timer	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%	48%
Water Heater - Pipe Insulation	34%	35%	35%	36%	36%	37%	37%	38%	38%	39%	39%
Water Heater - Tank Blanket/Insulation	34%	35%	35%	36%	36%	37%	37%	38%	38%	39%	39%
Water Heater - Pre-Rinse Spray Valve	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Combined Boiler & Water Htg. Unit	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Interior Lighting - Daylighting Controls	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%	52%
Interior Lighting - LED Exit Lighting	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Interior Lighting - Occupancy Sensors	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Interior Lighting - Task Lighting	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%	52%
Interior Lighting - Timers and Clocks	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%	52%
Interior Fluorescent - Bi-Level Fixture	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%	52%
Interior Fluorescent - Delamp and Install Reflectors	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Exterior Lighting - Bi-Level Fixture	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%	44%
Exterior Lighting - Daylighting Controls	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%	44%
Exterior Lighting - Photovoltaic Installation	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%	44%
Refrigerator - Anti-Sweat Door Heater	44%	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%
Refrigerator - Auto Door Closer	44%	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%
Refrigerator - Decommissioning	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Refrigerator - Demand Defrost	44%	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%
Refrigerator - Door Gasket Replacement	44%	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%
Refrigerator - Economizer	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Refrigerator - Evaporator Fan Controls	44%	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%
Refrigerator - Floating Head Pressure	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Refrigerator - Strip Curtain	44%	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%
Refrigerator - High Efficiency Compressor	44%	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%
Refrigerator - Variable Speed Compressor	44%	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%
Vending Machine - Controller	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Grocery - Display Case - LED Lighting	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Grocery - Display Case Motion Sensors	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Grocery - ECMs for Display Cases	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%

Measure	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Grocery - Open Display Case - Night Covers	38%	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%
Cooking - Exhaust Hoods with Sensor Control	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%	47%
Office Equipment - ENERGY STAR Power Supplies	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Office Equipment - Plug Load Occupancy Sensors	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Pool Pump - Timer	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%
Pool Heater - Solar	40%	40%	41%	41%	42%	42%	43%	43%	44%	44%	45%
Non-HVAC Motors - Variable Speed Control	45%	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%
Energy Management System	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%	44%
Thermostat - Clock/Programmable	66%	67%	67%	68%	68%	69%	69%	70%	70%	71%	71%
Lodging - Guest Room Controls	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%	52%
HVAC - Occupancy Sensors	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Commissioning - HVAC	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Commissioning - Lighting	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Retrocommissioning - HVAC	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Retrocommissioning - Lighting	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Advanced New Construction Designs	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Custom Measures	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Refrigerator - eCube	44%	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%
Electronics - Smart Power Strip	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Electronics - Monitor Power Management	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Insulation - Foundation	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Water Heating - Booster Water Heater	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Refrigeration - High Efficiency Evaporator Fan Motors	44%	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%
Boiler O2 Trim Controls	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Boiler Parallel Positioning Control	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Boiler blowdown heat exchanger (steam)	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Repair malfunctioning steam traps	34%	35%	35%	36%	36%	37%	37%	38%	38%	39%	39%
Insulate steam lines/condensate tank	34%	35%	35%	36%	36%	37%	37%	38%	38%	39%	39%
Destratification Fans (HVLS)	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Exhaust Hood Makeup Air	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Optimizing Kitchen Ventilation	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%

Table E-37 Industrial Electric Equipment Measures (Maximum Achievable Potential factor)

End Use	Fuel	Technology	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cooling	Electric	Air-Cooled Chiller	64%	65%	65%	66%	66%	67%	67%	68%	68%	69%	69%
Cooling	Electric	Water-Cooled Chiller	64%	65%	65%	66%	66%	67%	67%	68%	68%	69%	69%
Cooling	Electric	Roof top AC	64%	65%	65%	66%	66%	67%	67%	68%	68%	69%	69%
Cooling	Electric	Air Source Heat Pump	64%	65%	65%	66%	66%	67%	67%	68%	68%	69%	69%
Cooling	Electric	Geothermal Heat Pump	64%	65%	65%	66%	66%	67%	67%	68%	68%	69%	69%
Cooling	Electric	Other Cooling	64%	65%	65%	66%	66%	67%	67%	68%	68%	69%	69%
Heating	Electric	Air Source Heat Pump	64%	65%	65%	66%	66%	67%	67%	68%	68%	69%	69%
Heating	Electric	Geothermal Heat Pump	64%	65%	65%	66%	66%	67%	67%	68%	68%	69%	69%
Heating	Electric	Electric Resistance	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Heating	Electric	Electric Furnace	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Ventilation	Electric	Ventilation	58%	58%	59%	59%	60%	60%	61%	61%	62%	62%	63%
Interior Lighting	Electric	Screw-in	71%	71%	72%	72%	73%	73%	74%	74%	75%	75%	76%
Interior Lighting	Electric	High-Bay Fixtures	71%	71%	72%	72%	73%	73%	74%	74%	75%	75%	76%
Interior Lighting	Electric	Linear Fluorescent	71%	71%	72%	72%	73%	73%	74%	74%	75%	75%	76%
Exterior Lighting	Electric	Screw-in	71%	71%	72%	72%	73%	73%	74%	74%	75%	75%	76%
Exterior Lighting	Electric	HID	71%	71%	72%	72%	73%	73%	74%	74%	75%	75%	76%
Exterior Lighting	Electric	Linear Fluorescent	71%	71%	72%	72%	73%	73%	74%	74%	75%	75%	76%
Motors	Electric	Pumps	57%	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%
Motors	Electric	Fans & Blowers	57%	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%
Motors	Electric	Compressed Air	57%	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%
Motors	Electric	Matl Handling	57%	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%
Motors	Electric	Matl Processing	57%	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%
Motors	Electric	Other Motors	57%	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%
Process	Electric	Process Heating	57%	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%
Process	Electric	Process Cooling and Refrig	57%	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%
Process	Electric	Electro-Chemical Processes	57%	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%
Process	Electric	Other Process	57%	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%
Miscellaneous	Electric	Miscellaneous	57%	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%

Table E-38 Industrial Natural Gas Equipment Measures (Maximum Achievable Potential factor)

End Use	Fuel	Technology	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Heating	Natural Gas	Furnace	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Heating	Natural Gas	Boiler	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Heating	Natural Gas	Other Heating	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Process	Natural Gas	Process Heating	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Process	Natural Gas	Process Boiler	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Process	Natural Gas	Process Cooling	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Process	Natural Gas	Other Process	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Miscellaneous	Natural Gas	Miscellaneous	57%	57%	58%	58%	59%	59%	60%	60%	61%	61%	62%

Table E-39 Industrial Non-Equipment Measures (Maximum Achievable Potential factor)

Measure	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Insulation - Ceiling	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%	57%
Insulation - Ducting	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%	57%
Insulation - Wall Cavity	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%	57%
HVAC - Duct Repair and Sealing	67%	67%	68%	68%	69%	69%	70%	70%	71%	71%	72%
Air-Cooled Chiller - Economizer	77%	77%	78%	78%	79%	79%	80%	80%	81%	81%	82%
Air-Cooled Chiller - Efficient Mechanical Layout	77%	77%	78%	78%	79%	79%	80%	80%	81%	81%	82%
Air-Cooled Chiller - Maintenance	67%	67%	68%	68%	69%	69%	70%	70%	71%	71%	72%
Air-Cooled Chiller - Chilled Water Reset	77%	77%	78%	78%	79%	79%	80%	80%	81%	81%	82%
Air-Cooled Chiller - Chilled Water Variable-Flow System	68%	69%	69%	70%	70%	71%	71%	72%	72%	73%	73%
Air-Cooled Chiller - Condenser Water Temperature Reset	77%	77%	78%	78%	79%	79%	80%	80%	81%	81%	82%
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	68%	69%	69%	70%	70%	71%	71%	72%	72%	73%	73%
Air-Cooled Chiller - VSD on Fans	68%	69%	69%	70%	70%	71%	71%	72%	72%	73%	73%
Water-Cooled Chiller - Economizer	77%	77%	78%	78%	79%	79%	80%	80%	81%	81%	82%
Water-Cooled Chiller - Efficient Mechanical Layout	77%	77%	78%	78%	79%	79%	80%	80%	81%	81%	82%
Water-Cooled Chiller - Maintenance	67%	67%	68%	68%	69%	69%	70%	70%	71%	71%	72%
Water-Cooled Chiller - Chilled Water Reset	77%	77%	78%	78%	79%	79%	80%	80%	81%	81%	82%
Water-Cooled Chiller - Chilled Water Variable-Flow System	68%	69%	69%	70%	70%	71%	71%	72%	72%	73%	73%
Water-Cooled Chiller - Condenser Water Temperature Reset	77%	77%	78%	78%	79%	79%	80%	80%	81%	81%	82%
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	68%	69%	69%	70%	70%	71%	71%	72%	72%	73%	73%
Water-Cooled Chiller - VSD on Fans	68%	69%	69%	70%	70%	71%	71%	72%	72%	73%	73%
RTU - Maintenance	67%	67%	68%	68%	69%	69%	70%	70%	71%	71%	72%
Heat Pump - Maintenance	67%	67%	68%	68%	69%	69%	70%	70%	71%	71%	72%
Process Boilers - Hot Water Reset	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Process Boiler - Combustion Controls (O2 Trim)	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Process Boiler - Condensate Return Lines	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Process Boiler - Condensing Economizer	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Process Boiler - Pipe Insulation	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Process Boiler - Steam Trap Maintenance	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Roofs - High Reflectivity	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%	57%
Energy Management System	51%	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%
Thermostat - Clock/Programmable	73%	74%	74%	75%	75%	76%	76%	77%	77%	78%	78%
Interior Lighting - Occupancy Sensors	54%	55%	55%	56%	56%	57%	57%	58%	58%	59%	59%
Interior Lighting - Skylights	55%	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%
Interior Lighting - Time Clocks and Timers	54%	55%	55%	56%	56%	57%	57%	58%	58%	59%	59%
Interior Lighting - LED Exit Lighting	71%	71%	72%	72%	73%	73%	74%	74%	75%	75%	76%

Measure	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Interior Lighting - Daylighting Controls	55%	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%
Interior Screw-in - Task Lighting	54%	55%	55%	56%	56%	57%	57%	58%	58%	59%	59%
Interior Fluorescent - Bi-Level Fixture	55%	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%
Interior Fluorescent - Delamp and Install Reflectors	64%	65%	65%	66%	66%	67%	67%	68%	68%	69%	69%
Exterior Lighting - Bi-Level Fixture	66%	66%	67%	67%	68%	68%	69%	69%	70%	70%	71%
Exterior Lighting - Daylighting Controls	66%	66%	67%	67%	68%	68%	69%	69%	70%	70%	71%
Exterior Lighting - Photovoltaic Installation	66%	66%	67%	67%	68%	68%	69%	69%	70%	70%	71%
Process - Conductivity Controls	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Process - Controls on Fume Hoods	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Process - Timers and Controls	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Refrigeration - Floating Head Pressure	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Refrigeration - System Controls	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Refrigeration - System Maintenance	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Refrigeration - System Optimization	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Compressed Air - Air Usage Reduction	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Compressed Air - Compressor Replacement	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Compressed Air - System Controls	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Compressed Air - System Maintenance	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Compressed Air - System Optimization and Improvements	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Pumping System - Controls	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Pumping System - Maintenance	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Pumping System - Optimization	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Pumps - Variable Speed Control	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Pump Equipment Upgrade	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Fan Equipment Upgrade	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Fan System - Controls	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Fan System - Maintenance	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Fan System - Optimization	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Fans - Variable Speed Control	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Motors - Magnetic Adjustable Speed Drives	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Motors - Efficient Rewind	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Motors - Variable Frequency Drive	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Commissioning - HVAC	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Commissioning - Lighting	64%	65%	65%	66%	66%	67%	67%	68%	68%	69%	69%
Retrocommissioning - HVAC	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Retrocommissioning - Lighting	64%	65%	65%	66%	66%	67%	67%	68%	68%	69%	69%

Measure	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Ventilation - CO2 Controlled	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Gas Boiler - High Efficiency Hot Water Circulation	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Gas Boiler - Hot Water Reset	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Gas Boiler - Maintenance	67%	67%	68%	68%	69%	69%	70%	70%	71%	71%	72%
Gas Furnace - Maintenance	67%	67%	68%	68%	69%	69%	70%	70%	71%	71%	72%
Custom Measures	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Boiler Blowdown Heat Exchanger (Steam)	62%	63%	63%	64%	64%	65%	65%	66%	66%	67%	67%
Insulate Steam Lines / Condensate Tank	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Direct Fired Make-up Air System	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
Direct Contact Water Heater	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%
HVAC - Infrared Heater	55%	56%	56%	57%	57%	58%	58%	59%	59%	60%	60%

Table E-40 Industrial Electric Equipment Measures (Maximum Achievable Potential factor x Realistic Achievable Potential factor)

End Use	Fuel	Technology	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Cooling	Electric	Air-Cooled Chiller	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Cooling	Electric	Water-Cooled Chiller	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Cooling	Electric	Roof top AC	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Cooling	Electric	Air Source Heat Pump	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Cooling	Electric	Geothermal Heat Pump	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Cooling	Electric	Other Cooling	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Heating	Electric	Air Source Heat Pump	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Heating	Electric	Geothermal Heat Pump	33%	34%	34%	35%	35%	36%	36%	37%	37%	38%	38%
Heating	Electric	Electric Resistance	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Heating	Electric	Electric Furnace	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Ventilation	Electric	Ventilation	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%	44%
Interior Lighting	Electric	Screw-in	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Interior Lighting	Electric	High-Bay Fixtures	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Interior Lighting	Electric	Linear Fluorescent	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Exterior Lighting	Electric	Screw-in	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Exterior Lighting	Electric	HID	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Exterior Lighting	Electric	Linear Fluorescent	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%
Motors	Electric	Pumps	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Motors	Electric	Fans & Blowers	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Motors	Electric	Compressed Air	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Motors	Electric	Matl Handling	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Motors	Electric	Matl Processing	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Motors	Electric	Other Motors	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Process	Electric	Process Heating	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Process	Electric	Process Cooling and Refrig	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Process	Electric	Electro-Chemical Processes	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Process	Electric	Other Process	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Miscellaneous	Electric	Miscellaneous	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%

Table E-41 Industrial Natural Gas Equipment Measures (Maximum Achievable Potential factor x Realistic Achievable Potential factor)

End Use	Fuel	Technology	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Heating	Natural Gas	Furnace	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Heating	Natural Gas	Boiler	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Heating	Natural Gas	Other Heating	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Process	Natural Gas	Process Heating	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Process	Natural Gas	Process Boiler	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Process	Natural Gas	Process Cooling	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Process	Natural Gas	Other Process	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Miscellaneous	Natural Gas	Miscellaneous	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%

Table E-42 Industrial Non-Equipment Measures (Maximum Achievable Potential factor x Realistic Achievable Potential factor)

Measure	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Insulation - Ceiling	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Insulation - Ducting	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Insulation - Wall Cavity	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
HVAC - Duct Repair and Sealing	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%
Air-Cooled Chiller - Economizer	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Air-Cooled Chiller - Efficient Mechanical Layout	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Air-Cooled Chiller - Maintenance	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%
Air-Cooled Chiller - Chilled Water Reset	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Air-Cooled Chiller - Chilled Water Variable-Flow System	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%
Air-Cooled Chiller - Condenser Water Temperature Reset	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Air-Cooled Chiller - High Efficiency Cooling Tower Fans	44%	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%
Air-Cooled Chiller - VSD on Fans	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%
Water-Cooled Chiller - Economizer	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Water-Cooled Chiller - Efficient Mechanical Layout	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Water-Cooled Chiller - Maintenance	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%
Water-Cooled Chiller - Chilled Water Reset	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Water-Cooled Chiller - Chilled Water Variable-Flow System	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%
Water-Cooled Chiller - Condenser Water Temperature Reset	51%	52%	52%	53%	53%	54%	54%	55%	55%	56%	56%
Water-Cooled Chiller - High Efficiency Cooling Tower Fans	44%	44%	45%	45%	46%	46%	47%	47%	48%	48%	49%
Water-Cooled Chiller - VSD on Fans	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%
RTU - Maintenance	38%	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%
Heat Pump - Maintenance	34%	35%	35%	36%	36%	37%	37%	38%	38%	39%	39%
Process Boilers - Hot Water Reset	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Process Boiler - Combustion Controls (O2 Trim)	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Process Boiler - Condensate Return Lines	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Process Boiler - Condensing Economizer	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Process Boiler - Pipe Insulation	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Process Boiler - Steam Trap Maintenance	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Roofs - High Reflectivity	42%	42%	43%	43%	44%	44%	45%	45%	46%	46%	47%
Energy Management System	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%	44%
Thermostat - Clock/Programmable	66%	67%	67%	68%	68%	69%	69%	70%	70%	71%	71%
Interior Lighting - Occupancy Sensors	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Interior Lighting - Skylights	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%	52%
Interior Lighting - Time Clocks and Timers	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Interior Lighting - LED Exit Lighting	49%	50%	50%	51%	51%	52%	52%	53%	53%	54%	54%

Measure	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Interior Lighting - Daylighting Controls	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%	52%
Interior Screw-in - Task Lighting	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Interior Fluorescent - Bi-Level Fixture	47%	47%	48%	48%	49%	49%	50%	50%	51%	51%	52%
Interior Fluorescent - Delamp and Install Reflectors	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Exterior Lighting - Bi-Level Fixture	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%	44%
Exterior Lighting - Daylighting Controls	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%	44%
Exterior Lighting - Photovoltaic Installation	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%	44%
Process - Conductivity Controls	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Process - Controls on Fume Hoods	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Process - Timers and Controls	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Refrigeration - Floating Head Pressure	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Refrigeration - System Controls	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Refrigeration - System Maintenance	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Refrigeration - System Optimization	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Compressed Air - Air Usage Reduction	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Compressed Air - Compressor Replacement	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Compressed Air - System Controls	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Compressed Air - System Maintenance	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Compressed Air - System Optimization and Improvements	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Pumping System - Controls	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Pumping System - Maintenance	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Pumping System - Optimization	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Pumps - Variable Speed Control	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Pump Equipment Upgrade	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Fan Equipment Upgrade	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Fan System - Controls	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Fan System - Maintenance	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Fan System - Optimization	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Fans - Variable Speed Control	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Motors - Magnetic Adjustable Speed Drives	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Motors - Efficient Rewind	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Motors - Variable Frequency Drive	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Commissioning - HVAC	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Commissioning - Lighting	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%
Retrocommissioning - HVAC	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Retrocommissioning - Lighting	45%	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%

Measure	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Ventilation - CO2 Controlled	39%	39%	40%	40%	41%	41%	42%	42%	43%	43%	44%
Gas Boiler - High Efficiency Hot Water Circulation	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Gas Boiler - Hot Water Reset	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Gas Boiler - Maintenance	34%	35%	35%	36%	36%	37%	37%	38%	38%	39%	39%
Gas Furnace - Maintenance	34%	35%	35%	36%	36%	37%	37%	38%	38%	39%	39%
Custom Measures	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Boiler Blowdown Heat Exchanger (Steam)	36%	37%	37%	38%	38%	39%	39%	40%	40%	41%	41%
Insulate Steam Lines / Condensate Tank	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Direct Fired Make-up Air System	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
Direct Contact Water Heater	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%
HVAC - Infrared Heater	46%	46%	47%	47%	48%	48%	49%	49%	50%	50%	51%

ANNUAL MEASURE-LEVEL SAVINGS

This section presents the estimates of annual savings. Selected years are shown in Chapter 6 and 7 of the report. Table F-1 and Table F-2 show the overall annual savings for electric energy and peak demand, respectively. Table F-4 through Table F-12 show the annual savings for each sector.

Table F-1 Annual Electric Energy Savings, All Sectors

Baseline Forecast	36,571	36,019	35,827	35,865	35,810	35,999	35,850	35,806	35,795	35,791	35,824	35,880	36,012
Cumulative Net Savings (GWh)													
Realistic Achievable Potential	-	-	-	483	803	1,093	1,371	1,686	1,989	2,362	2,743	3,147	3,513
Maximum Achievable Potential	-	-	-	630	1,051	1,432	1,788	2,186	2,565	3,041	3,520	4,037	4,509
Economic Potential	-	-	-	1,149	1,958	2,650	3,265	3,851	4,363	5,013	5,707	6,420	7,054
Technical Potential	-	-	-	1,584	2,604	3,516	4,322	5,105	5,806	6,564	7,301	8,049	8,704
Cumulative Savings % of Baseline													
Realistic Achievable Potential	-	-	-	1.3%	2.2%	3.0%	3.8%	4.7%	5.6%	6.6%	7.7%	8.8%	9.8%
Maximum Achievable Potential	-	-	-	1.8%	2.9%	4.0%	5.0%	6.1%	7.2%	8.5%	9.8%	11.3%	12.5%
Economic Potential	-	-	-	3.2%	5.5%	7.4%	9.1%	10.8%	12.2%	14.0%	15.9%	17.9%	19.6%
Technical Potential	-	-	-	4.4%	7.3%	9.8%	12.1%	14.3%	16.2%	18.3%	20.4%	22.4%	24.2%
Incremental Net Savings (GWh)													
Realistic Achievable Potential	-	-	-	483	320	290	279	314	303	373	381	404	367
Maximum Achievable Potential	-	-	-	630	421	381	356	398	380	475	480	517	472
Economic Potential	-	-	-	1,149	810	692	614	586	513	650	694	713	634
Technical Potential	-	-	-	1,584	1,020	912	806	783	701	758	737	748	655
Incremental Savings % of Baseline													
Realistic Achievable Potential	-	-	-	1.3%	0.9%	0.8%	0.8%	0.9%	0.8%	1.0%	1.1%	1.1%	1.0%
Maximum Achievable Potential	-	-	-	1.8%	1.2%	1.1%	1.0%	1.1%	1.1%	1.3%	1.3%	1.4%	1.3%
Economic Potential	-	-	-	3.2%	2.3%	1.9%	1.7%	1.6%	1.4%	1.8%	1.9%	2.0%	1.8%
Technical Potential	-	-	-	4.4%	2.8%	2.5%	2.2%	2.2%	2.0%	2.1%	2.1%	2.1%	1.8%

Table F-2 Annual Electric Peak Demand Savings, All Sectors

Baseline Forecast	7,534	7,398	7,315	7,282	7,251	7,248	7,198	7,166	7,145	7,133	7,127	7,126	7,142
Peak Demand Savings (GWh)													
Realistic Achievable Potential	-	-	-	92	146	205	269	340	411	492	573	658	742
Maximum Achievable Potential	-	-	-	128	205	287	375	471	567	675	782	896	1,008
Economic Potential	-	-	-	239	378	522	673	828	976	1,139	1,300	1,464	1,624
Technical Potential	-	-	-	353	551	756	964	1,173	1,371	1,574	1,768	1,961	2,145
Peak Demand Savings % of Baseline													
Realistic Achievable Potential	-	-	-	1.3%	2.0%	2.8%	3.7%	4.7%	5.8%	6.9%	8.0%	9.2%	10.4%
Maximum Achievable Potential	-	-	-	1.8%	2.8%	4.0%	5.2%	6.6%	7.9%	9.5%	11.0%	12.6%	14.1%
Economic Potential	-	-	-	3.3%	5.2%	7.2%	9.4%	11.6%	13.7%	16.0%	18.2%	20.5%	22.7%
Technical Potential	-	-	-	4.8%	7.6%	10.4%	13.4%	16.4%	19.2%	22.1%	24.8%	27.5%	30.0%
Peak Demand Incremental Savings (GWh)													
Realistic Achievable Potential	-	-	-	92	54	59	64	71	71	81	81	85	84
Maximum Achievable Potential	-	-	-	128	77	82	88	96	95	109	107	113	112
Economic Potential	-	-	-	239	139	144	151	155	148	163	161	164	160
Technical Potential	-	-	-	353	198	206	208	208	198	204	194	193	184
Peak Demand Incremental Savings % of Baseline													
Realistic Achievable Potential	-	-	-	1.3%	0.8%	0.8%	0.9%	1.0%	1.0%	1.1%	1.1%	1.2%	1.2%
Maximum Achievable Potential	-	-	-	1.8%	1.1%	1.1%	1.2%	1.3%	1.3%	1.5%	1.5%	1.6%	1.6%
Economic Potential	-	-	-	3.3%	1.9%	2.0%	2.1%	2.2%	2.1%	2.3%	2.3%	2.3%	2.2%
Technical Potential	-	-	-	4.8%	2.7%	2.8%	2.9%	2.9%	2.8%	2.9%	2.7%	2.7%	2.6%

Table F-3 Annual Natural Gas Energy Savings, All Sectors

	1,105	1,100	1,100	1,102	1,109	1,109	1,104	1,099	1,093	1,089	1,085	1,082	1,081
Cumulative Net Savings (million therms)													
Realistic Achievable Potential	-	-	-	6	10	14	20	26	31	37	42	47	54
Maximum Achievable Potential	-	-	-	9	14	21	29	37	45	53	60	68	77
Economic Potential	-	-	-	17	27	40	54	70	83	96	108	119	133
Technical Potential	-	-	-	29	45	65	88	112	133	153	170	188	207
Cumulative Savings % of Baseline													
Realistic Achievable Potential	-	-	-	0.5%	0.9%	1.3%	1.8%	2.3%	2.9%	3.4%	3.9%	4.4%	5.0%
Maximum Achievable Potential	-	-	-	0.8%	1.3%	1.9%	2.6%	3.4%	4.1%	4.9%	5.5%	6.3%	7.1%
Economic Potential	-	-	-	1.6%	2.4%	3.6%	4.9%	6.3%	7.6%	8.8%	9.9%	11.0%	12.3%
Technical Potential	-	-	-	2.6%	4.1%	5.9%	8.0%	10.2%	12.2%	14.0%	15.7%	17.4%	19.1%
Incremental Net Savings (million therms)													
Realistic Achievable Potential	-	-	-	6	3	5	5	6	6	5	5	5	7
Maximum Achievable Potential	-	-	-	9	5	7	8	8	8	8	7	8	9
Economic Potential	-	-	-	17	10	13	15	15	14	13	12	12	14
Technical Potential	-	-	-	29	16	20	23	23	22	19	18	18	18
Incremental Savings % of Baseline													
Realistic Achievable Potential	-	-	-	0.5%	0.3%	0.4%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.6%
Maximum Achievable Potential	-	-	-	0.8%	0.5%	0.6%	0.7%	0.8%	0.7%	0.7%	0.7%	0.7%	0.8%
Economic Potential	-	-	-	1.6%	0.9%	1.1%	1.3%	1.4%	1.3%	1.1%	1.1%	1.1%	1.3%
Technical Potential	-	-	-	2.6%	1.5%	1.8%	2.1%	2.1%	2.0%	1.8%	1.6%	1.7%	1.7%

Table F-4 Annual Electric Energy Savings, Residential

Baseline Forecast	11,577	11,422	11,304	10,915	10,712	10,589	10,526	10,446	10,319	10,262	10,201	11,577	11,422
Cumulative Net Savings (GWh)													
Realistic Achievable Potential	-	-	-	103	233	322	400	476	533	547	584	597	103
Maximum Achievable Potential	-	-	-	135	296	409	506	603	672	695	746	769	135
Economic Potential	-	-	-	317	721	996	1,217	1,358	1,419	1,445	1,558	1,610	317
Technical Potential	-	-	-	520	1,069	1,478	1,803	2,056	2,221	2,297	2,412	2,483	520
Cumulative Savings % of Baseline													
Realistic Achievable Potential	-	-	-	0.9%	2.1%	3.0%	3.8%	4.5%	5.1%	5.3%	5.7%	5.9%	0.9%
Maximum Achievable Potential	-	-	-	1.2%	2.7%	3.8%	4.8%	5.7%	6.4%	6.7%	7.3%	7.5%	1.2%
Economic Potential	-	-	-	2.8%	6.6%	9.3%	11.5%	12.9%	13.6%	14.0%	15.2%	15.8%	2.8%
Technical Potential	-	-	-	4.7%	9.8%	13.8%	17.0%	19.5%	21.3%	22.3%	23.5%	24.3%	4.7%
Incremental Net Savings (GWh)													
Realistic Achievable Potential	-	-	-	103	129	90	78	76	56	15	36	14	103
Maximum Achievable Potential	-	-	-	135	160	114	97	96	69	23	51	23	135
Economic Potential	-	-	-	317	405	275	221	141	60	26	113	52	317
Technical Potential	-	-	-	520	548	409	325	253	165	76	115	71	520
Incremental Savings % of Baseline													
Realistic Achievable Potential	-	-	-	0.9%	1.2%	0.8%	0.7%	0.7%	0.5%	0.1%	0.4%	0.1%	0.9%
Maximum Achievable Potential	-	-	-	1.2%	1.5%	1.1%	1.0%	1.0%	0.7%	0.2%	0.5%	0.2%	1.2%
Economic Potential	-	-	-	2.9%	3.8%	2.7%	2.2%	1.4%	0.6%	0.3%	1.2%	0.6%	2.9%
Technical Potential	-	-	-	4.8%	5.4%	4.2%	3.5%	2.8%	1.8%	0.9%	1.3%	0.8%	4.8%

Table F-5 Annual Electric Peak Demand Savings, Residential

Baseline Forecast	3,338	3,270	3,213	3,170	3,122	3,077	3,040	3,010	2,985	2,959	2,942	2,932	2,920
Peak Demand Savings (GWh)													
Realistic Achievable Potential	-	-	-	31	53	75	101	127	152	172	195	215	235
Maximum Achievable Potential	-	-	-	45	75	104	139	175	207	236	266	295	322
Economic Potential	-	-	-	100	166	229	300	365	422	473	528	577	623
Technical Potential	-	-	-	192	310	426	545	657	757	844	929	1,007	1,079
Peak Demand Savings % of Baseline													
Realistic Achievable Potential	-	-	-	1%	2%	2%	3%	4%	5%	6%	7%	7%	8%
Maximum Achievable Potential	-	-	-	1%	2%	3%	5%	6%	7%	8%	9%	10%	11%
Economic Potential	-	-	-	3%	5%	7%	10%	12%	14%	16%	18%	20%	21%
Technical Potential	-	-	-	6%	10%	14%	18%	22%	25%	29%	32%	34%	37%
Peak Demand Incremental Savings (GWh)													
Realistic Achievable Potential	-	-	-	31	22	22	26	26	24	21	22	20	20
Maximum Achievable Potential	-	-	-	45	30	30	35	35	33	29	30	28	27
Economic Potential	-	-	-	100	66	63	71	65	57	51	55	49	46
Technical Potential	-	-	-	192	118	116	119	112	100	87	86	78	72
Peak Demand Incremental Savings % of Baseline													
Realistic Achievable Potential	-	-	-	1.0%	0.7%	0.7%	0.8%	0.9%	0.8%	0.7%	0.8%	0.7%	0.7%
Maximum Achievable Potential	-	-	-	1.4%	1.0%	1.0%	1.2%	1.2%	1.2%	1.0%	1.1%	1.0%	1.0%
Economic Potential	-	-	-	3.2%	2.2%	2.1%	2.4%	2.3%	2.1%	1.9%	2.1%	1.9%	1.8%
Technical Potential	-	-	-	6.3%	4.0%	4.1%	4.3%	4.2%	3.9%	3.5%	3.5%	3.3%	3.1%

Table F-6 Annual Natural Gas Energy Savings, Residential

Baseline Forecast	569	567	568	570	575	572	568	565	562	559	558	556	555
Cumulative Net Savings (million therms)													
Realistic Achievable Potential	-	-	-	2.6	4.1	6.3	9.0	11.9	14.5	16.9	19.1	21.5	24.6
Maximum Achievable Potential	-	-	-	3.8	6.1	9.2	13.1	17.2	20.8	24.1	27.1	30.5	34.7
Economic Potential	-	-	-	8.9	13.9	20.9	29.4	37.9	45.2	51.4	56.8	62.5	69.7
Technical Potential	-	-	-	15.1	23.9	34.8	47.9	61.0	72.9	83.4	93.2	103.8	114.6
Cumulative Savings % of Baseline													
Realistic Achievable Potential	-	-	-	0%	1%	1%	2%	2%	3%	3%	3%	4%	4%
Maximum Achievable Potential	-	-	-	1%	1%	2%	2%	3%	4%	4%	5%	5%	6%
Economic Potential	-	-	-	2%	2%	4%	5%	7%	8%	9%	10%	11%	13%
Technical Potential	-	-	-	3%	4%	6%	8%	11%	13%	15%	17%	19%	21%
Incremental Net Savings (million therms)													
Realistic Achievable Potential	-	-	-	2.6	1.6	2.2	2.8	2.9	2.6	2.3	2.2	2.4	3.1
Maximum Achievable Potential	-	-	-	3.8	2.2	3.1	3.9	4.1	3.7	3.3	3.0	3.3	4.2
Economic Potential	-	-	-	8.9	5.0	6.9	8.5	8.5	7.3	6.2	5.5	5.7	7.2
Technical Potential	-	-	-	15.1	8.8	10.9	13.2	13.1	11.9	10.5	9.7	10.7	10.8
Incremental Savings % of Baseline													
Realistic Achievable Potential	-	-	-	0.4%	0.3%	0.4%	0.5%	0.5%	0.5%	0.4%	0.4%	0.4%	0.6%
Maximum Achievable Potential	-	-	-	0.7%	0.4%	0.5%	0.7%	0.7%	0.7%	0.6%	0.6%	0.6%	0.8%
Economic Potential	-	-	-	1.6%	0.9%	1.2%	1.5%	1.6%	1.4%	1.1%	1.0%	1.1%	1.4%
Technical Potential	-	-	-	2.7%	1.6%	2.0%	2.4%	2.5%	2.3%	2.1%	1.9%	2.2%	2.2%

Table F-7 Annual Electric Energy Savings, Commercial

Baseline Forecast	12,414	12,031	11,742	11,547	11,415	11,332	11,293	11,308	11,349	11,413	11,479	11,532	11,613
Cumulative Net Savings (GWh)													
Realistic Achievable Potential	-	-	-	197	319	434	547	672	801	1,024	1,239	1,470	1,690
Maximum Achievable Potential	-	-	-	269	442	604	755	917	1,084	1,374	1,648	1,947	2,234
Economic Potential	-	-	-	440	704	950	1,171	1,398	1,631	2,013	2,371	2,759	3,130
Technical Potential	-	-	-	610	915	1,211	1,488	1,774	2,063	2,484	2,869	3,269	3,644
Cumulative Savings % of Baseline													
Realistic Achievable Potential	-	-	-	1.7%	2.8%	3.8%	4.8%	5.9%	7.1%	9.0%	10.8%	12.7%	14.6%
Maximum Achievable Potential	-	-	-	2.3%	3.9%	5.3%	6.7%	8.1%	9.6%	12.0%	14.4%	16.9%	19.2%
Economic Potential	-	-	-	3.8%	6.2%	8.4%	10.4%	12.4%	14.4%	17.6%	20.7%	23.9%	27.0%
Technical Potential	-	-	-	5.3%	8.0%	10.7%	13.2%	15.7%	18.2%	21.8%	25.0%	28.3%	31.4%
Incremental Net Savings (GWh)													
Realistic Achievable Potential	-	-	-	197	122	115	113	124	129	223	215	231	220
Maximum Achievable Potential	-	-	-	269	174	162	151	162	167	289	275	299	288
Economic Potential	-	-	-	440	264	246	221	227	232	383	358	388	371
Technical Potential	-	-	-	610	305	295	278	286	289	421	385	400	375
Incremental Savings % of Baseline													
Realistic Achievable Potential	-	-	-	1.7%	1.1%	1.0%	1.0%	1.1%	1.1%	2.0%	1.9%	2.0%	1.9%
Maximum Achievable Potential	-	-	-	2.3%	1.5%	1.4%	1.3%	1.4%	1.5%	2.5%	2.4%	2.6%	2.5%
Economic Potential	-	-	-	3.8%	2.3%	2.2%	2.0%	2.0%	2.0%	3.4%	3.1%	3.4%	3.2%
Technical Potential	-	-	-	5.3%	2.7%	2.6%	2.5%	2.5%	2.5%	3.7%	3.4%	3.5%	3.2%

Table F-8 Annual Electric Peak Demand Savings, Commercial

Baseline Forecast	2,501	2,435	2,383	2,350	2,323	2,304	2,292	2,291	2,294	2,302	2,311	2,314	2,324
Peak Demand Savings (GWh)													
Realistic Achievable Potential	-	-	-	33	54	75	99	124	151	191	229	271	312
Maximum Achievable Potential	-	-	-	47	78	109	142	178	215	268	319	375	431
Economic Potential	-	-	-	77	124	173	222	274	327	400	470	545	619
Technical Potential	-	-	-	92	144	199	254	311	368	444	514	590	662
Peak Demand Savings % of Baseline													
Realistic Achievable Potential	-	-	-	1.4%	2.3%	3.3%	4.3%	5.4%	6.6%	8.3%	9.9%	11.7%	13.4%
Maximum Achievable Potential	-	-	-	2.0%	3.3%	4.7%	6.2%	7.8%	9.4%	11.6%	13.8%	16.2%	18.5%
Economic Potential	-	-	-	3.3%	5.4%	7.5%	9.7%	12.0%	14.3%	17.4%	20.3%	23.6%	26.6%
Technical Potential	-	-	-	3.9%	6.2%	8.6%	11.1%	13.6%	16.1%	19.3%	22.3%	25.5%	28.5%
Peak Demand Incremental Savings (GWh)													
Realistic Achievable Potential	-	-	-	33	21	22	23	26	27	39	38	42	41
Maximum Achievable Potential	-	-	-	47	31	32	33	36	37	53	51	56	56
Economic Potential	-	-	-	77	47	49	49	52	53	73	70	75	74
Technical Potential	-	-	-	92	52	55	55	57	57	75	71	75	72
Peak Demand Incremental Savings % of Baseline													
Realistic Achievable Potential	-	-	-	1.4%	0.9%	0.9%	1.0%	1.1%	1.2%	1.7%	1.7%	1.8%	1.8%
Maximum Achievable Potential	-	-	-	2.0%	1.3%	1.4%	1.4%	1.6%	1.6%	2.3%	2.2%	2.4%	2.4%
Economic Potential	-	-	-	3.3%	2.0%	2.1%	2.1%	2.3%	2.3%	3.2%	3.0%	3.3%	3.2%
Technical Potential	-	-	-	3.9%	2.2%	2.4%	2.4%	2.5%	2.5%	3.3%	3.1%	3.2%	3.1%

Table F-9 Annual Natural Gas Energy Savings, Commercial

	207	205	205	205	207	208	208	209	210	211	211	212	212
Baseline Forecast	207	205	205	205	207	208	208	209	210	211	211	212	212
Cumulative Net Savings (million therms)													
Realistic Achievable Potential	-	-	-	2	3	5	7	8	10	12	14	16	18
Maximum Achievable Potential	-	-	-	3	5	7	10	13	16	18	21	23	26
Economic Potential	-	-	-	5	8	12	16	20	24	28	32	35	39
Technical Potential	-	-	-	7	10	15	20	25	30	34	39	42	46
Cumulative Savings % of Baseline													
Realistic Achievable Potential	-	-	-	1.0%	1.6%	2.3%	3.1%	4.0%	4.9%	5.8%	6.6%	7.4%	8.3%
Maximum Achievable Potential	-	-	-	1.5%	2.4%	3.6%	4.8%	6.1%	7.4%	8.6%	9.9%	11.1%	12.3%
Economic Potential	-	-	-	2.5%	3.9%	5.7%	7.5%	9.5%	11.5%	13.3%	15.0%	16.7%	18.4%
Technical Potential	-	-	-	3.2%	5.0%	7.2%	9.6%	12.0%	14.3%	16.3%	18.2%	20.0%	21.9%
Incremental Net Savings (million therms)													
Realistic Achievable Potential	-	-	-	2	1	2	2	2	2	2	2	2	2
Maximum Achievable Potential	-	-	-	3	2	2	3	3	3	3	3	3	3
Economic Potential	-	-	-	5	3	4	4	4	4	4	4	4	4
Technical Potential	-	-	-	7	4	5	5	5	5	4	4	4	4
Incremental Savings % of Baseline													
Realistic Achievable Potential	-	-	-	1.0%	0.6%	0.7%	0.8%	0.9%	0.9%	0.9%	0.8%	0.9%	0.9%
Maximum Achievable Potential	-	-	-	1.5%	0.9%	1.1%	1.2%	1.4%	1.3%	1.3%	1.2%	1.2%	1.3%
Economic Potential	-	-	-	2.5%	1.5%	1.8%	1.9%	2.0%	2.0%	1.8%	1.7%	1.7%	1.8%
Technical Potential	-	-	-	3.2%	1.8%	2.2%	2.4%	2.5%	2.3%	2.1%	1.9%	1.8%	1.9%

Table F-10 Annual Electric Energy Savings, Industrial

Baseline Forecast	12,580	12,566	12,781	13,130	13,480	13,955	13,968	13,971	14,000	14,060	14,083	14,147	14,295
Cumulative Net Savings (GWh)													
Realistic Achievable Potential	-	-	-	182	251	336	424	538	656	791	920	1,080	1,237
Maximum Achievable Potential	-	-	-	226	312	418	526	666	809	972	1,126	1,321	1,512
Economic Potential	-	-	-	392	533	705	876	1,094	1,314	1,555	1,778	2,051	2,320
Technical Potential	-	-	-	453	620	828	1,031	1,274	1,522	1,783	2,020	2,297	2,554
Cumulative Savings % of Baseline													
Realistic Achievable Potential	-	-	-	1.4%	1.9%	2.4%	3.0%	3.9%	4.7%	5.6%	6.5%	7.6%	8.7%
Maximum Achievable Potential	-	-	-	1.7%	2.3%	3.0%	3.8%	4.8%	5.8%	6.9%	8.0%	9.3%	10.6%
Economic Potential	-	-	-	3.0%	4.0%	5.0%	6.3%	7.8%	9.4%	11.1%	12.6%	14.5%	16.2%
Technical Potential	-	-	-	3.5%	4.6%	5.9%	7.4%	9.1%	10.9%	12.7%	14.3%	16.2%	17.9%
Incremental Net Savings (GWh)													
Realistic Achievable Potential	-	-	-	182	69	85	88	114	118	135	130	159	157
Maximum Achievable Potential	-	-	-	226	87	106	107	140	143	163	154	195	190
Economic Potential	-	-	-	392	141	172	172	218	220	241	223	273	268
Technical Potential	-	-	-	453	167	208	203	244	248	261	237	277	257
Incremental Savings % of Baseline													
Realistic Achievable Potential	-	-	-	1.4%	0.5%	0.6%	0.6%	0.8%	0.8%	1.0%	0.9%	1.1%	1.1%
Maximum Achievable Potential	-	-	-	1.7%	0.6%	0.8%	0.8%	1.0%	1.0%	1.2%	1.1%	1.4%	1.3%
Economic Potential	-	-	-	3.0%	1.0%	1.2%	1.2%	1.6%	1.6%	1.7%	1.6%	1.9%	1.9%
Technical Potential	-	-	-	3.5%	1.2%	1.5%	1.5%	1.7%	1.8%	1.9%	1.7%	2.0%	1.8%

Table F-11 Annual Electric Peak Demand Savings, Industrial

Baseline Forecast	1,695	1,693	1,719	1,762	1,806	1,867	1,866	1,864	1,866	1,872	1,874	1,880	1,898
Peak Demand Savings (GWh)													
Realistic Achievable Potential	-	-	-	28	39	54	70	88	108	129	149	172	195
Maximum Achievable Potential	-	-	-	37	53	73	94	119	144	172	197	226	256
Economic Potential	-	-	-	62	88	120	152	189	227	266	302	342	382
Technical Potential	-	-	-	68	96	132	166	205	245	287	324	364	405
Peak Demand Savings % of Baseline													
Realistic Achievable Potential	-	-	-	1.6%	2.2%	2.9%	3.7%	4.7%	5.8%	6.9%	8.0%	9.1%	10.3%
Maximum Achievable Potential	-	-	-	2.1%	2.9%	3.9%	5.0%	6.4%	7.7%	9.2%	10.5%	12.0%	13.5%
Economic Potential	-	-	-	3.5%	4.9%	6.4%	8.1%	10.1%	12.1%	14.2%	16.1%	18.2%	20.2%
Technical Potential	-	-	-	3.9%	5.3%	7.0%	8.9%	11.0%	13.1%	15.3%	17.3%	19.4%	21.3%
Peak Demand Incremental Savings (GWh)													
Realistic Achievable Potential	-	-	-	28	12	15	15	19	19	21	20	23	23
Maximum Achievable Potential	-	-	-	37	16	21	21	25	25	27	26	29	30
Economic Potential	-	-	-	62	26	32	32	37	38	40	36	40	41
Technical Potential	-	-	-	68	28	35	34	39	40	41	38	40	41
Peak Demand Incremental Savings % of Baseline													
Realistic Achievable Potential	-	-	-	1.6%	0.6%	0.8%	0.8%	1.0%	1.0%	1.1%	1.1%	1.2%	1.2%
Maximum Achievable Potential	-	-	-	2.1%	0.9%	1.1%	1.1%	1.3%	1.4%	1.5%	1.4%	1.5%	1.6%
Economic Potential	-	-	-	3.5%	1.4%	1.7%	1.7%	2.0%	2.0%	2.1%	1.9%	2.1%	2.1%
Technical Potential	-	-	-	3.9%	1.5%	1.9%	1.8%	2.1%	2.1%	2.2%	2.0%	2.1%	2.1%

Table F-12 Annual Natural Gas Energy Savings, Industrial

Baseline Forecast	330	327	327	326	326	329	328	325	322	319	316	315	314
Cumulative Net Savings (million therms)													
Realistic Achievable Potential	-	-	-	1.5	2.1	3.0	4.1	5.2	6.4	7.6	8.8	10.1	11.8
Maximum Achievable Potential	-	-	-	2.0	2.9	4.2	5.7	7.3	8.9	10.6	12.2	13.9	16.0
Economic Potential	-	-	-	3.5	4.9	6.9	9.3	11.7	14.2	16.7	19.1	21.5	24.7
Technical Potential	-	-	-	7.5	11.0	15.6	20.6	25.6	30.4	34.9	38.8	42.3	45.6
Cumulative Savings % of Baseline													
Realistic Achievable Potential	-	-	-	0.5%	0.6%	0.9%	1.2%	1.6%	2.0%	2.4%	2.8%	3.2%	3.7%
Maximum Achievable Potential	-	-	-	0.6%	0.9%	1.3%	1.7%	2.2%	2.8%	3.3%	3.9%	4.4%	5.1%
Economic Potential	-	-	-	1.1%	1.5%	2.1%	2.8%	3.6%	4.4%	5.2%	6.0%	6.8%	7.9%
Technical Potential	-	-	-	2.3%	3.4%	4.7%	6.3%	7.9%	9.5%	10.9%	12.3%	13.5%	14.5%
Incremental Net Savings (million therms)													
Realistic Achievable Potential	-	-	-	1.5	0.6	0.9	1.0	1.1	1.2	1.2	1.2	1.2	1.7
Maximum Achievable Potential	-	-	-	2.0	0.9	1.3	1.5	1.6	1.7	1.7	1.6	1.6	2.1
Economic Potential	-	-	-	3.5	1.5	2.0	2.3	2.5	2.5	2.5	2.4	2.4	3.2
Technical Potential	-	-	-	7.5	3.5	4.6	5.0	5.1	4.8	4.4	3.9	3.6	3.2
Incremental Savings % of Baseline													
Realistic Achievable Potential	-	-	-	0.5%	0.2%	0.3%	0.3%	0.4%	0.4%	0.4%	0.4%	0.4%	0.5%
Maximum Achievable Potential	-	-	-	0.6%	0.3%	0.4%	0.4%	0.5%	0.5%	0.5%	0.5%	0.5%	0.7%
Economic Potential	-	-	-	1.1%	0.4%	0.6%	0.7%	0.8%	0.8%	0.8%	0.8%	0.8%	1.0%
Technical Potential	-	-	-	2.3%	1.1%	1.4%	1.5%	1.6%	1.5%	1.4%	1.2%	1.1%	1.0%

PROGRAM MEASURE-LEVEL DETAILS

Maximum Achievable Potential (MAP)

Residential

Table G-1 Residential Lighting (MAP)

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
SF - Electric Only	Existing	Interior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	75%	\$37.50	12,551	12,182	12,182	15,281,644	12,366,495	12,058,191	1,029.79	833.35	812.57	-	-	-
SF - Electric Only	Existing	Interior Lighting	Electric	Specialty	CFL	per HH	\$21.86	75%	\$16.39	7,804	7,574	7,574	1,957,765	1,910,681	1,912,862	131.93	128.76	128.90	-	-	-
SF - Electric Only	Existing	Exterior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	75%	\$2.50	12,860	12,482	12,482	2,002,427	1,955,098	1,960,065	134.94	131.75	132.08	-	-	-
SF - Electric Only	New	Interior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	75%	\$42.60	457	444	444	504,831	401,881	386,905	34.02	27.08	26.07	-	-	-
SF - Electric Only	New	Interior Lighting	Electric	Specialty	CFL	per HH	\$21.73	75%	\$16.30	260	253	253	64,905	63,343	63,412	4.37	4.27	4.27	-	-	-
SF - Electric Only	New	Exterior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	75%	\$2.50	453	439	439	65,968	64,409	64,573	4.45	4.34	4.35	-	-	-
MF - Electric Only	Existing	Interior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	75%	\$17.15	4,719	4,580	4,580	4,002,032	3,238,684	3,157,956	269.69	218.25	212.81	-	-	-
MF - Electric Only	Existing	Interior Lighting	Electric	Specialty	CFL	per HH	\$17.72	75%	\$13.29	3,005	2,917	2,917	534,642	521,784	522,380	36.03	35.16	35.20	-	-	-
MF - Electric Only	Existing	Exterior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	75%	\$2.50	5,542	5,542	-	387,668	389,975	-	26.12	26.28	0.00	-	-	-
MF - Electric Only	Existing	Exterior Lighting	Electric	Screw-in	LED	per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	0.00	0.00	0.00	-	-	-
MF - Electric Only	New	Interior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	75%	\$21.90	88	85	85	69,494	54,092	52,551	4.68	3.65	3.54	-	-	-
MF - Electric Only	New	Interior Lighting	Electric	Specialty	CFL	per HH	\$17.65	75%	\$13.23	52	51	51	9,265	9,041	9,051	0.62	0.61	0.61	-	-	-
MF - Electric Only	New	Exterior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	75%	\$2.50	89	89	-	5,935	5,971	-	0.40	0.40	0.00	-	-	-
MF - Electric Only	New	Exterior Lighting	Electric	Screw-in	LED	per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	0.00	0.00	0.00	-	-	-
SF - Electric/Gas	Existing	Interior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	75%	\$32.84	31,016	30,104	30,104	27,280,487	26,631,907	26,666,723	1,838.37	1,794.66	1,797.00	-	-	-
SF - Electric/Gas	Existing	Interior Lighting	Electric	Specialty	CFL	per HH	\$20.94	75%	\$15.70	10,564	10,254	10,254	2,653,248	2,589,438	2,592,394	178.80	174.50	174.70	-	-	-
SF - Electric/Gas	Existing	Exterior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	75%	\$2.50	51,798	50,274	50,274	8,339,082	8,141,980	8,162,667	561.95	548.67	550.06	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
SF - Electric/Gas	New	Interior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	75%	\$37.31	1,114	1,082	1,082	879,189	858,287	859,409	59.25	57.84	57.91	-	-	-
SF - Electric/Gas	New	Interior Lighting	Electric	Specialty	CFL	per HH	\$20.78	75%	\$15.58	344	334	334	85,785	83,720	83,812	5.78	5.64	5.65	-	-	-
SF - Electric/Gas	New	Exterior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	75%	\$2.50	1,660	1,612	1,612	250,104	244,193	244,813	16.85	16.46	16.50	-	-	-
MF - Electric/Gas	Existing	Interior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	75%	\$21.38	5,044	4,896	4,896	3,587,800	3,502,502	3,507,080	241.77	236.02	236.33	-	-	-
MF - Electric/Gas	Existing	Interior Lighting	Electric	Specialty	CFL	per HH	\$17.99	75%	\$13.49	1,719	1,669	1,669	352,059	343,593	343,985	23.72	23.15	23.18	-	-	-
MF - Electric/Gas	Existing	Exterior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	75%	\$2.50	8,240	7,997	7,997	622,083	607,380	608,923	41.92	40.93	41.03	-	-	-
MF - Electric/Gas	New	Interior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	75%	\$27.32	93	90	90	63,001	61,503	61,584	4.25	4.14	4.15	-	-	-
MF - Electric/Gas	New	Interior Lighting	Electric	Specialty	CFL	per HH	\$17.97	75%	\$13.48	30	29	29	6,123	5,975	5,982	0.41	0.40	0.40	-	-	-
MF - Electric/Gas	New	Exterior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	75%	\$2.50	144	140	140	10,429	10,182	10,208	0.70	0.69	0.69	-	-	-

Table G-2 Residential ENERGY STAR Homes (MAP)

Segment	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
							2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
SF - Electric Only	Central AC	SEER 14.5 (Energy Star)	per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	Air-Source Heat Pump	SEER 16, HSPF 8.5	per HH	\$580.88	75%	\$435.66	10	10	10	2,720	1,915	1,667	3.39	2.39	2.08	-	-	-
SF - Electric Only	Air-Source Heat Pump	SEER 16, HSPF 8.5	per HH	\$313.88	75%	\$235.41	8	8	8	9,716	7,489	6,820	-	-	-	-	-	-
SF - Electric Only	Water Heater > 55 gal	EF 2.3 (HP)	per HH	\$731.11	75%	\$548.33	57	56	56	86,871	78,458	76,324	6.47	5.84	5.68	-	-	-
SF - Electric Only	Screw-in	CFL	per HH	\$0.00	75%	\$35.50	75	72	72	82,316	65,529	63,087	5.55	4.42	4.25	-	-	-
SF - Electric Only	Specialty	CFL	per HH	\$21.73	75%	\$16.30	46	45	45	11,454	11,178	11,190	0.77	0.75	0.75	-	-	-
SF - Electric Only	Screw-in	CFL	per HH	\$0.00	75%	\$2.50	80	78	78	11,641	11,366	11,395	0.78	0.77	0.77	-	-	-
SF - Electric/Gas	Central AC	SEER 14.5 (Energy Star)	per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	Air-Source Heat Pump	SEER 16, HSPF 8.5	per HH	\$548.90	75%	\$411.68	2	2	2	413	291	253	0.51	0.36	0.32	-	-	-
SF - Electric/Gas	Air-Source Heat Pump	SEER 16, HSPF 8.5	per HH	\$310.74	75%	\$233.06	0	0	0	391	303	277	-	-	-	-	-	-
SF - Electric/Gas	Water Heater > 55 gal	EF 2.3 (HP)	per HH	\$731.11	75%	\$548.33	12	12	12	18,751	17,550	17,297	1.40	1.31	1.29	-	-	-
SF - Electric/Gas	Screw-in	CFL	per HH	\$0.00	75%	\$31.09	182	176	176	143,357	139,949	140,132	9.66	9.43	9.44	-	-	-
SF - Electric/Gas	Specialty	CFL	per HH	\$20.78	75%	\$15.58	61	59	59	15,139	14,774	14,790	1.02	1.00	1.00	-	-	-
SF - Electric/Gas	Screw-in	CFL	per HH	\$0.00	75%	\$2.50	293	284	284	44,136	43,093	43,202	2.97	2.90	2.91	-	-	-
SF - Electric/Gas	Furnace	AFUE 0.9	per HH	\$0.00	75%	\$0.00	-	184	184	-	-	-	-	-	-	-	10,450	10,459
SF - Gas Only	Furnace	AFUE 0.9	per HH	\$0.00	75%	\$0.00	-	55	55	-	-	-	-	-	-	-	2,873	2,876
SF - Electric Only	Insulation - Ducting		per HH	\$95.00	75%	\$71.25	52	51	51	5,991	5,812	5,793	4.81	4.65	4.63	-	-	-
SF - Electric Only	Insulation - Foundation		per HH	\$760.32	75%	\$570.24	112	109	109	79,331	77,057	76,881	34.77	33.61	33.42	-	-	-
SF - Electric Only	Insulation - Infiltration Control		per HH	\$427.68	75%	\$320.76	57	57	57	6,057	6,065	6,054	2.12	2.12	2.10	-	-	-
SF - Electric Only	Insulation - Radiant Barrier		per HH	\$94.61	75%	\$70.96	30	30	30	593	594	592	0.29	0.29	0.29	-	-	-
SF - Electric Only	Ducting - Repair and Sealing		per HH	\$497.62	75%	\$373.22	35	34	34	33,700	32,717	32,632	16.59	16.03	15.94	-	-	-
SF - Electric Only	Windows - Install Reflective Film		per HH	\$0.00	75%	\$0.00	-	13	13	-	4,367	4,344	-	16.39	16.30	-	-	-
SF - Electric Only	Roofs - High Reflectivity		per HH	\$97.66	75%	\$73.25	221	214	214	23,529	22,762	22,642	29.43	28.47	28.32	-	-	-
SF - Electric Only	Ceiling Fan - Installation		per HH	\$204.00	75%	\$153.00	40	39	39	14,287	13,821	13,748	17.87	17.28	17.19	-	-	-
SF - Electric Only	Thermostat -		per HH	\$30.00	75%	\$22.50	97	94	94	13,571	13,215	13,210	-	-	-	-	-	-
SF - Electric Only	Clock/Programmable		per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	Boiler - Maintenance		per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	Water Heater - Drainwater Heat Recovery		per HH	\$899.00	75%	\$674.25	2	2	2	640	621	606	0.05	0.05	0.05	-	-	-
SF - Electric Only	Water Heater - Faucet Aerators		per HH	\$16.00	75%	\$12.00	68	66	66	5,127	4,826	4,708	0.38	0.36	0.35	-	-	-
SF - Electric Only	Water Heater - Low-Flow Showerheads		per HH	\$12.00	75%	\$9.00	62	60	60	21,371	20,114	19,625	1.59	1.50	1.46	-	-	-
SF - Electric Only	Water Heater - Desuperheater		per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	Water Heater - Solar System		per HH	\$5,400.00	75%	\$4,050.00	1	1	1	1,194	1,158	1,130	0.09	0.09	0.08	-	-	-
SF - Electric/Gas	Insulation - Ceiling		per HH	\$0.00	75%	\$0.00	-	-	12	-	-	375	-	-	0.38	-	-	140
SF - Electric/Gas	Insulation - Ducting		per HH	\$95.00	75%	\$71.25	66	64	64	5,743	5,565	5,543	6.38	6.18	6.15	965	942	936
SF - Electric/Gas	Insulation - Foundation		per HH	\$760.32	75%	\$570.24	127	123	123	47,007	45,589	45,438	45.97	44.50	44.30	13,908	13,598	13,517
SF - Electric/Gas	Insulation - Infiltration Control		per HH	\$427.68	75%	\$320.76	64	64	64	3,111	3,110	3,101	2.81	2.80	2.79	1,738	1,750	1,740
SF - Electric/Gas	Insulation - Radiant Barrier		per HH	\$94.61	75%	\$70.96	35	35	35	382	382	381	0.39	0.39	0.39	138	139	138
SF - Electric/Gas	Ducting - Repair and Sealing		per HH	\$497.62	75%	\$373.22	41	40	40	22,348	21,672	21,599	21.98	21.28	21.19	2,731	2,666	2,647
SF - Electric/Gas	Windows - Install Reflective Film		per HH	\$0.00	75%	\$0.00	-	18	18	-	5,782	5,756	-	21.69	21.59	-	-	-
SF - Electric/Gas	Roofs - High Reflectivity		per HH	\$97.66	75%	\$73.25	299	290	290	31,168	30,175	30,038	38.97	37.72	37.55	-	-	-
SF - Electric/Gas	Ceiling Fan - Installation		per HH	\$204.00	75%	\$153.00	54	53	53	18,925	18,322	18,239	23.66	22.91	22.80	-	-	-
SF - Electric/Gas	Thermostat -		per HH	\$30.00	75%	\$22.50	110	107	107	2,695	2,630	2,633	-	-	-	3,893	3,806	3,783
SF - Electric/Gas	Clock/Programmable		per HH	\$37.00	75%	\$27.75	31	30	30	-	-	-	-	-	-	3,463	3,418	3,420
SF - Electric/Gas	Boiler - Maintenance		per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	Water Heater - Drainwater Heat Recovery		per HH	\$899.00	75%	\$674.25	6	6	6	2,188	2,156	2,128	0.16	0.16	0.16	953	964	962
SF - Electric/Gas	Water Heater - Faucet Aerators		per HH	\$16.00	75%	\$12.00	230	223	223	17,344	16,581	16,362	1.29	1.23	1.22	1,209	1,187	1,185
SF - Electric/Gas	Water Heater - Low-Flow Showerheads		per HH	\$12.00	75%	\$9.00	210	204	204	72,291	69,110	68,196	5.38	5.15	5.08	4,941	4,852	4,841
SF - Electric/Gas	Water Heater - Desuperheater		per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-

Program Measure-Level Details

Segment	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
							2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
SF - Electric/Gas	Water Heater - Solar System		per HH	\$5,400.00	75%	\$4,050.00	0	0	0	494	487	480	0.04	0.04	0.04	-	-	-
SF - Electric/Gas	ENERGY STAR Home Design		per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	Combined Boiler & Water Htg. Unit		per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Gas Only	Insulation - Ducting		per HH	\$95.00	75%	\$71.25	16	16	16	-	-	-	-	-	-	217	211	209
SF - Gas Only	Insulation - Foundation		per HH	\$760.32	75%	\$570.24	34	33	33	-	-	-	-	-	-	3,356	3,276	3,255
SF - Gas Only	Insulation - Infiltration Control		per HH	\$427.68	75%	\$320.76	17	17	17	-	-	-	-	-	-	420	422	420
SF - Gas Only	Insulation - Radiant Barrier		per HH	\$94.61	75%	\$70.96	9	9	9	-	-	-	-	-	-	33	33	33
SF - Gas Only	Ducting - Repair and Sealing		per HH	\$497.62	75%	\$373.22	10	10	10	-	-	-	-	-	-	610	595	590
SF - Gas Only	Thermostat - Clock/Programmable		per HH	\$30.00	75%	\$22.50	29	28	28	-	-	-	-	-	-	940	918	912
SF - Gas Only	Boiler - Hot Water Reset		per HH	\$37.00	75%	\$27.75	7	6	6	-	-	-	-	-	-	690	681	681
SF - Gas Only	Water Heater - Drainwater Heat Recovery		per HH	\$899.00	75%	\$674.25	2	2	2	-	-	-	-	-	-	226	228	228
SF - Gas Only	Water Heater - Faucet Aerators		per HH	\$16.00	75%	\$12.00	59	57	57	-	-	-	-	-	-	286	281	281
SF - Gas Only	Water Heater - Low-Flow Showerheads		per HH	\$12.00	75%	\$9.00	54	52	52	-	-	-	-	-	-	1,170	1,149	1,147
SF - Gas Only	Water Heater - Desuperheater		per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Gas Only	Combined Boiler & Water Htg. Unit		per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-

Table G-3 Residential Home Energy Performance (MAP)

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
SF - Electric Only	Existing	Cooling	Electric	Central AC	SEER 14.5 (Energy Star)	per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	Existing	Cooling	Electric	Air-Source Heat Pump	SEER 16, HSPF 8.5	per HH	\$512.52	75%	\$384.39	113	109	109	24,848	18,119	16,065	30.98	22.59	20.03	-	-	-
SF - Electric Only	Existing	Heating	Electric	Air-Source Heat Pump	SEER 16, HSPF 8.5	per HH	\$276.94	75%	\$207.71	93	91	91	105,804	83,189	76,513	-	-	-	-	-	-
SF - Electric Only	Existing	Water Heating	Electric	Water Heater > 55 gal	EF 2.3 (HP)	per HH	\$731.11	75%	\$548.33	318	308	308	532,780	479,927	467,016	39.68	35.74	34.78	-	-	-
SF - Electric Only	Existing	Interior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	75%	\$31.25	1,734	1,683	1,683	2,111,210	1,708,473	1,665,880	142.27	115.13	112.26	-	-	-
SF - Electric Only	Existing	Interior Lighting	Electric	Specialty	CFL	per HH	\$21.86	75%	\$16.39	1,285	1,248	1,248	322,455	314,700	315,060	21.73	21.21	21.23	-	-	-
SF - Electric Only	Existing	Exterior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	75%	\$2.50	1,445	1,402	1,402	224,992	219,674	220,232	15.16	14.80	14.84	-	-	-
SF - Electric/Gas	Existing	Cooling	Electric	Central AC	SEER 14.5 (Energy Star)	per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	Existing	Cooling	Electric	Air-Source Heat Pump	SEER 16, HSPF 8.5	per HH	\$484.31	75%	\$363.23	18	17	17	3,732	2,708	2,396	4.65	3.38	2.99	-	-	-
SF - Electric/Gas	Existing	Heating	Electric	Air-Source Heat Pump	SEER 16, HSPF 8.5	per HH	\$274.17	75%	\$205.63	4	4	4	4,223	3,387	3,144	-	-	-	-	-	-
SF - Electric/Gas	Existing	Water Heating	Electric	Water Heater > 55 gal	EF 2.3 (HP)	per HH	\$731.11	75%	\$548.33	69	66	66	115,001	107,381	105,821	8.56	8.00	7.88	-	-	-
SF - Electric/Gas	Existing	Interior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	75%	\$27.36	4,285	4,159	4,159	3,768,891	3,679,287	3,684,097	253.98	247.94	248.26	-	-	-
SF - Electric/Gas	Existing	Interior Lighting	Electric	Specialty	CFL	per HH	\$20.94	75%	\$15.70	1,457	1,414	1,414	365,965	357,164	357,572	24.66	24.07	24.10	-	-	-
SF - Electric/Gas	Existing	Exterior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	75%	\$2.50	5,820	5,649	5,649	936,975	914,829	917,154	63.14	61.65	61.80	-	-	-
SF - Electric/Gas	Existing	Heating	Natural Gas	Furnace	AFUE 0.9	per HH	\$377.69	75%	\$283.27	359	349	349	-	-	-	-	-	-	19,882	19,630	19,647
SF - Gas Only	Existing	Heating	Natural Gas	Furnace	AFUE 0.9	per HH	\$348.64	75%	\$261.48	145	141	141	-	-	-	-	-	-	7,396	7,302	7,309
SF - Electric Only	Existing			Insulation - Ceiling		per HH	\$363.42	75%	\$272.57	610	610	610	34,827	34,588	34,258	17.15	16.86	16.55	-	-	-
SF - Electric Only	Existing			Insulation - Ducting		per HH	\$95.00	75%	\$71.25	4,312	4,185	4,185	290,040	276,997	272,132	351.72	335.70	329.64	-	-	-
SF - Electric Only	Existing			Insulation - Infiltration Control		per HH	\$327.87	75%	\$245.90	10,130	10,130	10,130	1,254,713	1,248,825	1,239,241	413.20	406.21	398.70	-	-	-
SF - Electric Only	Existing			Insulation - Radiant Barrier		per HH	\$82.84	75%	\$62.13	6,885	6,885	6,885	369,465	366,928	363,415	182.69	179.60	176.28	-	-	-
SF - Electric Only	Existing			Ducting - Repair and Sealing		per HH	\$497.62	75%	\$373.22	2,874	2,789	2,789	1,001,343	956,126	939,084	1,148.64	1,095.35	1,074.58	-	-	-
SF - Electric Only	Existing			Windows - Install Reflective Film		per HH	\$1,028.88	75%	\$771.66	1,066	1,066	1,066	265,491	261,156	256,487	1,004.19	987.82	970.18	-	-	-
SF - Electric Only	Existing			Doors - Storm and Thermal		per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	Existing			Roofs - High Reflectivity		per HH	\$85.51	75%	\$64.13	1,517	1,472	1,472	152,017	145,137	142,542	191.66	182.99	179.72	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
SF - Electric Only	Existing			Ceiling Fan - Installation		per HH	\$204.00	75%	\$153.00	536	520	520	159,231	152,025	149,307	200.76	191.68	188.25	-	-	-
SF - Electric Only	Existing			Thermostat - Clock/Programmable		per HH	\$30.00	75%	\$22.50	864	839	839	98,756	95,817	95,443	-	-	-	-	-	-
SF - Electric Only	Existing			Water Heater - Drainwater Heat Recovery		per HH	\$899.00	75%	\$674.25	55	55	55	20,334	20,218	20,027	1.51	1.51	1.49	-	-	-
SF - Electric Only	Existing			Water Heater - Faucet Aerators		per HH	\$16.00	75%	\$12.00	3,491	3,389	3,389	307,922	297,137	294,289	22.93	22.13	21.92	-	-	-
SF - Electric Only	Existing			Water Heater - Low-Flow Showerheads		per HH	\$12.00	75%	\$9.00	2,388	2,318	2,318	959,437	925,833	916,959	71.45	68.95	68.29	-	-	-
SF - Electric Only	Existing			Water Heater - Thermostat Setback		per HH	\$5.00	75%	\$3.75	1,553	1,553	1,553	133,475	132,718	131,462	9.94	9.88	9.79	-	-	-
SF - Electric Only	Existing			Water Heater - Desuperheater		per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	Existing			Water Heater - Solar System		per HH	\$5,400.00	75%	\$4,050.00	23	23	23	52,941	52,635	52,130	3.94	3.92	3.88	-	-	-
SF - Electric Only	New			Insulation - Ducting		per HH	\$95.00	75%	\$71.25	40	38	38	4,519	4,385	4,370	3.63	3.51	3.49	-	-	-
SF - Electric Only	New			Insulation - Foundation		per HH	\$760.32	75%	\$570.24	84	82	82	59,846	58,131	57,998	26.23	25.36	25.21	-	-	-
SF - Electric Only	New			Insulation - Infiltration Control		per HH	\$427.68	75%	\$320.76	43	43	43	4,570	4,575	4,567	1.60	1.60	1.59	-	-	-
SF - Electric Only	New			Insulation - Radiant Barrier		per HH	\$94.61	75%	\$70.96	23	23	23	448	448	447	0.22	0.22	0.22	-	-	-
SF - Electric Only	New			Ducting - Repair and Sealing		per HH	\$497.62	75%	\$373.22	27	26	26	25,422	24,681	24,617	12.51	12.10	12.02	-	-	-
SF - Electric Only	New			Windows - Install Reflective Film		per HH	\$0.00	75%	\$0.00	-	10	10	-	3,397	3,379	-	12.74	12.68	-	-	-
SF - Electric Only	New			Roofs - High Reflectivity		per HH	\$97.66	75%	\$73.25	172	167	167	18,300	17,704	17,611	22.89	22.14	22.02	-	-	-
SF - Electric Only	New			Thermostat - Clock/Programmable		per HH	\$30.00	75%	\$22.50	22	21	21	3,016	2,937	2,936	-	-	-	-	-	-
SF - Electric Only	New			Boiler - Maintenance		per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	New			Water Heater - Drainwater Heat Recovery		per HH	\$899.00	75%	\$674.25	1	1	1	523	508	496	0.04	0.04	0.04	-	-	-
SF - Electric Only	New			Water Heater - Faucet Aerators		per HH	\$16.00	75%	\$12.00	61	59	59	4,601	4,330	4,225	0.34	0.32	0.31	-	-	-
SF - Electric Only	New			Water Heater - Low-Flow Showerheads		per HH	\$12.00	75%	\$9.00	54	52	52	18,422	17,338	16,917	1.37	1.29	1.26	-	-	-
SF - Electric Only	New			Water Heater - Thermostat Setback		per HH	\$5.00	75%	\$3.75	66	66	66	5,555	5,390	5,261	0.41	0.40	0.39	-	-	-
SF - Electric Only	New			Water Heater - Desuperheater		per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	New			Water Heater - Solar System		per HH	\$5,400.00	75%	\$4,050.00	0	0	0	929	901	879	0.07	0.07	0.07	-	-	-
MF - Electric Only	Existing			Water Heater - Thermostat Setback		per HH	\$5.00	75%	\$3.75	1,303	1,303	1,303	111,722	111,135	110,230	8.12	8.08	8.01	-	-	-
MF - Electric Only	New			Water Heater - Thermostat Setback		per HH	\$5.00	75%	\$3.75	28	28	28	2,470	2,440	2,406	0.18	0.18	0.17	-	-	-
SF - Electric/Gas	Existing			Insulation - Ceiling		per HH	\$363.42	75%	\$272.57	689	689	689	21,793	21,538	21,241	22.50	22.16	21.78	7,115	7,156	7,088

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
SF - Electric/Gas	Existing			Insulation - Ducting		per HH	\$95.00	75%	\$71.25	5,494	5,333	5,333	383,528	366,497	360,253	475.27	454.10	446.31	73,139	71,667	71,240
SF - Electric/Gas	Existing			Insulation - Infiltration Control		per HH	\$327.87	75%	\$245.90	11,454	11,454	11,454	602,222	596,440	589,322	542.35	534.07	525.02	329,995	331,920	328,777
SF - Electric/Gas	Existing			Insulation - Radiant Barrier		per HH	\$82.84	75%	\$62.13	7,785	7,785	7,785	231,941	229,222	226,060	239.79	236.13	232.13	75,323	75,762	75,045
SF - Electric/Gas	Existing			Ducting - Repair and Sealing		per HH	\$497.62	75%	\$373.22	3,337	3,239	3,239	1,256,177	1,200,534	1,180,195	1,544.76	1,475.92	1,450.55	215,064	210,737	209,481
SF - Electric/Gas	Existing			Windows - Install Reflective Film		per HH	\$1,028.88	75%	\$771.66	1,442	1,442	1,442	350,286	344,930	339,086	1,323.84	1,303.65	1,281.60	-	-	-
SF - Electric/Gas	Existing			Doors - Storm and Thermal		per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	Existing			Roofs - High Reflectivity		per HH	\$85.51	75%	\$64.13	2,052	1,992	1,992	200,504	191,631	188,385	252.59	241.42	237.34	-	-	-
SF - Electric/Gas	Existing			Ceiling Fan - Installation		per HH	\$204.00	75%	\$153.00	763	741	741	221,146	211,359	207,778	278.59	266.27	261.77	-	-	-
SF - Electric/Gas	Existing			Thermostat - Clock/Programmable		per HH	\$30.00	75%	\$22.50	980	951	951	18,344	17,889	17,897	-	-	-	33,686	32,886	32,575
SF - Electric/Gas	Existing			Boiler - Hot Water Reset		per HH	\$37.00	75%	\$27.75	1,064	1,032	1,032	-	-	-	-	-	-	107,009	101,302	97,348
SF - Electric/Gas	Existing			Water Heater - Drainwater Heat Recovery		per HH	\$899.00	75%	\$674.25	185	185	185	68,751	68,531	68,067	5.12	5.10	5.07	35,623	35,823	35,525
SF - Electric/Gas	Existing			Water Heater - Faucet Aerators		per HH	\$16.00	75%	\$12.00	11,790	11,443	11,443	1,029,421	995,861	989,036	76.66	74.16	73.65	74,159	72,384	71,781
SF - Electric/Gas	Existing			Water Heater - Low-Flow Showerheads		per HH	\$12.00	75%	\$9.00	8,063	7,826	7,826	3,207,426	3,102,862	3,081,598	238.86	231.07	229.49	226,532	221,109	219,269
SF - Electric/Gas	Existing			Water Heater - Thermostat Setback		per HH	\$5.00	75%	\$3.75	642	642	642	55,210	55,033	54,661	4.11	4.10	4.07	-	-	-
SF - Electric/Gas	Existing			Water Heater - Desuperheater		per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	Existing			Water Heater - Solar System		per HH	\$5,400.00	75%	\$4,050.00	16	16	16	35,428	35,311	35,069	2.64	2.63	2.61	-	-	-
SF - Electric/Gas	Existing			Combined Boiler & Water Htg. Unit		per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	New			Insulation - Ceiling		per HH	\$0.00	75%	\$0.00	-	-	9	-	-	283	-	-	0.29	-	-	105
SF - Electric/Gas	New			Insulation - Ducting		per HH	\$95.00	75%	\$71.25	50	48	48	4,333	4,198	4,182	4.82	4.66	4.64	728	711	706
SF - Electric/Gas	New			Insulation - Foundation		per HH	\$760.32	75%	\$570.24	96	93	93	35,462	34,391	34,278	34.68	33.57	33.42	10,492	10,258	10,197
SF - Electric/Gas	New			Insulation - Infiltration Control		per HH	\$427.68	75%	\$320.76	49	49	49	2,347	2,346	2,339	2.12	2.11	2.10	1,311	1,321	1,313
SF - Electric/Gas	New			Insulation - Radiant Barrier		per HH	\$94.61	75%	\$70.96	26	26	26	288	288	287	0.29	0.29	0.29	104	105	104
SF - Electric/Gas	New			Ducting - Repair and Sealing		per HH	\$497.62	75%	\$373.22	31	30	30	16,859	16,349	16,294	16.59	16.06	15.98	2,060	2,011	1,997
SF - Electric/Gas	New			Windows - Install Reflective Film		per HH	\$0.00	75%	\$0.00	-	14	14	-	4,497	4,477	-	16.87	16.79	-	-	-
SF - Electric/Gas	New			Roofs - High Reflectivity		per HH	\$97.66	75%	\$73.25	232	226	226	24,242	23,469	23,363	30.31	29.34	29.21	-	-	-
SF - Electric/Gas	New			Thermostat - Clock/Programmable		per HH	\$30.00	75%	\$22.50	25	24	24	599	584	585	-	-	-	865	846	841
SF - Electric/Gas	New			Boiler - Hot Water Reset		per HH	\$37.00	75%	\$27.75	25	25	25	-	-	-	-	-	-	2,834	2,797	2,799

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
SF - Electric/Gas	New			Boiler - Maintenance		per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	New			Water Heater - Drainwater Heat Recovery		per HH	\$899.00	75%	\$674.25	5	5	5	1,790	1,764	1,741	0.13	0.13	0.13	780	789	787
SF - Electric/Gas	New			Water Heater - Faucet Aerators		per HH	\$16.00	75%	\$12.00	206	200	200	15,563	14,878	14,681	1.16	1.11	1.09	1,085	1,065	1,063
SF - Electric/Gas	New			Water Heater - Low-Flow Showerheads		per HH	\$12.00	75%	\$9.00	181	176	176	62,315	59,573	58,785	4.64	4.44	4.38	4,259	4,182	4,173
SF - Electric/Gas	New			Water Heater - Thermostat Setback		per HH	\$5.00	75%	\$3.75	27	27	27	2,324	2,290	2,261	0.17	0.17	0.17	-	-	-
SF - Electric/Gas	New			Water Heater - Desuperheater		per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	New			Water Heater - Solar System		per HH	\$5,400.00	75%	\$4,050.00	0	0	0	384	378	373	0.03	0.03	0.03	-	-	-
SF - Electric/Gas	New			Combined Boiler & Water Htg. Unit		per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	Existing			Water Heater - Thermostat Setback		per HH	\$5.00	75%	\$3.75	126	126	126	10,768	10,699	10,600	0.78	0.78	0.77	-	-	-
MF - Electric/Gas	New			Water Heater - Thermostat Setback		per HH	\$5.00	75%	\$3.75	3	3	3	235	232	228	0.02	0.02	0.02	-	-	-
SF - Gas Only	Existing			Insulation - Ceiling		per HH	\$363.42	75%	\$272.57	280	280	280	-	-	-	-	-	-	2,643	2,660	2,637
SF - Gas Only	Existing			Insulation - Ducting		per HH	\$95.00	75%	\$71.25	2,214	2,149	2,149	-	-	-	-	-	-	27,208	26,660	26,502
SF - Gas Only	Existing			Insulation - Infiltration Control		per HH	\$327.87	75%	\$245.90	4,599	4,599	4,599	-	-	-	-	-	-	121,194	122,008	120,953
SF - Gas Only	Existing			Insulation - Radiant Barrier		per HH	\$82.84	75%	\$62.13	3,129	3,129	3,129	-	-	-	-	-	-	27,692	27,878	27,637
SF - Gas Only	Existing			Ducting - Repair and Sealing		per HH	\$497.62	75%	\$373.22	1,345	1,305	1,305	-	-	-	-	-	-	80,005	78,395	77,928
SF - Gas Only	Existing			Doors - Storm and Thermal		per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Gas Only	Existing			Thermostat - Clock/Programmable		per HH	\$30.00	75%	\$22.50	392	380	380	-	-	-	-	-	-	12,316	12,034	11,930
SF - Gas Only	Existing			Boiler - Hot Water Reset		per HH	\$37.00	75%	\$27.75	349	338	338	-	-	-	-	-	-	32,364	30,638	29,442
SF - Gas Only	Existing			Water Heater - Drainwater Heat Recovery		per HH	\$899.00	75%	\$674.25	39	39	39	-	-	-	-	-	-	7,046	7,086	7,027
SF - Gas Only	Existing			Water Heater - Faucet Aerators		per HH	\$16.00	75%	\$12.00	4,558	4,424	4,424	-	-	-	-	-	-	26,669	26,031	25,814
SF - Gas Only	Existing			Water Heater - Low-Flow Showerheads		per HH	\$12.00	75%	\$9.00	3,117	3,025	3,025	-	-	-	-	-	-	81,466	79,515	78,854
SF - Gas Only	Existing			Water Heater - Desuperheater		per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Gas Only	Existing			Combined Boiler & Water Htg. Unit		per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Gas Only	New			Insulation - Ducting		per HH	\$95.00	75%	\$71.25	12	12	12	-	-	-	-	-	-	163	159	158
SF - Gas Only	New			Insulation - Foundation		per HH	\$760.32	75%	\$570.24	25	25	25	-	-	-	-	-	-	2,532	2,471	2,455
SF - Gas Only	New			Insulation - Infiltration Control		per HH	\$427.68	75%	\$320.76	13	13	13	-	-	-	-	-	-	317	319	317

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
SF - Gas Only	New			Insulation - Radiant Barrier		per HH	\$94.61	75%	\$70.96	7	7	7	-	-	-	-	-	-	25	25	25
SF - Gas Only	New			Ducting - Repair and Sealing		per HH	\$497.62	75%	\$373.22	7	7	7	-	-	-	-	-	-	460	449	445
SF - Gas Only	New			Thermostat - Clock/Programmable		per HH	\$30.00	75%	\$22.50	6	6	6	-	-	-	-	-	-	209	204	203
SF - Gas Only	New			Boiler - Hot Water Reset		per HH	\$37.00	75%	\$27.75	5	5	5	-	-	-	-	-	-	564	557	557
SF - Gas Only	New			Water Heater - Drainwater Heat Recovery		per HH	\$899.00	75%	\$674.25	1	1	1	-	-	-	-	-	-	185	187	186
SF - Gas Only	New			Water Heater - Faucet Aerators		per HH	\$16.00	75%	\$12.00	53	51	51	-	-	-	-	-	-	257	252	252
SF - Gas Only	New			Water Heater - Low-Flow Showerheads		per HH	\$12.00	75%	\$9.00	46	45	45	-	-	-	-	-	-	1,009	991	988
SF - Gas Only	New			Water Heater - Desuperheater		per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Gas Only	New			Combined Boiler & Water Htg. Unit		per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-

Table G-4 Residential Multi Family (MAP)

Segment	Vintage	Technology	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
							2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
MF - Electric Only	Existing	Water Heater > 55 gal	per HH	\$40.00	75%	\$30.00	81	-	-	7,562	-	-	0.55	-	-	-	-	-
MF - Electric Only	Existing	Water Heater > 55 gal	per HH	\$0.00	75%	\$0.00	-	81	81	-	79,260	75,459	-	5.76	5.49	-	-	-
MF - Electric Only	Existing	Screw-in	per HH	\$0.00	75%	\$14.29	2,547	2,472	2,472	2,159,592	1,747,671	1,704,108	145.53	117.77	114.84	-	-	-
MF - Electric Only	Existing	Specialty	per HH	\$17.72	75%	\$13.29	1,618	1,571	1,571	287,884	280,961	281,281	19.40	18.93	18.95	-	-	-
MF - Electric Only	Existing	Screw-in	per HH	\$0.00	75%	\$2.50	2,984	2,984	-	208,744	209,986	-	14.07	14.15	-	-	-	-
MF - Electric Only	Existing	Screw-in	per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric Only	Existing	Bathroom Exhaust Fan	per HH	\$43.50	75%	\$32.63	240	233	233	20,593	20,109	20,185	1.71	1.67	1.68	-	-	-
MF - Electric Only	New	Water Heater > 55 gal	per HH	\$40.00	75%	\$30.00	2	2	-	189	189	-	0.01	0.01	-	-	-	-
MF - Electric Only	New	Water Heater > 55 gal	per HH	\$0.00	75%	\$0.00	-	-	5	-	-	4,681	-	-	0.34	-	-	-
MF - Electric Only	New	Screw-in	per HH	\$0.00	75%	\$18.25	47	46	46	37,501	29,189	28,358	2.53	1.97	1.91	-	-	-
MF - Electric Only	New	Specialty	per HH	\$17.65	75%	\$13.23	28	27	27	4,989	4,868	4,874	0.34	0.33	0.33	-	-	-
MF - Electric Only	New	Screw-in	per HH	\$0.00	75%	\$2.50	48	48	-	3,196	3,215	-	0.22	0.22	-	-	-	-
MF - Electric Only	New	Screw-in	per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric Only	New	Bathroom Exhaust Fan	per HH	\$43.50	75%	\$32.63	8	8	8	708	692	694	0.06	0.06	0.06	-	-	-
MF - Electric/Gas	Existing	Water Heater > 55 gal	per HH	\$731.11	75%	\$548.33	69	67	67	112,678	105,453	103,948	8.19	7.67	7.56	-	-	-
MF - Electric/Gas	Existing	Screw-in	per HH	\$0.00	75%	\$17.81	2,722	2,642	2,642	1,936,062	1,890,033	1,892,504	130.47	127.36	127.53	-	-	-
MF - Electric/Gas	Existing	Specialty	per HH	\$17.99	75%	\$13.49	926	898	898	189,570	185,011	185,223	12.77	12.47	12.48	-	-	-
MF - Electric/Gas	Existing	Screw-in	per HH	\$0.00	75%	\$2.50	4,437	4,306	4,306	334,968	327,051	327,882	22.57	22.04	22.10	-	-	-
MF - Electric/Gas	Existing	Bathroom Exhaust Fan	per HH	\$43.50	75%	\$32.63	292	283	283	25,036	24,448	24,540	2.08	2.04	2.04	-	-	-
MF - Electric/Gas	New	Water Heater > 55 gal	per HH	\$731.11	75%	\$548.33	4	4	4	6,174	5,769	5,682	0.45	0.42	0.41	-	-	-
MF - Electric/Gas	New	Screw-in	per HH	\$0.00	75%	\$22.76	50	49	49	33,997	33,189	33,232	2.29	2.24	2.24	-	-	-
MF - Electric/Gas	New	Specialty	per HH	\$17.97	75%	\$13.48	16	16	16	3,297	3,217	3,221	0.22	0.22	0.22	-	-	-
MF - Electric/Gas	New	Screw-in	per HH	\$0.00	75%	\$2.50	78	75	75	5,615	5,483	5,497	0.38	0.37	0.37	-	-	-
MF - Electric/Gas	New	Bathroom Exhaust Fan	per HH	\$43.50	75%	\$32.63	10	10	10	863	843	846	0.07	0.07	0.07	-	-	-
MF - Electric Only	Existing	Insulation - Ceiling	per HH	\$574.27	75%	\$430.70	526	526	526	43,043	43,077	42,953	12.11	11.93	11.74	-	-	-
MF - Electric Only	Existing	Insulation - Ducting	per HH	\$95.00	75%	\$71.25	1,722	1,671	1,671	18,931	18,083	17,778	21.91	20.92	20.57	-	-	-
MF - Electric Only	Existing	Insulation - Infiltration Control	per HH	\$152.01	75%	\$114.01	6,216	6,216	6,216	956,922	960,122	959,408	132.06	130.09	127.97	-	-	-
MF - Electric Only	Existing	Insulation - Radiant Barrier	per HH	\$130.90	75%	\$98.18	2,789	2,789	2,789	215,474	215,621	214,980	61.85	60.93	59.93	-	-	-
MF - Electric Only	Existing	Insulation - Wall Cavity	per HH	\$696.64	75%	\$522.48	127	127	127	11,724	11,767	11,761	1.43	1.41	1.39	-	-	-
MF - Electric Only	Existing	Insulation - Wall Sheathing	per HH	\$510.87	75%	\$383.15	2,322	2,253	2,253	335,427	326,533	326,193	53.03	50.70	49.87	-	-	-
MF - Electric Only	Existing	Ducting - Repair and Sealing	per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-

Segment	Vintage	Technology	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
							2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
MF - Electric Only	Existing	Windows - High Efficiency/ENERGY STAR	per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric Only	Existing	Windows - Install Reflective Film	per HH	\$240.74	75%	\$180.56	361	361	361	17,473	17,212	16,932	60.94	60.03	59.05	-	-	-
MF - Electric Only	Existing	Roofs - High Reflectivity	per HH	\$135.12	75%	\$101.34	579	562	562	26,408	25,248	24,837	30.70	29.35	28.87	-	-	-
MF - Electric Only	Existing	Ceiling Fan - Installation	per HH	\$204.00	75%	\$153.00	1,015	985	985	149,599	143,029	140,698	173.92	166.28	163.57	-	-	-
MF - Electric Only	Existing	Thermostat - Clock/Programmable	per HH	\$30.00	75%	\$22.50	818	794	794	49,950	48,762	48,826	-	-	-	-	-	-
MF - Electric Only	Existing	Home Energy Management System	per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric Only	Existing	Water Heater - Drainwater Heat Recovery	per HH	\$899.00	75%	\$674.25	49	49	49	18,244	18,148	18,000	1.33	1.32	1.31	-	-	-
MF - Electric Only	Existing	Water Heater - Faucet Aerators	per HH	\$16.00	75%	\$12.00	4,975	4,829	4,829	382,449	369,242	366,226	27.81	26.85	26.63	-	-	-
MF - Electric Only	Existing	Water Heater - Low-Flow Showerheads	per HH	\$12.00	75%	\$9.00	3,421	3,320	3,320	1,199,647	1,158,220	1,148,760	87.23	84.21	83.53	-	-	-
MF - Electric Only	Existing	Water Heater - Desuperheater	per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric Only	Existing	Water Heater - Solar System	per HH	\$5,400.00	75%	\$4,050.00	38	38	38	53,289	53,008	52,575	3.87	3.85	3.82	-	-	-
MF - Electric Only	New	Insulation - Ceiling	per HH	\$534.21	75%	\$400.66	8	8	8	267	268	269	0.10	0.10	0.10	-	-	-
MF - Electric Only	New	Insulation - Ducting	per HH	\$95.00	75%	\$71.25	19	18	18	175	171	171	0.20	0.20	0.20	-	-	-
MF - Electric Only	New	Insulation - Foundation	per HH	\$251.39	75%	\$188.54	50	49	49	8,670	8,462	8,472	2.53	2.47	2.47	-	-	-
MF - Electric Only	New	Insulation - Infiltration Control	per HH	\$141.40	75%	\$106.05	32	32	32	1,778	1,788	1,790	0.38	0.38	0.38	-	-	-
MF - Electric Only	New	Insulation - Radiant Barrier	per HH	\$121.77	75%	\$91.33	14	14	14	174	175	175	0.06	0.06	0.06	-	-	-
MF - Electric Only	New	Insulation - Wall Sheathing	per HH	\$458.02	75%	\$343.52	49	48	48	4,836	4,720	4,726	1.01	0.98	0.98	-	-	-
MF - Electric Only	New	Ducting - Repair and Sealing	per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric Only	New	Windows - High Efficiency/ENERGY STAR	per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric Only	New	Windows - Install Reflective Film	per HH	\$327.40	75%	\$245.55	6	6	6	378	380	380	1.32	1.32	1.33	-	-	-
MF - Electric Only	New	Roofs - High Reflectivity	per HH	\$125.70	75%	\$94.28	92	89	89	2,052	2,002	2,003	2.39	2.33	2.33	-	-	-
MF - Electric Only	New	Ceiling Fan - Installation	per HH	\$204.00	75%	\$153.00	26	26	26	3,231	3,151	3,153	3.76	3.67	3.67	-	-	-
MF - Electric Only	New	Thermostat - Clock/Programmable	per HH	\$30.00	75%	\$22.50	6	6	6	225	219	219	-	-	-	-	-	-
MF - Electric Only	New	Home Energy Management System	per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric Only	New	Water Heater - Drainwater Heat Recovery	per HH	\$899.00	75%	\$674.25	2	2	2	567	560	552	0.04	0.04	0.04	-	-	-
MF - Electric Only	New	Water Heater - Faucet Aerators	per HH	\$16.00	75%	\$12.00	97	94	94	6,537	6,267	6,180	0.48	0.46	0.45	-	-	-
MF - Electric Only	New	Water Heater - Low-Flow Showerheads	per HH	\$12.00	75%	\$9.00	59	58	58	18,296	17,540	17,297	1.33	1.28	1.26	-	-	-
MF - Electric Only	New	Water Heater - Desuperheater	per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-

Program Measure-Level Details

Segment	Vintage	Technology	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
							2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
MF - Electric Only	New	Water Heater - Solar System	per HH	\$5,400.00	75%	\$4,050.00	1	1	1	800	790	779	0.06	0.06	0.06	-	-	-
MF - Electric/Gas	Existing	Insulation - Ceiling	per HH	\$574.27	75%	\$430.70	67	67	67	5,454	5,374	5,287	5.36	5.26	5.16	1,696	1,707	1,692
MF - Electric/Gas	Existing	Insulation - Ducting	per HH	\$95.00	75%	\$71.25	908	881	881	30,248	28,798	28,227	35.21	33.52	32.86	-	-	-
MF - Electric/Gas	Existing	Insulation - Infiltration Control	per HH	\$152.01	75%	\$114.01	2,605	2,605	2,605	236,549	233,927	230,892	191.71	188.17	184.53	129,581	130,402	129,222
MF - Electric/Gas	Existing	Insulation - Radiant Barrier	per HH	\$130.90	75%	\$98.18	1,182	1,182	1,182	92,042	90,683	89,219	90.84	89.17	87.44	27,944	28,121	27,866
MF - Electric/Gas	Existing	Insulation - Wall Cavity	per HH	\$696.64	75%	\$522.48	54	54	54	2,697	2,669	2,636	2.09	2.05	2.01	1,749	1,760	1,744
MF - Electric/Gas	Existing	Insulation - Wall Sheathing	per HH	\$510.87	75%	\$383.15	983	954	954	91,801	88,045	86,844	77.80	74.12	72.69	80,227	78,360	77,652
MF - Electric/Gas	Existing	Ducting - Repair and Sealing	per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	Existing	Windows - High Efficiency/ENERGY STAR	per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	Existing	Windows - Install Reflective Film	per HH	\$240.74	75%	\$180.56	214	214	214	25,481	25,011	24,527	88.96	87.32	85.63	-	-	-
MF - Electric/Gas	Existing	Roofs - High Reflectivity	per HH	\$135.12	75%	\$101.34	343	333	333	38,566	36,741	36,030	44.88	42.76	41.93	-	-	-
MF - Electric/Gas	Existing	Ceiling Fan - Installation	per HH	\$204.00	75%	\$153.00	601	584	584	218,471	208,133	204,105	254.25	242.22	237.53	-	-	-
MF - Electric/Gas	Existing	Thermostat - Clock/Programmable	per HH	\$30.00	75%	\$22.50	342	332	332	4,245	4,144	4,150	-	-	-	8,907	8,699	8,621
MF - Electric/Gas	Existing	Home Energy Management System	per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	Existing	Boiler - Hot Water Reset	per HH	\$37.00	75%	\$27.75	114	111	111	-	-	-	-	-	-	9,034	8,602	8,316
MF - Electric/Gas	Existing	Water Heater - Drainwater Heat Recovery	per HH	\$899.00	75%	\$674.25	30	30	30	10,889	10,820	10,720	0.79	0.79	0.78	4,101	4,123	4,089
MF - Electric/Gas	Existing	Water Heater - Faucet Aerators	per HH	\$16.00	75%	\$12.00	2,981	2,893	2,893	355,733	343,019	339,785	25.86	24.94	24.71	18,627	18,172	18,025
MF - Electric/Gas	Existing	Water Heater - Low-Flow Showerheads	per HH	\$12.00	75%	\$9.00	2,050	1,989	1,989	1,115,856	1,075,976	1,065,830	81.13	78.23	77.50	58,395	56,968	56,506
MF - Electric/Gas	Existing	Water Heater - Desuperheater	per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	Existing	Water Heater - Solar System	per HH	\$5,400.00	75%	\$4,050.00	4	4	4	8,013	7,961	7,886	0.58	0.58	0.57	-	-	-
MF - Electric/Gas	Existing	Combined Boiler & Water Htg. Unit	per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	New	Insulation - Ceiling	per HH	\$534.21	75%	\$400.66	3	3	3	138	139	139	0.14	0.14	0.14	55	56	56
MF - Electric/Gas	New	Insulation - Ducting	per HH	\$95.00	75%	\$71.25	10	10	10	276	270	270	0.32	0.31	0.31	-	-	-
MF - Electric/Gas	New	Insulation - Foundation	per HH	\$251.39	75%	\$188.54	21	20	20	3,672	3,584	3,589	3.67	3.58	3.59	1,230	1,214	1,215
MF - Electric/Gas	New	Insulation - Infiltration Control	per HH	\$141.40	75%	\$106.05	13	13	13	589	592	593	0.55	0.55	0.55	438	446	446
MF - Electric/Gas	New	Insulation - Radiant Barrier	per HH	\$121.77	75%	\$91.33	6	6	6	89	89	89	0.09	0.09	0.09	37	37	37
MF - Electric/Gas	New	Insulation - Wall Cavity	per HH	\$0.00	75%	\$0.00	-	-	4	-	-	66	-	-	0.05	-	-	80
MF - Electric/Gas	New	Insulation - Wall Sheathing	per HH	\$458.02	75%	\$343.52	21	20	20	1,576	1,538	1,540	1.46	1.43	1.43	1,232	1,216	1,217
MF - Electric/Gas	New	Ducting - Repair and Sealing	per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	New	Windows - High Efficiency/ENERGY STAR	per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	New	Windows - Install Reflective Film	per HH	\$327.40	75%	\$245.55	4	4	4	545	549	549	1.91	1.92	1.92	-	-	-
MF - Electric/Gas	New	Roofs - High Reflectivity	per HH	\$125.70	75%	\$94.28	54	52	52	2,964	2,893	2,896	3.45	3.37	3.37	-	-	-
MF - Electric/Gas	New	Ceiling Fan - Installation	per HH	\$204.00	75%	\$153.00	16	15	15	4,728	4,615	4,621	5.51	5.37	5.38	-	-	-
MF - Electric/Gas	New	Thermostat - Clock/Programmable	per HH	\$30.00	75%	\$22.50	2	2	2	18	18	18	-	-	-	45	45	45
MF - Electric/Gas	New	Home Energy Management System	per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	New	Water Heater - Drainwater Heat Recovery	per HH	\$899.00	75%	\$674.25	1	1	1	335	330	325	0.02	0.02	0.02	112	113	113
MF - Electric/Gas	New	Water Heater - Faucet Aerators	per HH	\$16.00	75%	\$12.00	58	56	56	6,011	5,742	5,653	0.44	0.42	0.41	320	314	313
MF - Electric/Gas	New	Water Heater - Low-Flow Showerheads	per HH	\$12.00	75%	\$9.00	36	34	34	16,822	16,070	15,821	1.22	1.17	1.15	895	879	876
MF - Electric/Gas	New	Water Heater - Desuperheater	per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	New	Water Heater - Solar System	per HH	\$5,400.00	75%	\$4,050.00	0	0	0	119	117	115	0.01	0.01	0.01	-	-	-
MF - Gas Only	Existing	Insulation - Ceiling	per HH	\$574.27	75%	\$430.70	9	9	9	-	-	-	-	-	-	200	201	199
MF - Gas Only	Existing	Insulation - Infiltration Control	per HH	\$152.01	75%	\$114.01	364	364	364	-	-	-	-	-	-	15,351	15,443	15,298
MF - Gas Only	Existing	Insulation - Radiant Barrier	per HH	\$130.90	75%	\$98.18	163	163	163	-	-	-	-	-	-	3,271	3,290	3,260
MF - Gas Only	Existing	Insulation - Wall Cavity	per HH	\$696.64	75%	\$522.48	7	7	7	-	-	-	-	-	-	206	207	205

Segment	Vintage	Technology	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
							2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
MF - Gas Only	Existing	Insulation - Wall Sheathing	per HH	\$510.87	75%	\$383.15	137	133	133	-	-	-	-	-	-	9,449	9,225	9,139
MF - Gas Only	Existing	Windows - High Efficiency/ENERGY STAR	per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Gas Only	Existing	Thermostat - Clock/Programmable	per HH	\$30.00	75%	\$22.50	48	46	46	-	-	-	-	-	-	1,053	1,028	1,018
MF - Gas Only	Existing	Home Energy Management System	per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Gas Only	Existing	Boiler - Hot Water Reset	per HH	\$37.00	75%	\$27.75	22	21	21	-	-	-	-	-	-	1,443	1,374	1,328
MF - Gas Only	Existing	Water Heater - Drainwater Heat Recovery	per HH	\$899.00	75%	\$674.25	5	5	5	-	-	-	-	-	-	625	629	623
MF - Gas Only	Existing	Water Heater - Faucet Aerators	per HH	\$16.00	75%	\$12.00	519	504	504	-	-	-	-	-	-	2,840	2,771	2,748
MF - Gas Only	Existing	Water Heater - Low-Flow Showerheads	per HH	\$12.00	75%	\$9.00	357	346	346	-	-	-	-	-	-	8,904	8,686	8,616
MF - Gas Only	Existing	Water Heater - Desuperheater	per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Gas Only	Existing	Combined Boiler & Water Htg. Unit	per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Gas Only	New	Insulation - Ceiling	per HH	\$534.21	75%	\$400.66	0	0	0	-	-	-	-	-	-	2	2	2
MF - Gas Only	New	Insulation - Foundation	per HH	\$251.39	75%	\$188.54	1	1	1	-	-	-	-	-	-	53	52	52
MF - Gas Only	New	Insulation - Infiltration Control	per HH	\$141.40	75%	\$106.05	1	1	1	-	-	-	-	-	-	19	19	19
MF - Gas Only	New	Insulation - Radiant Barrier	per HH	\$121.77	75%	\$91.33	0	0	0	-	-	-	-	-	-	2	2	2
MF - Gas Only	New	Insulation - Wall Sheathing	per HH	\$458.02	75%	\$343.52	1	1	1	-	-	-	-	-	-	52	52	52
MF - Gas Only	New	Windows - High Efficiency/ENERGY STAR	per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Gas Only	New	Thermostat - Clock/Programmable	per HH	\$30.00	75%	\$22.50	0	0	0	-	-	-	-	-	-	2	2	2
MF - Gas Only	New	Home Energy Management System	per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Gas Only	New	Water Heater - Drainwater Heat Recovery	per HH	\$899.00	75%	\$674.25	0	0	0	-	-	-	-	-	-	6	6	6
MF - Gas Only	New	Water Heater - Faucet Aerators	per HH	\$16.00	75%	\$12.00	4	4	4	-	-	-	-	-	-	18	17	17
MF - Gas Only	New	Water Heater - Low-Flow Showerheads	per HH	\$12.00	75%	\$9.00	2	2	2	-	-	-	-	-	-	49	48	48
MF - Gas Only	New	Water Heater - Desuperheater	per HH	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-

Table G-5 Residential Moderate Income (MAP)

Segment	Vintage	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
								2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
SF - Electric Only	Existing	Central AC	SEER 14.5 (Energy Star)	per HH	\$0.00	90%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	Existing	Air-Source Heat Pump	SEER 16, HSPF 8.5	per HH	\$2,423.61	90%	\$2,181.25	8	7	7	1,657	1,208	1,071	2.07	1.51	1.34	-	-	-
SF - Electric Only	Existing	Air-Source Heat Pump	SEER 16, HSPF 8.5	per HH	\$1,309.62	90%	\$1,178.65	6	6	6	7,054	5,546	5,101	-	-	-	-	-	-
SF - Electric Only	Existing	Screw-in	CFL	per HH	\$41.57	90%	\$20.00	144	140	140	175,934	142,373	138,823	11.86	9.59	9.35	-	-	-
SF - Electric Only	Existing	Specialty	CFL	per HH	\$25.79	90%	\$23.21	92	89	89	23,033	22,479	22,504	1.55	1.51	1.52	-	-	-
SF - Electric Only	Existing	Screw-in	CFL	per HH	\$1.78	90%	\$2.50	144	140	140	22,499	21,967	22,023	1.52	1.48	1.48	-	-	-
SF - Electric/Gas	Existing	Central AC	SEER 14.5 (Energy Star)	per HH	\$0.00	90%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	Existing	Air-Source Heat Pump	SEER 16, HSPF 8.5	per HH	\$2,290.20	90%	\$2,061.18	1	1	1	249	181	160	0.31	0.23	0.20	-	-	-
SF - Electric/Gas	Existing	Air-Source Heat Pump	SEER 16, HSPF 8.5	per HH	\$1,296.52	90%	\$1,166.87	0	0	0	282	226	210	-	-	-	-	-	-
SF - Electric/Gas	Existing	Screw-in	CFL	per HH	\$39.77	90%	\$20.00	357	347	347	314,074	306,607	307,008	21.16	20.66	20.69	-	-	-
SF - Electric/Gas	Existing	Specialty	CFL	per HH	\$24.70	90%	\$22.23	121	118	118	30,497	29,764	29,798	2.06	2.01	2.01	-	-	-
SF - Electric/Gas	Existing	Screw-in	CFL	per HH	\$1.35	90%	\$2.50	582	565	565	93,698	91,483	91,715	6.31	6.16	6.18	-	-	-
SF - Electric/Gas	Existing	Furnace	AFUE 0.9	per HH	\$2,738.28	90%	\$2,464.45	24	23	23	-	-	-	-	-	-	1,325	1,309	1,310
SF - Gas Only	Existing	Furnace	AFUE 0.9	per HH	\$2,527.64	90%	\$2,274.88	10	9	9	-	-	-	-	-	-	493	487	487
SF - Electric Only	Existing	Insulation - Ceiling		per HH	\$363.42	90%	\$327.08	6	6	6	352	349	346	0.17	0.17	0.17	-	-	-
SF - Electric Only	Existing	Insulation - Ducting		per HH	\$95.00	90%	\$85.50	44	42	42	2,930	2,798	2,749	3.55	3.39	3.33	-	-	-
SF - Electric Only	Existing	Insulation - Infiltration Control		per HH	\$327.87	90%	\$295.08	102	102	102	12,674	12,614	12,518	4.17	4.10	4.03	-	-	-
SF - Electric Only	Existing	Insulation - Radiant Barrier		per HH	\$82.84	90%	\$74.56	70	70	70	3,732	3,706	3,671	1.85	1.81	1.78	-	-	-
SF - Electric Only	Existing	Ducting - Repair and Sealing		per HH	\$497.62	90%	\$447.86	29	28	28	10,115	9,658	9,486	11.60	11.06	10.85	-	-	-
SF - Electric Only	Existing	Ceiling Fan - Installation		per HH	\$204.00	90%	\$183.60	28	27	27	8,381	8,001	7,858	10.57	10.09	9.91	-	-	-
SF - Electric Only	Existing	Thermostat - Clock/Programmable		per HH	\$30.00	90%	\$27.00	58	56	56	6,584	6,388	6,363	-	-	-	-	-	-
SF - Electric Only	Existing	Water Heater - Faucet Aerators		per HH	\$16.00	90%	\$14.40	75	73	73	6,611	6,380	6,319	0.49	0.48	0.47	-	-	-
SF - Electric Only	Existing	Water Heater - Low-Flow Showerheads		per HH	\$12.00	90%	\$10.80	52	51	51	21,063	20,326	20,131	1.57	1.51	1.50	-	-	-
SF - Electric/Gas	Existing	Insulation - Ceiling		per HH	\$363.42	90%	\$327.08	7	7	7	220	218	215	0.23	0.22	0.22	72	72	72
SF - Electric/Gas	Existing	Insulation - Ducting		per HH	\$95.00	90%	\$85.50	55	54	54	3,874	3,702	3,639	4.80	4.59	4.51	739	724	720
SF - Electric/Gas	Existing	Insulation - Infiltration Control		per HH	\$327.87	90%	\$295.08	116	116	116	6,083	6,025	5,953	5.48	5.39	5.30	3,333	3,353	3,321
SF - Electric/Gas	Existing	Insulation - Radiant Barrier		per HH	\$82.84	90%	\$74.56	79	79	79	2,343	2,315	2,283	2.42	2.39	2.34	761	765	758
SF - Electric/Gas	Existing	Ducting - Repair and Sealing		per HH	\$497.62	90%	\$447.86	34	33	33	12,689	12,127	11,921	15.60	14.91	14.65	2,172	2,129	2,116
SF - Electric/Gas	Existing	Thermostat - Clock/Programmable		per HH	\$30.00	90%	\$27.00	65	63	63	1,223	1,193	1,193	-	-	-	2,246	2,192	2,172
SF - Electric/Gas	Existing	Water Heater - Faucet Aerators		per HH	\$16.00	90%	\$14.40	253	246	246	22,102	21,382	21,235	1.65	1.59	1.58	1,592	1,554	1,541
SF - Electric/Gas	Existing	Water Heater - Low-Flow Showerheads		per HH	\$12.00	90%	\$10.80	177	172	172	70,415	68,120	67,653	5.24	5.07	5.04	4,973	4,854	4,814
SF - Electric/Gas	Existing	Combined Boiler & Water Htg. Unit		per HH	\$0.00	90%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Gas Only	Existing	Insulation - Ducting		per HH	\$95.00	90%	\$85.50	22	22	22	-	-	-	-	-	-	275	269	268

Segment	Vintage	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
								2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
SF - Gas Only	Existing	Insulation - Infiltration Control		per HH	\$327.87	90%	\$295.08	46	46	46	-	-	-	-	-	-	1,224	1,232	1,222
SF - Gas Only	Existing	Insulation - Radiant Barrier		per HH	\$82.84	90%	\$74.56	32	32	32	-	-	-	-	-	-	280	282	279
SF - Gas Only	Existing	Ducting - Repair and Sealing		per HH	\$497.62	90%	\$447.86	14	13	13	-	-	-	-	-	-	808	792	787
SF - Gas Only	Existing	Thermostat - Clock/Programmable		per HH	\$30.00	90%	\$27.00	26	25	25	-	-	-	-	-	-	821	802	795
SF - Gas Only	Existing	Water Heater - Faucet Aerators		per HH	\$16.00	90%	\$14.40	98	95	95	-	-	-	-	-	-	573	559	554
SF - Gas Only	Existing	Water Heater - Low-Flow Showerheads		per HH	\$12.00	90%	\$10.80	68	66	66	-	-	-	-	-	-	1,788	1,746	1,731

Table G-6 Residential Appliance Recycling (MAP)

Segment	Vintage	Technology	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
							2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
SF - Electric Only	Existing	Room AC - Removal of Second Unit	per HH	\$60.00	75%	\$45.00	1,098	1,066	1,066	1,109,116	1,063,501	1,047,630	1,610.44	1,544.21	1,521.17	-	-	-
SF - Electric Only	Existing	Refrigerator - Remove Second Unit	per HH	\$120.00	75%	\$90.00	2,879	2,795	2,795	1,919,684	1,742,429	1,636,971	200.81	182.27	171.24	-	-	-
SF - Electric Only	Existing	Freezer - Remove Second Unit	per HH	\$120.00	75%	\$90.00	3,190	3,096	3,096	1,611,395	1,506,666	1,455,552	188.36	176.12	170.14	-	-	-
SF - Electric Only	New	Room AC - Removal of Second Unit	per HH	\$60.00	75%	\$45.00	11	11	11	11,440	11,055	10,991	16.61	16.05	15.96	-	-	-
SF - Electric Only	New	Refrigerator - Remove Second Unit	per HH	\$120.00	75%	\$90.00	94	91	91	45,003	42,028	40,782	4.71	4.40	4.27	-	-	-
SF - Electric Only	New	Freezer - Remove Second Unit	per HH	\$120.00	75%	\$90.00	104	101	101	46,246	43,769	42,888	5.41	5.12	5.01	-	-	-
MF - Electric Only	Existing	Room AC - Removal of Second Unit	per HH	\$60.00	75%	\$45.00	858	832	832	274,377	263,830	260,557	315.83	303.69	299.92	-	-	-
MF - Electric Only	Existing	Refrigerator - Remove Second Unit	per HH	\$120.00	75%	\$90.00	354	344	344	219,513	197,471	185,296	22.97	20.66	19.39	-	-	-
MF - Electric Only	Existing	Freezer - Remove Second Unit	per HH	\$120.00	75%	\$90.00	397	385	385	207,632	197,795	194,398	24.27	23.12	22.73	-	-	-
MF - Electric Only	New	Room AC - Removal of Second Unit	per HH	\$60.00	75%	\$45.00	9	9	9	2,589	2,506	2,492	2.98	2.88	2.87	-	-	-
MF - Electric Only	New	Refrigerator - Remove Second Unit	per HH	\$120.00	75%	\$90.00	6	6	6	2,960	2,781	2,701	0.31	0.29	0.28	-	-	-
MF - Electric Only	New	Freezer - Remove Second Unit	per HH	\$120.00	75%	\$90.00	7	7	7	3,059	2,906	2,849	0.36	0.34	0.33	-	-	-
SF - Electric/Gas	Existing	Room AC - Removal of Second Unit	per HH	\$60.00	75%	\$45.00	1,422	1,381	1,381	1,358,523	1,303,859	1,285,629	1,972.59	1,893.21	1,866.74	-	-	-
SF - Electric/Gas	Existing	Refrigerator - Remove Second Unit	per HH	\$120.00	75%	\$90.00	3,280	3,184	3,184	2,228,643	2,027,848	1,908,693	233.13	212.13	199.66	-	-	-
SF - Electric/Gas	Existing	Freezer - Remove Second Unit	per HH	\$120.00	75%	\$90.00	3,442	3,340	3,340	1,738,385	1,625,404	1,570,261	203.20	190.00	183.55	-	-	-
SF - Electric/Gas	New	Room AC - Removal of Second Unit	per HH	\$60.00	75%	\$45.00	13	13	13	13,357	12,931	12,873	19.39	18.78	18.69	-	-	-
SF - Electric/Gas	New	Refrigerator - Remove Second Unit	per HH	\$120.00	75%	\$90.00	107	103	103	53,612	49,688	47,944	5.61	5.20	5.02	-	-	-
SF - Electric/Gas	New	Freezer - Remove Second Unit	per HH	\$120.00	75%	\$90.00	112	109	109	49,890	47,219	46,268	5.83	5.52	5.41	-	-	-
MF - Electric/Gas	Existing	Room AC - Removal of Second Unit	per HH	\$60.00	75%	\$45.00	224	217	217	161,229	155,137	153,320	185.59	178.58	176.49	-	-	-
MF - Electric/Gas	Existing	Refrigerator - Remove Second Unit	per HH	\$120.00	75%	\$90.00	267	260	260	169,046	152,290	143,069	17.69	15.93	14.97	-	-	-
MF - Electric/Gas	Existing	Freezer - Remove Second Unit	per HH	\$120.00	75%	\$90.00	355	345	345	185,810	177,006	173,967	21.72	20.69	20.34	-	-	-
MF - Electric/Gas	New	Room AC - Removal of Second Unit	per HH	\$60.00	75%	\$45.00	1	1	1	440	427	425	0.51	0.49	0.49	-	-	-
MF - Electric/Gas	New	Refrigerator - Remove Second Unit	per HH	\$120.00	75%	\$90.00	5	4	4	2,343	2,187	2,113	0.25	0.23	0.22	-	-	-
MF - Electric/Gas	New	Freezer - Remove Second Unit	per HH	\$120.00	75%	\$90.00	6	6	6	2,737	2,601	2,550	0.32	0.30	0.30	-	-	-

Table G-7 Residential HVAC (MAP)

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
SF - Electric/Gas	Existing	Heating	Natural Gas	Furnace	AFUE 0.9	per HH	\$377.69	70%	\$264.39	2,013	1,954	1,954	-	-	-	-	-	-	111,339	109,927	110,024
SF - Electric/Gas	New	Heating	Natural Gas	Furnace	AFUE 0.9	per HH	\$0.00	70%	\$0.00	-	1,040	1,040	-	-	-	-	-	-	-	59,214	59,267
SF - Gas Only	Existing	Heating	Natural Gas	Furnace	AFUE 0.9	per HH	\$348.64	70%	\$244.05	811	787	787	-	-	-	-	-	-	41,418	40,893	40,929
SF - Gas Only	New	Heating	Natural Gas	Furnace	AFUE 0.9	per HH	\$0.00	70%	\$0.00	-	310	310	-	-	-	-	-	-	-	16,282	16,297

Table G-8 Residential Efficient Products (MAP)

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
SF - Electric Only	Existing	Water Heating	Electric	Water Heater > 55 gal	EF 2.3 (HP)	per HH	\$731.11	40%	\$292.44	318	308	308	532,780	479,927	467,016	39.68	35.74	34.78	-	-	-
SF - Electric Only	Existing	Electronics	Electric	Personal Computers	Energy Star	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	Existing	Electronics	Electric	Monitor	Energy Star	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	Existing	Electronics	Electric	Laptops	Energy Star	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	Existing	Electronics	Electric	Set-top Boxes/DVR	Energy Star (2011)	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	Existing	Miscellaneous	Electric	Air Purifier/Cleaner	Energy Star	per HH	\$70.00	40%	\$28.00	1,252	1,215	1,215	633,672	618,783	621,119	48.85	47.71	47.89	-	-	-
SF - Electric Only	Existing	Miscellaneous	Electric	Pool Pump	High Efficiency	per HH	\$85.00	40%	\$34.00	1,226	1,190	1,190	182,769	178,474	179,148	14.09	13.76	13.81	-	-	-
SF - Electric Only	Existing	Miscellaneous	Electric	Bathroom Exhaust Fan	High Efficiency	per HH	\$43.50	40%	\$17.40	1,634	1,586	1,586	140,165	136,871	137,388	10.81	10.55	10.59	-	-	-
SF - Electric Only	New	Water Heating	Electric	Water Heater > 55 gal	EF 2.3 (HP)	per HH	\$731.11	40%	\$292.44	57	56	56	86,871	78,458	76,324	6.47	5.84	5.68	-	-	-
SF - Electric Only	New	Electronics	Electric	Personal Computers	Energy Star	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	New	Electronics	Electric	Monitor	Energy Star	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	New	Electronics	Electric	Laptops	Energy Star	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	New	Electronics	Electric	Set-top Boxes/DVR	Energy Star (2011)	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	New	Miscellaneous	Electric	Air Purifier/Cleaner	Energy Star	per HH	\$70.00	40%	\$28.00	109	106	106	55,297	53,998	54,202	4.26	4.16	4.18	-	-	-
SF - Electric Only	New	Miscellaneous	Electric	Pool Pump	High Efficiency	per HH	\$85.00	40%	\$34.00	97	94	94	14,507	14,167	14,220	1.12	1.09	1.10	-	-	-
SF - Electric Only	New	Miscellaneous	Electric	Bathroom Exhaust Fan	High Efficiency	per HH	\$43.50	40%	\$17.40	133	129	129	11,377	11,110	11,152	0.88	0.86	0.86	-	-	-
MF - Electric Only	Existing	Water Heating	Electric	Water Heater > 55 gal	EF 0.95	per HH	\$40.00	40%	\$16.00	20	-	-	1,891	-	-	0.14	-	-	-	-	-
MF - Electric Only	Existing	Water Heating	Electric	Water Heater > 55 gal	EF 2.0	per HH	\$0.00	40%	\$0.00	-	20	20	-	19,815	18,865	-	1.44	1.37	-	-	-
MF - Electric Only	Existing	Electronics	Electric	Personal Computers	Energy Star	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric Only	Existing	Electronics	Electric	Monitor	Energy Star	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric Only	Existing	Electronics	Electric	Laptops	Energy Star	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric Only	Existing	Electronics	Electric	Set-top Boxes/DVR	Energy Star (2011)	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric Only	Existing	Miscellaneous	Electric	Air Purifier/Cleaner	Energy Star	per HH	\$70.00	40%	\$28.00	470	456	456	237,596	232,014	232,890	19.79	19.32	19.39	-	-	-
MF - Electric Only	Existing	Miscellaneous	Electric	Pool Pump	High Efficiency	per HH	\$85.00	40%	\$34.00	42	41	41	6,243	6,096	6,120	0.52	0.51	0.51	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
MF - Electric Only	New	Water Heating	Electric	Water Heater > 55 gal	EF 0.95	per HH	\$40.00	40%	\$16.00	0	0	-	10	10	-	0.00	0.00	-	-	-	-
MF - Electric Only	New	Water Heating	Electric	Water Heater > 55 gal	EF 2.0	per HH	\$0.00	40%	\$0.00	-	-	0	-	-	246	-	-	0.02	-	-	-
MF - Electric Only	New	Electronics	Electric	Personal Computers	Energy Star	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric Only	New	Electronics	Electric	Monitor	Energy Star	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric Only	New	Electronics	Electric	Laptops	Energy Star	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric Only	New	Electronics	Electric	Set-top Boxes/DVR	Energy Star (2011)	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric Only	New	Miscellaneous	Electric	Air Purifier/Cleaner	Energy Star	per HH	\$70.00	40%	\$28.00	17	17	17	8,820	8,613	8,645	0.73	0.72	0.72	-	-	-
MF - Electric Only	New	Miscellaneous	Electric	Pool Pump	High Efficiency	per HH	\$85.00	40%	\$34.00	1	1	1	212	207	208	0.02	0.02	0.02	-	-	-
SF - Electric/Gas	Existing	Water Heating	Electric	Water Heater > 55 gal	EF 2.3 (HP)	per HH	\$731.11	40%	\$292.44	69	66	66	115,001	107,381	105,821	8.56	8.00	7.88	-	-	-
SF - Electric/Gas	Existing	Electronics	Electric	Personal Computers	Energy Star	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	Existing	Electronics	Electric	Monitor	Energy Star	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	Existing	Electronics	Electric	Laptops	Energy Star	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	Existing	Electronics	Electric	TVs	Energy Star (5.1)	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	Existing	Electronics	Electric	Printer/Fax/Copier	Energy Star	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	Existing	Electronics	Electric	Set-top Boxes/DVR	Energy Star (2011)	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	Existing	Miscellaneous	Electric	Air Purifier/Cleaner	Energy Star	per HH	\$70.00	40%	\$28.00	1,580	1,533	1,533	799,314	780,532	783,479	61.63	60.18	60.40	-	-	-
SF - Electric/Gas	Existing	Miscellaneous	Electric	Pool Pump	High Efficiency	per HH	\$85.00	40%	\$34.00	761	739	739	113,511	110,843	111,262	8.75	8.55	8.58	-	-	-
SF - Electric/Gas	Existing	Miscellaneous	Electric	Bathroom Exhaust Fan	High Efficiency	per HH	\$43.50	40%	\$17.40	5,223	5,069	5,069	447,996	437,470	439,121	34.54	33.73	33.86	-	-	-
SF - Electric/Gas	New	Water Heating	Electric	Water Heater > 55 gal	EF 2.3 (HP)	per HH	\$731.11	40%	\$292.44	12	12	12	18,751	17,550	17,297	1.40	1.31	1.29	-	-	-
SF - Electric/Gas	New	Electronics	Electric	Personal Computers	Energy Star	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	New	Electronics	Electric	Monitor	Energy Star	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	New	Electronics	Electric	Laptops	Energy Star	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	New	Electronics	Electric	TVs	Energy Star (5.1)	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	New	Electronics	Electric	Printer/Fax/Copier	Energy Star	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	New	Electronics	Electric	Set-top Boxes/DVR	Energy Star (2011)	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	New	Miscellaneous	Electric	Air Purifier/Cleaner	Energy Star	per HH	\$70.00	40%	\$28.00	138	134	134	69,752	68,113	68,370	5.38	5.25	5.27	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
SF - Electric/Gas	New	Miscellaneous	Electric	Pool Pump	High Efficiency	per HH	\$85.00	40%	\$34.00	60	59	59	9,010	8,798	8,832	0.69	0.68	0.68	-	-	-
SF - Electric/Gas	New	Miscellaneous	Electric	Bathroom Exhaust Fan	High Efficiency	per HH	\$43.50	40%	\$17.40	424	412	412	36,408	35,552	35,687	2.81	2.74	2.75	-	-	-
MF - Electric/Gas	Existing	Water Heating	Electric	Water Heater > 55 gal	EF 2.3 (HP)	per HH	\$731.11	40%	\$292.44	17	17	17	28,169	26,363	25,987	2.05	1.92	1.89	-	-	-
MF - Electric/Gas	Existing	Electronics	Electric	Personal Computers	Energy Star	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	Existing	Electronics	Electric	Monitor	Energy Star	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	Existing	Electronics	Electric	Laptops	Energy Star	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	Existing	Electronics	Electric	TVs	Energy Star (5.1)	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	Existing	Electronics	Electric	Printer/Fax/Copier	Energy Star	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	Existing	Electronics	Electric	Set-top Boxes/DVR	Energy Star (2011)	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	Existing	Miscellaneous	Electric	Air Purifier/Cleaner	Energy Star	per HH	\$70.00	40%	\$28.00	185	179	179	93,532	91,334	91,679	7.79	7.61	7.63	-	-	-
MF - Electric/Gas	Existing	Miscellaneous	Electric	Pool Pump	High Efficiency	per HH	\$85.00	40%	\$34.00	50	49	49	7,500	7,324	7,351	0.62	0.61	0.61	-	-	-
MF - Electric/Gas	New	Water Heating	Electric	Water Heater > 55 gal	EF 2.3 (HP)	per HH	\$731.11	40%	\$292.44	0	0	0	325	304	299	0.02	0.02	0.02	-	-	-
MF - Electric/Gas	New	Electronics	Electric	Personal Computers	Energy Star	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	New	Electronics	Electric	Monitor	Energy Star	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	New	Electronics	Electric	Laptops	Energy Star	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	New	Electronics	Electric	TVs	Energy Star (5.1)	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	New	Electronics	Electric	Printer/Fax/Copier	Energy Star	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	New	Electronics	Electric	Set-top Boxes/DVR	Energy Star (2011)	per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	New	Miscellaneous	Electric	Air Purifier/Cleaner	Energy Star	per HH	\$70.00	40%	\$28.00	7	7	7	3,472	3,391	3,403	0.29	0.28	0.28	-	-	-
MF - Electric/Gas	New	Miscellaneous	Electric	Pool Pump	High Efficiency	per HH	\$85.00	40%	\$34.00	2	2	2	254	248	249	0.02	0.02	0.02	-	-	-
SF - Electric Only	Existing			Roofs - High Reflectivity		per HH	\$85.51	40%	\$34.20	169	164	164	16,891	16,126	15,838	21.30	20.33	19.97	-	-	-
SF - Electric Only	Existing			Ceiling Fan - Installation		per HH	\$204.00	40%	\$81.60	2,256	2,189	2,189	670,448	640,104	628,660	845.30	807.06	792.65	-	-	-
SF - Electric Only	Existing			Thermostat - Clock/Programmable		per HH	\$30.00	40%	\$12.00	2,016	1,957	1,957	230,431	223,573	222,700	-	-	-	-	-	-
SF - Electric Only	Existing			Water Heater - Desuperheater		per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	Existing			Water Heater - Solar System		per HH	\$5,400.00	40%	\$2,160.00	19	19	19	43,315	43,065	42,652	3.23	3.21	3.18	-	-	-
SF - Electric Only	Existing			Pool Pump - Timer		per HH	\$0.00	40%	\$0.00	-	-	1,224	-	-	152,291	-	-	11.74	-	-	-
SF - Electric Only	Existing			Pool/Spa cover		per HH	\$115.00	40%	\$46.00	977	949	949	2,628,858	2,528,230	2,505,920	202.68	194.92	193.20	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
SF - Electric Only	New			Windows - Install Reflective Film		per HH	\$0.00	40%	\$0.00	-	6	6	-	1,941	1,931	-	7.28	7.24	-	-	-
SF - Electric Only	New			Roofs - High Reflectivity		per HH	\$97.66	40%	\$39.06	98	95	95	10,457	10,116	10,063	13.08	12.65	12.59	-	-	-
SF - Electric Only	New			Ceiling Fan - Installation		per HH	\$204.00	40%	\$81.60	49	48	48	17,461	16,892	16,804	21.84	21.13	21.01	-	-	-
SF - Electric Only	New			Thermostat - Clock/Programmable		per HH	\$30.00	40%	\$12.00	43	42	42	6,031	5,873	5,871	-	-	-	-	-	-
SF - Electric Only	New			Water Heater - Desuperheater		per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	New			Water Heater - Solar System		per HH	\$5,400.00	40%	\$2,160.00	0	0	0	531	515	502	0.04	0.04	0.04	-	-	-
SF - Electric Only	New			Pool/Spa cover		per HH	\$115.00	40%	\$46.00	32	31	31	79,601	77,731	78,024	6.14	5.99	6.02	-	-	-
MF - Electric Only	Existing			Water Heater - Solar System		per HH	\$5,400.00	40%	\$2,160.00	4	4	4	5,921	5,890	5,842	0.43	0.43	0.42	-	-	-
MF - Electric Only	Existing			Pool Pump - Timer		per HH	\$0.00	40%	\$0.00	-	-	41	-	-	5,083	-	-	0.42	-	-	-
MF - Electric Only	Existing			Pool/Spa cover		per HH	\$115.00	40%	\$46.00	55	53	53	146,950	141,320	140,076	12.24	11.77	11.67	-	-	-
MF - Electric Only	New			Water Heater - Solar System		per HH	\$5,400.00	40%	\$2,160.00	0	0	0	89	88	87	0.01	0.01	0.01	-	-	-
MF - Electric Only	New			Pool/Spa cover		per HH	\$115.00	40%	\$46.00	1	1	1	2,341	2,286	2,295	0.19	0.19	0.19	-	-	-
SF - Electric/Gas	Existing			Roofs - High Reflectivity		per HH	\$85.51	40%	\$34.20	228	221	221	22,278	21,292	20,932	28.07	26.82	26.37	-	-	-
SF - Electric/Gas	Existing			Ceiling Fan - Installation		per HH	\$204.00	40%	\$81.60	3,053	2,963	2,963	884,582	845,437	831,114	1,114.37	1,065.10	1,047.08	-	-	-
SF - Electric/Gas	Existing			Thermostat - Clock/Programmable		per HH	\$30.00	40%	\$12.00	2,286	2,219	2,219	42,803	41,740	41,759	-	-	-	78,601	76,734	76,007
SF - Electric/Gas	Existing			Water Heater - Solar System		per HH	\$5,400.00	40%	\$2,160.00	2	2	2	3,936	3,923	3,897	0.29	0.29	0.29	-	-	-
SF - Electric/Gas	Existing			Pool Pump - Timer		per HH	\$0.00	40%	\$0.00	-	-	760	-	-	94,582	-	-	7.29	-	-	-
SF - Electric/Gas	Existing			Pool/Spa cover		per HH	\$115.00	40%	\$46.00	2,043	1,983	1,983	5,496,195	5,285,810	5,239,166	423.74	407.52	403.93	190,511	186,752	185,526
SF - Electric/Gas	New			Windows - Install Reflective Film		per HH	\$0.00	40%	\$0.00	-	8	8	-	2,570	2,558	-	9.64	9.59	-	-	-
SF - Electric/Gas	New			Roofs - High Reflectivity		per HH	\$97.66	40%	\$39.06	133	129	129	13,852	13,411	13,350	17.32	16.77	16.69	-	-	-
SF - Electric/Gas	New			Ceiling Fan - Installation		per HH	\$204.00	40%	\$81.60	66	65	65	23,131	22,394	22,292	28.92	28.00	27.87	-	-	-
SF - Electric/Gas	New			Thermostat - Clock/Programmable		per HH	\$30.00	40%	\$12.00	49	48	48	1,198	1,169	1,170	-	-	-	1,730	1,692	1,682
SF - Electric/Gas	New			Water Heater - Desuperheater		per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	New			Water Heater - Solar System		per HH	\$5,400.00	40%	\$2,160.00	0	0	0	220	216	213	0.02	0.02	0.02	-	-	-
SF - Electric/Gas	New			Pool/Spa cover		per HH	\$115.00	40%	\$46.00	66	64	64	166,423	162,512	163,126	12.83	12.53	12.58	6,149	6,009	5,963
MF - Electric/Gas	Existing			Water Heater - Solar System		per HH	\$5,400.00	40%	\$2,160.00	0	0	0	890	885	876	0.06	0.06	0.06	-	-	-
MF - Electric/Gas	Existing			Pool Pump - Timer		per HH	\$0.00	40%	\$0.00	-	-	49	-	-	6,106	-	-	0.51	-	-	-
MF - Electric/Gas	Existing			Pool/Spa cover		per HH	\$115.00	40%	\$46.00	66	64	64	176,526	169,764	168,269	14.70	14.14	14.01	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
MF - Electric/Gas	New			Water Heater - Solar System		per HH	\$5,400.00	40%	\$2,160.00	0	0	0	13	13	13	0.00	0.00	0.00	-	-	-
MF - Electric/Gas	New			Pool/Spa cover		per HH	\$115.00	40%	\$46.00	1	1	1	2,812	2,746	2,757	0.23	0.23	0.23	-	-	-
SF - Gas Only	Existing			Thermostat - Clock/Programmable		per HH	\$30.00	40%	\$12.00	914	887	887	-	-	-	-	-	-	28,737	28,079	27,836
SF - Gas Only	Existing			Water Heater - Drainwater Heat Recovery		per HH	\$899.00	40%	\$359.60	32	32	32	-	-	-	-	-	-	5,765	5,797	5,749
SF - Gas Only	Existing			Water Heater - Desuperheater		per HH	\$0.00	40%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Gas Only	Existing			Pool/Spa cover		per HH	\$115.00	40%	\$46.00	916	889	889	-	-	-	-	-	-	85,434	83,748	83,198
SF - Gas Only	New			Thermostat - Clock/Programmable		per HH	\$30.00	40%	\$12.00	13	13	13	-	-	-	-	-	-	418	408	405
SF - Gas Only	New			Pool/Spa cover		per HH	\$115.00	40%	\$46.00	20	19	19	-	-	-	-	-	-	1,811	1,769	1,755

Table G-9 Residential School Kits (MAP)

Segment	Vintage	Technology	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
							2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
SF - Electric Only	Existing	Water Heater - Faucet Aerators	per HH	\$16.00	0%	\$0.00	182	176	176	16,032	15,471	15,323	1.19	1.15	1.14	-	-	-
SF - Electric Only	Existing	Water Heater - Low-Flow Showerheads	per HH	\$12.00	0%	\$0.00	181	176	176	72,669	70,123	69,451	5.41	5.22	5.17	-	-	-
SF - Electric Only	New	Water Heater - Faucet Aerators	per HH	\$16.00	0%	\$0.00	7	6	6	496	467	455	0.04	0.03	0.03	-	-	-
SF - Electric Only	New	Water Heater - Low-Flow Showerheads	per HH	\$12.00	0%	\$0.00	9	8	8	2,949	2,776	2,708	0.22	0.21	0.20	-	-	-
MF - Electric Only	Existing	Water Heater - Faucet Aerators	per HH	\$16.00	0%	\$0.00	254	246	246	19,494	18,821	18,667	1.42	1.37	1.36	-	-	-
MF - Electric Only	Existing	Water Heater - Low-Flow Showerheads	per HH	\$12.00	0%	\$0.00	254	246	246	88,910	85,840	85,139	6.46	6.24	6.19	-	-	-
MF - Electric Only	New	Water Heater - Faucet Aerators	per HH	\$16.00	0%	\$0.00	5	5	5	333	319	315	0.02	0.02	0.02	-	-	-
MF - Electric Only	New	Water Heater - Low-Flow Showerheads	per HH	\$12.00	0%	\$0.00	4	4	4	1,356	1,300	1,282	0.10	0.09	0.09	-	-	-
SF - Electric/Gas	Existing	Water Heater - Faucet Aerators	per HH	\$16.00	0%	\$0.00	614	596	596	53,598	51,851	51,496	3.99	3.86	3.83	3,861	3,769	3,737
SF - Electric/Gas	Existing	Water Heater - Low-Flow Showerheads	per HH	\$12.00	0%	\$0.00	611	593	593	242,933	235,014	233,403	18.09	17.50	17.38	17,158	16,747	16,608
SF - Electric/Gas	New	Water Heater - Faucet Aerators	per HH	\$16.00	0%	\$0.00	22	22	22	1,677	1,604	1,582	0.12	0.12	0.12	117	115	115
SF - Electric/Gas	New	Water Heater - Low-Flow Showerheads	per HH	\$12.00	0%	\$0.00	29	28	28	9,976	9,537	9,411	0.74	0.71	0.70	682	670	668
MF - Electric/Gas	Existing	Water Heater - Faucet Aerators	per HH	\$16.00	0%	\$0.00	152	147	147	18,132	17,484	17,320	1.32	1.27	1.26	949	926	919
MF - Electric/Gas	Existing	Water Heater - Low-Flow Showerheads	per HH	\$12.00	0%	\$0.00	152	147	147	82,700	79,745	78,993	6.01	5.80	5.74	4,328	4,222	4,188
MF - Electric/Gas	New	Water Heater - Faucet Aerators	per HH	\$16.00	0%	\$0.00	3	3	3	306	293	288	0.02	0.02	0.02	16	16	16
MF - Electric/Gas	New	Water Heater - Low-Flow Showerheads	per HH	\$12.00	0%	\$0.00	3	3	3	1,247	1,191	1,173	0.09	0.09	0.09	66	65	65
SF - Gas Only	Existing	Water Heater - Faucet Aerators	per HH	\$16.00	0%	\$0.00	237	230	230	-	-	-	-	-	-	1,389	1,355	1,344
SF - Gas Only	Existing	Water Heater - Low-Flow Showerheads	per HH	\$12.00	0%	\$0.00	236	229	229	-	-	-	-	-	-	6,170	6,023	5,972
SF - Gas Only	New	Water Heater - Faucet Aerators	per HH	\$16.00	0%	\$0.00	6	5	5	-	-	-	-	-	-	28	27	27
SF - Gas Only	New	Water Heater - Low-Flow Showerheads	per HH	\$12.00	0%	\$0.00	7	7	7	-	-	-	-	-	-	162	159	158
MF - Gas Only	Existing	Water Heater - Faucet Aerators	per HH	\$16.00	0%	\$0.00	26	26	26	-	-	-	-	-	-	145	141	140
MF - Gas Only	Existing	Water Heater - Low-Flow Showerheads	per HH	\$12.00	0%	\$0.00	26	26	26	-	-	-	-	-	-	660	644	639
MF - Gas Only	New	Water Heater - Faucet Aerators	per HH	\$16.00	0%	\$0.00	0	0	0	-	-	-	-	-	-	1	1	1
MF - Gas Only	New	Water Heater - Low-Flow Showerheads	per HH	\$12.00	0%	\$0.00	0	0	0	-	-	-	-	-	-	4	4	4

Commercial

Table G-10 Small Business Direct Install (MAP)

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Office - E	Existing	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.03	100%	\$0.03	14,522,712	14,095,573	14,095,573	1,660,085	1,484,995	1,376,121	314.20	281.06	260.46	-	-	-
Office - E	Existing	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.00	100%	\$0.00	8,713,213	8,456,942	8,456,942	282,590	274,179	273,505	53.49	51.89	51.77	-	-	-
Office - E	Existing	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.05	100%	\$0.05	5,228,630	5,074,847	5,074,847	948,294	920,071	917,808	179.48	174.14	173.71	-	-	-
Office - E	Existing	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.01	100%	\$0.01	9,385,228	9,109,192	9,109,192	179,561	160,615	148,829	1.67	1.49	1.38	-	-	-
Office - E	Existing	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	100%	\$0.00	-	-	4,552,946	-	-	6,296	-	-	0.06	-	-	-
Office - E	Existing	Refrigeration	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	100%	\$0.00	46,508	45,140	45,140	333	323	323	0.03	0.03	0.03	-	-	-
Office - E	Existing	Refrigeration	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	100%	\$0.00	325,414	315,843	315,843	16,791	16,276	16,239	1.76	1.70	1.70	-	-	-
Office - E	Existing	Refrigeration	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	100%	\$0.00	490,606	476,177	476,177	5,306	5,137	5,119	0.55	0.54	0.54	-	-	-
Office - E	Existing	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.00	100%	\$0.00	36,788	35,706	35,706	44,405	43,084	42,978	10.22	9.91	9.89	-	-	-
Office - E	Existing	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	100%	\$0.00	435,087	422,291	422,291	301,301	292,333	291,615	36.29	35.21	35.13	-	-	-
Office - E	Existing	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	100%	\$0.00	527,496	511,981	511,981	56,305	54,629	54,495	6.78	6.58	6.56	-	-	-
Office - E	Existing	Office Equipment	Server	Energy Star	per sq ft	\$0.00	100%	\$0.00	2,154,250	2,090,890	2,090,890	116,084	112,629	112,352	13.98	13.57	13.53	-	-	-
Office - E	Existing	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	100%	\$0.00	209,996	203,820	203,820	16,401	15,913	15,874	1.98	1.92	1.91	-	-	-
Office - E	Existing	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	100%	\$0.00	882,245	856,297	856,297	69,286	67,224	67,059	8.35	8.10	8.08	-	-	-
Office - E	New	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.03	100%	\$0.03	1,555,093	1,509,355	1,509,355	179,221	159,768	147,522	33.92	30.24	27.92	-	-	-
Office - E	New	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.00	100%	\$0.00	1,124,740	1,091,659	1,091,659	36,478	35,392	35,305	6.90	6.70	6.68	-	-	-
Office - E	New	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.05	100%	\$0.05	1,124,740	1,091,659	1,091,659	203,989	197,918	197,431	38.61	37.46	37.37	-	-	-
Office - E	New	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.01	100%	\$0.01	1,120,180	1,087,233	1,087,233	21,608	19,271	17,798	0.20	0.18	0.17	-	-	-
Office - E	New	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	100%	\$0.00	1,201,414	1,166,078	1,166,078	1,666	1,617	1,613	0.02	0.02	0.01	-	-	-
Office - E	New	Refrigeration	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	100%	\$0.00	11,472	11,135	11,135	82	80	80	0.01	0.01	0.01	-	-	-
Office - E	New	Refrigeration	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	100%	\$0.00	131,137	127,280	127,280	6,767	6,559	6,542	0.71	0.69	0.68	-	-	-
Office - E	New	Refrigeration	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	100%	\$0.00	131,137	127,280	127,280	1,418	1,373	1,367	0.15	0.14	0.14	-	-	-
Office - E	New	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.00	100%	\$0.00	9,372	9,097	9,097	11,313	10,976	10,949	2.60	2.53	2.52	-	-	-
Office - E	New	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	100%	\$0.00	46,378	45,014	45,014	32,117	31,161	31,085	3.87	3.75	3.74	-	-	-
Office - E	New	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	100%	\$0.00	58,391	56,673	56,673	6,233	6,047	6,032	0.75	0.73	0.73	-	-	-

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Office - E	New	Office Equipment	Server	Energy Star	per sq ft	\$0.00	100%	\$0.00	220,974	214,475	214,475	11,907	11,553	11,525	1.43	1.39	1.39	-	-	-
Office - E	New	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	100%	\$0.00	24,543	23,822	23,822	1,917	1,860	1,855	0.23	0.22	0.22	-	-	-
Office - E	New	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	100%	\$0.00	125,604	121,909	121,909	9,864	9,571	9,547	1.19	1.15	1.15	-	-	-
Restaurant - E	Existing	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.09	100%	\$0.09	3,062,687	2,972,607	2,972,607	1,364,291	1,218,196	1,129,587	162.93	145.48	134.90	-	-	-
Restaurant - E	Existing	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.02	100%	\$0.02	1,840,514	1,786,382	1,786,382	339,133	329,040	328,231	40.50	39.30	39.20	-	-	-
Restaurant - E	Existing	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.04	100%	\$0.04	1,070,334	1,038,853	1,038,853	192,401	186,675	186,216	22.98	22.29	22.24	-	-	-
Restaurant - E	Existing	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.02	100%	\$0.02	1,974,952	1,916,865	1,916,865	77,444	69,167	64,104	0.72	0.64	0.60	-	-	-
Restaurant - E	Existing	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	100%	\$0.00	-	-	961,731	-	-	320	-	-	0.00	-	-	-
Restaurant - E	Existing	Refrigeration	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.17	100%	\$0.17	56,249	54,595	54,595	26,747	25,802	25,619	2.72	2.62	2.60	-	-	-
Restaurant - E	Existing	Refrigeration	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.02	100%	\$0.02	15,880	15,413	15,413	2,554	2,478	2,475	0.26	0.25	0.25	-	-	-
Restaurant - E	Existing	Refrigeration	Glass Door Display	6800 kWh/yr	per sq ft	\$0.11	100%	\$0.11	147,210	142,880	142,880	170,572	165,346	164,960	17.33	16.80	16.76	-	-	-
Restaurant - E	Existing	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	100%	\$0.00	38,807	37,665	37,665	37,610	36,491	36,401	4.53	4.39	4.38	-	-	-
Restaurant - E	Existing	Food Preparation	Fryer	Energy Star	per sq ft	\$0.02	100%	\$0.02	67,472	65,487	65,487	41,030	39,809	39,711	4.94	4.79	4.78	-	-	-
Restaurant - E	Existing	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.05	100%	\$0.05	63,895	62,016	62,016	161,600	156,791	156,405	19.45	18.87	18.82	-	-	-
Restaurant - E	Existing	Food Preparation	Hot Food Container	Energy Star	per sq ft	\$0.07	100%	\$0.07	21,194	20,570	20,570	34,413	33,389	33,307	4.14	4.02	4.01	-	-	-
Restaurant - E	Existing	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	100%	\$0.00	71,792	69,681	69,681	7,760	7,529	7,511	0.75	0.73	0.73	-	-	-
Restaurant - E	Existing	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	100%	\$0.00	69,726	67,676	67,676	929	902	899	0.09	0.09	0.09	-	-	-
Restaurant - E	Existing	Office Equipment	Server	Energy Star	per sq ft	\$0.00	100%	\$0.00	268,174	260,287	260,287	27,067	26,262	26,197	2.63	2.55	2.55	-	-	-
Restaurant - E	Existing	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	100%	\$0.00	33,511	32,526	32,526	409	396	395	0.04	0.04	0.04	-	-	-
Restaurant - E	Existing	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	100%	\$0.00	85,389	82,877	82,877	2,512	2,437	2,431	0.24	0.24	0.24	-	-	-
Restaurant - E	New	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.09	100%	\$0.09	334,200	324,371	324,371	149,505	133,958	123,446	17.85	16.00	14.74	-	-	-
Restaurant - E	New	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.02	100%	\$0.02	237,582	230,594	230,594	43,777	42,474	42,369	5.23	5.07	5.06	-	-	-
Restaurant - E	New	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.04	100%	\$0.04	230,361	223,585	223,585	41,409	40,177	40,078	4.95	4.80	4.79	-	-	-
Restaurant - E	New	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.02	100%	\$0.02	240,860	233,776	233,776	9,485	8,496	7,835	0.09	0.08	0.07	-	-	-
Restaurant - E	New	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	100%	\$0.00	253,778	246,314	246,314	85	82	82	0.00	0.00	0.00	-	-	-
Restaurant - E	New	Refrigeration	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.17	100%	\$0.17	15,019	14,577	14,577	7,142	6,884	6,828	0.73	0.70	0.69	-	-	-
Restaurant - E	New	Refrigeration	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.02	100%	\$0.02	4,268	4,142	4,142	686	666	665	0.07	0.07	0.07	-	-	-
Restaurant - E	New	Refrigeration	Glass Door Display	6800 kWh/yr	per sq ft	\$0.11	100%	\$0.11	58,891	57,159	57,159	68,237	66,140	65,978	6.93	6.72	6.70	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Restaurant - E	New	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	100%	\$0.00	10,009	9,715	9,715	9,701	9,412	9,389	1.17	1.13	1.13	-	-	-
Restaurant - E	New	Food Preparation	Fryer	Energy Star	per sq ft	\$0.02	100%	\$0.02	17,623	17,105	17,105	10,717	10,398	10,372	1.29	1.25	1.25	-	-	-
Restaurant - E	New	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.05	100%	\$0.05	17,357	16,846	16,846	43,897	42,591	42,486	5.28	5.13	5.11	-	-	-
Restaurant - E	New	Food Preparation	Hot Food Container	Energy Star	per sq ft	\$0.07	100%	\$0.07	6,095	5,916	5,916	9,896	9,602	9,578	1.19	1.16	1.15	-	-	-
Restaurant - E	New	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	100%	\$0.00	7,677	7,451	7,451	830	805	803	0.08	0.08	0.08	-	-	-
Restaurant - E	New	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	100%	\$0.00	7,776	7,547	7,547	104	101	100	0.01	0.01	0.01	-	-	-
Restaurant - E	New	Office Equipment	Server	Energy Star	per sq ft	\$0.00	100%	\$0.00	27,658	26,845	26,845	2,792	2,708	2,702	0.27	0.26	0.26	-	-	-
Restaurant - E	New	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	100%	\$0.00	3,925	3,809	3,809	48	46	46	0.00	0.00	0.00	-	-	-
Restaurant - E	New	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	100%	\$0.00	12,262	11,901	11,901	361	350	349	0.04	0.03	0.03	-	-	-
Retail - E	Existing	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.02	100%	\$0.02	15,473,110	15,018,019	15,018,019	835,677	747,231	694,534	98.70	88.25	82.03	-	-	-
Retail - E	Existing	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.00	100%	\$0.00	8,837,568	8,577,640	8,577,640	266,054	258,136	257,501	31.42	30.49	30.41	-	-	-
Retail - E	Existing	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.09	100%	\$0.09	5,303,253	5,147,275	5,147,275	1,514,734	1,469,653	1,466,038	178.90	173.58	173.15	-	-	-
Retail - E	Existing	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.04	100%	\$0.04	10,082,491	9,785,948	9,785,948	631,505	564,679	523,793	5.86	5.24	4.86	-	-	-
Retail - E	Existing	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	100%	\$0.00	-	-	4,617,926	-	-	1,567	-	-	0.01	-	-	-
Retail - E	Existing	Refrigeration	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.01	100%	\$0.01	129,449	125,642	125,642	2,714	2,634	2,631	0.27	0.27	0.27	-	-	-
Retail - E	Existing	Refrigeration	Glass Door Display	6800 kWh/yr	per sq ft	\$0.01	100%	\$0.01	383,989	372,695	372,695	58,034	56,255	56,124	5.85	5.67	5.65	-	-	-
Retail - E	Existing	Refrigeration	Open Display Case	4330 kWh/yr	per sq ft	\$0.01	100%	\$0.01	578,917	561,890	561,890	18,340	17,755	17,691	1.85	1.79	1.78	-	-	-
Retail - E	Existing	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	100%	\$0.00	47,968	46,557	46,557	4,923	4,776	4,764	0.70	0.68	0.67	-	-	-
Retail - E	Existing	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	100%	\$0.00	46,119	44,762	44,762	2,970	2,881	2,874	0.42	0.41	0.41	-	-	-
Retail - E	Existing	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.00	100%	\$0.00	82,012	79,600	79,600	43,926	42,619	42,514	6.21	6.03	6.01	-	-	-
Retail - E	Existing	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	100%	\$0.00	412,379	400,251	400,251	25,622	24,859	24,798	2.48	2.40	2.40	-	-	-
Retail - E	Existing	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	100%	\$0.00	462,519	448,916	448,916	4,429	4,298	4,287	0.43	0.42	0.41	-	-	-
Retail - E	Existing	Office Equipment	Server	Energy Star	per sq ft	\$0.00	100%	\$0.00	1,624,805	1,577,017	1,577,017	94,265	91,460	91,235	9.11	8.84	8.82	-	-	-
Retail - E	Existing	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	100%	\$0.00	194,955	189,221	189,221	1,366	1,325	1,322	0.13	0.13	0.13	-	-	-
Retail - E	Existing	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	100%	\$0.00	752,715	730,576	730,576	6,364	6,175	6,160	0.62	0.60	0.60	-	-	-
Retail - E	New	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.02	100%	\$0.02	1,643,868	1,595,519	1,595,519	88,683	79,319	73,851	10.47	9.37	8.72	-	-	-
Retail - E	New	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.00	100%	\$0.00	1,140,792	1,107,239	1,107,239	34,343	33,321	33,239	4.06	3.94	3.93	-	-	-
Retail - E	New	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.09	100%	\$0.09	1,140,792	1,107,239	1,107,239	325,837	316,140	315,362	38.48	37.34	37.25	-	-	-

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Retail - E	New	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.04	100%	\$0.04	1,187,802	1,152,867	1,152,867	74,313	66,465	61,851	0.69	0.62	0.57	-	-	-
Retail - E	New	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	100%	\$0.00	1,218,560	1,182,720	1,182,720	415	402	401	0.00	0.00	0.00	-	-	-
Retail - E	New	Refrigeration	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.01	100%	\$0.01	34,975	33,947	33,947	733	712	711	0.07	0.07	0.07	-	-	-
Retail - E	New	Refrigeration	Glass Door Display	6800 kWh/yr	per sq ft	\$0.01	100%	\$0.01	154,445	149,903	149,903	23,342	22,624	22,569	2.35	2.28	2.27	-	-	-
Retail - E	New	Refrigeration	Open Display Case	4330 kWh/yr	per sq ft	\$0.01	100%	\$0.01	154,445	149,903	149,903	4,893	4,735	4,716	0.49	0.48	0.48	-	-	-
Retail - E	New	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	100%	\$0.00	12,308	11,946	11,946	1,263	1,225	1,222	0.18	0.17	0.17	-	-	-
Retail - E	New	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	100%	\$0.00	11,842	11,494	11,494	763	740	738	0.11	0.10	0.10	-	-	-
Retail - E	New	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.00	100%	\$0.00	21,047	20,428	20,428	11,273	10,938	10,911	1.59	1.55	1.54	-	-	-
Retail - E	New	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	100%	\$0.00	43,468	42,189	42,189	2,701	2,620	2,614	0.26	0.25	0.25	-	-	-
Retail - E	New	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	100%	\$0.00	51,299	49,790	49,790	491	477	475	0.05	0.05	0.05	-	-	-
Retail - E	New	Office Equipment	Server	Energy Star	per sq ft	\$0.00	100%	\$0.00	165,487	160,620	160,620	9,601	9,315	9,292	0.93	0.90	0.90	-	-	-
Retail - E	New	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	100%	\$0.00	22,641	21,975	21,975	159	154	154	0.02	0.01	0.01	-	-	-
Retail - E	New	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	100%	\$0.00	106,380	103,251	103,251	899	873	871	0.09	0.08	0.08	-	-	-
Grocery - E	Existing	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.02	100%	\$0.02	1,602,615	1,555,479	1,555,479	191,804	171,523	159,164	34.68	31.01	28.78	-	-	-
Grocery - E	Existing	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.00	100%	\$0.00	970,393	941,852	941,852	21,028	20,402	20,352	3.80	3.69	3.68	-	-	-
Grocery - E	Existing	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.14	100%	\$0.14	565,216	548,592	548,592	349,817	339,406	338,571	63.25	61.37	61.22	-	-	-
Grocery - E	Existing	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.01	100%	\$0.01	1,033,047	1,002,663	1,002,663	31,245	27,941	25,903	0.29	0.26	0.24	-	-	-
Grocery - E	Existing	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	100%	\$0.00	-	-	507,063	-	-	1,377	-	-	0.01	-	-	-
Grocery - E	Existing	Refrigeration	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.21	100%	\$0.21	19,761	19,180	19,180	16,510	15,926	15,814	1.83	1.76	1.75	-	-	-
Grocery - E	Existing	Refrigeration	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	100%	\$0.00	4,444	4,314	4,314	359	348	348	0.04	0.04	0.04	-	-	-
Grocery - E	Existing	Refrigeration	Glass Door Display	6800 kWh/yr	per sq ft	\$0.57	100%	\$0.57	78,878	76,558	76,558	458,820	444,762	443,724	50.83	49.27	49.15	-	-	-
Grocery - E	Existing	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	100%	\$0.00	38,283	37,157	37,157	4,093	3,971	3,961	0.99	0.96	0.96	-	-	-
Grocery - E	Existing	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	100%	\$0.00	57,441	55,752	55,752	3,853	3,739	3,729	0.93	0.91	0.90	-	-	-
Grocery - E	Existing	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.01	100%	\$0.01	17,448	16,935	16,935	9,736	9,446	9,423	2.36	2.29	2.29	-	-	-
Grocery - E	Existing	Food Preparation	Hot Food Container	Energy Star	per sq ft	\$0.06	100%	\$0.06	32,795	31,831	31,831	11,749	11,399	11,371	2.85	2.76	2.76	-	-	-
Grocery - E	Existing	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	100%	\$0.00	46,110	44,754	44,754	3,171	3,076	3,069	0.38	0.37	0.37	-	-	-
Grocery - E	Existing	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	100%	\$0.00	43,227	41,955	41,955	458	444	443	0.06	0.05	0.05	-	-	-
Grocery - E	Existing	Office Equipment	Server	Energy Star	per sq ft	\$0.00	100%	\$0.00	150,900	146,462	146,462	4,844	4,700	4,689	0.58	0.57	0.57	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Grocery - E	Existing	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	100%	\$0.00	21,513	20,880	20,880	167	162	161	0.02	0.02	0.02	-	-	-
Grocery - E	Existing	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	100%	\$0.00	96,804	93,957	93,957	906	879	877	0.11	0.11	0.11	-	-	-
Grocery - E	New	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.02	100%	\$0.02	169,887	164,890	164,890	19,447	17,663	16,401	3.52	3.19	2.97	-	-	-
Grocery - E	New	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.00	100%	\$0.00	125,263	121,578	121,578	2,714	2,634	2,627	0.49	0.48	0.48	-	-	-
Grocery - E	New	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.14	100%	\$0.14	121,606	118,030	118,030	75,263	73,023	72,844	13.61	13.20	13.17	-	-	-
Grocery - E	New	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.01	100%	\$0.01	123,500	119,868	119,868	3,573	3,237	3,008	0.03	0.03	0.03	-	-	-
Grocery - E	New	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	100%	\$0.00	133,802	129,866	129,866	364	353	353	0.00	0.00	0.00	-	-	-
Grocery - E	New	Refrigeration	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.21	100%	\$0.21	5,210	5,057	5,057	4,353	4,196	4,162	0.48	0.46	0.46	-	-	-
Grocery - E	New	Refrigeration	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	100%	\$0.00	1,066	1,035	1,035	87	84	84	0.01	0.01	0.01	-	-	-
Grocery - E	New	Refrigeration	Glass Door Display	6800 kWh/yr	per sq ft	\$0.57	100%	\$0.57	31,501	30,575	30,575	183,236	177,605	177,171	20.30	19.67	19.63	-	-	-
Grocery - E	New	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	100%	\$0.00	9,823	9,534	9,534	1,050	1,019	1,016	0.25	0.25	0.25	-	-	-
Grocery - E	New	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	100%	\$0.00	14,749	14,316	14,316	989	960	958	0.24	0.23	0.23	-	-	-
Grocery - E	New	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.01	100%	\$0.01	4,478	4,346	4,346	2,499	2,424	2,418	0.61	0.59	0.59	-	-	-
Grocery - E	New	Food Preparation	Hot Food Container	Energy Star	per sq ft	\$0.06	100%	\$0.06	9,250	8,978	8,978	3,314	3,215	3,207	0.80	0.78	0.78	-	-	-
Grocery - E	New	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	100%	\$0.00	4,860	4,717	4,717	334	324	323	0.04	0.04	0.04	-	-	-
Grocery - E	New	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	100%	\$0.00	4,806	4,665	4,665	51	49	49	0.01	0.01	0.01	-	-	-
Grocery - E	New	Office Equipment	Server	Energy Star	per sq ft	\$0.00	100%	\$0.00	15,369	14,917	14,917	493	479	478	0.06	0.06	0.06	-	-	-
Grocery - E	New	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	100%	\$0.00	2,498	2,425	2,425	19	19	19	0.00	0.00	0.00	-	-	-
Grocery - E	New	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	100%	\$0.00	13,681	13,279	13,279	128	124	124	0.02	0.01	0.01	-	-	-
College - E	Existing	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.01	100%	\$0.01	11,633,991	11,291,815	11,291,815	893,990	800,585	741,176	126.01	112.85	104.47	-	-	-
College - E	Existing	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.00	100%	\$0.00	6,536,474	6,344,224	6,344,224	362,301	351,518	350,653	51.07	49.55	49.43	-	-	-
College - E	Existing	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.06	100%	\$0.06	3,922,411	3,807,046	3,807,046	1,084,867	1,052,580	1,049,991	152.92	148.37	148.00	-	-	-
College - E	Existing	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.02	100%	\$0.02	7,498,300	7,277,762	7,277,762	307,224	275,065	254,798	2.85	2.55	2.36	-	-	-
College - E	Existing	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	100%	\$0.00	-	-	3,415,527	-	-	217	-	-	0.00	-	-	-
College - E	Existing	Refrigeration	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.00	100%	\$0.00	37,465	36,363	36,363	876	845	839	0.09	0.09	0.09	-	-	-
College - E	Existing	Refrigeration	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	100%	\$0.00	48,389	46,966	46,966	766	744	743	0.08	0.08	0.08	-	-	-
College - E	Existing	Refrigeration	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	100%	\$0.00	146,790	142,473	142,473	8,361	8,105	8,086	0.90	0.87	0.87	-	-	-
College - E	Existing	Refrigeration	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	100%	\$0.00	221,307	214,798	214,798	2,642	2,558	2,549	0.28	0.28	0.27	-	-	-

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
College - E	Existing	Refrigeration	Icemaker	5.5 kWh/100 lbs	per sq ft	\$0.00	100%	\$0.00	-	-	240,306	-	-	2,178	-	-	0.23	-	-	-
College - E	Existing	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	100%	\$0.00	453,351	440,017	440,017	3,627	3,519	3,511	0.63	0.61	0.61	-	-	-
College - E	Existing	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	100%	\$0.00	680,224	660,218	660,218	3,415	3,313	3,305	0.60	0.58	0.58	-	-	-
College - E	Existing	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.00	100%	\$0.00	293,615	284,980	284,980	12,261	11,896	11,867	2.14	2.08	2.07	-	-	-
College - E	Existing	Food Preparation	Hot Food Container	Energy Star	per sq ft	\$0.00	100%	\$0.00	177,380	172,163	172,163	4,755	4,614	4,603	0.83	0.81	0.80	-	-	-
College - E	Existing	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	100%	\$0.00	333,278	323,476	323,476	59,387	57,619	57,478	6.22	6.03	6.02	-	-	-
College - E	Existing	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	100%	\$0.00	286,756	278,322	278,322	7,876	7,641	7,623	0.82	0.80	0.80	-	-	-
College - E	Existing	Office Equipment	Server	Energy Star	per sq ft	\$0.00	100%	\$0.00	683,583	663,477	663,477	37,913	36,784	36,694	3.97	3.85	3.84	-	-	-
College - E	Existing	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	100%	\$0.00	157,772	153,132	153,132	3,171	3,076	3,069	0.33	0.32	0.32	-	-	-
College - E	Existing	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	100%	\$0.00	661,842	642,376	642,376	26,749	25,953	25,889	2.80	2.72	2.71	-	-	-
College - E	Existing	Office Equipment	POS Terminal	Energy Star	per sq ft	\$0.00	100%	\$0.00	-	-	380,458	-	-	15,018	-	-	1.57	-	-	-
College - E	New	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.01	100%	\$0.01	1,248,217	1,211,505	1,211,505	95,448	86,364	79,686	13.45	12.17	11.23	-	-	-
College - E	New	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.00	100%	\$0.00	843,757	818,940	818,940	46,767	45,375	45,264	6.59	6.40	6.38	-	-	-
College - E	New	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.06	100%	\$0.06	843,757	818,940	818,940	233,368	226,422	225,865	32.89	31.92	31.84	-	-	-
College - E	New	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.02	100%	\$0.02	899,989	873,519	873,519	36,695	33,144	30,615	0.34	0.31	0.28	-	-	-
College - E	New	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	100%	\$0.00	901,276	874,768	874,768	57	56	56	0.00	0.00	0.00	-	-	-
College - E	New	Refrigeration	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.00	100%	\$0.00	8,701	8,445	8,445	203	196	194	0.02	0.02	0.02	-	-	-
College - E	New	Refrigeration	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	100%	\$0.00	13,023	12,640	12,640	206	200	200	0.02	0.02	0.02	-	-	-
College - E	New	Refrigeration	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	100%	\$0.00	59,691	57,935	57,935	3,400	3,295	3,287	0.37	0.35	0.35	-	-	-
College - E	New	Refrigeration	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	100%	\$0.00	59,691	57,935	57,935	713	690	687	0.08	0.07	0.07	-	-	-
College - E	New	Refrigeration	Icemaker	5.5 kWh/100 lbs	per sq ft	\$0.00	100%	\$0.00	-	-	66,271	-	-	590	-	-	0.06	-	-	-
College - E	New	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	100%	\$0.00	118,763	115,270	115,270	950	922	920	0.17	0.16	0.16	-	-	-
College - E	New	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	100%	\$0.00	178,335	173,090	173,090	895	869	866	0.16	0.15	0.15	-	-	-
College - E	New	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.00	100%	\$0.00	76,757	74,499	74,499	3,205	3,110	3,102	0.56	0.54	0.54	-	-	-
College - E	New	Food Preparation	Hot Food Container	Energy Star	per sq ft	\$0.00	100%	\$0.00	50,971	49,472	49,472	1,366	1,326	1,323	0.24	0.23	0.23	-	-	-
College - E	New	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	100%	\$0.00	35,518	34,473	34,473	6,329	6,141	6,125	0.66	0.64	0.64	-	-	-
College - E	New	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	100%	\$0.00	31,893	30,955	30,955	876	850	848	0.09	0.09	0.09	-	-	-
College - E	New	Office Equipment	Server	Energy Star	per sq ft	\$0.00	100%	\$0.00	70,868	68,784	68,784	3,930	3,814	3,804	0.41	0.40	0.40	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
College - E	New	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	100%	\$0.00	18,440	17,897	17,897	371	360	359	0.04	0.04	0.04	-	-	-
College - E	New	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	100%	\$0.00	94,225	91,454	91,454	3,808	3,695	3,686	0.40	0.39	0.39	-	-	-
College - E	New	Office Equipment	POS Terminal	Energy Star	per sq ft	\$0.00	100%	\$0.00	-	-	75,251	-	-	2,970	-	-	0.31	-	-	-
School - E	Existing	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.01	100%	\$0.01	10,827,368	10,508,916	10,508,916	167,615	150,102	138,964	12.64	11.32	10.48	-	-	-
School - E	Existing	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.01	100%	\$0.01	6,083,278	5,904,358	5,904,358	201,502	195,505	195,024	15.20	14.75	14.71	-	-	-
School - E	Existing	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.11	100%	\$0.11	3,650,457	3,543,091	3,543,091	833,210	808,412	806,424	62.84	60.97	60.82	-	-	-
School - E	Existing	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.01	100%	\$0.01	6,978,418	6,773,170	6,773,170	97,908	87,660	81,201	0.91	0.81	0.75	-	-	-
School - E	Existing	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	100%	\$0.00	-	-	3,178,717	-	-	161	-	-	0.00	-	-	-
School - E	Existing	Refrigeration	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.01	100%	\$0.01	150,513	146,087	146,087	3,966	3,826	3,799	0.42	0.41	0.40	-	-	-
School - E	Existing	Refrigeration	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	100%	\$0.00	66,239	64,291	64,291	1,181	1,146	1,144	0.13	0.12	0.12	-	-	-
School - E	Existing	Refrigeration	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	100%	\$0.00	330,148	320,438	320,438	21,199	20,549	20,501	2.26	2.19	2.18	-	-	-
School - E	Existing	Refrigeration	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	100%	\$0.00	-	-	445,566	-	-	7,833	-	-	0.83	-	-	-
School - E	Existing	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	100%	\$0.00	149,626	145,225	145,225	3,161	3,066	3,059	0.18	0.17	0.17	-	-	-
School - E	Existing	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	100%	\$0.00	47,859	46,451	46,451	634	615	614	0.04	0.03	0.03	-	-	-
School - E	Existing	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.00	100%	\$0.00	283,194	274,865	274,865	31,221	30,292	30,217	1.76	1.71	1.70	-	-	-
School - E	Existing	Food Preparation	Hot Food Container	Energy Star	per sq ft	\$0.00	100%	\$0.00	81,749	79,344	79,344	5,786	5,614	5,600	0.33	0.32	0.32	-	-	-
School - E	Existing	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	100%	\$0.00	305,027	296,056	296,056	24,073	23,356	23,299	1.36	1.32	1.32	-	-	-
School - E	Existing	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	100%	\$0.00	379,546	368,383	368,383	3,078	2,986	2,979	0.17	0.17	0.17	-	-	-
School - E	Existing	Office Equipment	Server	Energy Star	per sq ft	\$0.00	100%	\$0.00	1,479,199	1,435,694	1,435,694	72,670	70,507	70,334	4.12	4.00	3.99	-	-	-
School - E	Existing	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	100%	\$0.00	146,834	142,515	142,515	1,307	1,268	1,265	0.07	0.07	0.07	-	-	-
School - E	Existing	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	100%	\$0.00	615,955	597,838	597,838	22,051	21,395	21,342	1.25	1.21	1.21	-	-	-
School - E	Existing	Office Equipment	POS Terminal	Energy Star	per sq ft	\$0.00	100%	\$0.00	244,714	237,517	237,517	3,432	3,330	3,322	0.19	0.19	0.19	-	-	-
School - E	New	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.01	100%	\$0.01	1,161,674	1,127,507	1,127,507	17,896	16,193	14,940	1.35	1.22	1.13	-	-	-
School - E	New	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.01	100%	\$0.01	785,256	762,160	762,160	26,011	25,237	25,175	1.96	1.90	1.90	-	-	-
School - E	New	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.11	100%	\$0.11	785,256	762,160	762,160	179,233	173,899	173,471	13.52	13.12	13.08	-	-	-
School - E	New	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.01	100%	\$0.01	837,590	812,955	812,955	11,694	10,562	9,757	0.11	0.10	0.09	-	-	-
School - E	New	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	100%	\$0.00	838,787	814,117	814,117	43	41	41	0.00	0.00	0.00	-	-	-
School - E	New	Refrigeration	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.01	100%	\$0.01	40,308	39,122	39,122	1,062	1,024	1,015	0.11	0.11	0.11	-	-	-

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
School - E	New	Refrigeration	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	100%	\$0.00	18,373	17,833	17,833	328	318	317	0.03	0.03	0.03	-	-	-
School - E	New	Refrigeration	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	100%	\$0.00	132,478	128,581	128,581	8,506	8,245	8,225	0.90	0.88	0.87	-	-	-
School - E	New	Refrigeration	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	100%	\$0.00	-	-	145,994	-	-	2,397	-	-	0.26	-	-	-
School - E	New	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	100%	\$0.00	40,609	39,414	39,414	858	832	830	0.05	0.05	0.05	-	-	-
School - E	New	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	100%	\$0.00	11,730	11,385	11,385	155	151	150	0.01	0.01	0.01	-	-	-
School - E	New	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.00	100%	\$0.00	73,985	71,809	71,809	8,157	7,914	7,894	0.46	0.45	0.44	-	-	-
School - E	New	Food Preparation	Hot Food Container	Energy Star	per sq ft	\$0.00	100%	\$0.00	23,933	23,229	23,229	1,694	1,644	1,640	0.10	0.09	0.09	-	-	-
School - E	New	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	100%	\$0.00	32,513	31,557	31,557	2,566	2,490	2,483	0.15	0.14	0.14	-	-	-
School - E	New	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	100%	\$0.00	41,998	40,763	40,763	341	330	330	0.02	0.02	0.02	-	-	-
School - E	New	Office Equipment	Server	Energy Star	per sq ft	\$0.00	100%	\$0.00	151,750	147,287	147,287	7,455	7,233	7,215	0.42	0.41	0.41	-	-	-
School - E	New	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	100%	\$0.00	17,161	16,656	16,656	153	148	148	0.01	0.01	0.01	-	-	-
School - E	New	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	100%	\$0.00	87,692	85,113	85,113	3,139	3,046	3,038	0.18	0.17	0.17	-	-	-
School - E	New	Office Equipment	POS Terminal	Energy Star	per sq ft	\$0.00	100%	\$0.00	32,803	31,838	31,838	460	446	445	0.03	0.03	0.03	-	-	-
Health - E	Existing	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.03	100%	\$0.03	7,743,956	7,516,193	7,516,193	896,706	800,892	742,604	94.29	84.22	78.09	-	-	-
Health - E	Existing	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.01	100%	\$0.01	4,662,017	4,524,898	4,524,898	216,988	210,530	210,013	22.82	22.14	22.08	-	-	-
Health - E	Existing	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.06	100%	\$0.06	2,715,328	2,635,465	2,635,465	587,549	570,062	568,660	61.78	59.94	59.80	-	-	-
Health - E	Existing	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.00	100%	\$0.00	5,007,376	4,860,100	4,860,100	13,862	12,384	11,477	0.13	0.11	0.11	-	-	-
Health - E	Existing	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	100%	\$0.00	-	-	2,436,060	-	-	88	-	-	0.00	-	-	-
Health - E	Existing	Refrigeration	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.00	100%	\$0.00	53,926	52,340	52,340	1,521	1,467	1,457	0.16	0.15	0.15	-	-	-
Health - E	Existing	Refrigeration	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	100%	\$0.00	26,070	25,304	25,304	250	242	242	0.03	0.03	0.03	-	-	-
Health - E	Existing	Refrigeration	Glass Door Display	6800 kWh/yr	per sq ft	\$0.01	100%	\$0.01	333,891	324,071	324,071	22,952	22,248	22,196	2.42	2.34	2.34	-	-	-
Health - E	Existing	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	100%	\$0.00	124,437	120,777	120,777	8,666	8,408	8,387	0.99	0.96	0.96	-	-	-
Health - E	Existing	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	100%	\$0.00	187,528	182,012	182,012	8,194	7,950	7,931	0.94	0.91	0.91	-	-	-
Health - E	Existing	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.01	100%	\$0.01	195,704	189,948	189,948	71,132	69,015	68,846	8.13	7.89	7.87	-	-	-
Health - E	Existing	Food Preparation	Hot Food Container	Energy Star	per sq ft	\$0.01	100%	\$0.01	34,388	33,377	33,377	8,025	7,786	7,767	0.92	0.89	0.89	-	-	-
Health - E	Existing	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	100%	\$0.00	233,156	226,299	226,299	30,872	29,953	29,880	3.11	3.02	3.01	-	-	-
Health - E	Existing	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	100%	\$0.00	227,267	220,583	220,583	4,638	4,500	4,489	0.47	0.45	0.45	-	-	-
Health - E	Existing	Office Equipment	Server	Energy Star	per sq ft	\$0.00	100%	\$0.00	1,065,893	1,034,543	1,034,543	32,946	31,966	31,887	3.32	3.22	3.21	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Health - E	Existing	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	100%	\$0.00	111,915	108,624	108,624	1,671	1,622	1,618	0.17	0.16	0.16	-	-	-
Health - E	Existing	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	100%	\$0.00	472,047	458,163	458,163	21,265	20,632	20,581	2.14	2.08	2.07	-	-	-
Health - E	New	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.03	100%	\$0.03	828,980	804,598	804,598	96,492	85,997	79,447	10.15	9.04	8.35	-	-	-
Health - E	New	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.01	100%	\$0.01	601,794	584,094	584,094	28,010	27,176	27,109	2.95	2.86	2.85	-	-	-
Health - E	New	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.06	100%	\$0.06	584,161	566,979	566,979	126,402	122,640	122,338	13.29	12.90	12.86	-	-	-
Health - E	New	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.00	100%	\$0.00	597,743	580,162	580,162	1,663	1,483	1,370	0.02	0.01	0.01	-	-	-
Health - E	New	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	100%	\$0.00	642,818	623,912	623,912	23	23	23	0.00	0.00	0.00	-	-	-
Health - E	New	Refrigeration	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.00	100%	\$0.00	14,055	13,641	13,641	396	382	379	0.04	0.04	0.04	-	-	-
Health - E	New	Refrigeration	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	100%	\$0.00	5,735	5,567	5,567	55	53	53	0.01	0.01	0.01	-	-	-
Health - E	New	Refrigeration	Glass Door Display	6800 kWh/yr	per sq ft	\$0.01	100%	\$0.01	133,673	129,741	129,741	9,189	8,906	8,884	0.97	0.94	0.94	-	-	-
Health - E	New	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	100%	\$0.00	33,516	32,530	32,530	2,334	2,265	2,259	0.27	0.26	0.26	-	-	-
Health - E	New	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	100%	\$0.00	50,566	49,079	49,079	2,210	2,144	2,139	0.25	0.25	0.24	-	-	-
Health - E	New	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.01	100%	\$0.01	51,727	50,206	50,206	18,801	18,242	18,197	2.15	2.09	2.08	-	-	-
Health - E	New	Food Preparation	Hot Food Container	Energy Star	per sq ft	\$0.01	100%	\$0.01	9,943	9,650	9,650	2,320	2,251	2,246	0.27	0.26	0.26	-	-	-
Health - E	New	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	100%	\$0.00	24,853	24,122	24,122	3,291	3,193	3,185	0.33	0.32	0.32	-	-	-
Health - E	New	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	100%	\$0.00	25,233	24,491	24,491	515	500	498	0.05	0.05	0.05	-	-	-
Health - E	New	Office Equipment	Server	Energy Star	per sq ft	\$0.00	100%	\$0.00	109,405	106,187	106,187	3,382	3,281	3,273	0.34	0.33	0.33	-	-	-
Health - E	New	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	100%	\$0.00	13,080	12,696	12,696	195	190	189	0.02	0.02	0.02	-	-	-
Health - E	New	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	100%	\$0.00	67,204	65,228	65,228	3,027	2,937	2,930	0.31	0.30	0.30	-	-	-
Lodging - E	Existing	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.11	100%	\$0.11	7,176,017	6,964,957	6,964,957	2,568,993	2,293,969	2,125,026	208.79	186.43	172.70	-	-	-
Lodging - E	Existing	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.00	100%	\$0.00	4,320,295	4,193,227	4,193,227	63,720	61,823	61,671	5.18	5.02	5.01	-	-	-
Lodging - E	Existing	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.02	100%	\$0.02	2,519,661	2,445,554	2,445,554	136,860	132,787	132,461	11.12	10.79	10.77	-	-	-
Lodging - E	Existing	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.03	100%	\$0.03	4,636,375	4,500,011	4,500,011	150,739	134,632	124,733	1.40	1.25	1.16	-	-	-
Lodging - E	Existing	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	100%	\$0.00	-	-	2,257,499	-	-	109	-	-	0.00	-	-	-
Lodging - E	Existing	Refrigeration	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.01	100%	\$0.01	77,012	74,747	74,747	2,483	2,395	2,378	0.25	0.24	0.24	-	-	-
Lodging - E	Existing	Refrigeration	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	100%	\$0.00	32,478	31,523	31,523	350	340	339	0.04	0.03	0.03	-	-	-
Lodging - E	Existing	Refrigeration	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	100%	\$0.00	210,565	204,371	204,371	16,541	16,034	15,996	1.68	1.63	1.62	-	-	-
Lodging - E	Existing	Refrigeration	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	100%	\$0.00	-	296,311	296,311	-	5,619	5,233	-	0.57	0.53	-	-	-

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Lodging - E	Existing	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	100%	\$0.00	265,856	258,037	258,037	2,271	2,204	2,198	0.27	0.26	0.26	-	-	-
Lodging - E	Existing	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	100%	\$0.00	140,256	136,131	136,131	752	730	728	0.09	0.09	0.09	-	-	-
Lodging - E	Existing	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.00	100%	\$0.00	319,781	310,376	310,376	14,259	13,835	13,801	1.67	1.62	1.62	-	-	-
Lodging - E	Existing	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	100%	\$0.00	205,215	199,179	199,179	3,995	3,876	3,867	0.36	0.35	0.35	-	-	-
Lodging - E	Existing	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	100%	\$0.00	223,111	216,549	216,549	670	650	648	0.06	0.06	0.06	-	-	-
Lodging - E	Existing	Office Equipment	Server	Energy Star	per sq ft	\$0.00	100%	\$0.00	927,069	899,803	899,803	8,427	8,176	8,156	0.76	0.73	0.73	-	-	-
Lodging - E	Existing	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	100%	\$0.00	95,512	92,703	92,703	210	203	203	0.02	0.02	0.02	-	-	-
Lodging - E	Existing	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	100%	\$0.00	396,787	385,117	385,117	1,051	1,020	1,018	0.09	0.09	0.09	-	-	-
Lodging - E	New	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.11	100%	\$0.11	772,944	750,211	750,211	274,780	247,305	228,873	22.33	20.10	18.60	-	-	-
Lodging - E	New	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.00	100%	\$0.00	557,683	541,280	541,280	8,225	7,980	7,961	0.67	0.65	0.65	-	-	-
Lodging - E	New	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.02	100%	\$0.02	540,571	524,672	524,672	29,362	28,488	28,418	2.39	2.32	2.31	-	-	-
Lodging - E	New	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.03	100%	\$0.03	556,522	540,153	540,153	17,967	16,155	14,959	0.17	0.15	0.14	-	-	-
Lodging - E	New	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	100%	\$0.00	595,700	578,179	578,179	29	28	28	0.00	0.00	0.00	-	-	-
Lodging - E	New	Refrigeration	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.01	100%	\$0.01	20,826	20,213	20,213	671	647	642	0.07	0.07	0.07	-	-	-
Lodging - E	New	Refrigeration	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	100%	\$0.00	8,242	7,999	7,999	90	87	87	0.01	0.01	0.01	-	-	-
Lodging - E	New	Refrigeration	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	100%	\$0.00	84,583	82,096	82,096	6,644	6,440	6,424	0.67	0.65	0.65	-	-	-
Lodging - E	New	Refrigeration	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	100%	\$0.00	-	88,038	88,038	-	1,623	1,521	-	0.16	0.15	-	-	-
Lodging - E	New	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	100%	\$0.00	70,633	68,556	68,556	603	585	584	0.07	0.07	0.07	-	-	-
Lodging - E	New	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	100%	\$0.00	37,478	36,375	36,375	201	195	194	0.02	0.02	0.02	-	-	-
Lodging - E	New	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.00	100%	\$0.00	82,551	80,123	80,123	3,681	3,572	3,563	0.43	0.42	0.42	-	-	-
Lodging - E	New	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	100%	\$0.00	21,887	21,244	21,244	426	413	412	0.04	0.04	0.04	-	-	-
Lodging - E	New	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	100%	\$0.00	24,750	24,022	24,022	74	72	72	0.01	0.01	0.01	-	-	-
Lodging - E	New	Office Equipment	Server	Energy Star	per sq ft	\$0.00	100%	\$0.00	95,208	92,408	92,408	865	840	838	0.08	0.08	0.08	-	-	-
Lodging - E	New	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	100%	\$0.00	11,169	10,841	10,841	25	24	24	0.00	0.00	0.00	-	-	-
Lodging - E	New	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	100%	\$0.00	56,532	54,869	54,869	150	145	145	0.01	0.01	0.01	-	-	-
Warehouse - E	Existing	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.01	100%	\$0.01	11,802,715	11,455,576	11,455,576	394,170	352,176	326,270	71.27	63.67	58.99	-	-	-
Warehouse - E	Existing	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.01	100%	\$0.01	7,084,826	6,876,449	6,876,449	533,272	517,401	516,129	96.42	93.55	93.32	-	-	-
Warehouse - E	Existing	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.04	100%	\$0.04	4,251,467	4,126,423	4,126,423	351,418	340,959	340,121	63.54	61.65	61.50	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Warehouse - E	Existing	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.00	100%	\$0.00	7,621,661	7,397,495	7,397,495	926	827	766	0.01	0.01	0.01	-	-	-
Warehouse - E	Existing	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	100%	\$0.00	-	-	3,702,059	-	-	26	-	-	0.00	-	-	-
Warehouse - E	Existing	Refrigeration	Icemaker	5.5 kWh/100 lbs	per sq ft	\$0.08	100%	\$0.08	190,489	184,887	184,887	21,751	21,107	21,081	2.41	2.34	2.34	-	-	-
Warehouse - E	Existing	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	100%	\$0.00	59,156	57,416	57,416	46	44	44	0.01	0.01	0.01	-	-	-
Warehouse - E	Existing	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.00	100%	\$0.00	192,847	187,175	187,175	1,240	1,203	1,200	0.30	0.29	0.29	-	-	-
Warehouse - E	Existing	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	100%	\$0.00	287,149	278,703	278,703	10,309	10,002	9,977	1.24	1.20	1.20	-	-	-
Warehouse - E	Existing	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	100%	\$0.00	189,471	183,898	183,898	839	814	812	0.10	0.10	0.10	-	-	-
Warehouse - E	Existing	Office Equipment	Server	Energy Star	per sq ft	\$0.00	100%	\$0.00	1,202,917	1,167,537	1,167,537	40,324	39,124	39,028	4.86	4.71	4.70	-	-	-
Warehouse - E	Existing	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	100%	\$0.00	128,585	124,803	124,803	521	505	504	0.06	0.06	0.06	-	-	-
Warehouse - E	Existing	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	100%	\$0.00	487,920	473,569	473,569	2,384	2,313	2,307	0.29	0.28	0.28	-	-	-
Warehouse - E	Existing	Office Equipment	POS Terminal	Energy Star	per sq ft	\$0.00	100%	\$0.00	59,742	57,985	57,985	572	555	553	0.07	0.07	0.07	-	-	-
Warehouse - E	New	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.01	100%	\$0.01	1,272,125	1,234,710	1,234,710	42,652	38,038	35,233	7.71	6.88	6.37	-	-	-
Warehouse - E	New	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.01	100%	\$0.01	914,540	887,642	887,642	68,837	66,788	66,624	12.45	12.08	12.05	-	-	-
Warehouse - E	New	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.04	100%	\$0.04	914,540	887,642	887,642	75,594	73,344	73,164	13.67	13.26	13.23	-	-	-
Warehouse - E	New	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.00	100%	\$0.00	916,924	889,955	889,955	112	100	92	0.00	0.00	0.00	-	-	-
Warehouse - E	New	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	100%	\$0.00	976,885	948,153	948,153	7	7	7	0.00	0.00	0.00	-	-	-
Warehouse - E	New	Refrigeration	Icemaker	5.5 kWh/100 lbs	per sq ft	\$0.08	100%	\$0.08	44,991	43,668	43,668	5,047	4,898	4,892	0.56	0.54	0.54	-	-	-
Warehouse - E	New	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	100%	\$0.00	14,617	14,187	14,187	11	11	11	0.00	0.00	0.00	-	-	-
Warehouse - E	New	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.00	100%	\$0.00	51,014	49,514	49,514	328	318	318	0.08	0.08	0.08	-	-	-
Warehouse - E	New	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	100%	\$0.00	30,688	29,785	29,785	1,102	1,069	1,066	0.13	0.13	0.13	-	-	-
Warehouse - E	New	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	100%	\$0.00	21,305	20,678	20,678	94	92	91	0.01	0.01	0.01	-	-	-
Warehouse - E	New	Office Equipment	Server	Energy Star	per sq ft	\$0.00	100%	\$0.00	123,831	120,189	120,189	4,151	4,028	4,018	0.50	0.49	0.48	-	-	-
Warehouse - E	New	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	100%	\$0.00	15,060	14,617	14,617	61	59	59	0.01	0.01	0.01	-	-	-
Warehouse - E	New	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	100%	\$0.00	69,703	67,653	67,653	341	330	330	0.04	0.04	0.04	-	-	-
Warehouse - E	New	Office Equipment	POS Terminal	Energy Star	per sq ft	\$0.00	100%	\$0.00	8,003	7,767	7,767	77	74	74	0.01	0.01	0.01	-	-	-
Misc. - E	Existing	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.03	100%	\$0.03	22,481,081	21,819,873	21,819,873	1,800,010	1,609,683	1,491,497	228.30	204.16	189.17	-	-	-
Misc. - E	Existing	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.01	100%	\$0.01	13,449,279	13,053,712	13,053,712	776,553	753,441	751,588	98.49	95.56	95.32	-	-	-
Misc. - E	Existing	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.07	100%	\$0.07	8,070,651	7,833,279	7,833,279	1,279,546	1,241,465	1,238,412	162.29	157.46	157.07	-	-	-

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Misc. - E	Existing	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.04	100%	\$0.04	14,494,442	14,068,135	14,068,135	625,860	559,684	518,591	5.79	5.18	4.80	-	-	-
Misc. - E	Existing	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	100%	\$0.00	-	-	7,027,700	-	-	127,774	-	-	1.18	-	-	-
Misc. - E	Existing	Refrigeration	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.01	100%	\$0.01	254,328	246,848	246,848	8,076	7,790	7,735	0.84	0.81	0.81	-	-	-
Misc. - E	Existing	Refrigeration	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	100%	\$0.00	112,997	109,674	109,674	1,213	1,177	1,176	0.13	0.12	0.12	-	-	-
Misc. - E	Existing	Refrigeration	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	100%	\$0.00	247,316	240,042	240,042	19,136	18,549	18,506	2.00	1.94	1.93	-	-	-
Misc. - E	Existing	Refrigeration	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	100%	\$0.00	372,863	361,897	361,897	6,047	5,854	5,833	0.63	0.61	0.61	-	-	-
Misc. - E	Existing	Refrigeration	Icemaker	5.5 kWh/100 lbs	per sq ft	\$0.01	100%	\$0.01	430,145	417,494	417,494	2,651	2,573	2,570	0.28	0.27	0.27	-	-	-
Misc. - E	Existing	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	100%	\$0.00	638,221	619,450	619,450	6,163	5,980	5,965	1.23	1.19	1.19	-	-	-
Misc. - E	Existing	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	100%	\$0.00	69,890	67,834	67,834	423	411	410	0.08	0.08	0.08	-	-	-
Misc. - E	Existing	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.00	100%	\$0.00	223,300	216,732	216,732	11,255	10,920	10,893	2.25	2.18	2.17	-	-	-
Misc. - E	Existing	Food Preparation	Hot Food Container	Energy Star	per sq ft	\$0.00	100%	\$0.00	65,997	64,056	64,056	2,136	2,072	2,067	0.43	0.41	0.41	-	-	-
Misc. - E	Existing	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	100%	\$0.00	483,770	469,542	469,542	47,737	46,316	46,202	6.65	6.45	6.44	-	-	-
Misc. - E	Existing	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	100%	\$0.00	522,632	507,260	507,260	7,949	7,712	7,693	1.11	1.07	1.07	-	-	-
Misc. - E	Existing	Office Equipment	Server	Energy Star	per sq ft	\$0.00	100%	\$0.00	1,374,964	1,334,524	1,334,524	63,345	61,459	61,308	8.83	8.57	8.54	-	-	-
Misc. - E	Existing	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	100%	\$0.00	216,228	209,868	209,868	2,406	2,335	2,329	0.34	0.33	0.32	-	-	-
Misc. - E	Existing	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	100%	\$0.00	609,074	591,160	591,160	16,358	15,871	15,832	2.28	2.21	2.21	-	-	-
Misc. - E	New	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.03	100%	\$0.03	2,426,915	2,355,535	2,355,535	193,978	174,855	161,466	24.60	22.18	20.48	-	-	-
Misc. - E	New	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.01	100%	\$0.01	1,736,092	1,685,031	1,685,031	100,241	97,257	97,018	12.71	12.34	12.30	-	-	-
Misc. - E	New	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.07	100%	\$0.07	1,736,092	1,685,031	1,685,031	275,245	267,054	266,397	34.91	33.87	33.79	-	-	-
Misc. - E	New	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.04	100%	\$0.04	1,748,957	1,697,517	1,697,517	75,387	67,873	62,727	0.70	0.63	0.58	-	-	-
Misc. - E	New	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.01	100%	\$0.01	1,854,442	1,799,900	1,799,900	33,812	32,805	32,725	0.31	0.30	0.30	-	-	-
Misc. - E	New	Refrigeration	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.01	100%	\$0.01	67,051	65,079	65,079	2,129	2,052	2,036	0.22	0.21	0.21	-	-	-
Misc. - E	New	Refrigeration	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	100%	\$0.00	29,806	28,929	28,929	316	307	306	0.03	0.03	0.03	-	-	-
Misc. - E	New	Refrigeration	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	100%	\$0.00	101,070	98,098	98,098	7,820	7,580	7,561	0.82	0.79	0.79	-	-	-
Misc. - E	New	Refrigeration	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	100%	\$0.00	101,070	98,098	98,098	1,639	1,586	1,580	0.17	0.17	0.17	-	-	-
Misc. - E	New	Refrigeration	Icemaker	5.5 kWh/100 lbs	per sq ft	\$0.01	100%	\$0.01	101,070	98,098	98,098	612	594	594	0.06	0.06	0.06	-	-	-
Misc. - E	New	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	100%	\$0.00	163,761	158,944	158,944	1,581	1,534	1,531	0.32	0.31	0.31	-	-	-
Misc. - E	New	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	100%	\$0.00	17,946	17,418	17,418	109	106	105	0.02	0.02	0.02	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Misc. - E	New	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.00	100%	\$0.00	57,307	55,622	55,622	2,888	2,802	2,796	0.58	0.56	0.56	-	-	-
Misc. - E	New	Food Preparation	Hot Food Container	Energy Star	per sq ft	\$0.00	100%	\$0.00	18,614	18,067	18,067	602	584	583	0.12	0.12	0.12	-	-	-
Misc. - E	New	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	100%	\$0.00	50,993	49,493	49,493	5,032	4,882	4,870	0.70	0.68	0.68	-	-	-
Misc. - E	New	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	100%	\$0.00	58,256	56,542	56,542	886	860	858	0.12	0.12	0.12	-	-	-
Misc. - E	New	Office Equipment	Server	Energy Star	per sq ft	\$0.00	100%	\$0.00	140,041	135,922	135,922	6,452	6,260	6,244	0.90	0.87	0.87	-	-	-
Misc. - E	New	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	100%	\$0.00	25,112	24,373	24,373	279	271	270	0.04	0.04	0.04	-	-	-
Misc. - E	New	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	100%	\$0.00	86,080	83,548	83,548	2,312	2,243	2,238	0.32	0.31	0.31	-	-	-
Office - G	Existing	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	100%	\$0.00	6,056	5,878	5,878	-	-	-	-	-	-	571	557	555
Office - G	Existing	Food Preparation	Fryer	Energy Star	per sq ft	\$0.01	100%	\$0.01	9,087	8,819	8,819	-	-	-	-	-	-	1,425	1,392	1,385
Office - G	Existing	Food Preparation	Griddle	High Efficiency	per sq ft	\$0.00	100%	\$0.00	9,957	9,665	9,665	-	-	-	-	-	-	224	218	217
Office - G	Existing	Food Preparation	Range	High Efficiency	per sq ft	\$0.00	100%	\$0.00	6,056	5,878	5,878	-	-	-	-	-	-	481	470	468
Office - G	New	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	100%	\$0.00	1,554	1,508	1,508	-	-	-	-	-	-	146	143	142
Office - G	New	Food Preparation	Fryer	Energy Star	per sq ft	\$0.01	100%	\$0.01	2,333	2,265	2,265	-	-	-	-	-	-	366	358	356
Office - G	New	Food Preparation	Griddle	High Efficiency	per sq ft	\$0.00	100%	\$0.00	2,556	2,481	2,481	-	-	-	-	-	-	57	56	56
Office - G	New	Food Preparation	Range	High Efficiency	per sq ft	\$0.00	100%	\$0.00	1,554	1,508	1,508	-	-	-	-	-	-	123	121	120
Restaurant - G	Existing	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	100%	\$0.00	17,352	16,842	16,842	-	-	-	-	-	-	862	842	838
Restaurant - G	Existing	Food Preparation	Fryer	Energy Star	per sq ft	\$0.18	100%	\$0.18	179,962	174,669	174,669	-	-	-	-	-	-	14,879	14,534	14,462
Restaurant - G	Existing	Food Preparation	Broiler	High Efficiency	per sq ft	\$0.05	100%	\$0.05	102,354	99,343	99,343	-	-	-	-	-	-	7,080	6,915	6,881
Restaurant - G	Existing	Food Preparation	Griddle	High Efficiency	per sq ft	\$0.00	100%	\$0.00	192,279	186,624	186,624	-	-	-	-	-	-	2,276	2,223	2,212
Restaurant - G	Existing	Food Preparation	Range	High Efficiency	per sq ft	\$0.01	100%	\$0.01	108,400	105,212	105,212	-	-	-	-	-	-	4,538	4,432	4,411
Restaurant - G	Existing	Food Preparation	Steamer	Energy Star	per sq ft	\$0.01	100%	\$0.01	8,153	7,914	7,914	-	-	-	-	-	-	1,663	1,625	1,617
Restaurant - G	Existing	Food Preparation	Other	Energy Star	per sq ft	\$0.00	100%	\$0.00	641	622	622	-	-	-	-	-	-	8	8	8
Restaurant - G	New	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	100%	\$0.00	4,452	4,321	4,321	-	-	-	-	-	-	221	216	215
Restaurant - G	New	Food Preparation	Fryer	Energy Star	per sq ft	\$0.18	100%	\$0.18	46,210	44,851	44,851	-	-	-	-	-	-	3,821	3,732	3,714
Restaurant - G	New	Food Preparation	Broiler	High Efficiency	per sq ft	\$0.05	100%	\$0.05	26,263	25,490	25,490	-	-	-	-	-	-	1,817	1,774	1,766
Restaurant - G	New	Food Preparation	Griddle	High Efficiency	per sq ft	\$0.00	100%	\$0.00	49,356	47,904	47,904	-	-	-	-	-	-	584	571	568
Restaurant - G	New	Food Preparation	Range	High Efficiency	per sq ft	\$0.01	100%	\$0.01	27,814	26,996	26,996	-	-	-	-	-	-	1,164	1,137	1,132
Restaurant - G	New	Food Preparation	Steamer	Energy Star	per sq ft	\$0.01	100%	\$0.01	2,088	2,026	2,026	-	-	-	-	-	-	426	416	414

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Restaurant - G	New	Food Preparation	Other	Energy Star	per sq ft	\$0.00	100%	\$0.00	178	173	173	-	-	-	-	-	-	2	2	2
Retail - G	Existing	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	100%	\$0.00	2,148	2,084	2,084	-	-	-	-	-	-	611	596	594
Retail - G	Existing	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	100%	\$0.00	3,222	3,128	3,128	-	-	-	-	-	-	1,526	1,490	1,483
Retail - G	New	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	100%	\$0.00	551	535	535	-	-	-	-	-	-	157	153	152
Retail - G	New	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	100%	\$0.00	827	803	803	-	-	-	-	-	-	392	383	381
Grocery - G	Existing	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	100%	\$0.00	18,739	18,188	18,188	-	-	-	-	-	-	199	194	193
Grocery - G	Existing	Food Preparation	Fryer	Energy Star	per sq ft	\$0.01	100%	\$0.01	28,117	27,290	27,290	-	-	-	-	-	-	497	485	483
Grocery - G	Existing	Food Preparation	Griddle	High Efficiency	per sq ft	\$0.00	100%	\$0.00	30,812	29,906	29,906	-	-	-	-	-	-	78	76	76
Grocery - G	Existing	Food Preparation	Range	High Efficiency	per sq ft	\$0.00	100%	\$0.00	18,739	18,188	18,188	-	-	-	-	-	-	168	164	163
Grocery - G	New	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	100%	\$0.00	4,808	4,667	4,667	-	-	-	-	-	-	51	50	50
Grocery - G	New	Food Preparation	Fryer	Energy Star	per sq ft	\$0.01	100%	\$0.01	7,220	7,007	7,007	-	-	-	-	-	-	128	125	124
Grocery - G	New	Food Preparation	Griddle	High Efficiency	per sq ft	\$0.00	100%	\$0.00	7,909	7,676	7,676	-	-	-	-	-	-	20	20	19
Grocery - G	New	Food Preparation	Range	High Efficiency	per sq ft	\$0.00	100%	\$0.00	4,808	4,667	4,667	-	-	-	-	-	-	43	42	42
College - G	Existing	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	100%	\$0.00	54,796	53,184	53,184	-	-	-	-	-	-	822	803	799
College - G	Existing	Food Preparation	Fryer	Energy Star	per sq ft	\$0.01	100%	\$0.01	53,200	51,635	51,635	-	-	-	-	-	-	1,329	1,298	1,292
College - G	Existing	Food Preparation	Broiler	High Efficiency	per sq ft	\$0.00	100%	\$0.00	54,796	53,184	53,184	-	-	-	-	-	-	1,146	1,119	1,113
College - G	Existing	Food Preparation	Griddle	High Efficiency	per sq ft	\$0.00	100%	\$0.00	127,196	123,454	123,454	-	-	-	-	-	-	455	444	442
College - G	Existing	Food Preparation	Range	High Efficiency	per sq ft	\$0.00	100%	\$0.00	95,624	92,812	92,812	-	-	-	-	-	-	1,210	1,182	1,176
College - G	Existing	Food Preparation	Steamer	Energy Star	per sq ft	\$0.00	100%	\$0.00	37,396	36,296	36,296	-	-	-	-	-	-	2,306	2,252	2,241
College - G	Existing	Food Preparation	Other	Energy Star	per sq ft	\$0.00	100%	\$0.00	6,526	6,335	6,335	-	-	-	-	-	-	50	49	48
College - G	New	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	100%	\$0.00	14,060	13,646	13,646	-	-	-	-	-	-	211	206	205
College - G	New	Food Preparation	Fryer	Energy Star	per sq ft	\$0.01	100%	\$0.01	13,660	13,259	13,259	-	-	-	-	-	-	341	333	332
College - G	New	Food Preparation	Broiler	High Efficiency	per sq ft	\$0.00	100%	\$0.00	14,060	13,646	13,646	-	-	-	-	-	-	294	287	286
College - G	New	Food Preparation	Griddle	High Efficiency	per sq ft	\$0.00	100%	\$0.00	32,650	31,689	31,689	-	-	-	-	-	-	117	114	114
College - G	New	Food Preparation	Range	High Efficiency	per sq ft	\$0.00	100%	\$0.00	24,536	23,814	23,814	-	-	-	-	-	-	310	303	302
College - G	New	Food Preparation	Steamer	Energy Star	per sq ft	\$0.00	100%	\$0.00	9,575	9,293	9,293	-	-	-	-	-	-	590	577	574
College - G	New	Food Preparation	Other	Energy Star	per sq ft	\$0.00	100%	\$0.00	1,814	1,761	1,761	-	-	-	-	-	-	14	14	13
School - G	Existing	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	100%	\$0.00	343,483	333,380	333,380	-	-	-	-	-	-	1,956	1,911	1,901

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
School - G	Existing	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	100%	\$0.00	165,724	160,850	160,850	-	-	-	-	-	-	1,571	1,535	1,527
School - G	Existing	Food Preparation	Broiler	High Efficiency	per sq ft	\$0.00	100%	\$0.00	246,595	239,342	239,342	-	-	-	-	-	-	1,956	1,911	1,901
School - G	Existing	Food Preparation	Griddle	High Efficiency	per sq ft	\$0.00	100%	\$0.00	348,449	338,200	338,200	-	-	-	-	-	-	473	462	460
School - G	Existing	Food Preparation	Range	High Efficiency	per sq ft	\$0.00	100%	\$0.00	258,584	250,979	250,979	-	-	-	-	-	-	1,241	1,213	1,207
School - G	Existing	Food Preparation	Steamer	Energy Star	per sq ft	\$0.00	100%	\$0.00	78,949	76,627	76,627	-	-	-	-	-	-	1,847	1,804	1,796
School - G	New	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	100%	\$0.00	88,134	85,542	85,542	-	-	-	-	-	-	502	490	488
School - G	New	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	100%	\$0.00	42,554	41,302	41,302	-	-	-	-	-	-	403	394	392
School - G	New	Food Preparation	Broiler	High Efficiency	per sq ft	\$0.00	100%	\$0.00	63,273	61,413	61,413	-	-	-	-	-	-	502	490	488
School - G	New	Food Preparation	Griddle	High Efficiency	per sq ft	\$0.00	100%	\$0.00	89,443	86,812	86,812	-	-	-	-	-	-	121	119	118
School - G	New	Food Preparation	Range	High Efficiency	per sq ft	\$0.00	100%	\$0.00	66,350	64,398	64,398	-	-	-	-	-	-	319	311	310
School - G	New	Food Preparation	Steamer	Energy Star	per sq ft	\$0.00	100%	\$0.00	20,214	19,620	19,620	-	-	-	-	-	-	473	462	460
Health - G	Existing	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	100%	\$0.00	13,123	12,737	12,737	-	-	-	-	-	-	615	601	598
Health - G	Existing	Food Preparation	Fryer	Energy Star	per sq ft	\$0.04	100%	\$0.04	113,968	110,616	110,616	-	-	-	-	-	-	8,899	8,692	8,649
Health - G	Existing	Food Preparation	Broiler	High Efficiency	per sq ft	\$0.00	100%	\$0.00	17,100	16,597	16,597	-	-	-	-	-	-	1,117	1,091	1,086
Health - G	Existing	Food Preparation	Griddle	High Efficiency	per sq ft	\$0.00	100%	\$0.00	28,117	27,290	27,290	-	-	-	-	-	-	314	307	305
Health - G	Existing	Food Preparation	Range	High Efficiency	per sq ft	\$0.00	100%	\$0.00	72,291	70,165	70,165	-	-	-	-	-	-	2,858	2,792	2,778
Health - G	Existing	Food Preparation	Steamer	Energy Star	per sq ft	\$0.00	100%	\$0.00	8,641	8,386	8,386	-	-	-	-	-	-	1,665	1,626	1,618
Health - G	New	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	100%	\$0.00	3,367	3,268	3,268	-	-	-	-	-	-	158	154	153
Health - G	New	Food Preparation	Fryer	Energy Star	per sq ft	\$0.04	100%	\$0.04	29,264	28,403	28,403	-	-	-	-	-	-	2,285	2,232	2,221
Health - G	New	Food Preparation	Broiler	High Efficiency	per sq ft	\$0.00	100%	\$0.00	4,388	4,259	4,259	-	-	-	-	-	-	287	280	279
Health - G	New	Food Preparation	Griddle	High Efficiency	per sq ft	\$0.00	100%	\$0.00	7,217	7,005	7,005	-	-	-	-	-	-	81	79	78
Health - G	New	Food Preparation	Range	High Efficiency	per sq ft	\$0.00	100%	\$0.00	18,549	18,004	18,004	-	-	-	-	-	-	733	716	713
Health - G	New	Food Preparation	Steamer	Energy Star	per sq ft	\$0.00	100%	\$0.00	2,212	2,147	2,147	-	-	-	-	-	-	426	416	414
Lodging - G	Existing	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	100%	\$0.00	24,709	23,982	23,982	-	-	-	-	-	-	336	328	327
Lodging - G	Existing	Food Preparation	Fryer	Energy Star	per sq ft	\$0.01	100%	\$0.01	14,083	13,668	13,668	-	-	-	-	-	-	319	312	310
Lodging - G	Existing	Food Preparation	Broiler	High Efficiency	per sq ft	\$0.00	100%	\$0.00	9,386	9,110	9,110	-	-	-	-	-	-	178	174	173
Lodging - G	Existing	Food Preparation	Griddle	High Efficiency	per sq ft	\$0.00	100%	\$0.00	41,258	40,044	40,044	-	-	-	-	-	-	134	131	130
Lodging - G	Existing	Food Preparation	Range	High Efficiency	per sq ft	\$0.00	100%	\$0.00	383	372	372	-	-	-	-	-	-	4	4	4

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Lodging - G	Existing	Food Preparation	Steamer	Energy Star	per sq ft	\$0.00	100%	\$0.00	417	404	404	-	-	-	-	-	-	23	23	23
Lodging - G	New	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	100%	\$0.00	6,340	6,154	6,154	-	-	-	-	-	-	86	84	84
Lodging - G	New	Food Preparation	Fryer	Energy Star	per sq ft	\$0.01	100%	\$0.01	3,616	3,510	3,510	-	-	-	-	-	-	82	80	80
Lodging - G	New	Food Preparation	Broiler	High Efficiency	per sq ft	\$0.00	100%	\$0.00	2,408	2,337	2,337	-	-	-	-	-	-	46	45	44
Lodging - G	New	Food Preparation	Griddle	High Efficiency	per sq ft	\$0.00	100%	\$0.00	10,590	10,279	10,279	-	-	-	-	-	-	34	34	33
Lodging - G	New	Food Preparation	Range	High Efficiency	per sq ft	\$0.00	100%	\$0.00	98	95	95	-	-	-	-	-	-	1	1	1
Lodging - G	New	Food Preparation	Steamer	Energy Star	per sq ft	\$0.00	100%	\$0.00	107	104	104	-	-	-	-	-	-	6	6	6
Misc. - G	Existing	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	100%	\$0.00	876,791	851,003	851,003	-	-	-	-	-	-	911	890	886
Misc. - G	Existing	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	100%	\$0.00	56,484	54,822	54,822	-	-	-	-	-	-	98	95	95
Misc. - G	Existing	Food Preparation	Broiler	High Efficiency	per sq ft	\$0.00	100%	\$0.00	429,068	416,449	416,449	-	-	-	-	-	-	621	607	604
Misc. - G	Existing	Food Preparation	Griddle	High Efficiency	per sq ft	\$0.00	100%	\$0.00	782,514	759,499	759,499	-	-	-	-	-	-	194	189	188
Misc. - G	Existing	Food Preparation	Range	High Efficiency	per sq ft	\$0.00	100%	\$0.00	529,070	513,509	513,509	-	-	-	-	-	-	463	453	450
Misc. - G	New	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	100%	\$0.00	224,975	218,358	218,358	-	-	-	-	-	-	234	228	227
Misc. - G	New	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	100%	\$0.00	14,504	14,077	14,077	-	-	-	-	-	-	25	25	24
Misc. - G	New	Food Preparation	Broiler	High Efficiency	per sq ft	\$0.00	100%	\$0.00	110,094	106,856	106,856	-	-	-	-	-	-	159	156	155
Misc. - G	New	Food Preparation	Griddle	High Efficiency	per sq ft	\$0.00	100%	\$0.00	200,862	194,955	194,955	-	-	-	-	-	-	50	49	48
Misc. - G	New	Food Preparation	Range	High Efficiency	per sq ft	\$0.00	100%	\$0.00	135,754	131,761	131,761	-	-	-	-	-	-	119	116	116
Office - E	Existing	Water Heater - Faucet Aerators Interior Lighting - Daylighting Controls Interior Lighting - LED Exit Lighting Water Heater - Faucet Aerators Interior Lighting - Daylighting Controls Interior Lighting - LED Exit Lighting Interior Lighting - Occupancy Sensors			per sq ft	\$0.00	100%	\$0.00	101,950	98,951	98,951	13,754	13,157	12,950	1.34	1.28	1.26	-	-	-
Office - E	Existing				per sq ft	\$0.11	100%	\$0.11	1,222,958	1,186,989	1,186,989	357,646	330,357	316,875	67.69	62.53	59.97	-	-	-
Office - E	Existing				per sq ft	\$0.00	100%	\$0.00	8,648,479	8,394,112	8,394,112	16,861	15,575	14,939	3.19	2.95	2.83	-	-	-
Office - E	New				per sq ft	\$0.00	100%	\$0.00	8,981	8,717	8,717	1,084	1,006	974	0.11	0.10	0.09	-	-	-
Office - E	New				per sq ft	\$0.11	100%	\$0.11	395,982	384,336	384,336	102,050	96,556	94,919	19.31	18.28	17.97	-	-	-
Office - E	New				per sq ft	\$0.00	100%	\$0.00	257,789	250,207	250,207	443	419	412	0.08	0.08	0.08	-	-	-
Office - E	New				per sq ft	\$0.00	100%	\$0.00	-	-	309,118	-	-	25,448	-	-	2.41	-	-	-
Restaurant - E	Existing				per sq ft	\$0.00	100%	\$0.00	21,832	21,190	21,190	32,290	30,902	30,425	3.28	3.14	3.09	-	-	-
Restaurant - E	Existing	Blanket/Insulation Water Heater - Pre-Rinse Spray Valve Interior Lighting - Daylighting Controls			per sq ft	\$0.02	100%	\$0.02	183,960	178,550	178,550	62,790	60,091	59,162	-	-	-	-	-	-
Restaurant - E	Existing				per sq ft	\$0.02	100%	\$0.02	331,056	321,319	321,319	489,652	468,604	461,363	49.74	47.60	46.86	-	-	-
Restaurant - E	Existing				per sq ft	\$0.11	100%	\$0.11	1,129,774	1,096,545	1,096,545	555,310	502,958	477,359	66.32	60.07	57.01	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Restaurant - E	Existing		Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	100%	\$0.00	1,826,840	1,773,110	1,773,110	5,986	5,422	5,146	0.71	0.65	0.61	-	-	-
Restaurant - E	New		Water Heater - Faucet Aerators		per sq ft	\$0.00	100%	\$0.00	2,246	2,180	2,180	2,962	2,748	2,661	0.30	0.28	0.27	-	-	-
Restaurant - E	New		Water Heater - Tank		per sq ft	\$0.02	100%	\$0.02	18,929	18,372	18,372	5,759	5,343	5,174	-	-	-	-	-	-
Restaurant - E	New		Blanket/Insulation Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.02	100%	\$0.02	34,065	33,063	33,063	44,908	41,667	40,347	4.56	4.23	4.10	-	-	-
Restaurant - E	New		Interior Lighting - Daylighting Controls		per sq ft	\$0.11	100%	\$0.11	100,875	97,908	97,908	44,306	41,172	40,072	5.29	4.92	4.79	-	-	-
Restaurant - E	New		Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	100%	\$0.00	54,454	52,852	52,852	159	148	144	0.02	0.02	0.02	-	-	-
Retail - E	Existing		Water Heater - Faucet Aerators		per sq ft	\$0.00	100%	\$0.00	150,550	146,122	146,122	24,203	23,160	22,801	2.22	2.13	2.09	-	-	-
Retail - E	Existing		Water Heater - Tank		per sq ft	\$0.02	100%	\$0.02	1,173,198	1,138,692	1,138,692	43,524	41,650	41,003	-	-	-	-	-	-
Retail - E	Existing		Blanket/Insulation Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.00	100%	\$0.00	127,068	123,331	123,331	20,428	19,548	19,244	1.88	1.80	1.77	-	-	-
Retail - E	Existing		Interior Lighting - Daylighting Controls		per sq ft	\$0.11	100%	\$0.11	4,690,970	4,553,001	4,553,001	1,941,424	1,796,959	1,720,636	229.30	212.24	203.22	-	-	-
Retail - E	Existing		Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	100%	\$0.00	8,771,910	8,513,913	8,513,913	24,203	22,402	21,450	2.86	2.65	2.53	-	-	-
Retail - E	New		Water Heater - Faucet Aerators		per sq ft	\$0.00	100%	\$0.00	12,838	12,460	12,460	1,816	1,684	1,630	0.17	0.15	0.15	-	-	-
Retail - E	New		Water Heater - Tank		per sq ft	\$0.02	100%	\$0.02	120,808	117,254	117,254	3,944	3,657	3,540	-	-	-	-	-	-
Retail - E	New		Blanket/Insulation Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.00	100%	\$0.00	10,852	10,533	10,533	1,535	1,423	1,378	0.14	0.13	0.13	-	-	-
Retail - E	New		Interior Lighting - Daylighting Controls		per sq ft	\$0.11	100%	\$0.11	484,371	470,125	470,125	171,203	163,390	161,330	20.22	19.30	19.05	-	-	-
Retail - E	New		Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	100%	\$0.00	261,469	253,778	253,778	616	588	581	0.07	0.07	0.07	-	-	-
Grocery - E	Existing		Water Heater - Faucet Aerators		per sq ft	\$0.00	100%	\$0.00	7,597	7,373	7,373	3,975	3,807	3,750	0.43	0.41	0.40	-	-	-
Grocery - E	Existing		Water Heater - Pipe Insulation		per sq ft	\$0.09	100%	\$0.09	75,912	73,680	73,680	10,378	9,939	9,790	1.16	1.11	1.10	-	-	-
Grocery - E	Existing		Water Heater - Tank		per sq ft	\$0.02	100%	\$0.02	58,499	56,779	56,779	7,065	6,766	6,665	-	-	-	-	-	-
Grocery - E	Existing		Blanket/Insulation Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.01	100%	\$0.01	6,414	6,225	6,225	3,356	3,214	3,166	0.36	0.35	0.34	-	-	-
Grocery - E	Existing		Interior Lighting - Daylighting Controls		per sq ft	\$0.11	100%	\$0.11	465,508	451,816	451,816	392,981	366,680	353,804	71.06	66.30	63.97	-	-	-
Grocery - E	Existing		Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	100%	\$0.00	963,183	934,854	934,854	5,421	5,058	4,880	0.98	0.91	0.88	-	-	-
Grocery - E	Existing		Interior Lighting - Occupancy Sensors		per sq ft	\$0.07	100%	\$0.07	540,475	524,579	524,579	152,090	141,911	136,927	13.75	12.83	12.38	-	-	-
Grocery - E	New		Water Heater - Faucet Aerators		per sq ft	\$0.00	100%	\$0.00	781	758	758	362	335	325	0.04	0.04	0.03	-	-	-
Grocery - E	New		Water Heater - Pipe Insulation		per sq ft	\$0.09	100%	\$0.09	5,021	4,873	4,873	607	563	546	0.07	0.06	0.06	-	-	-
Grocery - E	New		Water Heater - Tank		per sq ft	\$0.02	100%	\$0.02	6,009	5,832	5,832	642	596	577	-	-	-	-	-	-
Grocery - E	New		Blanket/Insulation		per sq ft															

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Grocery - E	New		Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.01	100%	\$0.01	660	640	640	305	283	274	0.03	0.03	0.03	-	-	-
Grocery - E	New		Interior Lighting - Daylighting Controls		per sq ft	\$0.11	100%	\$0.11	53,345	51,776	51,776	39,791	37,950	37,465	7.19	6.86	6.77	-	-	-
Grocery - E	New		Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	100%	\$0.00	28,710	27,866	27,866	143	136	134	0.03	0.02	0.02	-	-	-
Grocery - E	New		Interior Lighting - Occupancy Sensors		per sq ft	\$0.07	100%	\$0.07	23,897	23,194	23,194	5,942	5,667	5,594	0.54	0.51	0.51	-	-	-
College - E	Existing		Water Heater - Faucet Aerators		per sq ft	\$0.00	100%	\$0.00	13,301	12,910	12,910	4,637	4,441	4,374	0.53	0.50	0.50	-	-	-
College - E	Existing		Water Heater - Low Flow Showerheads		per sq ft	\$0.00	100%	\$0.00	11,324	10,991	10,991	7,985	7,647	7,533	0.91	0.87	0.86	-	-	-
College - E	Existing		Water Heater - Pipe Insulation		per sq ft	\$0.02	100%	\$0.02	165,409	160,544	160,544	15,069	14,431	14,215	1.63	1.56	1.53	-	-	-
College - E	Existing		Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.00	100%	\$0.00	11,258	10,927	10,927	3,925	3,759	3,703	0.45	0.43	0.42	-	-	-
College - E	Existing		Interior Lighting - Daylighting Controls		per sq ft	\$0.11	100%	\$0.11	806,466	782,746	782,746	316,475	297,832	289,845	44.61	41.98	40.85	-	-	-
College - E	Existing		Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	100%	\$0.00	6,487,911	6,297,090	6,297,090	16,973	15,973	15,545	2.39	2.25	2.19	-	-	-
College - E	Existing		Interior Lighting - Occupancy Sensors		per sq ft	\$0.00	100%	\$0.00	-	-	4,668,852	-	-	576,281	-	-	40.61	-	-	-
College - E	New		Water Heater - Faucet Aerators		per sq ft	\$0.00	100%	\$0.00	1,367	1,327	1,327	422	391	379	0.05	0.04	0.04	-	-	-
College - E	New		Water Heater - Low Flow Showerheads		per sq ft	\$0.00	100%	\$0.00	1,164	1,130	1,130	726	674	652	0.08	0.08	0.07	-	-	-
College - E	New		Water Heater - Pipe Insulation		per sq ft	\$0.02	100%	\$0.02	15,473	15,018	15,018	1,247	1,157	1,120	0.14	0.13	0.13	-	-	-
College - E	New		Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.00	100%	\$0.00	1,157	1,123	1,123	357	331	321	0.04	0.04	0.04	-	-	-
College - E	New		Interior Lighting - Daylighting Controls		per sq ft	\$0.11	100%	\$0.11	246,493	239,243	239,243	89,442	85,197	84,049	12.61	12.01	11.85	-	-	-
College - E	New		Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	100%	\$0.00	193,388	187,700	187,700	468	446	440	0.07	0.06	0.06	-	-	-
College - E	New		Interior Lighting - Occupancy Sensors		per sq ft	\$0.00	100%	\$0.00	-	169,172	169,172	-	20,081	19,811	-	1.42	1.40	-	-	-
School - E	Existing		Water Heater - Faucet Aerators		per sq ft	\$0.00	100%	\$0.00	8,038	7,802	7,802	1,818	1,741	1,715	0.10	0.10	0.10	-	-	-
School - E	Existing		Water Heater - Low Flow Showerheads		per sq ft	\$0.00	100%	\$0.00	6,846	6,645	6,645	3,132	2,999	2,955	0.17	0.17	0.16	-	-	-
School - E	Existing		Water Heater - Pipe Insulation		per sq ft	\$0.02	100%	\$0.02	40,231	39,048	39,048	2,378	2,277	2,243	0.13	0.12	0.12	-	-	-
School - E	Existing		Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.00	100%	\$0.00	6,797	6,597	6,597	1,537	1,472	1,450	0.09	0.08	0.08	-	-	-
School - E	Existing		Interior Lighting - Daylighting Controls		per sq ft	\$0.11	100%	\$0.11	827,370	803,036	803,036	264,861	246,486	236,998	19.98	18.59	17.88	-	-	-
School - E	Existing		Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	100%	\$0.00	6,038,083	5,860,492	5,860,492	12,886	11,992	11,531	0.97	0.90	0.87	-	-	-
School - E	New		Water Heater - Faucet Aerators		per sq ft	\$0.00	100%	\$0.00	794	770	770	159	147	143	0.01	0.01	0.01	-	-	-
School - E	New		Water Heater - Low Flow Showerheads		per sq ft	\$0.00	100%	\$0.00	676	656	656	274	254	246	0.02	0.01	0.01	-	-	-
School - E	New		Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.00	100%	\$0.00	672	652	652	134	125	121	0.01	0.01	0.01	-	-	-
School - E	New		Interior Lighting - Daylighting Controls		per sq ft	\$0.11	100%	\$0.11	273,283	265,245	265,245	75,687	72,417	71,611	5.71	5.46	5.40	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
School - E	New		Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	100%	\$0.00	179,980	174,686	174,686	332	318	314	0.03	0.02	0.02	-	-	-
Health - E	Existing		Water Heater - Faucet Aerators		per sq ft	\$0.00	100%	\$0.00	21,763	21,123	21,123	9,989	9,566	9,423	0.82	0.79	0.77	-	-	-
Health - E	Existing		Water Heater - Low Flow Showerheads		per sq ft	\$0.00	100%	\$0.00	18,546	18,001	18,001	17,217	16,488	16,242	1.41	1.35	1.33	-	-	-
Health - E	Existing		Water Heater - Pipe Insulation		per sq ft	\$0.04	100%	\$0.04	91,334	88,648	88,648	10,952	10,488	10,332	0.87	0.83	0.82	-	-	-
Health - E	Existing		Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.00	100%	\$0.00	18,429	17,887	17,887	8,459	8,101	7,980	0.70	0.67	0.66	-	-	-
Health - E	Existing		Interior Lighting - Daylighting Controls		per sq ft	\$0.11	100%	\$0.11	961,120	932,852	932,852	330,076	305,775	293,766	34.71	32.15	30.89	-	-	-
Health - E	Existing		Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	100%	\$0.00	4,627,380	4,491,281	4,491,281	10,594	9,814	9,429	1.11	1.03	0.99	-	-	-
Health - E	New		Water Heater - Faucet Aerators		per sq ft	\$0.00	100%	\$0.00	2,023	1,964	1,964	822	762	738	0.07	0.06	0.06	-	-	-
Health - E	New		Water Heater - Low Flow Showerheads		per sq ft	\$0.00	100%	\$0.00	1,723	1,673	1,673	1,415	1,313	1,272	0.12	0.11	0.10	-	-	-
Health - E	New		Water Heater - Pipe Insulation		per sq ft	\$0.04	100%	\$0.04	6,796	6,596	6,596	721	669	648	0.06	0.06	0.05	-	-	-
Health - E	New		Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.00	100%	\$0.00	1,714	1,663	1,663	696	646	625	0.06	0.05	0.05	-	-	-
Health - E	New		Interior Lighting - Daylighting Controls		per sq ft	\$0.11	100%	\$0.11	301,320	292,457	292,457	91,570	86,758	85,342	9.63	9.12	8.97	-	-	-
Health - E	New		Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	100%	\$0.00	137,931	133,874	133,874	279	265	260	0.03	0.03	0.03	-	-	-
Health - E	New		Interior Lighting - Occupancy Sensors		per sq ft	\$0.00	100%	\$0.00	-	-	164,242	-	-	15,976	-	-	0.84	-	-	-
Lodging - E	Existing		Water Heater - Faucet Aerators		per sq ft	\$0.00	100%	\$0.00	54,185	52,591	52,591	25,030	23,952	23,579	1.74	1.67	1.64	-	-	-
Lodging - E	Existing		Water Heater - Low Flow Showerheads		per sq ft	\$0.00	100%	\$0.00	426,624	414,076	414,076	398,583	381,406	375,474	27.74	26.54	26.13	-	-	-
Lodging - E	Existing		Water Heater - Pipe Insulation		per sq ft	\$0.05	100%	\$0.05	359,751	349,170	349,170	43,415	41,544	40,898	2.91	2.78	2.74	-	-	-
Lodging - E	Existing		Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.00	100%	\$0.00	45,903	44,552	44,552	21,204	20,291	19,975	1.48	1.41	1.39	-	-	-
Lodging - E	Existing		Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	100%	\$0.00	4,288,197	4,162,074	4,162,074	5,947	5,294	4,989	0.48	0.43	0.41	-	-	-
Lodging - E	New		Water Heater - Faucet Aerators		per sq ft	\$0.00	100%	\$0.00	5,570	5,406	5,406	2,296	2,130	2,062	0.16	0.15	0.14	-	-	-
Lodging - E	New		Water Heater - Low Flow Showerheads		per sq ft	\$0.00	100%	\$0.00	43,853	42,563	42,563	36,555	33,916	32,843	2.54	2.36	2.29	-	-	-
Lodging - E	New		Water Heater - Pipe Insulation		per sq ft	\$0.05	100%	\$0.05	35,453	34,410	34,410	3,817	3,542	3,430	0.27	0.25	0.25	-	-	-
Lodging - E	New		Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.00	100%	\$0.00	4,718	4,580	4,580	1,945	1,804	1,747	0.14	0.13	0.12	-	-	-
Lodging - E	New		Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	100%	\$0.00	127,820	124,061	124,061	162	147	141	0.01	0.01	0.01	-	-	-
Warehouse - E	Existing		Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	100%	\$0.00	7,032,190	6,825,361	6,825,361	7,759	7,040	6,663	1.40	1.27	1.20	-	-	-
Warehouse - E	New		Interior Lighting - Daylighting Controls		per sq ft	\$0.00	100%	\$0.00	-	787,013	787,013	-	106,793	105,198	-	19.31	19.02	-	-	-
Warehouse - E	New		Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	100%	\$0.00	209,612	203,447	203,447	194	184	181	0.04	0.03	0.03	-	-	-
Misc. - E	Existing		Water Heater - Faucet Aerators		per sq ft	\$0.00	100%	\$0.00	139,104	135,012	135,012	29,826	28,562	28,136	4.41	4.22	4.16	-	-	-

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Misc. - E	Existing		Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	100%	\$0.00	13,349,358	12,956,730	12,956,730	23,047	21,400	20,623	2.92	2.71	2.62	-	-	-
Misc. - E	New		Water Heater - Faucet Aerators		per sq ft	\$0.00	100%	\$0.00	13,675	13,273	13,273	2,594	2,407	2,331	0.38	0.36	0.34	-	-	-
Misc. - E	New		Interior Lighting - Daylighting Controls		per sq ft	\$0.00	100%	\$0.00	-	922,237	922,237	-	209,027	205,741	-	26.51	26.09	-	-	-
Misc. - E	New		Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	100%	\$0.00	397,911	386,207	386,207	615	584	574	0.08	0.07	0.07	-	-	-
Office - G	Existing		Exhaust Hood		per sq ft	\$0.16	100%	\$0.16	18	17	17	-	-	-	-	-	-	3	3	3
Office - G	New		Makeup Air		per sq ft	\$0.16	100%	\$0.16	2	2	2	-	-	-	-	-	-	0	0	0
Restaurant - G	Existing		Exhaust Hood		per sq ft	\$0.12	100%	\$0.12	6	6	6	-	-	-	-	-	-	1	1	1
Restaurant - G	New		Makeup Air		per sq ft	\$0.12	100%	\$0.12	1	1	1	-	-	-	-	-	-	0	0	0
Retail - G	Existing		Exhaust Hood		per sq ft	\$0.12	100%	\$0.12	272	264	264	-	-	-	-	-	-	38	36	36
Retail - G	New		Makeup Air		per sq ft	\$0.12	100%	\$0.12	28	27	27	-	-	-	-	-	-	3	3	3
College - G	Existing		Exhaust Hood		per sq ft	\$0.16	100%	\$0.16	142	138	138	-	-	-	-	-	-	17	17	17
College - G	New		Makeup Air		per sq ft	\$0.16	100%	\$0.16	15	14	14	-	-	-	-	-	-	1	1	1
School - G	New		Exhaust Hood		per sq ft	\$0.00	100%	\$0.00	-	-	415	-	-	-	-	-	-	-	-	17
Health - G	Existing		Makeup Air		per sq ft	\$0.05	100%	\$0.05	52	51	51	-	-	-	-	-	-	12	11	11
Health - G	New		Exhaust Hood		per sq ft	\$0.05	100%	\$0.05	5	5	5	-	-	-	-	-	-	0	0	0
Lodging - G	Existing		Makeup Air		per sq ft	\$0.05	100%	\$0.05	212	206	206	-	-	-	-	-	-	13	12	12
Lodging - G	New		Exhaust Hood		per sq ft	\$0.05	100%	\$0.05	22	21	21	-	-	-	-	-	-	1	1	1
Warehouse - G	Existing		Makeup Air		per sq ft	\$0.12	100%	\$0.12	29	28	28	-	-	-	-	-	-	14	14	13
Warehouse - G	New		Exhaust Hood		per sq ft	\$0.12	100%	\$0.12	3	3	3	-	-	-	-	-	-	1	1	1

Table G-11 Business (MAP)

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Office - E	Existing	Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	per sq ft	\$0.34	75%	\$0.25	98,595	95,696	95,696	83,024	80,553	80,355	47.80	46.37	46.26	-	-	-
Office - E	Existing	Cooling	Roof top AC	Ductless Minisplit	per sq ft	\$0.21	75%	\$0.16	3,341,554	3,243,273	3,243,273	1,294,789	1,256,253	1,253,164	745.41	723.22	721.44	-	-	-
Office - E	Existing	Cooling	PTAC	EER 11.5	per sq ft	\$0.01	75%	\$0.01	75,799	73,569	73,569	25,959	25,186	25,124	14.94	14.50	14.46	-	-	-
Office - E	Existing	Cooling	PTHP	EER 11.5	per sq ft	\$0.01	75%	\$0.01	119,528	116,012	116,012	40,934	39,716	39,618	23.57	22.86	22.81	-	-	-
Office - E	Existing	Heating	PTHP	EER 11.5	per sq ft	\$0.01	75%	\$0.01	133,142	129,226	129,226	27,051	26,245	26,181	-	-	-	-	-	-
Office - E	Existing	Ventilation	Ventilation	Variable Air Volume	per sq ft	\$0.43	75%	\$0.32	390,958	379,459	379,459	449,436	436,060	434,987	35.85	34.78	34.70	-	-	-
Office - E	Existing	Water Heating	Water Heating	EF 2.4	per sq ft	\$0.01	75%	\$0.00	2,384,002	2,313,884	2,313,884	869,258	843,040	840,856	84.66	82.11	81.90	-	-	-
Office - E	Existing	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.03	75%	\$0.02	14,522,712	14,095,573	14,095,573	1,660,085	1,484,995	1,376,121	314.20	281.06	260.46	-	-	-
Office - E	Existing	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.00	75%	\$0.00	8,713,213	8,456,942	8,456,942	282,590	274,179	273,505	53.49	51.89	51.77	-	-	-
Office - E	Existing	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.05	75%	\$0.04	5,228,630	5,074,847	5,074,847	948,294	920,071	917,808	179.48	174.14	173.71	-	-	-
Office - E	Existing	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.01	75%	\$0.01	9,385,228	9,109,192	9,109,192	179,561	160,615	148,829	1.67	1.49	1.38	-	-	-
Office - E	Existing	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	75%	\$0.00	-	-	4,552,946	-	-	6,296	-	-	0.06	-	-	-
Office - E	Existing	Refrigeration	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	75%	\$0.00	263,544	255,792	255,792	1,888	1,832	1,829	0.20	0.19	0.19	-	-	-
Office - E	Existing	Refrigeration	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	75%	\$0.00	1,844,012	1,789,776	1,789,776	95,149	92,233	92,018	9.95	9.64	9.62	-	-	-
Office - E	Existing	Refrigeration	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	75%	\$0.00	2,780,103	2,698,335	2,698,335	30,070	29,110	29,005	3.14	3.04	3.03	-	-	-
Office - E	Existing	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.00	75%	\$0.00	85,839	83,314	83,314	103,612	100,528	100,281	23.84	23.13	23.07	-	-	-
Office - E	Existing	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	75%	\$0.00	2,465,495	2,392,981	2,392,981	1,707,371	1,656,556	1,652,482	205.66	199.54	199.05	-	-	-
Office - E	Existing	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	75%	\$0.00	2,989,144	2,901,228	2,901,228	319,060	309,564	308,803	38.43	37.29	37.20	-	-	-
Office - E	Existing	Office Equipment	Server	Energy Star	per sq ft	\$0.00	75%	\$0.00	12,207,416	11,848,375	11,848,375	657,809	638,231	636,662	79.24	76.88	76.69	-	-	-
Office - E	Existing	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	75%	\$0.00	1,189,978	1,154,978	1,154,978	92,940	90,174	89,952	11.20	10.86	10.84	-	-	-
Office - E	Existing	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	75%	\$0.00	4,999,390	4,852,349	4,852,349	392,623	380,938	380,001	47.29	45.89	45.77	-	-	-
Office - E	Existing	Misc.	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	75%	\$0.00	4,198,140	-	-	11,629	-	-	1.81	-	-	-	-	-
Office - E	Existing	Misc.	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	75%	\$0.00	-	4,013,432	4,013,432	-	12,847	13,411	-	2.00	2.09	-	-	-
Office - E	New	Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	per sq ft	\$0.36	75%	\$0.27	75,001	72,795	72,795	53,483	52,250	52,208	30.79	30.08	30.06	-	-	-
Office - E	New	Cooling	Roof top AC	Ductless Minisplit	per sq ft	\$0.18	75%	\$0.14	1,568,429	1,522,298	1,522,298	495,552	480,803	479,621	285.29	276.80	276.12	-	-	-
Office - E	New	Cooling	PTAC	EER 11.5	per sq ft	\$0.01	75%	\$0.01	35,578	34,531	34,531	11,194	10,861	10,834	6.44	6.25	6.24	-	-	-
Office - E	New	Cooling	PTHP	EER 11.5	per sq ft	\$0.01	75%	\$0.01	42,178	40,937	40,937	13,271	12,876	12,844	7.64	7.41	7.39	-	-	-

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Office - E	New	Heating	PTHP	EER 11.5	per sq ft	\$0.00	75%	\$0.00	40,796	39,596	39,596	7,445	7,223	7,205	-	-	-	-	-	-
Office - E	New	Ventilation	Ventilation	Variable Air Volume	per sq ft	\$0.73	75%	\$0.55	66,254	64,306	64,306	105,536	102,395	102,144	8.42	8.17	8.15	-	-	-
Office - E	New	Water Heating	Water Heating	EF 2.4	per sq ft	\$0.00	75%	\$0.00	1,064,722	1,033,406	1,033,406	380,930	369,576	368,650	37.10	36.00	35.91	-	-	-
Office - E	New	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.03	75%	\$0.02	1,555,093	1,509,355	1,509,355	179,221	159,768	147,522	33.92	30.24	27.92	-	-	-
Office - E	New	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.00	75%	\$0.00	1,124,740	1,091,659	1,091,659	36,478	35,392	35,305	6.90	6.70	6.68	-	-	-
Office - E	New	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.05	75%	\$0.04	1,124,740	1,091,659	1,091,659	203,989	197,918	197,431	38.61	37.46	37.37	-	-	-
Office - E	New	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.01	75%	\$0.01	1,120,180	1,087,233	1,087,233	21,608	19,271	17,798	0.20	0.18	0.17	-	-	-
Office - E	New	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	75%	\$0.00	1,201,414	1,166,078	1,166,078	1,666	1,617	1,613	0.02	0.02	0.01	-	-	-
Office - E	New	Refrigeration	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	75%	\$0.00	65,008	63,096	63,096	466	452	451	0.05	0.05	0.05	-	-	-
Office - E	New	Refrigeration	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	75%	\$0.00	743,111	721,255	721,255	38,344	37,165	37,074	4.01	3.89	3.88	-	-	-
Office - E	New	Refrigeration	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	75%	\$0.00	743,111	721,255	721,255	8,038	7,779	7,747	0.84	0.81	0.81	-	-	-
Office - E	New	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.00	75%	\$0.00	21,869	21,225	21,225	26,397	25,611	25,548	6.07	5.89	5.88	-	-	-
Office - E	New	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	75%	\$0.00	262,809	255,080	255,080	181,997	176,580	176,146	21.92	21.27	21.22	-	-	-
Office - E	New	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	75%	\$0.00	330,882	321,150	321,150	35,318	34,267	34,183	4.25	4.13	4.12	-	-	-
Office - E	New	Office Equipment	Server	Energy Star	per sq ft	\$0.00	75%	\$0.00	1,252,187	1,215,358	1,215,358	67,475	65,467	65,306	8.13	7.89	7.87	-	-	-
Office - E	New	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	75%	\$0.00	139,079	134,989	134,989	10,862	10,539	10,513	1.31	1.27	1.27	-	-	-
Office - E	New	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	75%	\$0.00	711,754	690,820	690,820	55,897	54,233	54,100	6.73	6.53	6.52	-	-	-
Office - E	New	Misc.	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	75%	\$0.00	1,127,483	-	-	3,123	-	-	0.49	-	-	-	-	-
Office - E	New	Misc.	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	75%	\$0.00	-	1,352,264	1,352,264	-	4,372	4,573	-	0.68	0.71	-	-	-
Restaurant - E	Existing	Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	per sq ft	\$0.53	75%	\$0.40	3,338	3,240	3,240	8,565	8,309	8,289	3.72	3.61	3.60	-	-	-
Restaurant - E	Existing	Cooling	Roof top AC	Ductless Minisplit	per sq ft	\$0.20	75%	\$0.15	817,389	793,348	793,348	569,537	552,587	551,228	247.29	239.93	239.34	-	-	-
Restaurant - E	Existing	Cooling	Air Source Heat Pump	Ductless Minisplit	per sq ft	\$0.27	75%	\$0.20	31,105	30,190	30,190	27,265	26,386	26,295	11.84	11.46	11.42	-	-	-
Restaurant - E	Existing	Cooling	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.17	75%	\$0.13	19,833	19,250	19,250	33,871	32,711	32,497	14.71	14.20	14.11	-	-	-
Restaurant - E	Existing	Cooling	PTAC	EER 11.5	per sq ft	\$0.02	75%	\$0.02	32,140	31,195	31,195	4,737	4,597	4,585	2.06	2.00	1.99	-	-	-
Restaurant - E	Existing	Cooling	PTHP	EER 11.5	per sq ft	\$0.02	75%	\$0.02	11,995	11,642	11,642	1,768	1,715	1,711	0.77	0.74	0.74	-	-	-
Restaurant - E	Existing	Heating	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.13	75%	\$0.10	19,833	19,250	19,250	16,380	15,839	15,753	-	-	-	-	-	-
Restaurant - E	Existing	Heating	PTHP	EER 11.5	per sq ft	\$0.01	75%	\$0.01	13,527	13,130	13,130	1,237	1,201	1,198	-	-	-	-	-	-
Restaurant - E	Existing	Ventilation	Ventilation	Variable Air Volume	per sq ft	\$3.16	75%	\$2.37	362,762	352,092	352,092	644,962	625,767	624,228	50.42	48.92	48.80	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Restaurant - E	Existing	Water Heating	Water Heating	EF 2.4	per sq ft	\$0.03	75%	\$0.02	418,355	406,051	406,051	1,685,405	1,635,158	1,631,064	171.19	166.09	165.67	-	-	-
Restaurant - E	Existing	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.09	75%	\$0.07	3,062,687	2,972,607	2,972,607	1,364,291	1,218,196	1,129,587	162.93	145.48	134.90	-	-	-
Restaurant - E	Existing	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.02	75%	\$0.01	1,840,514	1,786,382	1,786,382	339,133	329,040	328,231	40.50	39.30	39.20	-	-	-
Restaurant - E	Existing	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.04	75%	\$0.03	1,070,334	1,038,853	1,038,853	192,401	186,675	186,216	22.98	22.29	22.24	-	-	-
Restaurant - E	Existing	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.02	75%	\$0.01	1,974,952	1,916,865	1,916,865	77,444	69,167	64,104	0.72	0.64	0.60	-	-	-
Restaurant - E	Existing	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	75%	\$0.00	-	-	961,731	-	-	320	-	-	0.00	-	-	-
Restaurant - E	Existing	Refrigeration	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.17	75%	\$0.13	318,745	309,370	309,370	151,566	146,209	145,175	15.40	14.86	14.75	-	-	-
Restaurant - E	Existing	Refrigeration	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.02	75%	\$0.02	89,985	87,339	87,339	14,472	14,044	14,027	1.47	1.43	1.43	-	-	-
Restaurant - E	Existing	Refrigeration	Glass Door Display	6800 kWh/yr	per sq ft	\$0.11	75%	\$0.08	834,191	809,656	809,656	966,577	936,962	934,775	98.21	95.20	94.97	-	-	-
Restaurant - E	Existing	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	75%	\$0.00	90,549	87,886	87,886	87,757	85,145	84,935	10.56	10.25	10.22	-	-	-
Restaurant - E	Existing	Food Preparation	Fryer	Energy Star	per sq ft	\$0.02	75%	\$0.01	157,434	152,803	152,803	95,737	92,888	92,659	11.52	11.18	11.15	-	-	-
Restaurant - E	Existing	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.05	75%	\$0.04	149,089	144,704	144,704	377,068	365,845	364,946	45.38	44.03	43.92	-	-	-
Restaurant - E	Existing	Food Preparation	Hot Food Container	Energy Star	per sq ft	\$0.07	75%	\$0.05	49,452	47,997	47,997	80,297	77,907	77,716	9.66	9.38	9.35	-	-	-
Restaurant - E	Existing	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	75%	\$0.00	406,824	394,859	394,859	43,974	42,665	42,561	4.28	4.15	4.14	-	-	-
Restaurant - E	Existing	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	75%	\$0.00	395,116	383,495	383,495	5,266	5,110	5,097	0.51	0.50	0.50	-	-	-
Restaurant - E	Existing	Office Equipment	Server	Energy Star	per sq ft	\$0.00	75%	\$0.00	1,519,653	1,474,957	1,474,957	153,380	148,815	148,449	14.92	14.47	14.44	-	-	-
Restaurant - E	Existing	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	75%	\$0.00	189,897	184,312	184,312	2,315	2,246	2,241	0.23	0.22	0.22	-	-	-
Restaurant - E	Existing	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	75%	\$0.00	483,869	469,638	469,638	14,235	13,812	13,778	1.38	1.34	1.34	-	-	-
Restaurant - E	Existing	Misc.	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	75%	\$0.00	197,946	-	-	876	-	-	0.10	-	-	-	-	-
Restaurant - E	Existing	Misc.	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	75%	\$0.00	-	189,237	189,237	-	968	1,010	-	0.11	0.11	-	-	-
Restaurant - E	New	Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	per sq ft	\$0.77	75%	\$0.58	2,486	2,413	2,413	5,133	4,983	4,972	2.23	2.16	2.16	-	-	-
Restaurant - E	New	Cooling	Roof top AC	Ductless Minisplit	per sq ft	\$0.24	75%	\$0.18	375,701	364,651	364,651	192,186	186,466	186,007	83.45	80.96	80.76	-	-	-
Restaurant - E	New	Cooling	Air Source Heat Pump	Ductless Minisplit	per sq ft	\$0.32	75%	\$0.24	10,748	10,432	10,432	6,915	6,694	6,670	3.00	2.91	2.90	-	-	-
Restaurant - E	New	Cooling	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.21	75%	\$0.16	6,853	6,652	6,652	8,987	8,685	8,628	3.90	3.77	3.75	-	-	-
Restaurant - E	New	Cooling	PTAC	EER 11.5	per sq ft	\$0.02	75%	\$0.02	14,773	14,338	14,338	2,001	1,941	1,936	0.87	0.84	0.84	-	-	-
Restaurant - E	New	Cooling	PTHP	EER 11.5	per sq ft	\$0.02	75%	\$0.02	4,145	4,023	4,023	561	545	543	0.24	0.24	0.24	-	-	-
Restaurant - E	New	Heating	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.16	75%	\$0.12	6,853	6,652	6,652	5,370	5,195	5,167	-	-	-	-	-	-
Restaurant - E	New	Heating	PTHP	EER 11.5	per sq ft	\$0.01	75%	\$0.01	4,145	4,023	4,023	341	330	330	-	-	-	-	-	-

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Restaurant - E	New	Ventilation	Ventilation	Variable Air Volume	per sq ft	\$5.38	75%	\$4.03	38,483	37,351	37,351	84,826	82,301	82,099	6.63	6.43	6.42	-	-	-
Restaurant - E	New	Water Heating	Water Heating	EF 2.4	per sq ft	\$0.03	75%	\$0.02	186,842	181,347	181,347	729,874	708,119	706,344	74.14	71.93	71.75	-	-	-
Restaurant - E	New	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.09	75%	\$0.07	334,200	324,371	324,371	149,505	133,958	123,446	17.85	16.00	14.74	-	-	-
Restaurant - E	New	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.02	75%	\$0.01	237,582	230,594	230,594	43,777	42,474	42,369	5.23	5.07	5.06	-	-	-
Restaurant - E	New	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.04	75%	\$0.03	230,361	223,585	223,585	41,409	40,177	40,078	4.95	4.80	4.79	-	-	-
Restaurant - E	New	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.02	75%	\$0.01	240,860	233,776	233,776	9,485	8,496	7,835	0.09	0.08	0.07	-	-	-
Restaurant - E	New	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	75%	\$0.00	253,778	246,314	246,314	85	82	82	0.00	0.00	0.00	-	-	-
Restaurant - E	New	Refrigeration	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.17	75%	\$0.13	85,107	82,604	82,604	40,469	39,011	38,692	4.11	3.96	3.93	-	-	-
Restaurant - E	New	Refrigeration	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.02	75%	\$0.02	24,184	23,473	23,473	3,890	3,774	3,770	0.40	0.38	0.38	-	-	-
Restaurant - E	New	Refrigeration	Glass Door Display	6800 kWh/yr	per sq ft	\$0.11	75%	\$0.08	333,717	323,901	323,901	386,678	374,795	373,877	39.29	38.08	37.99	-	-	-
Restaurant - E	New	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	75%	\$0.00	23,355	22,668	22,668	22,635	21,961	21,907	2.72	2.64	2.64	-	-	-
Restaurant - E	New	Food Preparation	Fryer	Energy Star	per sq ft	\$0.02	75%	\$0.01	41,121	39,912	39,912	25,006	24,262	24,202	3.01	2.92	2.91	-	-	-
Restaurant - E	New	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.05	75%	\$0.04	40,499	39,307	39,307	102,427	99,378	99,134	12.33	11.96	11.93	-	-	-
Restaurant - E	New	Food Preparation	Hot Food Container	Energy Star	per sq ft	\$0.07	75%	\$0.05	14,221	13,803	13,803	23,092	22,404	22,349	2.78	2.70	2.69	-	-	-
Restaurant - E	New	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	75%	\$0.00	43,501	42,221	42,221	4,702	4,562	4,551	0.46	0.44	0.44	-	-	-
Restaurant - E	New	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	75%	\$0.00	44,064	42,768	42,768	587	570	568	0.06	0.06	0.06	-	-	-
Restaurant - E	New	Office Equipment	Server	Energy Star	per sq ft	\$0.00	75%	\$0.00	156,730	152,121	152,121	15,819	15,348	15,310	1.54	1.49	1.49	-	-	-
Restaurant - E	New	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	75%	\$0.00	22,240	21,586	21,586	271	263	262	0.03	0.03	0.03	-	-	-
Restaurant - E	New	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	75%	\$0.00	69,482	67,439	67,439	2,044	1,983	1,978	0.20	0.19	0.19	-	-	-
Restaurant - E	New	Misc.	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	75%	\$0.00	53,162	-	-	235	-	-	0.03	-	-	-	-	-
Restaurant - E	New	Misc.	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	75%	\$0.00	-	63,760	63,760	-	329	344	-	0.04	0.04	-	-	-
Retail - E	Existing	Cooling	Roof top AC	Ductless Minisplit	per sq ft	\$0.12	75%	\$0.09	1,836,640	1,782,621	1,782,621	831,760	807,005	805,020	498.95	484.10	482.91	-	-	-
Retail - E	Existing	Cooling	Air Source Heat Pump	Ductless Minisplit	per sq ft	\$0.12	75%	\$0.09	74,976	72,771	72,771	33,265	32,194	32,082	19.95	19.31	19.25	-	-	-
Retail - E	Existing	Cooling	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.08	75%	\$0.06	26,429	25,652	25,652	22,854	22,074	21,930	13.71	13.24	13.16	-	-	-
Retail - E	Existing	Cooling	PTAC	EER 11.5	per sq ft	\$0.01	75%	\$0.01	153,769	149,246	149,246	14,730	14,292	14,256	8.84	8.57	8.55	-	-	-
Retail - E	Existing	Cooling	PTHP	EER 11.5	per sq ft	\$0.01	75%	\$0.01	16,594	16,106	16,106	1,590	1,542	1,539	0.95	0.93	0.92	-	-	-
Retail - E	Existing	Heating	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.00	75%	\$0.00	-	-	26,686	-	-	18,543	-	-	-	-	-	-
Retail - E	Existing	Heating	PTHP	EER 11.5	per sq ft	\$0.01	75%	\$0.01	16,353	15,872	15,872	1,458	1,415	1,411	-	-	-	-	-	-

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Retail - E	Existing	Ventilation	Ventilation	Variable Air Volume	per sq ft	\$1.46	75%	\$1.10	2,117,692	2,055,407	2,055,407	1,350,842	1,310,638	1,307,415	111.94	108.61	108.34	-	-	-
Retail - E	Existing	Water Heating	Water Heating	EF 2.4	per sq ft	\$0.00	75%	\$0.00	2,677,309	2,598,564	2,598,564	1,170,129	1,134,969	1,131,931	107.45	104.22	103.94	-	-	-
Retail - E	Existing	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.02	75%	\$0.01	15,473,110	15,018,019	15,018,019	835,677	747,231	694,534	98.70	88.25	82.03	-	-	-
Retail - E	Existing	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.00	75%	\$0.00	8,837,568	8,577,640	8,577,640	266,054	258,136	257,501	31.42	30.49	30.41	-	-	-
Retail - E	Existing	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.09	75%	\$0.07	5,303,253	5,147,275	5,147,275	1,514,734	1,469,653	1,466,038	178.90	173.58	173.15	-	-	-
Retail - E	Existing	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.04	75%	\$0.03	10,082,491	9,785,948	9,785,948	631,505	564,679	523,793	5.86	5.24	4.86	-	-	-
Retail - E	Existing	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	75%	\$0.00	-	-	4,617,926	-	-	1,567	-	-	0.01	-	-	-
Retail - E	Existing	Refrigeration	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.01	75%	\$0.00	733,545	711,970	711,970	15,382	14,927	14,909	1.55	1.50	1.50	-	-	-
Retail - E	Existing	Refrigeration	Glass Door Display	6800 kWh/yr	per sq ft	\$0.01	75%	\$0.01	2,175,939	2,111,941	2,111,941	328,857	318,781	318,037	33.13	32.12	32.04	-	-	-
Retail - E	Existing	Refrigeration	Open Display Case	4330 kWh/yr	per sq ft	\$0.01	75%	\$0.01	3,280,529	3,184,043	3,184,043	103,929	100,610	100,248	10.47	10.14	10.10	-	-	-
Retail - E	Existing	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	75%	\$0.00	111,925	108,634	108,634	11,486	11,144	11,117	1.62	1.58	1.57	-	-	-
Retail - E	Existing	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	75%	\$0.00	107,610	104,445	104,445	6,929	6,723	6,706	0.98	0.95	0.95	-	-	-
Retail - E	Existing	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.00	75%	\$0.00	191,361	185,732	185,732	102,494	99,443	99,199	14.49	14.06	14.03	-	-	-
Retail - E	Existing	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	75%	\$0.00	2,336,817	2,268,087	2,268,087	145,192	140,870	140,524	14.03	13.61	13.58	-	-	-
Retail - E	Existing	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	75%	\$0.00	2,620,942	2,543,856	2,543,856	25,100	24,353	24,293	2.43	2.35	2.35	-	-	-
Retail - E	Existing	Office Equipment	Server	Energy Star	per sq ft	\$0.00	75%	\$0.00	9,207,228	8,936,427	8,936,427	534,170	518,272	516,998	51.62	50.08	49.96	-	-	-
Retail - E	Existing	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	75%	\$0.00	1,104,743	1,072,251	1,072,251	7,741	7,511	7,493	0.75	0.73	0.72	-	-	-
Retail - E	Existing	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	75%	\$0.00	4,265,383	4,139,931	4,139,931	36,065	34,992	34,906	3.49	3.38	3.37	-	-	-
Retail - E	Existing	Misc.	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	75%	\$0.00	1,909,703	-	-	10,670	-	-	1.19	-	-	-	-	-
Retail - E	Existing	Misc.	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	75%	\$0.00	-	1,825,681	1,825,681	-	11,788	12,305	-	1.32	1.37	-	-	-
Retail - E	New	Cooling	Roof top AC	Ductless Minisplit	per sq ft	\$0.10	75%	\$0.08	891,996	865,761	865,761	306,405	297,285	296,554	183.80	178.33	177.90	-	-	-
Retail - E	New	Cooling	Air Source Heat Pump	Ductless Minisplit	per sq ft	\$0.11	75%	\$0.09	28,041	27,217	27,217	10,386	10,054	10,018	6.23	6.03	6.01	-	-	-
Retail - E	New	Cooling	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.08	75%	\$0.06	9,885	9,594	9,594	8,301	8,021	7,967	4.98	4.81	4.78	-	-	-
Retail - E	New	Cooling	PTAC	EER 11.5	per sq ft	\$0.01	75%	\$0.01	74,680	72,484	72,484	6,572	6,377	6,361	3.94	3.83	3.82	-	-	-
Retail - E	New	Cooling	PTHP	EER 11.5	per sq ft	\$0.01	75%	\$0.01	6,206	6,024	6,024	546	530	529	0.33	0.32	0.32	-	-	-
Retail - E	New	Heating	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.26	75%	\$0.19	7,981	7,746	7,746	6,202	6,000	5,967	-	-	-	-	-	-
Retail - E	New	Heating	PTHP	EER 11.5	per sq ft	\$0.01	75%	\$0.00	5,011	4,863	4,863	401	389	388	-	-	-	-	-	-
Retail - E	New	Ventilation	Ventilation	Variable Air Volume	per sq ft	\$2.47	75%	\$1.85	327,902	318,258	318,258	24,225	23,504	23,446	2.01	1.95	1.94	-	-	-

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Retail - E	New	Water Heating	Water Heating	EF 2.4	per sq ft	\$0.00	75%	\$0.00	1,195,716	1,160,548	1,160,548	488,778	475,333	474,735	44.88	43.65	43.59	-	-	-
Retail - E	New	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.02	75%	\$0.01	1,643,868	1,595,519	1,595,519	88,683	79,319	73,851	10.47	9.37	8.72	-	-	-
Retail - E	New	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.00	75%	\$0.00	1,140,792	1,107,239	1,107,239	34,343	33,321	33,239	4.06	3.94	3.93	-	-	-
Retail - E	New	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.09	75%	\$0.07	1,140,792	1,107,239	1,107,239	325,837	316,140	315,362	38.48	37.34	37.25	-	-	-
Retail - E	New	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.04	75%	\$0.03	1,187,802	1,152,867	1,152,867	74,313	66,465	61,851	0.69	0.62	0.57	-	-	-
Retail - E	New	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	75%	\$0.00	1,218,560	1,182,720	1,182,720	415	402	401	0.00	0.00	0.00	-	-	-
Retail - E	New	Refrigeration	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.01	75%	\$0.00	198,193	192,364	192,364	4,156	4,033	4,028	0.42	0.41	0.41	-	-	-
Retail - E	New	Refrigeration	Glass Door Display	6800 kWh/yr	per sq ft	\$0.01	75%	\$0.01	875,189	849,448	849,448	132,270	128,205	127,891	13.33	12.92	12.88	-	-	-
Retail - E	New	Refrigeration	Open Display Case	4330 kWh/yr	per sq ft	\$0.01	75%	\$0.01	875,189	849,448	849,448	27,727	26,833	26,725	2.79	2.70	2.69	-	-	-
Retail - E	New	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	75%	\$0.00	28,719	27,874	27,874	2,947	2,859	2,852	0.42	0.40	0.40	-	-	-
Retail - E	New	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	75%	\$0.00	27,632	26,819	26,819	1,779	1,726	1,722	0.25	0.24	0.24	-	-	-
Retail - E	New	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.00	75%	\$0.00	49,110	47,666	47,666	26,304	25,521	25,458	3.72	3.61	3.60	-	-	-
Retail - E	New	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	75%	\$0.00	246,318	239,074	239,074	15,304	14,849	14,812	1.48	1.43	1.43	-	-	-
Retail - E	New	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	75%	\$0.00	290,692	282,142	282,142	2,784	2,701	2,694	0.27	0.26	0.26	-	-	-
Retail - E	New	Office Equipment	Server	Energy Star	per sq ft	\$0.00	75%	\$0.00	937,761	910,179	910,179	54,405	52,786	52,656	5.26	5.10	5.09	-	-	-
Retail - E	New	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	75%	\$0.00	128,300	124,527	124,527	899	872	870	0.09	0.08	0.08	-	-	-
Retail - E	New	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	75%	\$0.00	602,821	585,091	585,091	5,097	4,945	4,933	0.49	0.48	0.48	-	-	-
Retail - E	New	Misc.	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	75%	\$0.00	512,884	-	-	2,866	-	-	0.32	-	-	-	-	-
Retail - E	New	Misc.	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	75%	\$0.00	-	615,135	615,135	-	4,011	4,196	-	0.45	0.47	-	-	-
Grocery - E	Existing	Cooling	Roof top AC	Ductless Minisplit	per sq ft	\$1.88	75%	\$1.41	374,123	363,119	363,119	358,145	347,486	346,632	625.36	606.75	605.26	-	-	-
Grocery - E	Existing	Cooling	Air Source Heat Pump	Ductless Minisplit	per sq ft	\$1.93	75%	\$1.45	9,125	8,856	8,856	8,535	8,260	8,231	14.90	14.42	14.37	-	-	-
Grocery - E	Existing	Cooling	PTHP	EER 11.5	per sq ft	\$0.03	75%	\$0.02	30,416	29,521	29,521	6,159	5,975	5,961	10.75	10.43	10.41	-	-	-
Grocery - E	Existing	Heating	PTHP	EER 11.5	per sq ft	\$0.02	75%	\$0.01	33,832	32,837	32,837	3,520	3,415	3,407	-	-	-	-	-	-
Grocery - E	Existing	Ventilation	Ventilation	Variable Air Volume	per sq ft	\$1.75	75%	\$1.31	215,479	209,142	209,142	468,364	454,425	453,307	38.60	37.45	37.36	-	-	-
Grocery - E	Existing	Water Heating	Water Heating	EF 2.4	per sq ft	\$0.02	75%	\$0.01	133,272	129,352	129,352	192,459	186,721	186,254	20.72	20.10	20.05	-	-	-
Grocery - E	Existing	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.02	75%	\$0.02	1,602,615	1,555,479	1,555,479	191,804	171,523	159,164	34.68	31.01	28.78	-	-	-
Grocery - E	Existing	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.00	75%	\$0.00	970,393	941,852	941,852	21,028	20,402	20,352	3.80	3.69	3.68	-	-	-
Grocery - E	Existing	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.14	75%	\$0.10	565,216	548,592	548,592	349,817	339,406	338,571	63.25	61.37	61.22	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Grocery - E	Existing	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.01	75%	\$0.01	1,033,047	1,002,663	1,002,663	31,245	27,941	25,903	0.29	0.26	0.24	-	-	-
Grocery - E	Existing	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	75%	\$0.00	-	-	507,063	-	-	1,377	-	-	0.01	-	-	-
Grocery - E	Existing	Refrigeration	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.21	75%	\$0.15	111,978	108,684	108,684	93,556	90,249	89,611	10.36	10.00	9.93	-	-	-
Grocery - E	Existing	Refrigeration	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	75%	\$0.00	25,185	24,444	24,444	2,035	1,975	1,972	0.23	0.22	0.22	-	-	-
Grocery - E	Existing	Refrigeration	Glass Door Display	6800 kWh/yr	per sq ft	\$0.57	75%	\$0.43	446,978	433,831	433,831	2,599,978	2,520,317	2,514,434	288.02	279.19	278.54	-	-	-
Grocery - E	Existing	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	75%	\$0.00	89,327	86,700	86,700	9,550	9,266	9,243	2.32	2.25	2.24	-	-	-
Grocery - E	Existing	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	75%	\$0.00	134,030	130,088	130,088	8,991	8,724	8,702	2.18	2.12	2.11	-	-	-
Grocery - E	Existing	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.01	75%	\$0.00	40,713	39,515	39,515	22,718	22,041	21,987	5.51	5.35	5.33	-	-	-
Grocery - E	Existing	Food Preparation	Hot Food Container	Energy Star	per sq ft	\$0.06	75%	\$0.04	76,522	74,271	74,271	27,414	26,598	26,532	6.65	6.45	6.44	-	-	-
Grocery - E	Existing	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	75%	\$0.00	261,292	253,607	253,607	17,966	17,432	17,389	2.17	2.10	2.10	-	-	-
Grocery - E	Existing	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	75%	\$0.00	244,951	237,747	237,747	2,596	2,519	2,513	0.31	0.30	0.30	-	-	-
Grocery - E	Existing	Office Equipment	Server	Energy Star	per sq ft	\$0.00	75%	\$0.00	855,100	829,950	829,950	27,451	26,634	26,568	3.31	3.21	3.20	-	-	-
Grocery - E	Existing	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	75%	\$0.00	121,907	118,322	118,322	945	917	915	0.11	0.11	0.11	-	-	-
Grocery - E	Existing	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	75%	\$0.00	548,555	532,421	532,421	5,133	4,980	4,968	0.62	0.60	0.60	-	-	-
Grocery - E	Existing	Misc.	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	75%	\$0.00	180,829	-	-	1,547	-	-	0.25	-	-	-	-	-
Grocery - E	Existing	Misc.	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	75%	\$0.00	-	172,873	172,873	-	1,709	1,784	-	0.28	0.29	-	-	-
Grocery - E	New	Cooling	Roof top AC	EER 12.0	per sq ft	\$0.40	75%	\$0.30	161,663	161,663	-	54,047	54,028	-	94.37	94.34	-	-	-	-
Grocery - E	New	Cooling	Roof top AC	Ductless Minisplit	per sq ft	\$0.00	75%	\$0.00	-	-	194,375	-	-	134,669	-	-	235.15	-	-	-
Grocery - E	New	Cooling	Air Source Heat Pump	Ductless Minisplit	per sq ft	\$1.97	75%	\$1.47	3,227	3,133	3,133	2,415	2,338	2,329	4.22	4.08	4.07	-	-	-
Grocery - E	New	Cooling	PTHP	EER 11.5	per sq ft	\$0.03	75%	\$0.02	10,758	10,442	10,442	2,001	1,942	1,937	3.49	3.39	3.38	-	-	-
Grocery - E	New	Heating	PTHP	EER 11.5	per sq ft	\$0.01	75%	\$0.01	10,367	10,062	10,062	969	940	938	-	-	-	-	-	-
Grocery - E	New	Ventilation	Ventilation	Variable Air Volume	per sq ft	\$3.04	75%	\$2.28	24,946	24,212	24,212	96,704	93,826	93,595	7.97	7.73	7.71	-	-	-
Grocery - E	New	Water Heating	Water Heating	EF 2.4	per sq ft	\$0.01	75%	\$0.01	59,521	57,770	57,770	81,657	79,223	79,024	8.79	8.53	8.51	-	-	-
Grocery - E	New	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.02	75%	\$0.02	169,887	164,890	164,890	19,447	17,663	16,401	3.52	3.19	2.97	-	-	-
Grocery - E	New	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.00	75%	\$0.00	125,263	121,578	121,578	2,714	2,634	2,627	0.49	0.48	0.48	-	-	-
Grocery - E	New	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.14	75%	\$0.10	121,606	118,030	118,030	75,263	73,023	72,844	13.61	13.20	13.17	-	-	-
Grocery - E	New	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.01	75%	\$0.01	123,500	119,868	119,868	3,573	3,237	3,008	0.03	0.03	0.03	-	-	-
Grocery - E	New	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	75%	\$0.00	133,802	129,866	129,866	364	353	353	0.00	0.00	0.00	-	-	-

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Grocery - E	New	Refrigeration	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.21	75%	\$0.15	29,522	28,654	28,654	24,665	23,777	23,584	2.73	2.63	2.61	-	-	-
Grocery - E	New	Refrigeration	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	75%	\$0.00	6,041	5,864	5,864	492	477	477	0.05	0.05	0.05	-	-	-
Grocery - E	New	Refrigeration	Glass Door Display	6800 kWh/yr	per sq ft	\$0.57	75%	\$0.43	178,507	173,257	173,257	1,038,338	1,006,429	1,003,967	115.02	111.49	111.22	-	-	-
Grocery - E	New	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	75%	\$0.00	22,920	22,246	22,246	2,450	2,378	2,372	0.59	0.58	0.58	-	-	-
Grocery - E	New	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	75%	\$0.00	34,415	33,403	33,403	2,309	2,240	2,234	0.56	0.54	0.54	-	-	-
Grocery - E	New	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.01	75%	\$0.00	10,448	10,141	10,141	5,830	5,657	5,643	1.41	1.37	1.37	-	-	-
Grocery - E	New	Food Preparation	Hot Food Container	Energy Star	per sq ft	\$0.06	75%	\$0.04	21,583	20,948	20,948	7,732	7,502	7,483	1.88	1.82	1.82	-	-	-
Grocery - E	New	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	75%	\$0.00	27,542	26,732	26,732	1,894	1,837	1,833	0.23	0.22	0.22	-	-	-
Grocery - E	New	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	75%	\$0.00	27,236	26,435	26,435	289	280	279	0.03	0.03	0.03	-	-	-
Grocery - E	New	Office Equipment	Server	Energy Star	per sq ft	\$0.00	75%	\$0.00	87,092	84,531	84,531	2,796	2,713	2,706	0.34	0.33	0.33	-	-	-
Grocery - E	New	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	75%	\$0.00	14,158	13,741	13,741	110	107	106	0.01	0.01	0.01	-	-	-
Grocery - E	New	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	75%	\$0.00	77,527	75,246	75,246	725	704	702	0.09	0.08	0.08	-	-	-
Grocery - E	New	Misc.	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	75%	\$0.00	48,565	-	-	415	-	-	0.07	-	-	-	-	-
Grocery - E	New	Misc.	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	75%	\$0.00	-	58,247	58,247	-	581	608	-	0.09	0.10	-	-	-
College - E	Existing	Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	per sq ft	\$0.70	75%	\$0.53	395,473	383,842	383,842	397,623	385,413	384,100	244.74	237.23	236.42	-	-	-
College - E	Existing	Cooling	Roof top AC	Ductless Minisplit	per sq ft	\$0.36	75%	\$0.27	378,688	367,550	367,550	132,227	128,292	127,977	81.39	78.97	78.77	-	-	-
College - E	Existing	Cooling	PTAC	EER 11.5	per sq ft	\$0.03	75%	\$0.02	129,481	125,672	125,672	39,956	38,767	38,671	24.59	23.86	23.80	-	-	-
College - E	Existing	Ventilation	Ventilation	Variable Air Volume	per sq ft	\$1.61	75%	\$1.21	401,647	389,833	389,833	400,625	388,701	387,745	32.70	31.72	31.65	-	-	-
College - E	Existing	Water Heating	Water Heating	EF 2.4	per sq ft	\$0.01	75%	\$0.01	409,269	397,232	397,232	393,744	382,006	381,050	44.75	43.42	43.31	-	-	-
College - E	Existing	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.01	75%	\$0.01	11,633,991	11,291,815	11,291,815	893,990	800,585	741,176	126.01	112.85	104.47	-	-	-
College - E	Existing	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.00	75%	\$0.00	6,536,474	6,344,224	6,344,224	362,301	351,518	350,653	51.07	49.55	49.43	-	-	-
College - E	Existing	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.06	75%	\$0.04	3,922,411	3,807,046	3,807,046	1,084,867	1,052,580	1,049,991	152.92	148.37	148.00	-	-	-
College - E	Existing	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.02	75%	\$0.01	7,498,300	7,277,762	7,277,762	307,224	275,065	254,798	2.85	2.55	2.36	-	-	-
College - E	Existing	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	75%	\$0.00	-	-	3,415,527	-	-	217	-	-	0.00	-	-	-
College - E	Existing	Refrigeration	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.00	75%	\$0.00	212,303	206,058	206,058	4,963	4,787	4,752	0.53	0.52	0.51	-	-	-
College - E	Existing	Refrigeration	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	75%	\$0.00	274,207	266,142	266,142	4,343	4,214	4,209	0.47	0.45	0.45	-	-	-
College - E	Existing	Refrigeration	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	75%	\$0.00	831,812	807,347	807,347	47,379	45,928	45,821	5.10	4.95	4.94	-	-	-
College - E	Existing	Refrigeration	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	75%	\$0.00	1,254,072	1,217,187	1,217,187	14,973	14,495	14,443	1.61	1.56	1.56	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
College - E	Existing	Refrigeration	Icemaker	5.5 kWh/100 lbs	per sq ft	\$0.00	75%	\$0.00	-	-	1,361,732	-	-	12,340	-	-	1.33	-	-	-
College - E	Existing	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	75%	\$0.00	1,057,819	1,026,707	1,026,707	8,463	8,211	8,191	1.48	1.43	1.43	-	-	-
College - E	Existing	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	75%	\$0.00	1,587,190	1,540,508	1,540,508	7,968	7,731	7,712	1.39	1.35	1.35	-	-	-
College - E	Existing	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.00	75%	\$0.00	685,103	664,952	664,952	28,608	27,757	27,689	5.00	4.85	4.84	-	-	-
College - E	Existing	Food Preparation	Hot Food Container	Energy Star	per sq ft	\$0.00	75%	\$0.00	413,887	401,714	401,714	11,096	10,766	10,739	1.94	1.88	1.88	-	-	-
College - E	Existing	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	75%	\$0.00	1,888,577	1,833,030	1,833,030	336,525	326,509	325,706	35.22	34.17	34.09	-	-	-
College - E	Existing	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	75%	\$0.00	1,624,950	1,577,158	1,577,158	44,630	43,302	43,195	4.67	4.53	4.52	-	-	-
College - E	Existing	Office Equipment	Server	Energy Star	per sq ft	\$0.00	75%	\$0.00	3,873,635	3,759,704	3,759,704	214,839	208,445	207,933	22.48	21.82	21.76	-	-	-
College - E	Existing	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	75%	\$0.00	894,044	867,748	867,748	17,967	17,432	17,390	1.88	1.82	1.82	-	-	-
College - E	Existing	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	75%	\$0.00	3,750,440	3,640,133	3,640,133	151,576	147,065	146,703	15.86	15.39	15.35	-	-	-
College - E	Existing	Office Equipment	POS Terminal	Energy Star	per sq ft	\$0.00	75%	\$0.00	-	-	2,155,930	-	-	85,100	-	-	8.91	-	-	-
College - E	Existing	Misc.	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	75%	\$0.00	3,123,232	-	-	3,513	-	-	0.48	-	-	-	-	-
College - E	Existing	Misc.	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	75%	\$0.00	-	2,985,817	2,985,817	-	3,881	4,052	-	0.53	0.55	-	-	-
College - E	Existing	Misc.	Pool Pump	High Efficiency, Multi-Speed	per sq ft	\$0.00	75%	\$0.00	2,250,305	2,184,119	2,184,119	1,810	1,756	1,752	0.25	0.24	0.24	-	-	-
College - E	Existing	Misc.	Pool Heater	Heat Pump	per sq ft	\$0.00	75%	\$0.00	780,220	757,273	757,273	2,405	2,333	2,328	0.33	0.32	0.32	-	-	-
College - E	New	Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	per sq ft	\$0.76	75%	\$0.57	294,594	285,930	285,930	271,218	259,214	257,286	166.94	159.55	158.36	-	-	-
College - E	New	Cooling	Roof top AC	EER 12.0	per sq ft	\$0.08	75%	\$0.06	150,782	-	-	22,454	-	-	13.82	-	-	-	-	-
College - E	New	Cooling	Roof top AC	Ductless Minisplit	per sq ft	\$0.00	75%	\$0.00	-	180,577	180,577	-	55,832	55,695	-	34.37	34.28	-	-	-
College - E	New	Cooling	PTAC	EER 11.5	per sq ft	\$0.03	75%	\$0.02	59,514	57,763	57,763	16,491	16,000	15,961	10.15	9.85	9.82	-	-	-
College - E	New	Ventilation	Ventilation	Variable Air Volume	per sq ft	\$2.86	75%	\$2.14	27,743	26,927	26,927	49,185	47,721	47,604	4.01	3.89	3.89	-	-	-
College - E	New	Water Heating	Water Heating	EF 2.4	per sq ft	\$0.01	75%	\$0.01	182,784	177,408	177,408	167,053	162,074	161,668	18.99	18.42	18.38	-	-	-
College - E	New	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.01	75%	\$0.01	1,248,217	1,211,505	1,211,505	95,448	86,364	79,686	13.45	12.17	11.23	-	-	-
College - E	New	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.00	75%	\$0.00	843,757	818,940	818,940	46,767	45,375	45,264	6.59	6.40	6.38	-	-	-
College - E	New	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.06	75%	\$0.04	843,757	818,940	818,940	233,368	226,422	225,865	32.89	31.92	31.84	-	-	-
College - E	New	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.02	75%	\$0.01	899,989	873,519	873,519	36,695	33,144	30,615	0.34	0.31	0.28	-	-	-
College - E	New	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	75%	\$0.00	901,276	874,768	874,768	57	56	56	0.00	0.00	0.00	-	-	-
College - E	New	Refrigeration	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.00	75%	\$0.00	49,304	47,854	47,854	1,152	1,111	1,101	0.12	0.12	0.12	-	-	-
College - E	New	Refrigeration	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	75%	\$0.00	73,798	71,627	71,627	1,167	1,132	1,131	0.13	0.12	0.12	-	-	-

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
College - E	New	Refrigeration	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	75%	\$0.00	338,248	328,300	328,300	19,266	18,674	18,628	2.08	2.01	2.01	-	-	-
College - E	New	Refrigeration	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	75%	\$0.00	338,248	328,300	328,300	4,039	3,908	3,893	0.43	0.42	0.42	-	-	-
College - E	New	Refrigeration	Icemaker	5.5 kWh/100 lbs	per sq ft	\$0.00	75%	\$0.00	-	-	375,534	-	-	3,346	-	-	0.36	-	-	-
College - E	New	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	75%	\$0.00	277,114	268,964	268,964	2,217	2,151	2,146	0.39	0.38	0.37	-	-	-
College - E	New	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	75%	\$0.00	416,115	403,876	403,876	2,089	2,027	2,022	0.36	0.35	0.35	-	-	-
College - E	New	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.00	75%	\$0.00	179,100	173,832	173,832	7,479	7,256	7,238	1.31	1.27	1.26	-	-	-
College - E	New	Food Preparation	Hot Food Container	Energy Star	per sq ft	\$0.00	75%	\$0.00	118,932	115,434	115,434	3,188	3,094	3,086	0.56	0.54	0.54	-	-	-
College - E	New	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	75%	\$0.00	201,266	195,347	195,347	35,864	34,796	34,711	3.75	3.64	3.63	-	-	-
College - E	New	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	75%	\$0.00	180,727	175,412	175,412	4,964	4,816	4,804	0.52	0.50	0.50	-	-	-
College - E	New	Office Equipment	Server	Energy Star	per sq ft	\$0.00	75%	\$0.00	401,586	389,775	389,775	22,273	21,610	21,557	2.33	2.26	2.26	-	-	-
College - E	New	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	75%	\$0.00	104,491	101,418	101,418	2,100	2,037	2,032	0.22	0.21	0.21	-	-	-
College - E	New	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	75%	\$0.00	533,943	518,239	518,239	21,580	20,937	20,886	2.26	2.19	2.19	-	-	-
College - E	New	Office Equipment	POS Terminal	Energy Star	per sq ft	\$0.00	75%	\$0.00	-	-	426,423	-	-	16,832	-	-	1.76	-	-	-
College - E	New	Misc.	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	75%	\$0.00	838,798	-	-	944	-	-	0.13	-	-	-	-	-
College - E	New	Misc.	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	75%	\$0.00	-	1,006,025	1,006,025	-	1,321	1,382	-	0.18	0.19	-	-	-
College - E	New	Misc.	Pool Pump	High Efficiency, Multi-Speed	per sq ft	\$0.00	75%	\$0.00	1,411,485	1,369,971	1,369,971	1,135	1,102	1,099	0.16	0.15	0.15	-	-	-
College - E	New	Misc.	Pool Heater	Heat Pump	per sq ft	\$0.00	75%	\$0.00	548,649	532,512	532,512	1,691	1,641	1,637	0.23	0.22	0.22	-	-	-
School - E	Existing	Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	per sq ft	\$0.54	75%	\$0.40	170,078	165,076	165,076	130,889	126,867	126,430	175.62	170.22	169.64	-	-	-
School - E	Existing	Cooling	Roof top AC	Ductless Minisplit	per sq ft	\$0.28	75%	\$0.21	560,974	544,475	544,475	149,928	145,466	145,108	201.16	195.18	194.70	-	-	-
School - E	Existing	Cooling	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.15	75%	\$0.11	112,576	109,265	109,265	48,433	46,786	46,483	64.98	62.77	62.37	-	-	-
School - E	Existing	Cooling	PTAC	EER 11.5	per sq ft	\$0.03	75%	\$0.02	97,901	95,022	95,022	23,124	22,436	22,381	31.03	30.10	30.03	-	-	-
School - E	Existing	Heating	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.07	75%	\$0.05	119,026	115,525	115,525	124,814	120,716	120,068	-	-	-	-	-	-
School - E	Existing	Ventilation	Ventilation	Variable Air Volume	per sq ft	\$1.02	75%	\$0.77	373,799	362,805	362,805	237,149	230,091	229,525	19.65	19.07	19.02	-	-	-
School - E	Existing	Water Heating	Water Heating	EF 2.4	per sq ft	\$0.01	75%	\$0.01	158,957	154,282	154,282	99,217	96,259	96,018	5.51	5.34	5.33	-	-	-
School - E	Existing	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.01	75%	\$0.00	10,827,368	10,508,916	10,508,916	167,615	150,102	138,964	12.64	11.32	10.48	-	-	-
School - E	Existing	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.01	75%	\$0.01	6,083,278	5,904,358	5,904,358	201,502	195,505	195,024	15.20	14.75	14.71	-	-	-
School - E	Existing	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.11	75%	\$0.08	3,650,457	3,543,091	3,543,091	833,210	808,412	806,424	62.84	60.97	60.82	-	-	-
School - E	Existing	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.01	75%	\$0.01	6,978,418	6,773,170	6,773,170	97,908	87,660	81,201	0.91	0.81	0.75	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
School - E	Existing	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	75%	\$0.00	-	-	3,178,717	-	-	161	-	-	0.00	-	-	-
School - E	Existing	Refrigeration	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.01	75%	\$0.01	852,909	827,824	827,824	22,474	21,680	21,527	2.39	2.31	2.29	-	-	-
School - E	Existing	Refrigeration	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	75%	\$0.00	375,353	364,313	364,313	6,691	6,493	6,485	0.71	0.69	0.69	-	-	-
School - E	Existing	Refrigeration	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	75%	\$0.00	1,870,838	1,815,813	1,815,813	120,125	116,445	116,173	12.78	12.39	12.36	-	-	-
School - E	Existing	Refrigeration	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	75%	\$0.00	-	-	2,524,874	-	-	44,386	-	-	4.72	-	-	-
School - E	Existing	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	75%	\$0.00	349,127	338,858	338,858	7,375	7,155	7,137	0.42	0.40	0.40	-	-	-
School - E	Existing	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	75%	\$0.00	111,671	108,386	108,386	1,480	1,436	1,432	0.08	0.08	0.08	-	-	-
School - E	Existing	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.00	75%	\$0.00	660,786	641,351	641,351	72,848	70,680	70,506	4.10	3.98	3.97	-	-	-
School - E	Existing	Food Preparation	Hot Food Container	Energy Star	per sq ft	\$0.00	75%	\$0.00	190,747	185,137	185,137	13,501	13,099	13,067	0.76	0.74	0.74	-	-	-
School - E	Existing	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	75%	\$0.00	1,728,489	1,677,651	1,677,651	136,412	132,352	132,026	7.73	7.50	7.48	-	-	-
School - E	Existing	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	75%	\$0.00	2,150,762	2,087,505	2,087,505	17,442	16,923	16,881	0.99	0.96	0.96	-	-	-
School - E	Existing	Office Equipment	Server	Energy Star	per sq ft	\$0.00	75%	\$0.00	8,382,130	8,135,597	8,135,597	411,796	399,540	398,557	23.35	22.65	22.60	-	-	-
School - E	Existing	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	75%	\$0.00	832,057	807,584	807,584	7,406	7,185	7,168	0.42	0.41	0.41	-	-	-
School - E	Existing	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	75%	\$0.00	3,490,409	3,387,750	3,387,750	124,956	121,237	120,939	7.08	6.87	6.86	-	-	-
School - E	Existing	Office Equipment	POS Terminal	Energy Star	per sq ft	\$0.00	75%	\$0.00	1,386,715	1,345,929	1,345,929	19,449	18,870	18,824	1.10	1.07	1.07	-	-	-
School - E	Existing	Misc.	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	75%	\$0.00	1,428,721	-	-	1,101	-	-	0.06	-	-	-	-	-
School - E	Existing	Misc.	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	75%	\$0.00	-	1,365,861	1,365,861	-	1,216	1,269	-	0.06	0.06	-	-	-
School - E	Existing	Misc.	Pool Pump	High Efficiency, Multi-Speed	per sq ft	\$0.00	75%	\$0.00	187,859	182,334	182,334	31	30	30	0.00	0.00	0.00	-	-	-
School - E	New	Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	per sq ft	\$0.58	75%	\$0.44	105,491	102,389	102,389	74,338	71,009	70,472	99.74	95.28	94.56	-	-	-
School - E	New	Cooling	Roof top AC	Ductless Minisplit	per sq ft	\$0.27	75%	\$0.20	251,507	244,110	244,110	59,542	57,770	57,628	79.89	77.51	77.32	-	-	-
School - E	New	Cooling	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.19	75%	\$0.14	40,738	39,540	39,540	19,873	19,202	19,071	26.66	25.76	25.59	-	-	-
School - E	New	Cooling	PTAC	EER 11.5	per sq ft	\$0.02	75%	\$0.02	43,893	42,602	42,602	9,309	9,032	9,010	12.49	12.12	12.09	-	-	-
School - E	New	Heating	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.10	75%	\$0.07	30,180	29,292	29,292	30,928	29,919	29,755	-	-	-	-	-	-
School - E	New	Ventilation	Ventilation	Variable Air Volume	per sq ft	\$1.82	75%	\$1.36	25,819	25,060	25,060	29,115	28,248	28,179	2.41	2.34	2.34	-	-	-
School - E	New	Water Heating	Water Heating	EF 2.4	per sq ft	\$0.01	75%	\$0.01	70,992	68,904	68,904	42,094	40,840	40,737	2.34	2.27	2.26	-	-	-
School - E	New	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.01	75%	\$0.00	1,161,674	1,127,507	1,127,507	17,896	16,193	14,940	1.35	1.22	1.13	-	-	-
School - E	New	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.01	75%	\$0.01	785,256	762,160	762,160	26,011	25,237	25,175	1.96	1.90	1.90	-	-	-
School - E	New	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.11	75%	\$0.08	785,256	762,160	762,160	179,233	173,899	173,471	13.52	13.12	13.08	-	-	-

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
School - E	New	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.01	75%	\$0.01	837,590	812,955	812,955	11,694	10,562	9,757	0.11	0.10	0.09	-	-	-
School - E	New	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	75%	\$0.00	838,787	814,117	814,117	43	41	41	0.00	0.00	0.00	-	-	-
School - E	New	Refrigeration	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.01	75%	\$0.01	228,409	221,691	221,691	6,019	5,802	5,754	0.64	0.62	0.61	-	-	-
School - E	New	Refrigeration	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	75%	\$0.00	104,115	101,053	101,053	1,856	1,801	1,799	0.20	0.19	0.19	-	-	-
School - E	New	Refrigeration	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	75%	\$0.00	750,706	728,627	728,627	48,202	46,721	46,606	5.13	4.97	4.96	-	-	-
School - E	New	Refrigeration	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	75%	\$0.00	-	-	827,299	-	-	13,584	-	-	1.45	-	-	-
School - E	New	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	75%	\$0.00	94,753	91,967	91,967	2,001	1,942	1,937	0.11	0.11	0.11	-	-	-
School - E	New	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	75%	\$0.00	27,369	26,564	26,564	363	352	351	0.02	0.02	0.02	-	-	-
School - E	New	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.00	75%	\$0.00	172,632	167,555	167,555	19,032	18,465	18,420	1.07	1.04	1.04	-	-	-
School - E	New	Food Preparation	Hot Food Container	Energy Star	per sq ft	\$0.00	75%	\$0.00	55,844	54,202	54,202	3,953	3,835	3,826	0.22	0.22	0.22	-	-	-
School - E	New	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	75%	\$0.00	184,240	178,821	178,821	14,540	14,107	14,073	0.82	0.80	0.80	-	-	-
School - E	New	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	75%	\$0.00	237,989	230,989	230,989	1,930	1,873	1,868	0.11	0.11	0.11	-	-	-
School - E	New	Office Equipment	Server	Energy Star	per sq ft	\$0.00	75%	\$0.00	859,918	834,626	834,626	42,246	40,989	40,888	2.40	2.32	2.32	-	-	-
School - E	New	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	75%	\$0.00	97,246	94,386	94,386	866	840	838	0.05	0.05	0.05	-	-	-
School - E	New	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	75%	\$0.00	496,923	482,308	482,308	17,790	17,260	17,218	1.01	0.98	0.98	-	-	-
School - E	New	Office Equipment	POS Terminal	Energy Star	per sq ft	\$0.00	75%	\$0.00	185,882	180,415	180,415	2,607	2,529	2,523	0.15	0.14	0.14	-	-	-
School - E	New	Misc.	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	75%	\$0.00	383,708	-	-	296	-	-	0.01	-	-	-	-	-
School - E	New	Misc.	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	75%	\$0.00	-	460,206	460,206	-	414	433	-	0.02	0.02	-	-	-
School - E	New	Misc.	Pool Pump	High Efficiency, Multi-Speed	per sq ft	\$0.00	75%	\$0.00	117,833	114,368	114,368	19	19	19	0.00	0.00	0.00	-	-	-
Health - E	Existing	Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	per sq ft	\$0.80	75%	\$0.60	110,722	107,465	107,465	135,150	131,128	130,855	34.38	33.36	33.29	-	-	-
Health - E	Existing	Cooling	Roof top AC	Ductless Minisplit	per sq ft	\$0.32	75%	\$0.24	913,314	886,452	886,452	627,254	608,585	607,089	159.57	154.82	154.44	-	-	-
Health - E	Existing	Cooling	Air Source Heat Pump	Ductless Minisplit	per sq ft	\$0.33	75%	\$0.25	5,292	5,137	5,137	3,658	3,540	3,528	0.93	0.90	0.90	-	-	-
Health - E	Existing	Cooling	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.21	75%	\$0.16	69,696	67,646	67,646	93,750	90,540	89,947	23.85	23.03	22.88	-	-	-
Health - E	Existing	Cooling	PTAC	EER 11.5	per sq ft	\$0.02	75%	\$0.02	30,670	29,768	29,768	18,617	18,063	18,018	4.74	4.60	4.58	-	-	-
Health - E	Existing	Cooling	PTHP	EER 11.5	per sq ft	\$0.02	75%	\$0.02	40,796	39,596	39,596	24,764	24,027	23,967	6.30	6.11	6.10	-	-	-
Health - E	Existing	Heating	Air Source Heat Pump	Ductless Minisplit	per sq ft	\$0.05	75%	\$0.04	5,180	5,028	5,028	544	526	524	0.00	0.00	0.00	-	-	-
Health - E	Existing	Heating	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.04	75%	\$0.03	68,214	66,208	66,208	65,139	62,987	62,645	0.01	0.01	0.01	-	-	-
Health - E	Existing	Heating	PTHP	EER 11.5	per sq ft	\$0.02	75%	\$0.01	45,029	43,704	43,704	20,475	19,866	19,817	0.00	0.00	0.00	-	-	-

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Health - E	Existing	Ventilation	Ventilation	Variable Air Volume	per sq ft	\$0.83	75%	\$0.62	145,503	141,224	141,224	296,643	287,815	287,107	27.28	26.47	26.41	-	-	-
Health - E	Existing	Water Heating	Water Heating	EF 2.4	per sq ft	\$0.01	75%	\$0.01	371,057	360,144	360,144	469,984	455,973	454,832	38.62	37.47	37.38	-	-	-
Health - E	Existing	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.03	75%	\$0.02	7,743,956	7,516,193	7,516,193	896,706	800,892	742,604	94.29	84.22	78.09	-	-	-
Health - E	Existing	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.01	75%	\$0.00	4,662,017	4,524,898	4,524,898	216,988	210,530	210,013	22.82	22.14	22.08	-	-	-
Health - E	Existing	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.06	75%	\$0.05	2,715,328	2,635,465	2,635,465	587,549	570,062	568,660	61.78	59.94	59.80	-	-	-
Health - E	Existing	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.00	75%	\$0.00	5,007,376	4,860,100	4,860,100	13,862	12,384	11,477	0.13	0.11	0.11	-	-	-
Health - E	Existing	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	75%	\$0.00	-	-	2,436,060	-	-	88	-	-	0.00	-	-	-
Health - E	Existing	Refrigeration	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.00	75%	\$0.00	305,579	296,592	296,592	8,620	8,316	8,257	0.91	0.88	0.87	-	-	-
Health - E	Existing	Refrigeration	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	75%	\$0.00	147,732	143,387	143,387	1,415	1,373	1,372	0.15	0.14	0.14	-	-	-
Health - E	Existing	Refrigeration	Glass Door Display	6800 kWh/yr	per sq ft	\$0.01	75%	\$0.00	1,892,049	1,836,400	1,836,400	130,059	126,074	125,779	13.69	13.27	13.24	-	-	-
Health - E	Existing	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	75%	\$0.00	290,353	281,813	281,813	20,220	19,618	19,570	2.31	2.24	2.24	-	-	-
Health - E	Existing	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	75%	\$0.00	437,565	424,696	424,696	19,120	18,551	18,505	2.19	2.12	2.12	-	-	-
Health - E	Existing	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.01	75%	\$0.01	456,642	443,212	443,212	165,975	161,036	160,640	18.97	18.41	18.36	-	-	-
Health - E	Existing	Food Preparation	Hot Food Container	Energy Star	per sq ft	\$0.01	75%	\$0.00	80,239	77,879	77,879	18,724	18,167	18,122	2.14	2.08	2.07	-	-	-
Health - E	Existing	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	75%	\$0.00	1,321,220	1,282,360	1,282,360	174,942	169,735	169,318	17.63	17.11	17.06	-	-	-
Health - E	Existing	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	75%	\$0.00	1,287,848	1,249,970	1,249,970	26,284	25,501	25,439	2.65	2.57	2.56	-	-	-
Health - E	Existing	Office Equipment	Server	Energy Star	per sq ft	\$0.00	75%	\$0.00	6,040,059	5,862,411	5,862,411	186,696	181,139	180,694	18.81	18.25	18.21	-	-	-
Health - E	Existing	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	75%	\$0.00	634,186	615,534	615,534	9,471	9,189	9,166	0.95	0.93	0.92	-	-	-
Health - E	Existing	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	75%	\$0.00	2,674,930	2,596,256	2,596,256	120,500	116,914	116,626	12.14	11.78	11.75	-	-	-
Health - E	Existing	Misc.	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	75%	\$0.00	1,858,273	-	-	31,422	-	-	3.41	-	-	-	-	-
Health - E	Existing	Misc.	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	75%	\$0.00	-	1,776,514	1,776,514	-	34,714	36,237	-	3.77	3.93	-	-	-
Health - E	New	Cooling	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	per sq ft	\$0.70	75%	\$0.52	85,507	82,992	82,992	94,884	92,060	91,834	24.14	23.42	23.36	-	-	-
Health - E	New	Cooling	Roof top AC	Ductless Minisplit	per sq ft	\$0.19	75%	\$0.14	435,204	422,404	422,404	261,742	253,952	253,327	66.59	64.61	64.45	-	-	-
Health - E	New	Cooling	Air Source Heat Pump	Ductless Minisplit	per sq ft	\$0.23	75%	\$0.17	1,896	1,840	1,840	1,310	1,269	1,264	0.33	0.32	0.32	-	-	-
Health - E	New	Cooling	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.14	75%	\$0.11	24,967	24,233	24,233	33,631	32,500	32,285	8.56	8.27	8.21	-	-	-
Health - E	New	Cooling	PTAC	EER 11.5	per sq ft	\$0.02	75%	\$0.02	14,614	14,185	14,185	8,150	7,908	7,888	2.07	2.01	2.01	-	-	-
Health - E	New	Cooling	PTHP	EER 11.5	per sq ft	\$0.02	75%	\$0.02	14,614	14,185	14,185	8,150	7,908	7,888	2.07	2.01	2.01	-	-	-
Health - E	New	Heating	Air Source Heat Pump	EER 11.7, COP 3.4	per sq ft	\$0.02	75%	\$0.02	1,034	1,034	-	50	50	-	0.00	0.00	-	-	-	-

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Health - E	New	Heating	Air Source Heat Pump	Ductless Minisplit	per sq ft	\$0.00	75%	\$0.00	-	-	1,961	-	-	189	-	-	0.00	-	-	-
Health - E	New	Heating	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.03	75%	\$0.02	23,571	22,878	22,878	21,048	20,362	20,251	0.00	0.00	0.00	-	-	-
Health - E	New	Heating	PTHP	EER 11.5	per sq ft	\$0.01	75%	\$0.01	13,797	13,391	13,391	5,635	5,467	5,454	0.00	0.00	0.00	-	-	-
Health - E	New	Ventilation	Ventilation	Variable Air Volume	per sq ft	\$1.34	75%	\$1.00	10,612	10,300	10,300	33,582	32,583	32,503	3.09	3.00	2.99	-	-	-
Health - E	New	Water Heating	Water Heating	EF 2.4	per sq ft	\$0.01	75%	\$0.01	165,718	160,844	160,844	199,404	193,460	192,975	16.39	15.90	15.86	-	-	-
Health - E	New	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.03	75%	\$0.02	828,980	804,598	804,598	96,492	85,997	79,447	10.15	9.04	8.35	-	-	-
Health - E	New	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.01	75%	\$0.00	601,794	584,094	584,094	28,010	27,176	27,109	2.95	2.86	2.85	-	-	-
Health - E	New	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.06	75%	\$0.05	584,161	566,979	566,979	126,402	122,640	122,338	13.29	12.90	12.86	-	-	-
Health - E	New	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.00	75%	\$0.00	597,743	580,162	580,162	1,663	1,483	1,370	0.02	0.01	0.01	-	-	-
Health - E	New	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	75%	\$0.00	642,818	623,912	623,912	23	23	23	0.00	0.00	0.00	-	-	-
Health - E	New	Refrigeration	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.00	75%	\$0.00	79,643	77,301	77,301	2,247	2,165	2,147	0.24	0.23	0.23	-	-	-
Health - E	New	Refrigeration	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	75%	\$0.00	32,501	31,545	31,545	310	301	301	0.03	0.03	0.03	-	-	-
Health - E	New	Refrigeration	Glass Door Display	6800 kWh/yr	per sq ft	\$0.01	75%	\$0.00	757,479	735,201	735,201	52,069	50,469	50,345	5.48	5.31	5.30	-	-	-
Health - E	New	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	75%	\$0.00	78,203	75,903	75,903	5,446	5,284	5,271	0.62	0.60	0.60	-	-	-
Health - E	New	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	75%	\$0.00	117,988	114,518	114,518	5,156	5,002	4,990	0.59	0.57	0.57	-	-	-
Health - E	New	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.01	75%	\$0.01	120,697	117,147	117,147	43,870	42,564	42,459	5.01	4.87	4.85	-	-	-
Health - E	New	Food Preparation	Hot Food Container	Energy Star	per sq ft	\$0.01	75%	\$0.00	23,200	22,518	22,518	5,414	5,253	5,240	0.62	0.60	0.60	-	-	-
Health - E	New	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	75%	\$0.00	140,833	136,691	136,691	18,648	18,093	18,048	1.88	1.82	1.82	-	-	-
Health - E	New	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	75%	\$0.00	142,988	138,783	138,783	2,918	2,831	2,824	0.29	0.29	0.28	-	-	-
Health - E	New	Office Equipment	Server	Energy Star	per sq ft	\$0.00	75%	\$0.00	619,960	601,726	601,726	19,163	18,592	18,547	1.93	1.87	1.87	-	-	-
Health - E	New	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	75%	\$0.00	74,123	71,943	71,943	1,107	1,074	1,071	0.11	0.11	0.11	-	-	-
Health - E	New	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	75%	\$0.00	380,825	369,624	369,624	17,155	16,645	16,604	1.73	1.68	1.67	-	-	-
Health - E	New	Misc.	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	75%	\$0.00	499,071	-	-	8,439	-	-	0.92	-	-	-	-	-
Health - E	New	Misc.	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	75%	\$0.00	-	598,569	598,569	-	11,813	12,356	-	1.28	1.34	-	-	-
Lodging - E	Existing	Cooling	Roof top AC	Ductless Minisplit	per sq ft	\$0.03	75%	\$0.02	361,664	351,026	351,026	31,396	30,462	30,387	11.37	11.03	11.01	-	-	-
Lodging - E	Existing	Cooling	PTAC	EER 11.5	per sq ft	\$0.01	75%	\$0.01	805,983	782,278	782,278	190,616	184,942	184,488	69.04	66.98	66.82	-	-	-
Lodging - E	Existing	Cooling	PTHP	EER 11.5	per sq ft	\$0.01	75%	\$0.01	1,008,659	978,993	978,993	238,549	231,449	230,880	86.40	83.82	83.62	-	-	-
Lodging - E	Existing	Heating	PTHP	EER 11.5	per sq ft	\$0.01	75%	\$0.01	1,129,819	1,096,589	1,096,589	248,219	240,832	240,239	-	-	-	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Lodging - E	Existing	Ventilation	Ventilation	Variable Air Volume	per sq ft	\$0.38	75%	\$0.29	642,483	623,586	623,586	256,652	249,013	248,401	21.24	20.61	20.56	-	-	-
Lodging - E	Existing	Water Heating	Water Heating	EF 2.4	per sq ft	\$0.02	75%	\$0.02	1,145,249	1,111,565	1,111,565	1,437,676	1,394,272	1,390,477	100.06	97.04	96.77	-	-	-
Lodging - E	Existing	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.11	75%	\$0.08	7,176,017	6,964,957	6,964,957	2,568,993	2,293,969	2,125,026	208.79	186.43	172.70	-	-	-
Lodging - E	Existing	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.00	75%	\$0.00	4,320,295	4,193,227	4,193,227	63,720	61,823	61,671	5.18	5.02	5.01	-	-	-
Lodging - E	Existing	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.02	75%	\$0.02	2,519,661	2,445,554	2,445,554	136,860	132,787	132,461	11.12	10.79	10.77	-	-	-
Lodging - E	Existing	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.03	75%	\$0.02	4,636,375	4,500,011	4,500,011	150,739	134,632	124,733	1.40	1.25	1.16	-	-	-
Lodging - E	Existing	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	75%	\$0.00	-	-	2,257,499	-	-	109	-	-	0.00	-	-	-
Lodging - E	Existing	Refrigeration	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.01	75%	\$0.00	436,401	423,565	423,565	14,068	13,571	13,476	1.43	1.38	1.37	-	-	-
Lodging - E	Existing	Refrigeration	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	75%	\$0.00	184,041	178,628	178,628	1,985	1,926	1,924	0.20	0.20	0.20	-	-	-
Lodging - E	Existing	Refrigeration	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	75%	\$0.00	1,193,199	1,158,105	1,158,105	93,730	90,858	90,646	9.52	9.23	9.20	-	-	-
Lodging - E	Existing	Refrigeration	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	75%	\$0.00	-	1,679,096	1,679,096	-	31,841	29,652	-	3.23	3.01	-	-	-
Lodging - E	Existing	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	75%	\$0.00	620,330	602,085	602,085	5,300	5,142	5,129	0.62	0.60	0.60	-	-	-
Lodging - E	Existing	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	75%	\$0.00	327,263	317,638	317,638	1,754	1,702	1,698	0.21	0.20	0.20	-	-	-
Lodging - E	Existing	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.00	75%	\$0.00	746,156	724,210	724,210	33,272	32,282	32,202	3.90	3.79	3.78	-	-	-
Lodging - E	Existing	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	75%	\$0.00	1,162,883	1,128,681	1,128,681	22,641	21,967	21,913	2.03	1.97	1.97	-	-	-
Lodging - E	Existing	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	75%	\$0.00	1,264,294	1,227,109	1,227,109	3,794	3,681	3,672	0.34	0.33	0.33	-	-	-
Lodging - E	Existing	Office Equipment	Server	Energy Star	per sq ft	\$0.00	75%	\$0.00	5,253,393	5,098,881	5,098,881	47,752	46,331	46,217	4.28	4.16	4.15	-	-	-
Lodging - E	Existing	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	75%	\$0.00	541,233	525,314	525,314	1,188	1,153	1,150	0.11	0.10	0.10	-	-	-
Lodging - E	Existing	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	75%	\$0.00	2,248,461	2,182,330	2,182,330	5,957	5,780	5,766	0.53	0.52	0.52	-	-	-
Lodging - E	Existing	Misc.	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	75%	\$0.00	2,121,072	-	-	2,683	-	-	0.25	-	-	-	-	-
Lodging - E	Existing	Misc.	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	75%	\$0.00	-	2,027,750	2,027,750	-	2,964	3,094	-	0.28	0.29	-	-	-
Lodging - E	Existing	Misc.	Pool Pump	High Efficiency, Multi-Speed	per sq ft	\$0.00	75%	\$0.00	673,340	653,536	653,536	1,827	1,773	1,768	0.17	0.17	0.17	-	-	-
Lodging - E	Existing	Misc.	Pool Heater	Heat Pump	per sq ft	\$0.00	75%	\$0.00	51,284	49,776	49,776	533	517	516	0.05	0.05	0.05	-	-	-
Lodging - E	New	Cooling	Roof top AC	Ductless Minisplit	per sq ft	\$0.03	75%	\$0.02	168,171	163,225	163,225	14,830	14,389	14,353	5.37	5.21	5.20	-	-	-
Lodging - E	New	Cooling	PTAC	EER 11.5	per sq ft	\$0.01	75%	\$0.01	374,777	363,754	363,754	81,434	79,010	78,816	29.49	28.62	28.54	-	-	-
Lodging - E	New	Cooling	PTHP	EER 11.5	per sq ft	\$0.01	75%	\$0.01	352,604	342,233	342,233	76,616	74,336	74,153	27.75	26.92	26.86	-	-	-
Lodging - E	New	Heating	PTHP	EER 11.5	per sq ft	\$0.00	75%	\$0.00	346,189	336,007	336,007	68,313	66,280	66,117	-	-	-	-	-	-
Lodging - E	New	Ventilation	Ventilation	Variable Air Volume	per sq ft	\$0.67	75%	\$0.50	39,621	38,456	38,456	11,496	11,154	11,126	0.95	0.92	0.92	-	-	-

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Lodging - E	New	Water Heating	Water Heating	EF 2.4	per sq ft	\$0.02	75%	\$0.02	511,481	496,437	496,437	624,636	606,018	604,499	43.47	42.18	42.07	-	-	-
Lodging - E	New	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.11	75%	\$0.08	772,944	750,211	750,211	274,780	247,305	228,873	22.33	20.10	18.60	-	-	-
Lodging - E	New	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.00	75%	\$0.00	557,683	541,280	541,280	8,225	7,980	7,961	0.67	0.65	0.65	-	-	-
Lodging - E	New	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.02	75%	\$0.02	540,571	524,672	524,672	29,362	28,488	28,418	2.39	2.32	2.31	-	-	-
Lodging - E	New	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.03	75%	\$0.02	556,522	540,153	540,153	17,967	16,155	14,959	0.17	0.15	0.14	-	-	-
Lodging - E	New	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	75%	\$0.00	595,700	578,179	578,179	29	28	28	0.00	0.00	0.00	-	-	-
Lodging - E	New	Refrigeration	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.01	75%	\$0.00	118,013	114,542	114,542	3,804	3,667	3,637	0.39	0.37	0.37	-	-	-
Lodging - E	New	Refrigeration	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	75%	\$0.00	46,703	45,330	45,330	509	494	494	0.05	0.05	0.05	-	-	-
Lodging - E	New	Refrigeration	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	75%	\$0.00	479,306	465,208	465,208	37,651	36,494	36,404	3.82	3.71	3.70	-	-	-
Lodging - E	New	Refrigeration	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	75%	\$0.00	-	498,879	498,879	-	9,195	8,619	-	0.93	0.88	-	-	-
Lodging - E	New	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	75%	\$0.00	164,810	159,963	159,963	1,408	1,366	1,363	0.17	0.16	0.16	-	-	-
Lodging - E	New	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	75%	\$0.00	87,448	84,876	84,876	469	455	454	0.06	0.05	0.05	-	-	-
Lodging - E	New	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.00	75%	\$0.00	192,620	186,954	186,954	8,589	8,334	8,313	1.01	0.98	0.98	-	-	-
Lodging - E	New	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	75%	\$0.00	124,028	120,380	120,380	2,415	2,343	2,337	0.22	0.21	0.21	-	-	-
Lodging - E	New	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	75%	\$0.00	140,252	136,127	136,127	421	408	407	0.04	0.04	0.04	-	-	-
Lodging - E	New	Office Equipment	Server	Energy Star	per sq ft	\$0.00	75%	\$0.00	539,514	523,646	523,646	4,904	4,758	4,746	0.44	0.43	0.43	-	-	-
Lodging - E	New	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	75%	\$0.00	63,293	61,432	61,432	139	135	135	0.01	0.01	0.01	-	-	-
Lodging - E	New	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	75%	\$0.00	320,349	310,927	310,927	849	824	821	0.08	0.07	0.07	-	-	-
Lodging - E	New	Misc.	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	75%	\$0.00	569,651	-	-	721	-	-	0.07	-	-	-	-	-
Lodging - E	New	Misc.	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	75%	\$0.00	-	683,219	683,219	-	1,009	1,055	-	0.09	0.10	-	-	-
Lodging - E	New	Misc.	Pool Pump	High Efficiency, Multi-Speed	per sq ft	\$0.00	75%	\$0.00	422,347	409,925	409,925	1,146	1,112	1,109	0.11	0.10	0.10	-	-	-
Lodging - E	New	Misc.	Pool Heater	Heat Pump	per sq ft	\$0.00	75%	\$0.00	36,063	35,002	35,002	375	364	363	0.04	0.03	0.03	-	-	-
Warehouse - E	Existing	Cooling	Roof top AC	Ductless Minisplit	per sq ft	\$0.08	75%	\$0.06	586,214	568,972	568,972	189,371	183,735	183,284	351.42	340.96	340.12	-	-	-
Warehouse - E	Existing	Cooling	Air Source Heat Pump	Ductless Minisplit	per sq ft	\$0.09	75%	\$0.07	8,016	7,780	7,780	2,537	2,456	2,447	4.71	4.56	4.54	-	-	-
Warehouse - E	Existing	Cooling	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.05	75%	\$0.04	494,160	479,625	479,625	304,807	294,545	292,679	565.63	546.59	543.13	-	-	-
Warehouse - E	Existing	Heating	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.00	75%	\$0.00	-	-	250,724	-	-	243,005	-	-	-	-	-	-
Warehouse - E	Existing	Ventilation	Ventilation	Variable Air Volume	per sq ft	\$0.38	75%	\$0.29	1,404,036	1,362,740	1,362,740	233,300	226,356	225,800	19.12	18.55	18.50	-	-	-
Warehouse - E	Existing	Water Heating	Water Heating	EF 2.4	per sq ft	\$0.00	75%	\$0.00	495,591	481,014	481,014	65,360	63,411	63,253	6.77	6.57	6.55	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Warehouse - E	Existing	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.01	75%	\$0.01	11,802,715	11,455,576	11,455,576	394,170	352,176	326,270	71.27	63.67	58.99	-	-	-
Warehouse - E	Existing	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.01	75%	\$0.01	7,084,826	6,876,449	6,876,449	533,272	517,401	516,129	96.42	93.55	93.32	-	-	-
Warehouse - E	Existing	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.04	75%	\$0.03	4,251,467	4,126,423	4,126,423	351,418	340,959	340,121	63.54	61.65	61.50	-	-	-
Warehouse - E	Existing	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.00	75%	\$0.00	7,621,661	7,397,495	7,397,495	926	827	766	0.01	0.01	0.01	-	-	-
Warehouse - E	Existing	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	75%	\$0.00	-	-	3,702,059	-	-	26	-	-	0.00	-	-	-
Warehouse - E	Existing	Refrigeration	Icemaker	5.5 kWh/100 lbs	per sq ft	\$0.08	75%	\$0.06	1,079,439	1,047,691	1,047,691	123,253	119,607	119,459	13.66	13.26	13.24	-	-	-
Warehouse - E	Existing	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	75%	\$0.00	138,031	133,971	133,971	107	104	103	0.03	0.03	0.03	-	-	-
Warehouse - E	Existing	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.00	75%	\$0.00	449,977	436,742	436,742	2,894	2,808	2,801	0.70	0.68	0.68	-	-	-
Warehouse - E	Existing	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	75%	\$0.00	1,627,177	1,579,319	1,579,319	58,416	56,677	56,538	7.04	6.83	6.81	-	-	-
Warehouse - E	Existing	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	75%	\$0.00	1,073,670	1,042,091	1,042,091	4,753	4,611	4,600	0.57	0.56	0.55	-	-	-
Warehouse - E	Existing	Office Equipment	Server	Energy Star	per sq ft	\$0.00	75%	\$0.00	6,816,530	6,616,044	6,616,044	228,504	221,703	221,158	27.53	26.71	26.64	-	-	-
Warehouse - E	Existing	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	75%	\$0.00	728,648	707,217	707,217	2,950	2,862	2,855	0.36	0.34	0.34	-	-	-
Warehouse - E	Existing	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	75%	\$0.00	2,764,880	2,683,560	2,683,560	13,508	13,106	13,074	1.63	1.58	1.57	-	-	-
Warehouse - E	Existing	Office Equipment	POS Terminal	Energy Star	per sq ft	\$0.00	75%	\$0.00	338,539	328,582	328,582	3,240	3,143	3,136	0.39	0.38	0.38	-	-	-
Warehouse - E	Existing	Misc.	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	75%	\$0.00	1,899,832	-	-	4,643	-	-	0.76	-	-	-	-	-
Warehouse - E	Existing	Misc.	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	75%	\$0.00	-	1,816,244	1,816,244	-	5,130	5,355	-	0.84	0.87	-	-	-
Warehouse - E	New	Cooling	Roof top AC	Ductless Minisplit	per sq ft	\$0.07	75%	\$0.05	213,879	207,589	207,589	52,407	50,847	50,722	97.25	94.36	94.13	-	-	-
Warehouse - E	New	Cooling	Air Source Heat Pump	Ductless Minisplit	per sq ft	\$0.08	75%	\$0.06	2,645	2,567	2,567	699	676	674	1.30	1.26	1.25	-	-	-
Warehouse - E	New	Cooling	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.06	75%	\$0.04	163,069	158,273	158,273	91,574	88,467	87,847	169.93	164.17	163.02	-	-	-
Warehouse - E	New	Heating	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.29	75%	\$0.22	66,485	64,529	64,529	57,654	55,774	55,468	-	-	-	-	-	-
Warehouse - E	New	Ventilation	Ventilation	Variable Air Volume	per sq ft	\$0.64	75%	\$0.48	152,420	147,937	147,937	2,933	2,846	2,839	0.24	0.23	0.23	-	-	-
Warehouse - E	New	Water Heating	Water Heating	EF 2.4	per sq ft	\$0.00	75%	\$0.00	221,336	214,826	214,826	27,732	26,905	26,838	2.87	2.79	2.78	-	-	-
Warehouse - E	New	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.01	75%	\$0.01	1,272,125	1,234,710	1,234,710	42,652	38,038	35,233	7.71	6.88	6.37	-	-	-
Warehouse - E	New	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.01	75%	\$0.01	914,540	887,642	887,642	68,837	66,788	66,624	12.45	12.08	12.05	-	-	-
Warehouse - E	New	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.04	75%	\$0.03	914,540	887,642	887,642	75,594	73,344	73,164	13.67	13.26	13.23	-	-	-
Warehouse - E	New	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.00	75%	\$0.00	916,924	889,955	889,955	112	100	92	0.00	0.00	0.00	-	-	-
Warehouse - E	New	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	75%	\$0.00	976,885	948,153	948,153	7	7	7	0.00	0.00	0.00	-	-	-
Warehouse - E	New	Refrigeration	Icemaker	5.5 kWh/100 lbs	per sq ft	\$0.08	75%	\$0.06	254,950	247,452	247,452	28,602	27,755	27,721	3.17	3.08	3.07	-	-	-

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Warehouse - E	New	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	75%	\$0.00	34,107	33,104	33,104	26	26	26	0.01	0.01	0.01	-	-	-
Warehouse - E	New	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.00	75%	\$0.00	119,032	115,532	115,532	766	743	741	0.19	0.18	0.18	-	-	-
Warehouse - E	New	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	75%	\$0.00	173,897	168,782	168,782	6,243	6,057	6,042	0.75	0.73	0.73	-	-	-
Warehouse - E	New	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	75%	\$0.00	120,726	117,175	117,175	534	519	517	0.06	0.06	0.06	-	-	-
Warehouse - E	New	Office Equipment	Server	Energy Star	per sq ft	\$0.00	75%	\$0.00	701,710	681,071	681,071	23,523	22,823	22,767	2.83	2.75	2.74	-	-	-
Warehouse - E	New	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	75%	\$0.00	85,338	82,828	82,828	346	335	334	0.04	0.04	0.04	-	-	-
Warehouse - E	New	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	75%	\$0.00	394,982	383,365	383,365	1,930	1,872	1,868	0.23	0.23	0.22	-	-	-
Warehouse - E	New	Office Equipment	POS Terminal	Energy Star	per sq ft	\$0.00	75%	\$0.00	45,348	44,014	44,014	434	421	420	0.05	0.05	0.05	-	-	-
Warehouse - E	New	Misc.	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	75%	\$0.00	510,233	-	-	1,247	-	-	0.20	-	-	-	-	-
Warehouse - E	New	Misc.	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	75%	\$0.00	-	611,955	611,955	-	1,746	1,826	-	0.28	0.30	-	-	-
Misc. - E	Existing	Cooling	Roof top AC	Ductless Minisplit	per sq ft	\$0.10	75%	\$0.08	4,904,268	4,760,024	4,760,024	1,361,460	1,320,940	1,317,692	1,001.47	971.67	969.28	-	-	-
Misc. - E	Existing	Cooling	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.06	75%	\$0.05	69,562	67,516	67,516	36,874	35,611	35,378	27.12	26.20	26.02	-	-	-
Misc. - E	Existing	Cooling	PTAC	EER 11.5	per sq ft	\$0.01	75%	\$0.01	148,473	144,106	144,106	36,431	35,347	35,260	26.80	26.00	25.94	-	-	-
Misc. - E	Existing	Cooling	PTHP	EER 11.5	per sq ft	\$0.01	75%	\$0.01	189,750	184,169	184,169	46,560	45,174	45,063	34.25	33.23	33.15	-	-	-
Misc. - E	Existing	Heating	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.07	75%	\$0.05	68,413	66,401	66,401	34,225	33,095	32,915	-	-	-	-	-	-
Misc. - E	Existing	Heating	PTHP	EER 11.5	per sq ft	\$0.01	75%	\$0.01	210,452	204,262	204,262	54,711	53,083	52,952	-	-	-	-	-	-
Misc. - E	Existing	Ventilation	Ventilation	Variable Air Volume	per sq ft	\$0.25	75%	\$0.19	1,964,710	1,906,924	1,906,924	742,800	720,693	718,920	61.51	59.68	59.53	-	-	-
Misc. - E	Existing	Water Heating	Water Heating	EF 2.4	per sq ft	\$0.00	75%	\$0.00	2,613,784	2,536,908	2,536,908	1,546,635	1,500,527	1,496,771	228.52	221.71	221.15	-	-	-
Misc. - E	Existing	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.03	75%	\$0.02	22,481,081	21,819,873	21,819,873	1,800,010	1,609,683	1,491,497	228.30	204.16	189.17	-	-	-
Misc. - E	Existing	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.01	75%	\$0.01	13,449,279	13,053,712	13,053,712	776,553	753,441	751,588	98.49	95.56	95.32	-	-	-
Misc. - E	Existing	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.07	75%	\$0.05	8,070,651	7,833,279	7,833,279	1,279,546	1,241,465	1,238,412	162.29	157.46	157.07	-	-	-
Misc. - E	Existing	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.04	75%	\$0.03	14,494,442	14,068,135	14,068,135	625,860	559,684	518,591	5.79	5.18	4.80	-	-	-
Misc. - E	Existing	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.00	75%	\$0.00	-	-	7,027,700	-	-	127,774	-	-	1.18	-	-	-
Misc. - E	Existing	Refrigeration	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.01	75%	\$0.01	1,441,195	1,398,806	1,398,806	45,762	44,144	43,832	4.78	4.61	4.58	-	-	-
Misc. - E	Existing	Refrigeration	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	75%	\$0.00	640,317	621,484	621,484	6,876	6,672	6,664	0.72	0.70	0.70	-	-	-
Misc. - E	Existing	Refrigeration	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	75%	\$0.00	1,401,458	1,360,239	1,360,239	108,435	105,113	104,868	11.33	10.98	10.96	-	-	-
Misc. - E	Existing	Refrigeration	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	75%	\$0.00	2,112,892	2,050,748	2,050,748	34,269	33,175	33,055	3.58	3.47	3.45	-	-	-
Misc. - E	Existing	Refrigeration	Icemaker	5.5 kWh/100 lbs	per sq ft	\$0.01	75%	\$0.00	2,437,488	2,365,797	2,365,797	15,024	14,580	14,562	1.57	1.52	1.52	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Misc. - E	Existing	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	75%	\$0.00	1,489,183	1,445,384	1,445,384	14,381	13,953	13,919	2.87	2.78	2.78	-	-	-
Misc. - E	Existing	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	75%	\$0.00	163,077	158,280	158,280	988	959	956	0.20	0.19	0.19	-	-	-
Misc. - E	Existing	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.00	75%	\$0.00	521,033	505,708	505,708	26,261	25,480	25,417	5.24	5.08	5.07	-	-	-
Misc. - E	Existing	Food Preparation	Hot Food Container	Energy Star	per sq ft	\$0.00	75%	\$0.00	153,994	149,464	149,464	4,983	4,835	4,823	0.99	0.96	0.96	-	-	-
Misc. - E	Existing	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	75%	\$0.00	2,741,365	2,660,737	2,660,737	270,509	262,458	261,812	37.70	36.58	36.49	-	-	-
Misc. - E	Existing	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	75%	\$0.00	2,961,579	2,874,474	2,874,474	45,044	43,704	43,596	6.28	6.09	6.08	-	-	-
Misc. - E	Existing	Office Equipment	Server	Energy Star	per sq ft	\$0.00	75%	\$0.00	7,791,462	7,562,301	7,562,301	358,952	348,269	347,413	50.02	48.54	48.42	-	-	-
Misc. - E	Existing	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	75%	\$0.00	1,225,292	1,189,254	1,189,254	13,636	13,230	13,198	1.90	1.84	1.84	-	-	-
Misc. - E	Existing	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	75%	\$0.00	3,451,419	3,349,907	3,349,907	92,695	89,937	89,715	12.92	12.53	12.50	-	-	-
Misc. - E	Existing	Misc.	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	75%	\$0.00	4,333,128	-	-	26,137	-	-	4.48	-	-	-	-	-
Misc. - E	Existing	Misc.	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	75%	\$0.00	-	4,142,481	4,142,481	-	28,875	30,142	-	4.95	5.17	-	-	-
Misc. - E	Existing	Misc.	Pool Pump	High Efficiency, Multi-Speed	per sq ft	\$0.00	75%	\$0.00	4,122,542	4,001,291	4,001,291	2,667	2,588	2,582	0.46	0.44	0.44	-	-	-
Misc. - E	New	Cooling	Roof top AC	Ductless Minisplit	per sq ft	\$0.08	75%	\$0.06	2,318,492	2,250,301	2,250,301	644,223	625,050	623,513	473.88	459.78	458.65	-	-	-
Misc. - E	New	Cooling	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.06	75%	\$0.04	24,723	23,996	23,996	14,167	13,690	13,600	10.42	10.07	10.00	-	-	-
Misc. - E	New	Cooling	PTAC	EER 11.5	per sq ft	\$0.01	75%	\$0.01	70,191	68,126	68,126	15,824	15,353	15,315	11.64	11.29	11.27	-	-	-
Misc. - E	New	Cooling	PTHP	EER 11.5	per sq ft	\$0.01	75%	\$0.01	67,439	65,455	65,455	15,203	14,751	14,715	11.18	10.85	10.82	-	-	-
Misc. - E	New	Heating	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.03	75%	\$0.02	23,640	22,945	22,945	13,864	13,412	13,339	-	-	-	-	-	-
Misc. - E	New	Heating	PTHP	EER 11.5	per sq ft	\$0.00	75%	\$0.00	64,485	62,588	62,588	15,057	14,609	14,573	-	-	-	-	-	-
Misc. - E	New	Ventilation	Ventilation	Variable Air Volume	per sq ft	\$0.42	75%	\$0.31	232,185	225,356	225,356	117,472	113,975	113,695	9.73	9.44	9.41	-	-	-
Misc. - E	New	Water Heating	Water Heating	EF 2.4	per sq ft	\$0.01	75%	\$0.01	1,167,345	1,133,012	1,133,012	656,078	636,523	634,928	96.94	94.05	93.81	-	-	-
Misc. - E	New	Interior Lighting	Screw-in	LED (2010)	per sq ft	\$0.03	75%	\$0.02	2,426,915	2,355,535	2,355,535	193,978	174,855	161,466	24.60	22.18	20.48	-	-	-
Misc. - E	New	Interior Lighting	High-Bay Fixtures	T5	per sq ft	\$0.01	75%	\$0.01	1,736,092	1,685,031	1,685,031	100,241	97,257	97,018	12.71	12.34	12.30	-	-	-
Misc. - E	New	Interior Lighting	Linear Fluorescent	T5	per sq ft	\$0.07	75%	\$0.05	1,736,092	1,685,031	1,685,031	275,245	267,054	266,397	34.91	33.87	33.79	-	-	-
Misc. - E	New	Exterior Lighting	Screw-in	LED (2010)	per sq ft	\$0.04	75%	\$0.03	1,748,957	1,697,517	1,697,517	75,387	67,873	62,727	0.70	0.63	0.58	-	-	-
Misc. - E	New	Exterior Lighting	Linear Fluorescent	T5	per sq ft	\$0.01	75%	\$0.01	1,854,442	1,799,900	1,799,900	33,812	32,805	32,725	0.31	0.30	0.30	-	-	-
Misc. - E	New	Refrigeration	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.01	75%	\$0.01	379,957	368,782	368,782	12,065	11,630	11,536	1.26	1.22	1.21	-	-	-
Misc. - E	New	Refrigeration	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	75%	\$0.00	168,898	163,931	163,931	1,790	1,737	1,735	0.19	0.18	0.18	-	-	-
Misc. - E	New	Refrigeration	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	75%	\$0.00	572,731	555,886	555,886	44,314	42,952	42,846	4.63	4.49	4.48	-	-	-

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Misc. - E	New	Refrigeration	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	75%	\$0.00	572,731	555,886	555,886	9,289	8,990	8,953	0.97	0.94	0.94	-	-	-
Misc. - E	New	Refrigeration	Icemaker	5.5 kWh/100 lbs	per sq ft	\$0.01	75%	\$0.00	572,731	555,886	555,886	3,471	3,368	3,364	0.36	0.35	0.35	-	-	-
Misc. - E	New	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	75%	\$0.00	382,108	370,870	370,870	3,690	3,580	3,571	0.74	0.71	0.71	-	-	-
Misc. - E	New	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	75%	\$0.00	41,874	40,642	40,642	254	246	246	0.05	0.05	0.05	-	-	-
Misc. - E	New	Food Preparation	Dishwasher	Energy Star	per sq ft	\$0.00	75%	\$0.00	133,717	129,784	129,784	6,740	6,539	6,523	1.34	1.30	1.30	-	-	-
Misc. - E	New	Food Preparation	Hot Food Container	Energy Star	per sq ft	\$0.00	75%	\$0.00	43,433	42,156	42,156	1,405	1,364	1,360	0.28	0.27	0.27	-	-	-
Misc. - E	New	Office Equipment	Desktop Computer	Energy Star	per sq ft	\$0.00	75%	\$0.00	288,961	280,462	280,462	28,514	27,665	27,597	3.97	3.86	3.85	-	-	-
Misc. - E	New	Office Equipment	Laptop	Energy Star	per sq ft	\$0.00	75%	\$0.00	330,116	320,407	320,407	5,021	4,871	4,859	0.70	0.68	0.68	-	-	-
Misc. - E	New	Office Equipment	Server	Energy Star	per sq ft	\$0.00	75%	\$0.00	793,564	770,224	770,224	36,559	35,471	35,384	5.09	4.94	4.93	-	-	-
Misc. - E	New	Office Equipment	Monitor	Energy Star	per sq ft	\$0.00	75%	\$0.00	142,300	138,115	138,115	1,584	1,537	1,533	0.22	0.21	0.21	-	-	-
Misc. - E	New	Office Equipment	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	75%	\$0.00	487,785	473,438	473,438	13,101	12,711	12,679	1.83	1.77	1.77	-	-	-
Misc. - E	New	Misc.	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	75%	\$0.00	1,163,737	-	-	7,020	-	-	1.20	-	-	-	-	-
Misc. - E	New	Misc.	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	75%	\$0.00	-	1,395,745	1,395,745	-	9,826	10,278	-	1.68	1.76	-	-	-
Misc. - E	New	Misc.	Pool Pump	High Efficiency, Multi-Speed	per sq ft	\$0.00	75%	\$0.00	2,585,830	2,509,777	2,509,777	1,673	1,623	1,619	0.29	0.28	0.28	-	-	-
Office - G	Existing	Heating	Furnace	EF .96	per sq ft	\$0.15	75%	\$0.11	545,698	529,648	529,648	-	-	-	-	-	-	21,557	21,057	20,952
Office - G	Existing	Heating	Boiler	EF .96	per sq ft	\$0.00	75%	\$0.00	8,260	8,017	8,017	-	-	-	-	-	-	529	517	514
Office - G	Existing	Heating	Unit Heater	Condensing	per sq ft	\$0.00	75%	\$0.00	21,103	20,483	20,483	-	-	-	-	-	-	578	564	562
Office - G	Existing	Water Heating	Water Heating	EF 0.94	per sq ft	\$0.00	75%	\$0.00	958,838	930,637	930,637	-	-	-	-	-	-	12,492	12,199	12,138
Office - G	Existing	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	75%	\$0.00	14,131	13,715	13,715	-	-	-	-	-	-	1,331	1,300	1,294
Office - G	Existing	Food Preparation	Fryer	Energy Star	per sq ft	\$0.01	75%	\$0.00	21,202	20,579	20,579	-	-	-	-	-	-	3,326	3,249	3,233
Office - G	Existing	Food Preparation	Griddle	High Efficiency	per sq ft	\$0.00	75%	\$0.00	23,234	22,551	22,551	-	-	-	-	-	-	522	510	507
Office - G	Existing	Food Preparation	Range	High Efficiency	per sq ft	\$0.00	75%	\$0.00	14,131	13,715	13,715	-	-	-	-	-	-	1,122	1,096	1,091
Office - G	New	Heating	Furnace	EF .96	per sq ft	\$0.14	75%	\$0.11	513,635	498,528	498,528	-	-	-	-	-	-	25,306	24,722	24,602
Office - G	New	Heating	Boiler	EF .96	per sq ft	\$0.00	75%	\$0.00	3,584	3,478	3,478	-	-	-	-	-	-	230	225	224
Office - G	New	Heating	Unit Heater	Condensing	per sq ft	\$0.00	75%	\$0.00	10,574	10,263	10,263	-	-	-	-	-	-	289	283	281
Office - G	New	Water Heating	Water Heating	EF 0.94	per sq ft	\$0.00	75%	\$0.00	249,150	241,822	241,822	-	-	-	-	-	-	3,050	2,981	2,969
Office - G	New	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	75%	\$0.00	3,626	3,519	3,519	-	-	-	-	-	-	342	334	332
Office - G	New	Food Preparation	Fryer	Energy Star	per sq ft	\$0.01	75%	\$0.00	5,444	5,284	5,284	-	-	-	-	-	-	854	834	830

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Office - G	New	Food Preparation	Griddle	High Efficiency	per sq ft	\$0.00	75%	\$0.00	5,964	5,789	5,789	-	-	-	-	-	-	134	131	130
Office - G	New	Food Preparation	Range	High Efficiency	per sq ft	\$0.00	75%	\$0.00	3,626	3,519	3,519	-	-	-	-	-	-	288	281	280
Restaurant - G	Existing	Heating	Furnace	EF .96	per sq ft	\$0.11	75%	\$0.08	213,701	207,416	207,416	-	-	-	-	-	-	9,097	8,887	8,844
Restaurant - G	Existing	Heating	Boiler	EF .96	per sq ft	\$0.00	75%	\$0.00	2,054	1,994	1,994	-	-	-	-	-	-	117	115	113
Restaurant - G	Existing	Heating	Unit Heater	Condensing	per sq ft	\$0.00	75%	\$0.00	3,820	3,708	3,708	-	-	-	-	-	-	113	110	110
Restaurant - G	Existing	Water Heating	Water Heating	EF 0.94	per sq ft	\$0.00	75%	\$0.00	746,722	724,759	724,759	-	-	-	-	-	-	36,593	35,741	35,564
Restaurant - G	Existing	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	75%	\$0.00	40,488	39,297	39,297	-	-	-	-	-	-	2,011	1,964	1,954
Restaurant - G	Existing	Food Preparation	Fryer	Energy Star	per sq ft	\$0.18	75%	\$0.13	419,911	407,560	407,560	-	-	-	-	-	-	34,718	33,912	33,745
Restaurant - G	Existing	Food Preparation	Broiler	High Efficiency	per sq ft	\$0.05	75%	\$0.04	238,825	231,801	231,801	-	-	-	-	-	-	16,520	16,136	16,057
Restaurant - G	Existing	Food Preparation	Griddle	High Efficiency	per sq ft	\$0.00	75%	\$0.00	448,652	435,456	435,456	-	-	-	-	-	-	5,310	5,187	5,161
Restaurant - G	Existing	Food Preparation	Range	High Efficiency	per sq ft	\$0.01	75%	\$0.00	252,933	245,494	245,494	-	-	-	-	-	-	10,588	10,342	10,291
Restaurant - G	Existing	Food Preparation	Steamer	Energy Star	per sq ft	\$0.01	75%	\$0.01	19,025	18,465	18,465	-	-	-	-	-	-	3,881	3,791	3,773
Restaurant - G	Existing	Food Preparation	Other	Energy Star	per sq ft	\$0.00	75%	\$0.00	1,495	1,451	1,451	-	-	-	-	-	-	19	18	18
Restaurant - G	New	Heating	Furnace	EF .96	per sq ft	\$0.10	75%	\$0.08	201,145	195,229	195,229	-	-	-	-	-	-	8,277	8,087	8,048
Restaurant - G	New	Heating	Boiler	EF .96	per sq ft	\$0.00	75%	\$0.00	956	928	928	-	-	-	-	-	-	36	35	35
Restaurant - G	New	Heating	Unit Heater	Condensing	per sq ft	\$0.00	75%	\$0.00	1,914	1,858	1,858	-	-	-	-	-	-	57	55	55
Restaurant - G	New	Water Heating	Water Heating	EF 0.94	per sq ft	\$0.00	75%	\$0.00	194,033	188,326	188,326	-	-	-	-	-	-	8,967	8,759	8,718
Restaurant - G	New	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	75%	\$0.00	10,389	10,083	10,083	-	-	-	-	-	-	516	504	501
Restaurant - G	New	Food Preparation	Fryer	Energy Star	per sq ft	\$0.18	75%	\$0.13	107,823	104,651	104,651	-	-	-	-	-	-	8,915	8,708	8,665
Restaurant - G	New	Food Preparation	Broiler	High Efficiency	per sq ft	\$0.05	75%	\$0.04	61,280	59,478	59,478	-	-	-	-	-	-	4,239	4,140	4,120
Restaurant - G	New	Food Preparation	Griddle	High Efficiency	per sq ft	\$0.00	75%	\$0.00	115,164	111,777	111,777	-	-	-	-	-	-	1,363	1,331	1,325
Restaurant - G	New	Food Preparation	Range	High Efficiency	per sq ft	\$0.01	75%	\$0.00	64,900	62,991	62,991	-	-	-	-	-	-	2,717	2,654	2,641
Restaurant - G	New	Food Preparation	Steamer	Energy Star	per sq ft	\$0.01	75%	\$0.01	4,871	4,728	4,728	-	-	-	-	-	-	994	971	966
Restaurant - G	New	Food Preparation	Other	Energy Star	per sq ft	\$0.00	75%	\$0.00	415	403	403	-	-	-	-	-	-	5	5	5
Retail - G	Existing	Heating	Boiler	EF .96	per sq ft	\$0.00	75%	\$0.00	107,678	104,511	104,511	-	-	-	-	-	-	6,036	5,896	5,867
Retail - G	Existing	Heating	Unit Heater	Condensing	per sq ft	\$0.01	75%	\$0.01	161,698	156,943	156,943	-	-	-	-	-	-	6,103	5,962	5,933
Retail - G	Existing	Water Heating	Water Heating	EF 0.94	per sq ft	\$0.00	75%	\$0.00	1,182,861	1,148,071	1,148,071	-	-	-	-	-	-	20,832	20,350	20,251
Retail - G	Existing	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	75%	\$0.00	5,011	4,864	4,864	-	-	-	-	-	-	1,425	1,392	1,385

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Retail - G	Existing	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	75%	\$0.00	7,519	7,298	7,298	-	-	-	-	-	-	3,560	3,477	3,460
Retail - G	New	Heating	Boiler	EF .96	per sq ft	\$0.00	75%	\$0.00	47,512	46,114	46,114	-	-	-	-	-	-	2,016	1,968	1,958
Retail - G	New	Heating	Unit Heater	Condensing	per sq ft	\$0.01	75%	\$0.01	81,021	78,638	78,638	-	-	-	-	-	-	3,058	2,987	2,973
Retail - G	New	Water Heating	Water Heating	EF 0.94	per sq ft	\$0.00	75%	\$0.00	307,362	298,322	298,322	-	-	-	-	-	-	5,096	4,974	4,949
Retail - G	New	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	75%	\$0.00	1,286	1,248	1,248	-	-	-	-	-	-	366	357	355
Retail - G	New	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	75%	\$0.00	1,931	1,874	1,874	-	-	-	-	-	-	914	893	888
Grocery - G	Existing	Heating	Furnace	EF .96	per sq ft	\$0.13	75%	\$0.09	113,884	110,535	110,535	-	-	-	-	-	-	5,569	5,441	5,413
Grocery - G	Existing	Water Heating	Water Heating	EF 0.94	per sq ft	\$0.00	75%	\$0.00	395,053	383,434	383,434	-	-	-	-	-	-	6,496	6,345	6,314
Grocery - G	Existing	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	75%	\$0.00	43,725	42,439	42,439	-	-	-	-	-	-	464	453	451
Grocery - G	Existing	Food Preparation	Fryer	Energy Star	per sq ft	\$0.01	75%	\$0.01	65,607	63,677	63,677	-	-	-	-	-	-	1,159	1,132	1,127
Grocery - G	Existing	Food Preparation	Griddle	High Efficiency	per sq ft	\$0.00	75%	\$0.00	71,894	69,780	69,780	-	-	-	-	-	-	182	178	177
Grocery - G	Existing	Food Preparation	Range	High Efficiency	per sq ft	\$0.00	75%	\$0.00	43,725	42,439	42,439	-	-	-	-	-	-	391	382	380
Grocery - G	New	Heating	Furnace	EF .96	per sq ft	\$0.12	75%	\$0.09	107,193	104,040	104,040	-	-	-	-	-	-	5,089	4,968	4,943
Grocery - G	New	Water Heating	Water Heating	EF 0.94	per sq ft	\$0.00	75%	\$0.00	102,653	99,634	99,634	-	-	-	-	-	-	1,599	1,565	1,556
Grocery - G	New	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	75%	\$0.00	11,219	10,889	10,889	-	-	-	-	-	-	119	116	116
Grocery - G	New	Food Preparation	Fryer	Energy Star	per sq ft	\$0.01	75%	\$0.01	16,846	16,351	16,351	-	-	-	-	-	-	298	291	289
Grocery - G	New	Food Preparation	Griddle	High Efficiency	per sq ft	\$0.00	75%	\$0.00	18,454	17,912	17,912	-	-	-	-	-	-	47	46	45
Grocery - G	New	Food Preparation	Range	High Efficiency	per sq ft	\$0.00	75%	\$0.00	11,219	10,889	10,889	-	-	-	-	-	-	100	98	98
College - G	Existing	Heating	Furnace	EF .96	per sq ft	\$0.12	75%	\$0.09	366,391	355,615	355,615	-	-	-	-	-	-	23,109	22,571	22,290
College - G	Existing	Heating	Boiler	EF .96	per sq ft	\$0.00	75%	\$0.00	37,557	36,452	36,452	-	-	-	-	-	-	1,729	1,689	1,680
College - G	Existing	Water Heating	Water Heating	EF 0.94	per sq ft	\$0.00	75%	\$0.00	1,190,989	1,155,960	1,155,960	-	-	-	-	-	-	29,986	29,293	29,148
College - G	Existing	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	75%	\$0.00	127,857	124,096	124,096	-	-	-	-	-	-	1,919	1,874	1,865
College - G	Existing	Food Preparation	Fryer	Energy Star	per sq ft	\$0.01	75%	\$0.00	124,132	120,481	120,481	-	-	-	-	-	-	3,102	3,030	3,015
College - G	Existing	Food Preparation	Broiler	High Efficiency	per sq ft	\$0.00	75%	\$0.00	127,857	124,096	124,096	-	-	-	-	-	-	2,673	2,611	2,598
College - G	Existing	Food Preparation	Griddle	High Efficiency	per sq ft	\$0.00	75%	\$0.00	296,790	288,060	288,060	-	-	-	-	-	-	1,062	1,037	1,032
College - G	Existing	Food Preparation	Range	High Efficiency	per sq ft	\$0.00	75%	\$0.00	223,123	216,560	216,560	-	-	-	-	-	-	2,823	2,757	2,744
College - G	Existing	Food Preparation	Steamer	Energy Star	per sq ft	\$0.00	75%	\$0.00	87,258	84,691	84,691	-	-	-	-	-	-	5,381	5,256	5,230
College - G	Existing	Food Preparation	Other	Energy Star	per sq ft	\$0.00	75%	\$0.00	15,228	14,781	14,781	-	-	-	-	-	-	116	114	113

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
College - G	New	Heating	Furnace	EF .96	per sq ft	\$0.12	75%	\$0.09	344,864	334,721	334,721	-	-	-	-	-	-	21,712	21,210	21,105
College - G	New	Heating	Boiler	EF .96	per sq ft	\$0.00	75%	\$0.00	11,652	11,310	11,310	-	-	-	-	-	-	492	481	478
College - G	New	Water Heating	Water Heating	EF 0.94	per sq ft	\$0.00	75%	\$0.00	309,474	300,372	300,372	-	-	-	-	-	-	7,345	7,176	7,138
College - G	New	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	75%	\$0.00	32,807	31,842	31,842	-	-	-	-	-	-	492	481	479
College - G	New	Food Preparation	Fryer	Energy Star	per sq ft	\$0.01	75%	\$0.00	31,874	30,937	30,937	-	-	-	-	-	-	796	778	774
College - G	New	Food Preparation	Broiler	High Efficiency	per sq ft	\$0.00	75%	\$0.00	32,807	31,842	31,842	-	-	-	-	-	-	686	670	667
College - G	New	Food Preparation	Griddle	High Efficiency	per sq ft	\$0.00	75%	\$0.00	76,182	73,942	73,942	-	-	-	-	-	-	273	266	265
College - G	New	Food Preparation	Range	High Efficiency	per sq ft	\$0.00	75%	\$0.00	57,251	55,567	55,567	-	-	-	-	-	-	724	708	704
College - G	New	Food Preparation	Steamer	Energy Star	per sq ft	\$0.00	75%	\$0.00	22,342	21,685	21,685	-	-	-	-	-	-	1,378	1,346	1,339
College - G	New	Food Preparation	Other	Energy Star	per sq ft	\$0.00	75%	\$0.00	4,232	4,108	4,108	-	-	-	-	-	-	32	32	31
School - G	Existing	Heating	Furnace	EF .96	per sq ft	\$0.05	75%	\$0.04	342,011	331,952	331,952	-	-	-	-	-	-	9,687	9,462	9,344
School - G	Existing	Heating	Boiler	EF .96	per sq ft	\$0.00	75%	\$0.00	426,320	413,781	413,781	-	-	-	-	-	-	8,812	8,609	8,567
School - G	Existing	Heating	Unit Heater	Condensing	per sq ft	\$0.00	75%	\$0.00	103,956	100,898	100,898	-	-	-	-	-	-	2,001	1,954	1,945
School - G	Existing	Water Heating	Water Heating	EF 0.94	per sq ft	\$0.00	75%	\$0.00	3,946,050	3,829,990	3,829,990	-	-	-	-	-	-	54,856	53,587	53,323
School - G	Existing	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	75%	\$0.00	801,459	777,887	777,887	-	-	-	-	-	-	4,564	4,458	4,436
School - G	Existing	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	75%	\$0.00	386,690	375,316	375,316	-	-	-	-	-	-	3,667	3,581	3,564
School - G	Existing	Food Preparation	Broiler	High Efficiency	per sq ft	\$0.00	75%	\$0.00	575,387	558,464	558,464	-	-	-	-	-	-	4,564	4,458	4,436
School - G	Existing	Food Preparation	Griddle	High Efficiency	per sq ft	\$0.00	75%	\$0.00	813,047	789,134	789,134	-	-	-	-	-	-	1,104	1,078	1,073
School - G	Existing	Food Preparation	Range	High Efficiency	per sq ft	\$0.00	75%	\$0.00	603,363	585,617	585,617	-	-	-	-	-	-	2,897	2,829	2,815
School - G	Existing	Food Preparation	Steamer	Energy Star	per sq ft	\$0.00	75%	\$0.00	184,215	178,797	178,797	-	-	-	-	-	-	4,310	4,210	4,190
School - G	Existing	Misc.	Pool Heater	EF .95	per sq ft	\$0.00	75%	\$0.00	692,225	671,866	671,866	-	-	-	-	-	-	799	780	776
School - G	New	Heating	Furnace	EF .96	per sq ft	\$0.05	75%	\$0.04	321,916	312,448	312,448	-	-	-	-	-	-	9,102	8,891	8,847
School - G	New	Heating	Boiler	EF .96	per sq ft	\$0.00	75%	\$0.00	132,268	128,378	128,378	-	-	-	-	-	-	2,510	2,451	2,439
School - G	New	Heating	Unit Heater	Condensing	per sq ft	\$0.00	75%	\$0.00	52,088	50,556	50,556	-	-	-	-	-	-	1,002	979	974
School - G	New	Water Heating	Water Heating	EF 0.94	per sq ft	\$0.00	75%	\$0.00	1,025,366	995,208	995,208	-	-	-	-	-	-	13,437	13,128	13,059
School - G	New	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	75%	\$0.00	205,646	199,597	199,597	-	-	-	-	-	-	1,171	1,144	1,138
School - G	New	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	75%	\$0.00	99,292	96,372	96,372	-	-	-	-	-	-	941	920	915
School - G	New	Food Preparation	Broiler	High Efficiency	per sq ft	\$0.00	75%	\$0.00	147,638	143,296	143,296	-	-	-	-	-	-	1,171	1,144	1,138

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
School - G	New	Food Preparation	Griddle	High Efficiency	per sq ft	\$0.00	75%	\$0.00	208,700	202,562	202,562	-	-	-	-	-	-	283	277	275
School - G	New	Food Preparation	Range	High Efficiency	per sq ft	\$0.00	75%	\$0.00	154,816	150,263	150,263	-	-	-	-	-	-	743	726	722
School - G	New	Food Preparation	Steamer	Energy Star	per sq ft	\$0.00	75%	\$0.00	47,167	45,780	45,780	-	-	-	-	-	-	1,104	1,078	1,073
School - G	New	Misc.	Pool Heater	EF .95	per sq ft	\$0.00	75%	\$0.00	105,645	102,538	102,538	-	-	-	-	-	-	122	119	118
Health - G	Existing	Heating	Furnace	EF .96	per sq ft	\$0.12	75%	\$0.09	387,553	376,154	376,154	-	-	-	-	-	-	38,444	37,538	37,346
Health - G	Existing	Heating	Boiler	EF .96	per sq ft	\$0.00	75%	\$0.00	39,836	38,664	38,664	-	-	-	-	-	-	3,515	3,433	3,444
Health - G	Existing	Water Heating	Water Heating	EF 0.94	per sq ft	\$0.00	75%	\$0.00	1,513,788	1,469,265	1,469,265	-	-	-	-	-	-	84,563	82,602	82,194
Health - G	Existing	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	75%	\$0.00	30,621	29,721	29,721	-	-	-	-	-	-	1,436	1,403	1,396
Health - G	Existing	Food Preparation	Fryer	Energy Star	per sq ft	\$0.04	75%	\$0.03	265,926	258,104	258,104	-	-	-	-	-	-	20,764	20,281	20,182
Health - G	Existing	Food Preparation	Broiler	High Efficiency	per sq ft	\$0.00	75%	\$0.00	39,900	38,727	38,727	-	-	-	-	-	-	2,606	2,546	2,533
Health - G	Existing	Food Preparation	Griddle	High Efficiency	per sq ft	\$0.00	75%	\$0.00	65,606	63,676	63,676	-	-	-	-	-	-	733	716	713
Health - G	Existing	Food Preparation	Range	High Efficiency	per sq ft	\$0.00	75%	\$0.00	168,679	163,718	163,718	-	-	-	-	-	-	6,668	6,514	6,482
Health - G	Existing	Food Preparation	Steamer	Energy Star	per sq ft	\$0.00	75%	\$0.00	20,161	19,568	19,568	-	-	-	-	-	-	3,885	3,794	3,776
Health - G	New	Heating	Furnace	EF .96	per sq ft	\$0.11	75%	\$0.08	364,782	354,053	354,053	-	-	-	-	-	-	27,745	27,097	26,963
Health - G	New	Heating	Boiler	EF .96	per sq ft	\$0.00	75%	\$0.00	17,632	17,113	17,113	-	-	-	-	-	-	690	674	671
Health - G	New	Water Heating	Water Heating	EF 0.94	per sq ft	\$0.00	75%	\$0.00	393,352	381,783	381,783	-	-	-	-	-	-	20,879	20,392	20,292
Health - G	New	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	75%	\$0.00	7,857	7,626	7,626	-	-	-	-	-	-	368	360	358
Health - G	New	Food Preparation	Fryer	Energy Star	per sq ft	\$0.04	75%	\$0.03	68,283	66,275	66,275	-	-	-	-	-	-	5,332	5,208	5,182
Health - G	New	Food Preparation	Broiler	High Efficiency	per sq ft	\$0.00	75%	\$0.00	10,238	9,937	9,937	-	-	-	-	-	-	669	653	650
Health - G	New	Food Preparation	Griddle	High Efficiency	per sq ft	\$0.00	75%	\$0.00	16,840	16,345	16,345	-	-	-	-	-	-	188	184	183
Health - G	New	Food Preparation	Range	High Efficiency	per sq ft	\$0.00	75%	\$0.00	43,281	42,008	42,008	-	-	-	-	-	-	1,711	1,671	1,663
Health - G	New	Food Preparation	Steamer	Energy Star	per sq ft	\$0.00	75%	\$0.00	5,162	5,010	5,010	-	-	-	-	-	-	995	972	967
Lodging - G	Existing	Heating	Furnace	EF .96	per sq ft	\$0.03	75%	\$0.02	34,456	33,443	33,443	-	-	-	-	-	-	1,062	1,038	1,033
Lodging - G	Existing	Heating	Boiler	EF .96	per sq ft	\$0.00	75%	\$0.00	76,861	74,600	74,600	-	-	-	-	-	-	1,746	1,742	1,744
Lodging - G	Existing	Heating	Unit Heater	Condensing	per sq ft	\$0.00	75%	\$0.00	5,576	5,412	5,412	-	-	-	-	-	-	119	116	116
Lodging - G	Existing	Water Heating	Water Heating	EF 0.94	per sq ft	\$0.00	75%	\$0.00	483,397	469,179	469,179	-	-	-	-	-	-	15,432	15,074	15,000
Lodging - G	Existing	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	75%	\$0.00	57,655	55,959	55,959	-	-	-	-	-	-	784	766	762
Lodging - G	Existing	Food Preparation	Fryer	Energy Star	per sq ft	\$0.01	75%	\$0.00	32,859	31,893	31,893	-	-	-	-	-	-	744	727	724

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Lodging - G	Existing	Food Preparation	Broiler	High Efficiency	per sq ft	\$0.00	75%	\$0.00	21,900	21,256	21,256	-	-	-	-	-	-	415	405	403
Lodging - G	Existing	Food Preparation	Griddle	High Efficiency	per sq ft	\$0.00	75%	\$0.00	96,268	93,436	93,436	-	-	-	-	-	-	312	305	303
Lodging - G	Existing	Food Preparation	Range	High Efficiency	per sq ft	\$0.00	75%	\$0.00	894	868	868	-	-	-	-	-	-	10	10	10
Lodging - G	Existing	Food Preparation	Steamer	Energy Star	per sq ft	\$0.00	75%	\$0.00	972	944	944	-	-	-	-	-	-	54	53	53
Lodging - G	Existing	Misc.	Pool Heater	EF .82	per sq ft	\$0.00	75%	\$0.00	445,473	432,371	432,371	-	-	-	-	-	-	186	182	181
Lodging - G	New	Heating	Furnace	EF .96	per sq ft	\$0.01	75%	\$0.01	32,432	31,478	31,478	-	-	-	-	-	-	699	683	679
Lodging - G	New	Heating	Boiler	EF .96	per sq ft	\$0.00	75%	\$0.00	31,247	30,328	30,328	-	-	-	-	-	-	557	545	542
Lodging - G	New	Heating	Unit Heater	Condensing	per sq ft	\$0.00	75%	\$0.00	2,794	2,712	2,712	-	-	-	-	-	-	60	58	58
Lodging - G	New	Water Heating	Water Heating	EF 0.94	per sq ft	\$0.00	75%	\$0.00	125,609	121,914	121,914	-	-	-	-	-	-	3,809	3,721	3,703
Lodging - G	New	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	75%	\$0.00	14,794	14,359	14,359	-	-	-	-	-	-	201	197	196
Lodging - G	New	Food Preparation	Fryer	Energy Star	per sq ft	\$0.01	75%	\$0.00	8,437	8,189	8,189	-	-	-	-	-	-	191	187	186
Lodging - G	New	Food Preparation	Broiler	High Efficiency	per sq ft	\$0.00	75%	\$0.00	5,619	5,454	5,454	-	-	-	-	-	-	106	104	104
Lodging - G	New	Food Preparation	Griddle	High Efficiency	per sq ft	\$0.00	75%	\$0.00	24,711	23,984	23,984	-	-	-	-	-	-	80	78	78
Lodging - G	New	Food Preparation	Range	High Efficiency	per sq ft	\$0.00	75%	\$0.00	229	223	223	-	-	-	-	-	-	3	3	3
Lodging - G	New	Food Preparation	Steamer	Energy Star	per sq ft	\$0.00	75%	\$0.00	249	242	242	-	-	-	-	-	-	14	14	14
Lodging - G	New	Misc.	Pool Heater	EF .82	per sq ft	\$0.00	75%	\$0.00	67,938	65,940	65,940	-	-	-	-	-	-	28	28	28
Warehouse - G	Existing	Heating	Boiler	EF .96	per sq ft	\$0.00	75%	\$0.00	22,946	22,271	22,271	-	-	-	-	-	-	4,318	4,216	4,195
Warehouse - G	Existing	Heating	Unit Heater	Condensing	per sq ft	\$0.01	75%	\$0.01	375,213	364,177	364,177	-	-	-	-	-	-	7,404	7,232	7,197
Warehouse - G	Existing	Water Heating	Water Heating	EF 0.94	per sq ft	\$0.00	75%	\$0.00	1,526,143	1,481,257	1,481,257	-	-	-	-	-	-	5,441	5,312	5,289
Warehouse - G	New	Heating	Boiler	EF .96	per sq ft	\$0.00	75%	\$0.00	10,441	10,134	10,134	-	-	-	-	-	-	1,565	1,523	1,514
Warehouse - G	New	Heating	Unit Heater	Condensing	per sq ft	\$0.01	75%	\$0.01	188,004	182,475	182,475	-	-	-	-	-	-	3,710	3,624	3,606
Warehouse - G	New	Water Heating	Water Heating	EF 0.94	per sq ft	\$0.00	75%	\$0.00	396,562	384,899	384,899	-	-	-	-	-	-	1,324	1,297	1,291
Misc. - G	Existing	Heating	Furnace	EF .96	per sq ft	\$0.08	75%	\$0.06	1,903,368	1,847,387	1,847,387	-	-	-	-	-	-	47,891	46,786	46,559
Misc. - G	Existing	Heating	Boiler	EF .96	per sq ft	\$0.00	75%	\$0.00	306,204	297,198	297,198	-	-	-	-	-	-	6,718	6,565	6,486
Misc. - G	Existing	Heating	Unit Heater	Condensing	per sq ft	\$0.00	75%	\$0.00	20,274	19,677	19,677	-	-	-	-	-	-	331	323	322
Misc. - G	Existing	Water Heating	Water Heating	EF 0.94	per sq ft	\$0.00	75%	\$0.00	5,848,979	5,676,951	5,676,951	-	-	-	-	-	-	54,920	53,636	53,380
Misc. - G	Existing	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	75%	\$0.00	2,045,847	1,985,675	1,985,675	-	-	-	-	-	-	2,126	2,077	2,066
Misc. - G	Existing	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	75%	\$0.00	131,795	127,919	127,919	-	-	-	-	-	-	228	223	222

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Misc. - G	Existing	Food Preparation	Broiler	High Efficiency	per sq ft	\$0.00	75%	\$0.00	1,001,159	971,713	971,713	-	-	-	-	-	-	1,449	1,415	1,409
Misc. - G	Existing	Food Preparation	Griddle	High Efficiency	per sq ft	\$0.00	75%	\$0.00	1,825,865	1,772,164	1,772,164	-	-	-	-	-	-	452	442	440
Misc. - G	Existing	Food Preparation	Range	High Efficiency	per sq ft	\$0.00	75%	\$0.00	1,234,496	1,198,187	1,198,187	-	-	-	-	-	-	1,081	1,056	1,051
Misc. - G	Existing	Misc.	Pool Heater	EF .82	per sq ft	\$0.00	75%	\$0.00	11,602,315	11,261,070	11,261,070	-	-	-	-	-	-	4,788	4,677	4,654
Misc. - G	New	Heating	Furnace	EF .96	per sq ft	\$0.04	75%	\$0.03	1,791,536	1,738,843	1,738,843	-	-	-	-	-	-	44,072	43,050	42,830
Misc. - G	New	Heating	Boiler	EF .96	per sq ft	\$0.00	75%	\$0.00	143,755	139,527	139,527	-	-	-	-	-	-	2,521	2,458	2,445
Misc. - G	New	Heating	Unit Heater	Condensing	per sq ft	\$0.00	75%	\$0.00	10,158	9,860	9,860	-	-	-	-	-	-	166	162	161
Misc. - G	New	Water Heating	Water Heating	EF 0.94	per sq ft	\$0.00	75%	\$0.00	1,519,835	1,475,134	1,475,134	-	-	-	-	-	-	13,567	13,238	13,179
Misc. - G	New	Food Preparation	Oven	Energy Star	per sq ft	\$0.00	75%	\$0.00	524,942	509,503	509,503	-	-	-	-	-	-	545	533	530
Misc. - G	New	Food Preparation	Fryer	Energy Star	per sq ft	\$0.00	75%	\$0.00	33,842	32,846	32,846	-	-	-	-	-	-	59	57	57
Misc. - G	New	Food Preparation	Broiler	High Efficiency	per sq ft	\$0.00	75%	\$0.00	256,887	249,331	249,331	-	-	-	-	-	-	372	363	361
Misc. - G	New	Food Preparation	Griddle	High Efficiency	per sq ft	\$0.00	75%	\$0.00	468,679	454,894	454,894	-	-	-	-	-	-	116	113	113
Misc. - G	New	Food Preparation	Range	High Efficiency	per sq ft	\$0.00	75%	\$0.00	316,758	307,442	307,442	-	-	-	-	-	-	277	271	270
Misc. - G	New	Misc.	Pool Heater	EF .82	per sq ft	\$0.00	75%	\$0.00	1,769,434	1,717,392	1,717,392	-	-	-	-	-	-	730	713	710
Office - E	Existing		Insulation - Ceiling		per sq ft	\$0.13	75%	\$0.09	2,856,960	2,772,931	2,772,931	37,392	36,044	35,735	21.15	20.00	19.48	-	-	-
Office - E	Existing		Insulation - Radiant Barrier		per sq ft	\$0.03	75%	\$0.02	2,869,478	2,785,081	2,785,081	14,900	14,359	14,233	8.31	7.86	7.66	-	-	-
Office - E	Existing		Insulation - Wall Cavity		per sq ft	\$0.16	75%	\$0.12	2,866,473	2,782,165	2,782,165	98,098	94,583	93,815	22.14	20.94	20.39	-	-	-
Office - E	Existing		HVAC - Duct Repair and Sealing		per sq ft	\$0.00	75%	\$0.00	3,272,463	3,176,214	3,176,214	126,018	120,338	118,313	8.43	7.97	7.76	-	-	-
Office - E	Existing		Windows - High Efficiency		per sq ft	\$0.18	75%	\$0.13	2,766,261	2,684,901	2,684,901	1,510,598	1,444,492	1,421,713	282.20	266.95	259.95	-	-	-
Office - E	Existing		Air-Cooled Chiller - Condenser Air Temperature Reset		per sq ft	\$0.00	75%	\$0.00	19,057	18,497	18,497	6,910	6,638	6,567	-	-	-	-	-	-
Office - E	Existing		Air-Cooled Chiller - Economizer		per sq ft	\$0.00	75%	\$0.00	80,931	78,551	78,551	64,767	62,220	61,558	-	-	-	-	-	-
Office - E	Existing		Air-Cooled Chiller - VSD on fans		per sq ft	\$0.01	75%	\$0.01	118,091	114,618	114,618	33	32	31	1.67	1.61	1.59	-	-	-
Office - E	Existing		Air-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.00	75%	\$0.00	160,131	155,421	155,421	87,669	84,221	83,324	31.23	30.00	29.68	-	-	-
Office - E	Existing		Air-Cooled Chiller - High Efficiency Cooling Tower Fans		per sq ft	\$0.01	75%	\$0.01	74,053	71,875	71,875	2,896	2,783	2,753	0.65	0.62	0.62	-	-	-
Office - E	Existing		Air-Cooled Chiller - Maintenance		per sq ft	\$0.06	75%	\$0.04	120,602	117,055	117,055	57,405	55,147	54,560	33.11	31.80	31.47	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Office - E	Existing		Water-Cooled Chiller - Condenser Water Temperature Reset		per sq ft	\$0.01	75%	\$0.00	20,955	20,339	20,339	10,166	9,514	9,209	2.26	2.12	2.05	-	-	-
Office - E	Existing		Water-Cooled Chiller - Economizer		per sq ft	\$0.02	75%	\$0.01	14,775	14,341	14,341	10,123	9,474	9,170	-	-	-	-	-	-
Office - E	Existing		Water-Cooled Chiller - VSD on Fans		per sq ft	\$1.17	75%	\$0.88	21,452	20,821	20,821	19,769	18,502	17,908	11.38	10.65	10.31	-	-	-
Office - E	Existing		Water-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.00	75%	\$0.00	29,240	28,380	28,380	9,076	8,495	8,222	-	-	-	-	-	-
Office - E	Existing		Water-Cooled Chiller - High Efficiency Cooling Tower Fans		per sq ft	\$0.01	75%	\$0.01	13,451	13,056	13,056	450	422	408	0.10	0.09	0.09	-	-	-
Office - E	Existing		Water-Cooled Chiller - Maintenance RTU		per sq ft	\$0.06	75%	\$0.04	21,891	21,247	21,247	8,920	8,349	8,081	5.14	4.82	4.66	-	-	-
Office - E	Existing		Maintenance Space Heating - Heat Recovery Ventilator		per sq ft	\$0.06	75%	\$0.04	2,593,918	2,517,627	2,517,627	1,150,706	1,085,670	1,054,380	663.64	626.13	608.08	-	-	-
Office - E	Existing		Ventilation - Variable Speed Control		per sq ft	\$0.02	75%	\$0.01	231,988	225,165	225,165	76,514	74,224	74,030	-	-	-	-	-	-
Office - E	Existing		Water Heater - Faucet Aerators		per sq ft	\$0.02	75%	\$0.02	5,038,945	4,890,741	4,890,741	1,837,101	1,766,194	1,748,359	54.02	51.93	51.41	-	-	-
Office - E	Existing		Water Heater - Desuperheater		per sq ft	\$0.00	75%	\$0.00	101,950	98,951	98,951	13,754	13,157	12,950	1.34	1.28	1.26	-	-	-
Office - E	Existing		Interior Lighting - Daylighting Controls		per sq ft	\$0.00	75%	\$0.00	-	211,333	211,333	-	25,939	25,530	-	2.53	2.49	-	-	-
Office - E	Existing		Interior Lighting - LED Exit Lighting		per sq ft	\$0.11	75%	\$0.08	1,222,958	1,186,989	1,186,989	357,646	330,357	316,875	67.69	62.53	59.97	-	-	-
Office - E	Existing		Refrigerator - Auto Door Closer		per sq ft	\$0.00	75%	\$0.00	8,648,479	8,394,112	8,394,112	16,861	15,575	14,939	3.19	2.95	2.83	-	-	-
Office - E	Existing		Refrigerator - Evaporator Fan Controls		per sq ft	\$0.00	75%	\$0.00	430,117	417,466	417,466	33,297	31,617	30,928	3.48	3.31	3.23	-	-	-
Office - E	Existing		Vending Machine - Controller		per sq ft	\$0.00	75%	\$0.00	992,981	963,776	963,776	2,692	2,534	2,443	0.28	0.26	0.26	-	-	-
Office - E	Existing		Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.00	75%	\$0.00	524,953	509,513	509,513	14,938	13,851	12,806	1.56	1.45	1.34	-	-	-
Office - E	Existing		Thermostat - Clock/Programmable		per sq ft	\$0.00	75%	\$0.00	1,927,241	1,870,558	1,870,558	58,439	56,657	56,473	9.11	8.84	8.81	-	-	-
Office - E	Existing		Electronics - Smart Power Strip		per sq ft	\$0.00	75%	\$0.00	-	-	2,683,412	-	-	15,148	-	-	8.72	-	-	-
Office - E	Existing		Electronics - Monitor Power Management		per sq ft	\$0.00	75%	\$0.00	19,749,632	19,168,761	19,168,761	82,664	78,246	76,117	-	-	-	-	-	-
Office - E	Existing				per sq ft	\$0.00	75%	\$0.00	6,499,123	6,307,972	6,307,972	1,300,231	1,256,576	1,248,534	-	-	-	-	-	-

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Office - E	Existing		Water Heating - Booster Water Heater		per sq ft	\$0.02	75%	\$0.01	466,591	452,867	452,867	23,242	22,234	21,883	2.26	2.17	2.13	-	-	-
Office - E	New		Insulation - Ceiling		per sq ft	\$0.00	75%	\$0.00	-	280,773	280,773	-	2,676	2,662	-	1.08	1.07	-	-	-
Office - E	New		Insulation - Radiant Barrier		per sq ft	\$0.03	75%	\$0.02	292,566	283,961	283,961	883	853	848	0.35	0.34	0.34	-	-	-
Office - E	New		Insulation - Wall Cavity		per sq ft	\$0.16	75%	\$0.12	294,656	285,990	285,990	4,111	3,974	3,954	0.85	0.82	0.82	-	-	-
Office - E	New		HVAC - Duct Repair and Sealing		per sq ft	\$0.00	75%	\$0.00	266,845	258,997	258,997	13,193	12,732	12,653	0.45	0.43	0.43	-	-	-
Office - E	New		Air-Cooled Chiller - Condenser Air Temperature Reset		per sq ft	\$0.00	75%	\$0.00	1,141	1,107	1,107	279	267	263	-	-	-	-	-	-
Office - E	New		Air-Cooled Chiller - Economizer		per sq ft	\$0.00	75%	\$0.00	5,948	5,773	5,773	4,173	3,982	3,929	0.00	0.00	0.00	-	-	-
Office - E	New		Air-Cooled Chiller - VSD on fans		per sq ft	\$0.01	75%	\$0.01	11,987	11,634	11,634	12	11	11	0.13	0.13	0.12	-	-	-
Office - E	New		Air-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.00	75%	\$0.00	13,032	12,649	12,649	4,834	4,613	4,551	1.54	1.47	1.45	-	-	-
Office - E	New		Air-Cooled Chiller - High Efficiency Cooling Tower Fans		per sq ft	\$0.01	75%	\$0.01	7,561	7,339	7,339	140	133	132	0.04	0.04	0.04	-	-	-
Office - E	New		Air-Cooled Chiller - Maintenance		per sq ft	\$0.06	75%	\$0.04	10,893	10,573	10,573	3,960	3,779	3,728	2.27	2.17	2.14	-	-	-
Office - E	New		Water-Cooled Chiller - Condenser Water Temperature Reset		per sq ft	\$0.01	75%	\$0.00	1,248	1,211	1,211	274	265	265	0.06	0.06	0.06	-	-	-
Office - E	New		Water-Cooled Chiller - Economizer		per sq ft	\$0.02	75%	\$0.01	1,078	1,047	1,047	385	374	373	0.00	0.00	0.00	-	-	-
Office - E	New		Water-Cooled Chiller - VSD on Fans		per sq ft	\$1.17	75%	\$0.88	2,204	2,139	2,139	915	888	886	0.53	0.51	0.51	-	-	-
Office - E	New		Water-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.00	75%	\$0.00	2,402	2,331	2,331	300	291	290	-	-	-	-	-	-
Office - E	New		Water-Cooled Chiller - High Efficiency Cooling Tower Fans		per sq ft	\$0.01	75%	\$0.01	1,377	1,337	1,337	13	13	13	0.00	0.00	0.00	-	-	-
Office - E	New		Water-Cooled Chiller - Maintenance		per sq ft	\$0.06	75%	\$0.04	1,998	1,939	1,939	370	359	358	0.21	0.21	0.21	-	-	-
Office - E	New		RTU - Maintenance		per sq ft	\$0.06	75%	\$0.04	232,547	225,708	225,708	65,716	63,105	62,531	37.72	36.22	35.89	-	-	-
Office - E	New		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.02	75%	\$0.01	88,000	85,411	85,411	26,665	25,865	25,798	-	-	-	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Office - E	New		Ventilation - Variable Speed Control		per sq ft	\$0.02	75%	\$0.02	520,663	505,350	505,350	217,517	210,496	209,613	6.40	6.19	6.16	-	-	-
Office - E	New		Water Heater - Faucet Aerators		per sq ft	\$0.00	75%	\$0.00	8,981	8,717	8,717	1,084	1,006	974	0.11	0.10	0.09	-	-	-
Office - E	New		Water Heater - Desuperheater		per sq ft	\$0.00	75%	\$0.00	-	21,758	21,758	-	2,318	2,245	-	0.23	0.22	-	-	-
Office - E	New		Interior Lighting - Daylighting Controls		per sq ft	\$0.11	75%	\$0.08	395,982	384,336	384,336	102,050	96,556	94,919	19.31	18.28	17.97	-	-	-
Office - E	New		Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	75%	\$0.00	257,789	250,207	250,207	443	419	412	0.08	0.08	0.08	-	-	-
Office - E	New		Interior Lighting - Occupancy Sensors		per sq ft	\$0.00	75%	\$0.00	-	-	309,118	-	-	25,448	-	-	2.41	-	-	-
Office - E	New		Refrigerator - Auto Door Closer		per sq ft	\$0.00	75%	\$0.00	44,402	43,096	43,096	3,055	2,856	2,783	0.32	0.30	0.29	-	-	-
Office - E	New		Refrigerator - Evaporator Fan Controls		per sq ft	\$0.00	75%	\$0.00	94,073	91,306	91,306	208	196	192	0.02	0.02	0.02	-	-	-
Office - E	New		Vending Machine - Controller		per sq ft	\$0.00	75%	\$0.00	27,048	26,252	26,252	453	423	413	0.05	0.04	0.04	-	-	-
Office - E	New		Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.00	75%	\$0.00	158,485	153,824	153,824	4,801	4,642	4,620	0.75	0.72	0.72	-	-	-
Office - E	New		Thermostat - Clock/Programmable		per sq ft	\$0.01	75%	\$0.00	137,980	133,922	133,922	3,400	3,264	3,234	1.96	1.88	1.86	-	-	-
Office - E	New		Commissioning - HVAC		per sq ft	\$0.38	□/ 75%	\$0.28	201,100	195,185	195,185	58,810	56,462	55,942	-	-	-	-	-	-
Office - E	New		Commissioning - Lighting		per sq ft	\$0.04	75%	\$0.03	1,135,458	1,102,062	1,102,062	146,311	138,435	136,088	-	-	-	-	-	-
Office - E	New		Electronics - Smart Power Strip		per sq ft	\$0.00	75%	\$0.00	2,038,342	1,978,391	1,978,391	8,378	7,963	7,816	-	-	-	-	-	-
Office - E	New		Electronics - Monitor Power Management		per sq ft	\$0.00	75%	\$0.00	669,640	649,945	649,945	133,506	129,232	128,461	-	-	-	-	-	-
Office - E	New		Insulation - Foundation		per sq ft	\$0.32	75%	\$0.24	113,726	110,381	110,381	11,086	10,643	10,545	6.38	6.13	6.07	-	-	-
Restaurant - E	Existing		HVAC - Duct Repair and Sealing		per sq ft	\$0.01	75%	\$0.01	706,429	685,651	685,651	29,454	27,688	26,822	1.30	1.23	1.19	-	-	-
Restaurant - E	Existing		Windows - High Efficiency		per sq ft	\$0.39	75%	\$0.30	1,028,773	998,515	998,515	223,935	211,634	206,003	75.74	71.44	69.37	-	-	-
Restaurant - E	Existing		Air-Cooled Chiller - Economizer		per sq ft	\$0.15	75%	\$0.11	3,710	3,600	3,600	10,996	10,602	10,520	-	-	-	-	-	-
Restaurant - E	Existing		Air-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.15	75%	\$0.11	5,566	5,402	5,402	7,559	7,288	7,231	1.25	1.20	1.19	-	-	-
Restaurant - E	Existing		Air-Cooled Chiller - Maintenance		per sq ft	\$2.24	75%	\$1.68	2,477	2,404	2,404	2,699	2,602	2,582	1.17	1.13	1.12	-	-	-
Restaurant - E	Existing		RTU - Maintenance		per sq ft	\$2.24	75%	\$1.68	389,422	377,969	377,969	310,692	293,132	284,684	134.82	127.20	123.53	-	-	-
Restaurant - E	Existing		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.01	75%	\$0.01	32,941	31,972	31,972	15,550	15,022	14,925	-	-	-	-	-	-

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Restaurant - E	Existing		Heat Pump - Maintenance Ventilation -		per sq ft	\$0.71	75%	\$0.53	63,678	61,806	61,806	36,144	34,004	32,917	14.23	13.37	12.93	-	-	-
Restaurant - E	Existing		Variable Speed Control		per sq ft	\$0.02	75%	\$0.01	1,070,115	1,038,641	1,038,641	362,843	339,848	328,427	10.46	9.79	9.47	-	-	-
Restaurant - E	Existing		Water Heater - Drainwater Heat Recovery		per sq ft	\$0.04	75%	\$0.03	153,430	148,917	148,917	94,264	90,212	88,818	-	-	-	-	-	-
Restaurant - E	Existing		Water Heater - Faucet Aerators		per sq ft	\$0.00	75%	\$0.00	21,832	21,190	21,190	32,290	30,902	30,425	3.28	3.14	3.09	-	-	-
Restaurant - E	Existing		Water Heater - Desuperheater		per sq ft	\$0.04	75%	\$0.03	31,819	30,883	30,883	43,442	41,575	40,932	4.41	4.22	4.16	-	-	-
Restaurant - E	Existing		Water Heater - Install Timer		per sq ft	\$0.28	75%	\$0.21	145,171	140,901	140,901	84,235	80,614	79,368	8.56	8.19	8.06	-	-	-
Restaurant - E	Existing		Water Heater - Tank		per sq ft	\$0.02	75%	\$0.02	183,960	178,550	178,550	62,790	60,091	59,162	-	-	-	-	-	-
Restaurant - E	Existing		Blanket/Insulation Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.02	75%	\$0.01	331,056	321,319	321,319	489,652	468,604	461,363	49.74	47.60	46.86	-	-	-
Restaurant - E	Existing		Interior Lighting - Daylighting Controls		per sq ft	\$0.11	75%	\$0.08	1,129,774	1,096,545	1,096,545	555,310	502,958	477,359	66.32	60.07	57.01	-	-	-
Restaurant - E	Existing		Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	75%	\$0.00	1,826,840	1,773,110	1,773,110	5,986	5,422	5,146	0.71	0.65	0.61	-	-	-
Restaurant - E	Existing		Exterior Lighting - Daylighting Controls		per sq ft	\$0.00	75%	\$0.00	-	1,248,534	1,248,534	-	150,925	145,209	-	-	-	-	-	-
Restaurant - E	Existing		Refrigerator - Auto Door Closer		per sq ft	\$0.03	75%	\$0.02	190,699	185,090	185,090	331,512	314,790	307,922	33.68	31.98	31.29	-	-	-
Restaurant - E	Existing		Refrigerator - Decommissioning		per sq ft	\$0.13	75%	\$0.10	822,007	797,830	797,830	1,119,126	1,048,116	1,010,266	113.71	106.49	102.64	-	-	-
Restaurant - E	Existing		Refrigerator - Demand Defrost		per sq ft	\$0.00	75%	\$0.00	-	-	8,922,182	-	-	627,659	-	-	63.77	-	-	-
Restaurant - E	Existing		Refrigerator - Evaporator Fan Controls		per sq ft	\$0.05	75%	\$0.04	450,222	436,980	436,980	27,243	25,514	24,593	2.77	2.59	2.50	-	-	-
Restaurant - E	Existing		Vending Machine - Controller		per sq ft	\$0.03	75%	\$0.02	229,255	222,512	222,512	73,082	67,731	62,580	7.43	6.88	6.36	-	-	-
Restaurant - E	Existing		Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.04	75%	\$0.03	99,140	96,224	96,224	4,802	4,655	4,640	0.52	0.51	0.51	-	-	-
Restaurant - E	Existing		HVAC - Occupancy Sensors		per sq ft	\$0.00	75%	\$0.00	-	744,590	744,590	-	134,028	130,140	-	58.19	56.51	-	-	-
Restaurant - E	Existing		Refrigerator - eCube		per sq ft	\$0.01	75%	\$0.00	4,481,548	4,349,738	4,349,738	1,355,873	1,269,842	1,223,985	-	-	-	-	-	-
Restaurant - E	Existing		Electronics - Smart Power Strip		per sq ft	\$0.00	75%	\$0.00	3,354,587	3,255,922	3,255,922	4,128	3,881	3,777	-	-	-	-	-	-
Restaurant - E	Existing		Electronics - Monitor Power Management		per sq ft	\$0.00	75%	\$0.00	1,037,131	1,006,627	1,006,627	32,387	31,299	31,099	-	-	-	-	-	-
Restaurant - E	Existing		Water Heating - Booster Water Heater		per sq ft	\$0.01	75%	\$0.01	143,266	139,052	139,052	78,240	74,877	73,719	7.95	7.61	7.49	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Restaurant - E	Existing		Refrigeration - High Efficiency Evaporator Fan Motors		per sq ft	\$0.06	75%	\$0.05	26,474	25,695	25,695	68,924	60,848	55,708	-	-	-	-	-	-
Restaurant - E	New		HVAC - Duct Repair and Sealing		per sq ft	\$0.01	75%	\$0.01	57,324	55,638	55,638	1,816	1,744	1,726	0.14	0.14	0.14	-	-	-
Restaurant - E	New		Windows - High Efficiency		per sq ft	\$0.39	75%	\$0.30	416,692	404,436	404,436	49,102	47,213	46,799	14.44	13.86	13.72	-	-	-
Restaurant - E	New		Air-Cooled Chiller - Economizer		per sq ft	\$0.15	75%	\$0.11	242	235	235	403	382	375	-	-	-	-	-	-
Restaurant - E	New		Air-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.15	75%	\$0.11	551	535	535	466	442	434	0.08	0.07	0.07	-	-	-
Restaurant - E	New		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.01	75%	\$0.01	12,381	12,017	12,017	5,112	4,951	4,934	-	-	-	-	-	-
Restaurant - E	New		Heat Pump - Maintenance		per sq ft	\$0.71	75%	\$0.53	6,786	6,586	6,586	2,250	2,153	2,129	0.89	0.85	0.84	-	-	-
Restaurant - E	New		Ventilation - Variable Speed Control		per sq ft	\$0.02	75%	\$0.01	109,999	106,764	106,764	41,384	39,751	39,349	1.19	1.15	1.13	-	-	-
Restaurant - E	New		Water Heater - Drainwater Heat Recovery		per sq ft	\$0.04	75%	\$0.03	15,832	15,366	15,366	8,670	8,044	7,789	-	-	-	-	-	-
Restaurant - E	New		Water Heater - Faucet Aerators		per sq ft	\$0.00	75%	\$0.00	2,246	2,180	2,180	2,962	2,748	2,661	0.30	0.28	0.27	-	-	-
Restaurant - E	New		Water Heater - Desuperheater		per sq ft	\$0.04	75%	\$0.03	3,274	3,178	3,178	3,984	3,697	3,580	0.40	0.38	0.36	-	-	-
Restaurant - E	New		Water Heater - Install Timer		per sq ft	\$0.28	75%	\$0.21	8,339	8,094	8,094	4,313	4,002	3,875	0.44	0.41	0.39	-	-	-
Restaurant - E	New		Water Heater - Tank		per sq ft	\$0.02	75%	\$0.02	18,929	18,372	18,372	5,759	5,343	5,174	-	-	-	-	-	-
Restaurant - E	New		Blanket/Insulation Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.02	75%	\$0.01	34,065	33,063	33,063	44,908	41,667	40,347	4.56	4.23	4.10	-	-	-
Restaurant - E	New		Interior Lighting - Daylighting Controls		per sq ft	\$0.11	75%	\$0.08	100,875	97,908	97,908	44,306	41,172	40,072	5.29	4.92	4.79	-	-	-
Restaurant - E	New		Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	75%	\$0.00	54,454	52,852	52,852	159	148	144	0.02	0.02	0.02	-	-	-
Restaurant - E	New		Exterior Lighting - Daylighting Controls		per sq ft	\$0.02	75%	\$0.02	247,738	240,451	240,451	26,724	25,753	25,628	-	-	-	-	-	-
Restaurant - E	New		Refrigerator - Auto Door Closer		per sq ft	\$0.03	75%	\$0.02	19,675	19,096	19,096	30,405	28,432	27,710	3.09	2.89	2.82	-	-	-
Restaurant - E	New		Refrigerator - Decommissioning		per sq ft	\$0.13	75%	\$0.10	84,865	82,369	82,369	92,779	87,996	86,575	9.43	8.94	8.80	-	-	-
Restaurant - E	New		Refrigerator - Door Gasket Replacement		per sq ft	\$0.00	75%	\$0.00	-	-	185,770	-	-	14,741	-	-	-	-	-	-
Restaurant - E	New		Refrigerator - Evaporator Fan Controls		per sq ft	\$0.05	75%	\$0.04	42,663	41,408	41,408	2,073	1,966	1,934	0.21	0.20	0.20	-	-	-
Restaurant - E	New		Vending Machine - Controller		per sq ft	\$0.03	75%	\$0.02	11,866	11,517	11,517	2,164	2,039	1,998	0.22	0.21	0.20	-	-	-

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Restaurant - E	New		Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.04	75%	\$0.03	10,190	9,890	9,890	493	477	474	0.05	0.05	0.05	-	-	-
Restaurant - E	New		Thermostat - Clock/Programmable		per sq ft	\$0.22	75%	\$0.17	31,306	30,385	30,385	1,254	1,203	1,192	0.54	0.52	0.52	-	-	-
Restaurant - E	New		Commissioning - HVAC		per sq ft	\$0.38	75%	\$0.28	117,553	114,095	114,095	55,889	53,625	53,109	-	-	-	-	-	-
Restaurant - E	New		Commissioning - Lighting		per sq ft	\$0.04	75%	\$0.03	426,463	413,920	413,920	93,654	87,031	84,705	-	-	-	-	-	-
Restaurant - E	New		Refrigerator - eCube		per sq ft	\$0.01	75%	\$0.00	422,371	409,948	409,948	102,613	97,323	95,752	-	-	-	-	-	-
Restaurant - E	New		Electronics - Smart Power Strip		per sq ft	\$0.00	75%	\$0.00	346,693	336,497	336,497	418	395	387	-	-	-	-	-	-
Restaurant - E	New		Electronics - Monitor Power Management		per sq ft	\$0.00	75%	\$0.00	106,946	103,800	103,800	3,328	3,221	3,202	-	-	-	-	-	-
Restaurant - E	New		Insulation - Foundation		per sq ft	\$0.32	75%	\$0.24	27,959	27,137	27,137	4,431	4,251	4,211	1.92	1.85	1.83	-	-	-
Restaurant - E	New		Water Heating - Booster Water Heater		per sq ft	\$0.01	75%	\$0.01	8,247	8,004	8,004	4,014	3,725	3,607	0.41	0.38	0.37	-	-	-
Restaurant - E	New		Refrigeration - High Efficiency Evaporator Fan Motors		per sq ft	\$0.06	75%	\$0.05	2,503	2,429	2,429	3,536	3,345	3,286	-	-	-	-	-	-
Retail - E	Existing		HVAC - Duct Repair and Sealing		per sq ft	\$0.00	75%	\$0.00	2,447,757	2,375,765	2,375,765	57,834	55,353	54,496	2.40	2.29	2.25	-	-	-
Retail - E	Existing		Windows - High Efficiency		per sq ft	\$0.01	75%	\$0.01	4,203,170	4,079,547	4,079,547	518,394	496,925	489,988	164.23	156.75	153.99	-	-	-
Retail - E	Existing		Water-Cooled Chiller - Economizer		per sq ft	\$0.03	75%	\$0.03	722	701	701	622	588	574	-	-	-	-	-	-
Retail - E	Existing		Water-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.01	75%	\$0.00	1,112	1,079	1,079	265	250	245	-	-	-	-	-	-
Retail - E	Existing		Water-Cooled Chiller - Maintenance		per sq ft	\$0.08	75%	\$0.06	784	761	761	248	235	229	0.15	0.14	0.14	-	-	-
Retail - E	Existing		RTU - Maintenance		per sq ft	\$0.08	75%	\$0.06	1,246,656	1,209,990	1,209,990	643,975	607,196	589,448	386.07	364.02	353.38	-	-	-
Retail - E	Existing		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.01	75%	\$0.01	101,285	98,306	98,306	47,688	46,231	46,077	-	-	-	-	-	-
Retail - E	Existing		Heat Pump - Maintenance		per sq ft	\$0.02	75%	\$0.02	139,208	135,114	135,114	43,491	41,238	40,232	22.25	21.06	20.51	-	-	-
Retail - E	Existing		Ventilation - Variable Speed Control		per sq ft	\$0.02	75%	\$0.01	5,138,353	4,987,225	4,987,225	942,213	907,201	898,205	28.78	27.71	27.44	-	-	-
Retail - E	Existing		Water Heater - Faucet Aerators		per sq ft	\$0.00	75%	\$0.00	150,550	146,122	146,122	24,203	23,160	22,801	2.22	2.13	2.09	-	-	-
Retail - E	Existing		Water Heater - Desuperheater		per sq ft	\$0.04	75%	\$0.03	204,030	198,029	198,029	30,277	28,973	28,523	2.78	2.66	2.62	-	-	-
Retail - E	Existing		Water Heater - Tank		per sq ft	\$0.02	75%	\$0.02	1,173,198	1,138,692	1,138,692	43,524	41,650	41,003	-	-	-	-	-	-
			Blanket/Insulation																	

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Retail - E	Existing		Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.00	75%	\$0.00	127,068	123,331	123,331	20,428	19,548	19,244	1.88	1.80	1.77	-	-	-
Retail - E	Existing		Interior Lighting - Daylighting Controls		per sq ft	\$0.11	75%	\$0.08	4,690,970	4,553,001	4,553,001	1,941,424	1,796,959	1,720,636	229.30	212.24	203.22	-	-	-
Retail - E	Existing		Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	75%	\$0.00	8,771,910	8,513,913	8,513,913	24,203	22,402	21,450	2.86	2.65	2.53	-	-	-
Retail - E	Existing		Refrigerator - Auto Door Closer		per sq ft	\$0.00	75%	\$0.00	507,539	492,612	492,612	115,082	109,277	106,893	11.59	11.01	10.77	-	-	-
Retail - E	Existing		Refrigerator - Evaporator Fan Controls		per sq ft	\$0.00	75%	\$0.00	1,236,925	1,200,545	1,200,545	10,621	10,003	9,664	1.07	1.01	0.97	-	-	-
Retail - E	Existing		Vending Machine - Controller		per sq ft	\$0.00	75%	\$0.00	602,045	584,338	584,338	50,052	46,376	42,827	5.04	4.67	4.31	-	-	-
Retail - E	Existing		Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.00	75%	\$0.00	956,463	928,332	928,332	58,498	56,714	56,530	6.54	6.34	6.32	-	-	-
Retail - E	Existing		Refrigerator - eCube		per sq ft	\$0.01	75%	\$0.00	11,989,646	11,637,009	11,637,009	514,770	484,819	468,375	-	-	-	-	-	-
Retail - E	Existing		Electronics - Smart Power Strip		per sq ft	\$0.00	75%	\$0.00	20,347,564	19,749,106	19,749,106	13,755	12,866	12,465	-	-	-	-	-	-
Retail - E	Existing		Electronics - Monitor Power Management		per sq ft	\$0.00	75%	\$0.00	6,033,612	5,856,153	5,856,153	108,302	104,666	103,996	-	-	-	-	-	-
Retail - E	Existing		Water Heating - Booster Water Heater		per sq ft	\$0.01	75%	\$0.01	926,423	899,175	899,175	54,991	52,622	51,805	5.05	4.83	4.76	-	-	-
Retail - E	New		HVAC - Duct Repair and Sealing		per sq ft	\$0.00	75%	\$0.00	203,079	197,106	197,106	4,007	3,860	3,825	0.29	0.29	0.29	-	-	-
Retail - E	New		Windows - High Efficiency		per sq ft	\$0.01	75%	\$0.01	400,870	389,079	389,079	29,218	28,226	28,070	7.99	7.83	7.92	-	-	-
Retail - E	New		Water-Cooled Chiller - Economizer		per sq ft	\$0.03	75%	\$0.03	53	52	52	20	20	20	-	-	-	-	-	-
Retail - E	New		Water-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.01	75%	\$0.00	117	114	114	14	14	14	-	-	-	-	-	-
Retail - E	New		Water-Cooled Chiller - Maintenance		per sq ft	\$0.08	75%	\$0.06	88	85	85	17	16	16	0.01	0.01	0.01	-	-	-
Retail - E	New		RTU - Maintenance		per sq ft	\$0.08	75%	\$0.06	137,859	133,804	133,804	42,396	40,694	40,317	25.39	24.37	24.15	-	-	-
Retail - E	New		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.01	75%	\$0.01	38,069	36,949	36,949	17,001	16,485	16,437	-	-	-	-	-	-
Retail - E	New		Heat Pump - Maintenance		per sq ft	\$0.02	75%	\$0.02	15,538	15,081	15,081	3,325	3,215	3,211	1.69	1.64	1.64	-	-	-
Retail - E	New		Ventilation - Variable Speed Control		per sq ft	\$0.02	75%	\$0.01	528,182	512,648	512,648	96,087	93,160	92,881	2.94	2.85	2.84	-	-	-
Retail - E	New		Water Heater - Faucet Aerators		per sq ft	\$0.00	75%	\$0.00	12,838	12,460	12,460	1,816	1,684	1,630	0.17	0.15	0.15	-	-	-
Retail - E	New		Water Heater - Desuperheater		per sq ft	\$0.04	75%	\$0.03	21,010	20,392	20,392	2,744	2,544	2,463	0.25	0.23	0.23	-	-	-

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Retail - E	New		Water Heater - Tank		per sq ft	\$0.02	75%	\$0.02	120,808	117,254	117,254	3,944	3,657	3,540	-	-	-	-	-	-
Retail - E	New		Blanket/Insulation Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.00	75%	\$0.00	10,852	10,533	10,533	1,535	1,423	1,378	0.14	0.13	0.13	-	-	-
Retail - E	New		Interior Lighting - Daylighting Controls		per sq ft	\$0.11	75%	\$0.08	484,371	470,125	470,125	171,203	163,390	161,330	20.22	19.30	19.05	-	-	-
Retail - E	New		Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	75%	\$0.00	261,469	253,778	253,778	616	588	581	0.07	0.07	0.07	-	-	-
Retail - E	New		Exterior Lighting - Daylighting Controls		per sq ft	\$0.02	75%	\$0.02	1,218,929	1,183,078	1,183,078	41,532	38,433	37,323	-	-	-	-	-	-
Retail - E	New		Refrigerator - Auto Door Closer		per sq ft	\$0.00	75%	\$0.00	52,362	50,822	50,822	10,552	9,866	9,614	1.06	0.99	0.97	-	-	-
Retail - E	New		Refrigerator - Evaporator Fan Controls		per sq ft	\$0.00	75%	\$0.00	116,907	113,468	113,468	818	775	763	0.08	0.08	0.08	-	-	-
Retail - E	New		Vending Machine - Controller		per sq ft	\$0.00	75%	\$0.00	31,019	30,106	30,106	1,408	1,317	1,285	0.14	0.13	0.13	-	-	-
Retail - E	New		Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.00	75%	\$0.00	98,309	95,418	95,418	6,007	5,808	5,780	0.67	0.65	0.65	-	-	-
Retail - E	New		Thermostat - Clock/Programmable		per sq ft	\$0.01	75%	\$0.01	76,829	74,569	74,569	2,049	1,964	1,944	1.23	1.18	1.17	-	-	-
Retail - E	New		Commissioning - HVAC		per sq ft	\$0.38	75%	\$0.28	271,398	263,416	263,416	85,903	82,334	81,496	-	-	-	-	-	-
Retail - E	New		Commissioning - Lighting		per sq ft	\$0.04	75%	\$0.03	2,053,884	1,993,475	1,993,475	362,977	346,413	342,044	-	-	-	-	-	-
Retail - E	New		Refrigerator - eCube		per sq ft	\$0.01	75%	\$0.00	1,131,226	1,097,954	1,097,954	39,588	37,519	36,898	-	-	-	-	-	-
Retail - E	New		Electronics - Smart Power Strip		per sq ft	\$0.00	75%	\$0.00	2,094,344	2,032,745	2,032,745	1,387	1,303	1,271	-	-	-	-	-	-
Retail - E	New		Electronics - Monitor Power Management		per sq ft	\$0.00	75%	\$0.00	620,161	601,921	601,921	11,094	10,739	10,674	-	-	-	-	-	-
Retail - E	New		Insulation - Foundation		per sq ft	\$0.32	75%	\$0.24	63,282	61,421	61,421	6,677	6,399	6,334	4.01	3.84	3.80	-	-	-
Retail - E	New		Water Heating - Booster Water Heater		per sq ft	\$0.01	75%	\$0.01	52,680	51,130	51,130	2,752	2,551	2,470	0.25	0.23	0.23	-	-	-
Grocery - E	Existing		Insulation - Radiant Barrier		per sq ft	\$0.45	75%	\$0.33	375,006	363,977	363,977	64,609	62,082	61,364	150.71	142.44	138.57	-	-	-
Grocery - E	Existing		Insulation - Wall Cavity		per sq ft	\$1.00	75%	\$0.75	350,098	339,801	339,801	172,463	166,669	165,652	111.08	104.98	102.13	-	-	-
Grocery - E	Existing		HVAC - Duct Repair and Sealing		per sq ft	\$0.00	75%	\$0.00	398,367	386,650	386,650	7,904	7,524	7,378	-	-	-	-	-	-
Grocery - E	Existing		Windows - High Efficiency		per sq ft	\$0.25	75%	\$0.19	837,458	812,827	812,827	393,794	375,983	369,563	442.83	418.54	407.18	-	-	-
Grocery - E	Existing		RTU - Maintenance		per sq ft	\$0.19	75%	\$0.14	333,911	324,090	324,090	365,949	345,267	335,316	638.61	602.51	585.15	-	-	-
Grocery - E	Existing		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.05	75%	\$0.04	47,566	46,167	46,167	31,363	30,409	30,314	-	-	-	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Grocery - E	Existing		Heat Pump - Maintenance Ventilation - Variable Speed Control		per sq ft	\$0.13	75%	\$0.10	19,248	18,682	18,682	12,039	11,357	11,025	18.46	17.36	16.81	-	-	-
Grocery - E	Existing		Water Heater - Drainwater Heat Recovery		per sq ft	\$0.07	75%	\$0.05	559,977	543,507	543,507	227,330	212,753	205,433	6.91	6.46	6.24	-	-	-
Grocery - E	Existing		Water Heater - Faucet Aerators		per sq ft	\$0.04	75%	\$0.03	50,221	48,744	48,744	10,917	10,455	10,299	-	-	-	-	-	-
Grocery - E	Existing		Water Heater - Desuperheater		per sq ft	\$0.00	75%	\$0.00	7,597	7,373	7,373	3,975	3,807	3,750	0.43	0.41	0.40	-	-	-
Grocery - E	Existing		Water Heater - Install Timer		per sq ft	\$0.04	75%	\$0.03	10,118	9,821	9,821	4,888	4,681	4,611	0.53	0.50	0.50	-	-	-
Grocery - E	Existing		Water Heater - Pipe Insulation		per sq ft	\$0.00	75%	\$0.00	-	47,690	47,690	-	9,660	9,516	-	1.04	1.02	-	-	-
Grocery - E	Existing		Water Heater - Tank		per sq ft	\$0.09	75%	\$0.07	75,912	73,680	73,680	10,378	9,939	9,790	1.16	1.11	1.10	-	-	-
Grocery - E	Existing		Blanket/Insulation Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.02	75%	\$0.02	58,499	56,779	56,779	7,065	6,766	6,665	-	-	-	-	-	-
Grocery - E	Existing		Interior Lighting - Daylighting Controls		per sq ft	\$0.01	75%	\$0.00	6,414	6,225	6,225	3,356	3,214	3,166	0.36	0.35	0.34	-	-	-
Grocery - E	Existing		Interior Lighting - LED Exit Lighting		per sq ft	\$0.11	75%	\$0.08	465,508	451,816	451,816	392,981	366,680	353,804	71.06	66.30	63.97	-	-	-
Grocery - E	Existing		Interior Lighting - Occupancy Sensors		per sq ft	\$0.00	75%	\$0.00	963,183	934,854	934,854	5,421	5,058	4,880	0.98	0.91	0.88	-	-	-
Grocery - E	Existing		Refrigerator - Anti-Sweat Door Heater		per sq ft	\$0.07	75%	\$0.05	540,475	524,579	524,579	152,090	141,911	136,927	13.75	12.83	12.38	-	-	-
Grocery - E	Existing		Refrigerator - Auto Door Closer		per sq ft	\$0.01	75%	\$0.01	2,334,633	2,265,967	2,265,967	7,673,148	7,244,237	7,051,921	-	-	-	-	-	-
Grocery - E	Existing		Refrigerator - Decommissioning		per sq ft	\$0.01	75%	\$0.01	102,181	99,175	99,175	891,727	846,747	828,274	98.78	93.80	91.75	-	-	-
Grocery - E	Existing		Refrigerator - Demand Defrost		per sq ft	\$0.13	75%	\$0.10	388,009	376,597	376,597	1,836,367	1,733,718	1,687,693	203.43	192.06	186.96	-	-	-
Grocery - E	Existing		Refrigerator - Door Gasket Replacement		per sq ft	\$0.20	75%	\$0.15	2,181,637	2,117,471	2,117,471	573,624	541,560	527,183	63.54	59.99	58.40	-	-	-
Grocery - E	Existing		Refrigerator - Evaporator Fan Controls		per sq ft	\$0.10	75%	\$0.08	655,396	636,120	636,120	315,778	297,651	289,254	-	-	-	-	-	-
Grocery - E	Existing		Vending Machine - Controllor		per sq ft	\$0.02	75%	\$0.01	217,020	210,637	210,637	45,649	43,098	41,954	5.06	4.77	4.65	-	-	-
Grocery - E	Existing		Grocery - Display Case - LED Lighting		per sq ft	\$0.01	75%	\$0.01	114,024	110,670	110,670	18,272	16,937	15,651	2.02	1.88	1.73	-	-	-
Grocery - E	Existing		Grocery - Open Display Case - Night Covers		per sq ft	\$0.02	75%	\$0.02	726,178	704,820	704,820	384,901	364,805	356,505	42.64	40.41	39.49	-	-	-
Grocery - E	Existing		Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.05	75%	\$0.04	531,715	516,076	516,076	215,402	203,372	198,352	23.86	22.53	21.97	-	-	-
Grocery - E	Existing				per sq ft	\$0.01	75%	\$0.01	90,567	87,904	87,904	8,480	8,222	8,195	1.38	1.34	1.34	-	-	-

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Grocery - E	Existing		Thermostat - Clock/Programmable		per sq ft	\$0.02	75%	\$0.01	193,170	187,489	187,489	143,979	135,842	131,923	251.40	237.19	230.35	-	-	-
Grocery - E	Existing		HVAC - Occupancy Sensors		per sq ft	\$0.14	75%	\$0.11	271,532	263,546	263,546	68,450	64,581	62,718	119.52	112.77	109.51	-	-	-
Grocery - E	Existing		Refrigerator - eCube		per sq ft	\$0.02	75%	\$0.02	2,298,802	2,231,190	2,231,190	2,417,723	2,282,578	2,221,982	-	-	-	-	-	-
Grocery - E	Existing		Electronics - Smart Power Strip		per sq ft	\$0.00	75%	\$0.00	2,274,030	2,207,147	2,207,147	1,395	1,314	1,276	-	-	-	-	-	-
Grocery - E	Existing		Electronics - Monitor Power Management		per sq ft	\$0.00	75%	\$0.00	665,803	646,221	646,221	13,226	12,782	12,700	-	-	-	-	-	-
Grocery - E	Existing		Insulation - Foundation		per sq ft	\$1.36	75%	\$1.02	123,024	119,406	119,406	45,739	43,154	41,909	79.86	75.35	73.18	-	-	-
Grocery - E	Existing		Water Heating - Booster Water Heater		per sq ft	\$0.04	75%	\$0.03	39,662	38,496	38,496	7,664	7,339	7,230	0.83	0.79	0.78	-	-	-
Grocery - E	Existing		Refrigeration - High Efficiency Evaporator Fan Motors		per sq ft	\$0.11	75%	\$0.08	9,300	9,027	9,027	42,544	37,559	34,386	-	-	-	-	-	-
Grocery - E	New		HVAC - Duct Repair and Sealing		per sq ft	\$0.00	75%	\$0.00	32,484	31,528	31,528	656	630	624	-	-	-	-	-	-
Grocery - E	New		Windows - High Efficiency RTU - Maintenance		per sq ft	\$0.25	75%	\$0.19	154,402	149,860	149,860	39,739	38,234	37,859	13.12	12.70	12.59	-	-	-
Grocery - E	New		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.19	75%	\$0.14	34,790	33,767	33,767	21,865	21,111	20,848	38.12	36.81	36.35	-	-	-
Grocery - E	New		Heat Pump - Maintenance Ventilation - Variable Speed Control		per sq ft	\$0.05	75%	\$0.04	17,880	17,354	17,354	10,385	10,070	10,042	-	-	-	-	-	-
Grocery - E	New		Heat Pump - Maintenance Ventilation - Variable Speed Control		per sq ft	\$0.13	75%	\$0.10	1,992	1,933	1,933	789	757	750	1.22	1.17	1.16	-	-	-
Grocery - E	New		Water Heater - Drainwater Heat Recovery		per sq ft	\$0.07	75%	\$0.05	58,025	56,318	56,318	33,650	32,266	31,922	1.02	0.98	0.97	-	-	-
Grocery - E	New		Water Heater - Faucet Aerators		per sq ft	\$0.04	75%	\$0.03	5,177	5,025	5,025	996	924	895	-	-	-	-	-	-
Grocery - E	New		Water Heater - Desuperheater		per sq ft	\$0.00	75%	\$0.00	781	758	758	362	335	325	0.04	0.04	0.03	-	-	-
Grocery - E	New		Water Heater - Install Timer		per sq ft	\$0.04	75%	\$0.03	1,045	1,014	1,014	447	414	401	0.05	0.04	0.04	-	-	-
Grocery - E	New		Water Heater - Pipe Insulation		per sq ft	\$0.00	75%	\$0.00	-	3,161	3,161	-	549	531	-	0.06	0.06	-	-	-
Grocery - E	New		Water Heater - Tank Blanket/Insulation		per sq ft	\$0.09	75%	\$0.07	5,021	4,873	4,873	607	563	546	0.07	0.06	0.06	-	-	-
Grocery - E	New		Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.02	75%	\$0.02	6,009	5,832	5,832	642	596	577	-	-	-	-	-	-
Grocery - E	New		Interior Lighting - Daylighting Controls		per sq ft	\$0.01	75%	\$0.00	660	640	640	305	283	274	0.03	0.03	0.03	-	-	-
Grocery - E	New				per sq ft	\$0.11	75%	\$0.08	53,345	51,776	51,776	39,791	37,950	37,465	7.19	6.86	6.77	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Grocery - E	New		Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	75%	\$0.00	28,710	27,866	27,866	143	136	134	0.03	0.02	0.02	-	-	-
Grocery - E	New		Interior Lighting - Occupancy Sensors		per sq ft	\$0.07	75%	\$0.05	23,897	23,194	23,194	5,942	5,667	5,594	0.54	0.51	0.51	-	-	-
Grocery - E	New		Exterior Lighting - Daylighting Controls		per sq ft	\$0.00	75%	\$0.00	-	106,764	106,764	-	5,451	5,403	-	-	-	-	-	-
Grocery - E	New		Refrigerator - Anti-Sweat Door Heater		per sq ft	\$0.01	75%	\$0.01	217,202	210,814	210,814	612,966	579,153	568,227	-	-	-	-	-	-
Grocery - E	New		Refrigerator - Auto Door Closer		per sq ft	\$0.01	75%	\$0.01	10,531	10,222	10,222	81,703	76,402	74,465	9.05	8.46	8.25	-	-	-
Grocery - E	New		Refrigerator - Decommissioning		per sq ft	\$0.13	75%	\$0.10	43,222	41,951	41,951	175,647	165,958	162,827	19.46	18.38	18.04	-	-	-
Grocery - E	New		Refrigerator - Door Gasket Replacement		per sq ft	\$0.10	75%	\$0.08	61,915	60,094	60,094	25,721	24,006	23,345	-	-	-	-	-	-
Grocery - E	New		Refrigerator - Evaporator Fan Controls		per sq ft	\$0.02	75%	\$0.01	21,729	21,090	21,090	3,924	3,708	3,638	0.43	0.41	0.40	-	-	-
Grocery - E	New		Vending Machine - Controller		per sq ft	\$0.01	75%	\$0.01	5,941	5,766	5,766	561	524	512	0.06	0.06	0.06	-	-	-
Grocery - E	New		Grocery - Display Case - LED Lighting		per sq ft	\$0.02	75%	\$0.02	63,278	61,416	61,416	29,495	27,868	27,351	3.27	3.09	3.03	-	-	-
Grocery - E	New		Grocery - Open Display Case - Night Covers		per sq ft	\$0.05	75%	\$0.04	50,123	48,649	48,649	17,459	16,856	16,778	1.93	1.87	1.86	-	-	-
Grocery - E	New		Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.01	75%	\$0.01	9,309	9,035	9,035	871	842	838	0.14	0.14	0.14	-	-	-
Grocery - E	New		Thermostat - Clock/Programmable		per sq ft	\$0.02	75%	\$0.01	14,510	14,083	14,083	3,737	3,605	3,560	6.53	6.29	6.22	-	-	-
Grocery - E	New		HVAC - Occupancy Sensors		per sq ft	\$0.14	75%	\$0.11	13,611	13,211	13,211	1,992	1,921	1,897	3.48	3.35	3.31	-	-	-
Grocery - E	New		Commissioning - HVAC		per sq ft	\$0.38	75%	\$0.28	51,922	50,395	50,395	33,614	32,425	32,020	-	-	-	-	-	-
Grocery - E	New		Commissioning - Lighting		per sq ft	\$0.04	75%	\$0.03	225,523	218,890	218,890	84,111	80,219	79,194	-	-	-	-	-	-
Grocery - E	New		Refrigerator - eCube		per sq ft	\$0.02	75%	\$0.02	216,369	210,005	210,005	195,397	184,618	181,135	-	-	-	-	-	-
Grocery - E	New		Electronics - Smart Power Strip		per sq ft	\$0.00	75%	\$0.00	234,048	227,164	227,164	140	132	130	-	-	-	-	-	-
Grocery - E	New		Electronics - Monitor Power Management		per sq ft	\$0.00	75%	\$0.00	68,434	66,421	66,421	1,355	1,311	1,304	-	-	-	-	-	-
Grocery - E	New		Insulation - Foundation		per sq ft	\$0.32	75%	\$0.24	12,679	12,306	12,306	2,736	2,639	2,606	4.78	4.61	4.55	-	-	-
Grocery - E	New		Water Heating - Booster Water Heater		per sq ft	\$0.04	75%	\$0.03	2,621	2,544	2,544	448	416	403	0.05	0.04	0.04	-	-	-

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Grocery - E	New		Refrigeration - High Efficiency Evaporator Fan Motors		per sq ft	\$0.11	75%	\$0.08	892	866	866	2,215	2,096	2,059	-	-	-	-	-	-
College - E	Existing		Insulation - Ceiling		per sq ft	\$0.00	75%	\$0.00	-	2,021,119	2,021,119	-	86,027	85,054	-	49.30	48.20	-	-	-
College - E	Existing		Insulation - Radiant Barrier		per sq ft	\$0.18	75%	\$0.13	2,106,472	2,044,517	2,044,517	35,415	33,937	33,541	19.73	18.70	18.29	-	-	-
College - E	Existing		Insulation - Wall Cavity		per sq ft	\$0.16	75%	\$0.12	2,208,643	2,143,683	2,143,683	6,979	7,054	7,323	5.17	4.90	4.79	-	-	-
College - E	Existing		HVAC - Duct Repair and Sealing		per sq ft	\$0.00	75%	\$0.00	2,359,356	2,289,963	2,289,963	90,850	85,623	83,326	28.54	27.05	26.45	-	-	-
College - E	Existing		Windows - High Efficiency		per sq ft	\$0.10	75%	\$0.07	5,412,661	5,253,465	5,253,465	700,304	664,299	650,268	312.62	296.31	289.75	-	-	-
College - E	Existing		Air-Cooled Chiller - Condenser Air Temperature Reset		per sq ft	\$0.01	75%	\$0.01	78,178	75,879	75,879	27,763	26,612	26,279	-	-	-	-	-	-
College - E	Existing		Air-Cooled Chiller - Economizer		per sq ft	\$0.01	75%	\$0.01	625,608	607,208	607,208	29,385	28,166	27,814	-	-	-	-	-	-
College - E	Existing		Air-Cooled Chiller - High Efficiency		per sq ft	\$0.01	75%	\$0.01	242,674	235,537	235,537	11,673	11,189	11,049	2.79	2.67	2.64	-	-	-
College - E	Existing		Cooling Tower Fans		per sq ft	\$0.01	75%	\$0.01	242,674	235,537	235,537	11,673	11,189	11,049	2.79	2.67	2.64	-	-	-
College - E	Existing		Air-Cooled Chiller - Maintenance		per sq ft	\$0.08	75%	\$0.06	473,547	459,619	459,619	277,199	265,702	262,385	170.44	163.37	161.33	-	-	-
College - E	Existing		Water-Cooled Chiller - Condenser Water Temperature Reset		per sq ft	\$0.01	75%	\$0.00	1,486,930	1,443,197	1,443,197	939,738	889,291	868,915	223.59	211.59	206.74	-	-	-
College - E	Existing		Water-Cooled Chiller - Economizer		per sq ft	\$0.00	75%	\$0.00	1,980,618	1,922,364	1,922,364	84,367	79,838	78,009	-	-	-	-	-	-
College - E	Existing		Water-Cooled Chiller - VSD on Fans		per sq ft	\$1.17	75%	\$0.88	1,961,814	1,904,113	1,904,113	2,336,097	2,210,691	2,160,038	1,437.91	1,360.72	1,329.54	-	-	-
College - E	Existing		Water-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.01	75%	\$0.01	1,994,515	1,935,853	1,935,853	642,352	607,869	593,941	-	-	-	-	-	-
College - E	Existing		Water-Cooled Chiller - High Efficiency		per sq ft	\$0.01	75%	\$0.01	750,735	728,655	728,655	32,750	30,992	30,281	7.83	7.41	7.24	-	-	-
College - E	Existing		Cooling Tower Fans		per sq ft	\$0.01	75%	\$0.01	750,735	728,655	728,655	32,750	30,992	30,281	7.83	7.41	7.24	-	-	-
College - E	Existing		Water-Cooled Chiller - Maintenance		per sq ft	\$0.08	75%	\$0.06	1,466,538	1,423,404	1,423,404	778,529	736,736	719,856	478.68	452.99	442.61	-	-	-
College - E	Existing		RTU - Maintenance		per sq ft	\$0.08	75%	\$0.06	280,066	271,829	271,829	111,962	105,634	102,589	68.84	64.95	63.08	-	-	-
College - E	Existing		Space Heating - Heat Recovery		per sq ft	\$0.02	75%	\$0.01	28,443	27,606	27,606	21,377	20,741	20,690	-	-	-	-	-	-
College - E	Existing		Ventilator		per sq ft	\$0.02	75%	\$0.02	3,791,994	3,680,465	3,680,465	747,202	696,931	672,349	22.48	20.97	20.23	-	-	-
College - E	Existing		Variable Speed Control		per sq ft	\$0.02	75%	\$0.02	3,791,994	3,680,465	3,680,465	747,202	696,931	672,349	22.48	20.97	20.23	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
College - E	Existing		Water Heater - Faucet Aerators		per sq ft	\$0.00	75%	\$0.00	13,301	12,910	12,910	4,637	4,441	4,374	0.53	0.50	0.50	-	-	-
College - E	Existing		Water Heater - Low Flow Showerheads		per sq ft	\$0.00	75%	\$0.00	11,324	10,991	10,991	7,985	7,647	7,533	0.91	0.87	0.86	-	-	-
College - E	Existing		Water Heater - Desuperheater		per sq ft	\$0.04	75%	\$0.03	31,205	30,287	30,287	10,043	9,617	9,474	1.14	1.09	1.08	-	-	-
College - E	Existing		Water Heater - Pipe Insulation		per sq ft	\$0.02	75%	\$0.02	165,409	160,544	160,544	15,069	14,431	14,215	1.63	1.56	1.53	-	-	-
College - E	Existing		Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.00	75%	\$0.00	11,258	10,927	10,927	3,925	3,759	3,703	0.45	0.43	0.42	-	-	-
College - E	Existing		Interior Lighting - Daylighting Controls		per sq ft	\$0.11	75%	\$0.08	806,466	782,746	782,746	316,475	297,832	289,845	44.61	41.98	40.85	-	-	-
College - E	Existing		Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	75%	\$0.00	6,487,911	6,297,090	6,297,090	16,973	15,973	15,545	2.39	2.25	2.19	-	-	-
College - E	Existing		Interior Lighting - Occupancy Sensors		per sq ft	\$0.00	75%	\$0.00	-	-	4,668,852	-	-	576,281	-	-	40.61	-	-	-
College - E	Existing		Refrigerator - Auto Door Closer		per sq ft	\$0.00	75%	\$0.00	194,021	188,314	188,314	16,580	15,744	15,400	1.79	1.70	1.66	-	-	-
College - E	Existing		Refrigerator - Evaporator Fan Controls		per sq ft	\$0.00	75%	\$0.00	483,151	468,940	468,940	1,675	1,570	1,510	0.18	0.17	0.16	-	-	-
College - E	Existing		Vending Machine - Controller		per sq ft	\$0.00	75%	\$0.00	234,540	227,642	227,642	7,369	6,833	6,317	0.79	0.74	0.68	-	-	-
College - E	Existing		Pool Pump - Timer		per sq ft	\$0.00	75%	\$0.00	1,200,384	1,165,079	1,165,079	1,411	1,364	1,355	-	-	-	-	-	-
College - E	Existing		Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.00	75%	\$0.00	1,391,116	1,350,201	1,350,201	17,130	16,608	16,554	2.34	2.27	2.27	-	-	-
College - E	Existing		Thermostat - Clock/Programmable		per sq ft	\$0.01	75%	\$0.01	1,277,071	1,239,510	1,239,510	533,281	506,108	495,517	328.24	311.52	305.00	-	-	-
College - E	Existing		Refrigerator - eCube		per sq ft	\$0.01	75%	\$0.01	4,683,232	4,545,490	4,545,490	81,183	76,096	73,184	-	-	-	-	-	-
College - E	Existing		Electronics - Smart Power Strip		per sq ft	\$0.00	75%	\$0.00	8,287,348	8,043,602	8,043,602	11,998	11,363	11,057	-	-	-	-	-	-
College - E	Existing		Electronics - Monitor Power Management		per sq ft	\$0.00	75%	\$0.00	4,882,864	4,739,251	4,739,251	251,362	242,923	241,368	-	-	-	-	-	-
College - E	Existing		Water Heating - Booster Water Heater		per sq ft	\$0.02	75%	\$0.01	85,949	83,421	83,421	11,064	10,596	10,437	1.26	1.20	1.19	-	-	-
College - E	Existing		Refrigeration - High Efficiency Evaporator Fan Motors		per sq ft	\$0.00	75%	\$0.00	13,397	13,003	13,003	1,584	1,383	1,260	-	-	-	-	-	-
College - E	New		Insulation - Radiant Barrier		per sq ft	\$0.18	75%	\$0.13	206,471	200,398	200,398	1,625	1,572	1,566	0.84	0.81	0.80	-	-	-
College - E	New		HVAC - Duct Repair and Sealing		per sq ft	\$0.00	75%	\$0.00	190,460	184,858	184,858	6,544	6,324	6,292	1.40	1.35	1.34	-	-	-
College - E	New		Windows - High Efficiency		per sq ft	\$0.10	75%	\$0.07	965,993	937,581	937,581	74,404	71,832	71,419	27.60	26.64	26.48	-	-	-

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
College - E	New		Air-Cooled Chiller - Condenser Air Temperature Reset		per sq ft	\$0.01	75%	\$0.01	4,594	4,459	4,459	1,340	1,282	1,267	-	-	-	-	-	-
College - E	New		Air-Cooled Chiller - High Efficiency Cooling Tower Fans		per sq ft	\$0.01	75%	\$0.01	23,355	22,668	22,668	534	511	505	0.17	0.16	0.16	-	-	-
College - E	New		Air-Cooled Chiller - Maintenance Water-Cooled Chiller -		per sq ft	\$0.08	75%	\$0.06	48,714	47,281	47,281	21,891	20,940	20,695	13.49	12.91	12.75	-	-	-
College - E	New		Condenser Water Temperature Reset		per sq ft	\$0.01	75%	\$0.00	87,374	84,804	84,804	33,975	32,964	32,883	8.08	7.84	7.82	-	-	-
College - E	New		Water-Cooled Chiller - Economizer		per sq ft	\$0.00	75%	\$0.00	84,072	81,599	81,599	1,682	1,632	1,628	-	-	-	-	-	-
College - E	New		Water-Cooled Chiller - VSD on Fans		per sq ft	\$1.17	75%	\$0.88	191,449	185,818	185,818	140,492	136,311	135,976	86.48	83.90	83.70	-	-	-
College - E	New		Water-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.01	75%	\$0.01	162,737	157,951	157,951	34,686	33,653	33,571	-	-	-	-	-	-
College - E	New		Water-Cooled Chiller - High Efficiency Cooling Tower Fans		per sq ft	\$0.01	75%	\$0.01	70,519	68,445	68,445	1,179	1,144	1,141	0.37	0.36	0.36	-	-	-
College - E	New		Water-Cooled Chiller - Maintenance RTU -		per sq ft	\$0.08	75%	\$0.06	151,752	147,289	147,289	49,839	48,355	48,236	30.72	29.80	29.73	-	-	-
College - E	New		Maintenance Space Heating -		per sq ft	\$0.08	75%	\$0.06	28,800	27,953	27,953	8,058	7,720	7,638	4.97	4.76	4.71	-	-	-
College - E	New		Heat Recovery Ventilator		per sq ft	\$0.02	75%	\$0.01	8,535	8,284	8,284	6,232	6,047	6,032	-	-	-	-	-	-
College - E	New		Ventilation - Variable Speed Control		per sq ft	\$0.02	75%	\$0.02	390,694	379,203	379,203	108,325	104,849	104,423	3.26	3.15	3.14	-	-	-
College - E	New		Water Heater - Faucet Aerators		per sq ft	\$0.00	75%	\$0.00	1,367	1,327	1,327	422	391	379	0.05	0.04	0.04	-	-	-
College - E	New		Water Heater - Low Flow Showerheads		per sq ft	\$0.00	75%	\$0.00	1,164	1,130	1,130	726	674	652	0.08	0.08	0.07	-	-	-
College - E	New		Water Heater - Desuperheater		per sq ft	\$0.04	75%	\$0.03	3,208	3,113	3,113	913	847	821	0.10	0.10	0.09	-	-	-
College - E	New		Water Heater - Pipe Insulation		per sq ft	\$0.02	75%	\$0.02	15,473	15,018	15,018	1,247	1,157	1,120	0.14	0.13	0.13	-	-	-
College - E	New		Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.00	75%	\$0.00	1,157	1,123	1,123	357	331	321	0.04	0.04	0.04	-	-	-
College - E	New		Interior Lighting - Daylighting Controls		per sq ft	\$0.11	75%	\$0.08	246,493	239,243	239,243	89,442	85,197	84,049	12.61	12.01	11.85	-	-	-
College - E	New		Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	75%	\$0.00	193,388	187,700	187,700	468	446	440	0.07	0.06	0.06	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
College - E	New		Interior Lighting - Occupancy Sensors		per sq ft	\$0.00	75%	\$0.00	-	169,172	169,172	-	20,081	19,811	-	1.42	1.40	-	-	-
College - E	New		Refrigerator - Auto Door Closer		per sq ft	\$0.00	75%	\$0.00	20,087	19,496	19,496	1,525	1,425	1,389	0.16	0.15	0.15	-	-	-
College - E	New		Refrigerator - Evaporator Fan Controls		per sq ft	\$0.00	75%	\$0.00	46,811	45,435	45,435	130	123	121	0.01	0.01	0.01	-	-	-
College - E	New		Vending Machine - Controller		per sq ft	\$0.00	75%	\$0.00	12,397	12,033	12,033	230	215	210	0.02	0.02	0.02	-	-	-
College - E	New		Pool Pump - Timer		per sq ft	\$0.00	75%	\$0.00	91,913	89,210	89,210	105	99	96	-	-	-	-	-	-
College - E	New		Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.00	75%	\$0.00	142,985	138,780	138,780	1,759	1,701	1,693	0.24	0.23	0.23	-	-	-
College - E	New		Thermostat - Clock/Programmable		per sq ft	\$0.01	75%	\$0.01	118,211	114,735	114,735	33,343	32,183	31,996	20.52	19.81	19.69	-	-	-
College - E	New		Commissioning - HVAC		per sq ft	\$0.38	75%	\$0.28	166,303	161,412	161,412	58,621	56,581	56,253	-	-	-	-	-	-
College - E	New		Commissioning - Lighting		per sq ft	\$0.04	75%	\$0.03	868,057	842,526	842,526	157,491	150,016	147,996	-	-	-	-	-	-
College - E	New		Refrigerator - eCube		per sq ft	\$0.01	75%	\$0.01	444,232	431,166	431,166	6,173	5,850	5,737	-	-	-	-	-	-
College - E	New		Electronics - Smart Power Strip		per sq ft	\$0.00	75%	\$0.00	856,002	830,826	830,826	1,217	1,157	1,134	-	-	-	-	-	-
College - E	New		Electronics - Monitor Power Management		per sq ft	\$0.00	75%	\$0.00	503,106	488,309	488,309	25,809	24,983	24,834	-	-	-	-	-	-
College - E	New		Insulation - Foundation		per sq ft	\$0.32	75%	\$0.24	98,834	95,927	95,927	11,613	11,209	11,144	7.15	6.90	6.86	-	-	-
College - E	New		Water Heating - Booster Water Heater		per sq ft	\$0.02	75%	\$0.01	8,039	7,802	7,802	916	849	823	0.10	0.10	0.09	-	-	-
College - E	New		Refrigeration - High Efficiency Evaporator Fan Motors		per sq ft	\$0.00	75%	\$0.00	1,332	1,293	1,293	92	87	85	-	-	-	-	-	-
School - E	Existing		Insulation - Ceiling		per sq ft	\$0.00	75%	\$0.00	-	-	1,517,195	-	-	29,011	-	-	23.75	-	-	-
School - E	Existing		Insulation - Radiant Barrier		per sq ft	\$0.18	75%	\$0.13	1,395,109	1,354,076	1,354,076	10,212	9,954	9,986	8.28	7.99	7.95	-	-	-
School - E	Existing		Insulation - Wall Cavity		per sq ft	\$0.16	75%	\$0.12	1,335,671	1,296,387	1,296,387	5,370	5,272	5,323	1.98	1.91	1.90	-	-	-
School - E	Existing		HVAC - Duct Repair and Sealing		per sq ft	\$0.00	75%	\$0.00	1,503,969	1,459,735	1,459,735	29,229	27,505	26,739	11.53	11.13	11.07	-	-	-
School - E	Existing		Windows - High Efficiency		per sq ft	\$0.10	75%	\$0.07	1,273,810	1,236,345	1,236,345	65,901	63,091	62,296	46.61	44.99	44.75	-	-	-
School - E	Existing		Air-Cooled Chiller - Condenser Air Temperature Reset		per sq ft	\$0.01	75%	\$0.01	22,685	22,018	22,018	6,121	5,855	5,771	-	-	-	-	-	-
School - E	Existing		Air-Cooled Chiller - Economizer		per sq ft	\$0.01	75%	\$0.01	119,275	115,767	115,767	4,257	4,072	4,013	-	-	-	-	-	-

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
School - E	Existing		Air-Cooled Chiller - High Efficiency Cooling Tower Fans		per sq ft	\$0.01	75%	\$0.01	90,512	87,850	87,850	3,308	3,164	3,119	1.72	1.65	1.63	-	-	-
School - E	Existing		Air-Cooled Chiller - Maintenance		per sq ft	\$0.08	75%	\$0.06	66,620	64,661	64,661	29,632	28,342	27,935	39.72	37.99	37.44	-	-	-
School - E	Existing		Water-Cooled Chiller - Condenser Water Temperature Reset		per sq ft	\$0.01	75%	\$0.00	129,472	125,664	125,664	61,690	58,204	56,730	32.00	30.19	29.42	-	-	-
School - E	Existing		Water-Cooled Chiller - Economizer		per sq ft	\$0.00	75%	\$0.00	112,772	109,455	109,455	3,622	3,417	3,330	-	-	-	-	-	-
School - E	Existing		Water-Cooled Chiller - VSD on Fans		per sq ft	\$1.17	75%	\$0.88	132,895	128,986	128,986	119,306	112,564	109,715	160.08	151.03	147.21	-	-	-
School - E	Existing		Water-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.01	75%	\$0.01	173,669	168,561	168,561	42,168	39,785	38,778	-	-	-	-	-	-
School - E	Existing		Water-Cooled Chiller - High Efficiency Cooling Tower Fans		per sq ft	\$0.01	75%	\$0.01	84,054	81,582	81,582	2,764	2,608	2,542	1.44	1.36	1.32	-	-	-
School - E	Existing		Water-Cooled Chiller - Maintenance		per sq ft	\$0.08	75%	\$0.06	61,910	60,090	60,090	24,778	23,378	22,786	33.21	31.33	30.54	-	-	-
School - E	Existing		RTU - Maintenance		per sq ft	\$0.08	75%	\$0.06	158,990	154,313	154,313	48,063	45,240	43,868	64.42	60.64	58.80	-	-	-
School - E	Existing		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.02	75%	\$0.01	41,417	40,199	40,199	21,492	20,700	20,508	-	-	-	-	-	-
School - E	Existing		Ventilation - Variable Speed Control		per sq ft	\$0.02	75%	\$0.02	3,534,087	3,430,143	3,430,143	442,933	413,132	398,560	13.53	12.62	12.17	-	-	-
School - E	Existing		Water Heater - Faucet Aerators		per sq ft	\$0.00	75%	\$0.00	8,038	7,802	7,802	1,818	1,741	1,715	0.10	0.10	0.10	-	-	-
School - E	Existing		Water Heater - Low Flow Showerheads		per sq ft	\$0.00	75%	\$0.00	6,846	6,645	6,645	3,132	2,999	2,955	0.17	0.17	0.16	-	-	-
School - E	Existing		Water Heater - Desuperheater		per sq ft	\$0.04	75%	\$0.03	12,096	11,740	11,740	2,526	2,419	2,382	0.14	0.13	0.13	-	-	-
School - E	Existing		Water Heater - Pipe Insulation		per sq ft	\$0.02	75%	\$0.02	40,231	39,048	39,048	2,378	2,277	2,243	0.13	0.12	0.12	-	-	-
School - E	Existing		Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.00	75%	\$0.00	6,797	6,597	6,597	1,537	1,472	1,450	0.09	0.08	0.08	-	-	-
School - E	Existing		Interior Lighting - Daylighting Controls		per sq ft	\$0.11	75%	\$0.08	827,370	803,036	803,036	264,861	246,486	236,998	19.98	18.59	17.88	-	-	-
School - E	Existing		Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	75%	\$0.00	6,038,083	5,860,492	5,860,492	12,886	11,992	11,531	0.97	0.90	0.87	-	-	-
School - E	Existing		Refrigerator - Auto Door Closer		per sq ft	\$0.00	75%	\$0.00	436,374	423,540	423,540	42,037	39,917	39,046	4.47	4.25	4.15	-	-	-
School - E	Existing		Refrigerator - Evaporator Fan Controls		per sq ft	\$0.00	75%	\$0.00	1,104,834	1,072,339	1,072,339	4,599	4,299	4,126	0.49	0.46	0.44	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
School - E	Existing		Vending Machine		per sq ft	\$0.00	75%	\$0.00	538,230	522,399	522,399	19,062	17,675	16,342	2.03	1.88	1.74	-	-	-
School - E	Existing		- Controller Pool Pump - Timer		per sq ft	\$0.00	75%	\$0.00	112,682	109,368	109,368	27	26	26	-	-	-	-	-	-
School - E	Existing		Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.00	75%	\$0.00	687,885	667,653	667,653	5,801	5,624	5,606	0.29	0.28	0.28	-	-	-
School - E	Existing		Thermostat - Clock/Programmable		per sq ft	\$0.01	75%	\$0.01	346,003	335,826	335,826	92,887	87,836	85,628	124.63	117.85	114.89	-	-	-
School - E	Existing		HVAC - Occupancy Sensors		per sq ft	\$0.00	75%	\$0.00	-	779,855	779,855	-	58,898	57,418	-	79.03	77.04	-	-	-
School - E	Existing		Refrigerator - eCube		per sq ft	\$0.01	75%	\$0.01	10,473,967	10,165,909	10,165,909	218,003	203,782	195,588	-	-	-	-	-	-
School - E	Existing		Electronics - Smart Power Strip		per sq ft	\$0.00	75%	\$0.00	13,544,588	13,146,218	13,146,218	11,049	10,395	10,110	-	-	-	-	-	-
School - E	Existing		Electronics - Monitor Power Management		per sq ft	\$0.00	75%	\$0.00	4,544,319	4,410,663	4,410,663	103,609	100,130	99,489	-	-	-	-	-	-
School - E	Existing		Water Heating - Booster Water Heater		per sq ft	\$0.02	75%	\$0.01	20,905	20,290	20,290	1,746	1,672	1,647	0.10	0.09	0.09	-	-	-
School - E	Existing		Refrigeration - High Efficiency Evaporator Fan Motors		per sq ft	\$0.00	75%	\$0.00	72,279	70,154	70,154	10,428	9,206	8,428	-	-	-	-	-	-
School - E	New		Insulation - Radiant Barrier		per sq ft	\$0.18	75%	\$0.13	142,229	138,046	138,046	546	536	543	0.42	0.42	0.43	-	-	-
School - E	New		HVAC - Duct Repair and Sealing		per sq ft	\$0.00	75%	\$0.00	125,086	121,407	121,407	2,753	2,660	2,647	0.66	0.66	0.68	-	-	-
School - E	New		Windows - High Efficiency		per sq ft	\$0.10	75%	\$0.07	291,593	283,017	283,017	9,639	9,475	9,595	6.04	6.02	6.19	-	-	-
School - E	New		Air-Cooled Chiller - Condenser Air Temperature Reset		per sq ft	\$0.01	75%	\$0.01	1,515	1,470	1,470	337	322	318	-	-	-	-	-	-
School - E	New		Air-Cooled Chiller - High Efficiency		per sq ft	\$0.01	75%	\$0.01	9,917	9,626	9,626	173	166	163	0.12	0.11	0.11	-	-	-
School - E	New		Cooling Tower Fans		per sq ft	\$0.08	75%	\$0.06	9,689	9,404	9,404	3,325	3,176	3,137	4.47	4.27	4.22	-	-	-
School - E	New		Air-Cooled Chiller - Maintenance		per sq ft	\$0.01	75%	\$0.00	8,644	8,390	8,390	2,573	2,496	2,490	1.33	1.29	1.29	-	-	-
School - E	New		Water-Cooled Chiller - Condenser Water Temperature Reset		per sq ft	\$0.00	75%	\$0.00	8,739	8,482	8,482	134	130	130	-	-	-	-	-	-
School - E	New		Water-Cooled Chiller - Economizer		per sq ft	\$1.17	75%	\$0.88	14,827	14,391	14,391	8,328	8,080	8,060	11.17	10.84	10.81	-	-	-
School - E	New		Chiller - VSD on Fans		per sq ft															

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
School - E	New		Water-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.01	75%	\$0.01	16,100	15,626	15,626	2,627	2,548	2,542	-	-	-	-	-	-
School - E	New		Water-Cooled Chiller - High Efficiency Cooling		per sq ft	\$0.01	75%	\$0.01	9,267	8,995	8,995	119	115	115	0.08	0.08	0.08	-	-	-
School - E	New		Tower Fans		per sq ft	\$0.08	75%	\$0.06	9,057	8,791	8,791	2,277	2,209	2,204	3.06	2.97	2.96	-	-	-
School - E	New		Water-Cooled Chiller - Maintenance		per sq ft	\$0.08	75%	\$0.06	23,115	22,435	22,435	4,895	4,697	4,653	6.58	6.31	6.25	-	-	-
School - E	New		RTU - Maintenance		per sq ft	\$0.02	75%	\$0.01	13,734	13,330	13,330	6,697	6,465	6,427	-	-	-	-	-	-
School - E	New		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.02	75%	\$0.02	363,606	352,911	352,911	64,123	62,065	61,813	1.96	1.90	1.89	-	-	-
School - E	New		Variable Speed Control		per sq ft	\$0.00	75%	\$0.00	794	770	770	159	147	143	0.01	0.01	0.01	-	-	-
School - E	New		Water Heater - Faucet Aerators		per sq ft	\$0.00	75%	\$0.00	676	656	656	274	254	246	0.02	0.01	0.01	-	-	-
School - E	New		Water Heater - Low Flow Showerheads		per sq ft	\$0.04	75%	\$0.03	1,245	1,208	1,208	230	213	207	0.01	0.01	0.01	-	-	-
School - E	New		Water Heater - Desuperheater		per sq ft	\$0.00	75%	\$0.00	672	652	652	134	125	121	0.01	0.01	0.01	-	-	-
School - E	New		Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.11	75%	\$0.08	273,283	265,245	265,245	75,687	72,417	71,611	5.71	5.46	5.40	-	-	-
School - E	New		Interior Lighting - Daylighting Controls		per sq ft	\$0.00	75%	\$0.00	179,980	174,686	174,686	332	318	314	0.03	0.02	0.02	-	-	-
School - E	New		Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	75%	\$0.00	44,987	43,664	43,664	3,852	3,602	3,510	0.41	0.38	0.37	-	-	-
School - E	New		Refrigerator - Auto Door Closer		per sq ft	\$0.00	75%	\$0.00	104,280	101,213	101,213	341	324	318	0.04	0.03	0.03	-	-	-
School - E	New		Refrigerator - Evaporator Fan Controls		per sq ft	\$0.00	75%	\$0.00	27,766	26,949	26,949	578	541	527	0.06	0.06	0.06	-	-	-
School - E	New		Vending Machine - Controller		per sq ft	\$0.00	75%	\$0.00	7,673	7,447	7,447	2	2	2	-	-	-	-	-	-
School - E	New		Pool Pump - Timer		per sq ft	\$0.00	75%	\$0.00	73,549	71,386	71,386	620	599	596	0.03	0.03	0.03	-	-	-
School - E	New		Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.01	75%	\$0.01	32,929	31,961	31,961	6,402	6,143	6,084	8.59	8.24	8.16	-	-	-
School - E	New		Thermostat - Clock/Programmable		per sq ft	\$0.00	75%	\$0.00	-	44,227	44,227	-	2,401	2,378	-	3.22	3.19	-	-	-
School - E	New		HVAC - Occupancy Sensors		per sq ft	\$0.38	75%	\$0.28	56,944	55,269	55,269	13,834	13,275	13,149	-	-	-	-	-	-
School - E	New		Commissioning - HVAC		per sq ft	\$0.04	75%	\$0.03	805,456	781,766	781,766	111,538	106,719	105,531	-	-	-	-	-	-
School - E	New		Commissioning - Lighting		per sq ft	\$0.01	75%	\$0.01	989,628	960,521	960,521	16,188	15,376	15,096	-	-	-	-	-	-
School - E	New		Refrigerator - eCube		per sq ft															

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
School - E	New		Electronics - Smart Power Strip		per sq ft	\$0.00	75%	\$0.00	1,398,054	1,356,935	1,356,935	1,125	1,060	1,037	-	-	-	-	-	-
School - E	New		Electronics - Monitor Power Management		per sq ft	\$0.00	75%	\$0.00	468,224	454,453	454,453	10,638	10,298	10,236	-	-	-	-	-	-
School - E	New		Insulation - Foundation		per sq ft	\$0.32	75%	\$0.24	32,801	31,836	31,836	2,656	2,549	2,525	3.56	3.42	3.39	-	-	-
School - E	New		Refrigeration - High Efficiency Evaporator Fan Motors		per sq ft	\$0.00	75%	\$0.00	6,829	6,628	6,628	534	506	497	-	-	-	-	-	-
Health - E	Existing		HVAC - Duct Repair and Sealing		per sq ft	\$0.00	75%	\$0.00	1,730,256	1,679,366	1,679,366	69,350	64,898	62,765	1.31	1.24	1.21	-	-	-
Health - E	Existing		Air-Cooled Chiller - Condenser Air Temperature Reset		per sq ft	\$0.01	75%	\$0.01	20,850	20,237	20,237	10,828	10,402	10,291	-	-	-	-	-	-
Health - E	Existing		Air-Cooled Chiller - Economizer		per sq ft	\$0.01	75%	\$0.01	199,460	193,594	193,594	374,420	359,686	355,851	-	-	-	-	-	-
Health - E	Existing		Air-Cooled Chiller - VSD on fans		per sq ft	\$0.02	75%	\$0.02	170,938	165,910	165,910	69	67	66	1.55	1.49	1.47	-	-	-
Health - E	Existing		Air-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.01	75%	\$0.01	136,307	132,298	132,298	109,673	105,357	104,234	4.09	3.93	3.88	-	-	-
Health - E	Existing		Air-Cooled Chiller - High Efficiency Cooling Tower Fans		per sq ft	\$0.01	75%	\$0.01	65,161	63,245	63,245	3,694	3,548	3,511	0.36	0.35	0.35	-	-	-
Health - E	Existing		Air-Cooled Chiller - Maintenance		per sq ft	\$0.28	75%	\$0.21	115,917	112,508	112,508	79,968	76,821	76,002	20.33	19.53	19.32	-	-	-
Health - E	Existing		Water-Cooled Chiller - Condenser Water Temperature Reset		per sq ft	\$0.00	75%	\$0.00	401,224	389,423	389,423	282,529	264,480	256,029	27.78	26.01	25.18	-	-	-
Health - E	Existing		Water-Cooled Chiller - Economizer		per sq ft	\$0.00	75%	\$0.00	610,156	592,210	592,210	58,955	55,189	53,426	-	-	-	-	-	-
Health - E	Existing		Water-Cooled Chiller - VSD on Fans		per sq ft	\$1.17	75%	\$0.88	545,246	529,209	529,209	724,854	678,548	656,866	184.40	172.62	167.11	-	-	-
Health - E	Existing		Water-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.01	75%	\$0.01	433,296	420,552	420,552	192,945	180,619	174,847	-	-	-	-	-	-
Health - E	Existing		Water-Cooled Chiller - High Efficiency Cooling Tower Fans		per sq ft	\$0.00	75%	\$0.00	-	-	284,904	-	-	4,176	-	-	0.44	-	-	-
Health - E	Existing		Water-Cooled Chiller - Maintenance		per sq ft	\$0.28	75%	\$0.21	354,037	343,624	343,624	67,938	63,598	61,566	20.67	19.35	18.73	-	-	-
Health - E	Existing		RTU - Maintenance		per sq ft	\$0.28	75%	\$0.21	621,055	602,789	602,789	158,427	149,473	145,165	48.21	45.48	44.17	-	-	-
Health - E	Existing		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.01	75%	\$0.00	125,860	122,158	122,158	92,779	89,938	89,640	-	-	-	-	-	-

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Health - E	Existing		Heat Pump - Maintenance Ventilation -		per sq ft	\$0.04	75%	\$0.03	10,572	10,261	10,261	2,494	2,355	2,286	0.44	0.41	0.40	-	-	-
Health - E	Existing		Variable Speed Control		per sq ft	\$0.01	75%	\$0.01	2,644,325	2,566,551	2,566,551	1,065,927	992,800	957,144	36.14	33.66	32.45	-	-	-
Health - E	Existing		Water Heater - Drainwater Heat Recovery		per sq ft	\$0.04	75%	\$0.03	140,460	136,328	136,328	26,780	25,646	25,263	-	-	-	-	-	-
Health - E	Existing		Water Heater - Faucet Aerators		per sq ft	\$0.00	75%	\$0.00	21,763	21,123	21,123	9,989	9,566	9,423	0.82	0.79	0.77	-	-	-
Health - E	Existing		Water Heater - Low Flow Showerheads		per sq ft	\$0.00	75%	\$0.00	18,546	18,001	18,001	17,217	16,488	16,242	1.41	1.35	1.33	-	-	-
Health - E	Existing		Water Heater - Desuperheater		per sq ft	\$0.04	75%	\$0.03	28,131	27,304	27,304	11,919	11,414	11,244	0.98	0.94	0.92	-	-	-
Health - E	Existing		Water Heater - Install Timer		per sq ft	\$0.00	75%	\$0.00	-	-	90,087	-	-	15,767	-	-	1.30	-	-	-
Health - E	Existing		Water Heater - Pipe Insulation		per sq ft	\$0.04	75%	\$0.03	91,334	88,648	88,648	10,952	10,488	10,332	0.87	0.83	0.82	-	-	-
Health - E	Existing		Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.00	75%	\$0.00	18,429	17,887	17,887	8,459	8,101	7,980	0.70	0.67	0.66	-	-	-
Health - E	Existing		Interior Lighting - Daylighting Controls		per sq ft	\$0.11	75%	\$0.08	961,120	932,852	932,852	330,076	305,775	293,766	34.71	32.15	30.89	-	-	-
Health - E	Existing		Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	75%	\$0.00	4,627,380	4,491,281	4,491,281	10,594	9,814	9,429	1.11	1.03	0.99	-	-	-
Health - E	Existing		Refrigerator - Auto Door Closer		per sq ft	\$0.00	75%	\$0.00	441,322	428,341	428,341	45,514	43,218	42,275	4.79	4.55	4.45	-	-	-
Health - E	Existing		Refrigerator - Evaporator Fan Controls		per sq ft	\$0.00	75%	\$0.00	991,095	961,945	961,945	4,272	4,027	3,895	0.45	0.42	0.41	-	-	-
Health - E	Existing		Vending Machine - Controller		per sq ft	\$0.00	75%	\$0.00	533,488	517,797	517,797	20,303	18,861	17,507	2.14	1.99	1.84	-	-	-
Health - E	Existing		Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.00	75%	\$0.00	907,949	881,245	881,245	168,064	162,939	162,410	18.24	17.68	17.63	-	-	-
Health - E	Existing		Refrigerator - eCube		per sq ft	\$0.00	75%	\$0.00	9,606,791	9,324,238	9,324,238	207,037	195,172	188,787	-	-	-	-	-	-
Health - E	Existing		Electronics - Smart Power Strip		per sq ft	\$0.00	75%	\$0.00	7,412,064	7,194,062	7,194,062	7,672	7,257	7,068	-	-	-	-	-	-
Health - E	Existing		Electronics - Monitor Power Management		per sq ft	\$0.00	75%	\$0.00	3,463,641	3,361,769	3,361,769	132,493	128,045	127,225	-	-	-	-	-	-
Health - E	Existing		Water Heating - Booster Water Heater		per sq ft	\$0.01	75%	\$0.00	47,707	46,304	46,304	8,085	7,743	7,627	0.66	0.64	0.63	-	-	-
Health - E	Existing		Refrigeration - High Efficiency		per sq ft	\$0.00	75%	\$0.00	23,853	23,151	23,151	3,616	3,183	2,909	-	-	-	-	-	-
Health - E	Existing		Evaporator Fan Motors		per sq ft	\$0.00	75%	\$0.00	141,474	137,313	137,313	5,758	5,563	5,529	0.17	0.16	0.16	-	-	-
Health - E	New		HVAC - Duct Repair and Sealing		per sq ft	\$0.00	75%	\$0.00												

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Health - E	New		Air-Cooled Chiller - Condenser Air Temperature Reset		per sq ft	\$0.01	75%	\$0.01	1,294	1,256	1,256	448	428	422	-	-	-	-	-	-
Health - E	New		Air-Cooled Chiller - Economizer		per sq ft	\$0.01	75%	\$0.01	8,425	8,178	8,178	9,275	8,862	8,753	-	-	-	-	-	-
Health - E	New		Air-Cooled Chiller - VSD on fans		per sq ft	\$0.02	75%	\$0.02	17,735	17,213	17,213	26	25	25	0.13	0.12	0.12	-	-	-
Health - E	New		Air-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.01	75%	\$0.01	9,819	9,530	9,530	5,572	5,324	5,258	0.02	0.02	0.02	-	-	-
Health - E	New		Air-Cooled Chiller - High Efficiency Cooling Tower Fans		per sq ft	\$0.01	75%	\$0.01	6,770	6,571	6,571	188	180	178	0.02	0.02	0.02	-	-	-
Health - E	New		Air-Cooled Chiller - Maintenance Water-Cooled Chiller -		per sq ft	\$0.28	75%	\$0.21	6,382	6,194	6,194	3,486	3,331	3,290	0.89	0.85	0.84	-	-	-
Health - E	New		Condenser Water Temperature Reset		per sq ft	\$0.00	75%	\$0.00	24,320	23,605	23,605	9,922	9,627	9,603	0.98	0.95	0.94	-	-	-
Health - E	New		Water-Cooled Chiller - VSD on Fans		per sq ft	\$1.17	75%	\$0.88	55,174	53,551	53,551	42,646	41,376	41,275	10.85	10.53	10.50	-	-	-
Health - E	New		Water-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.01	75%	\$0.01	30,198	29,310	29,310	6,590	6,394	6,378	-	-	-	-	-	-
Health - E	New		Water-Cooled Chiller - High Efficiency Cooling Tower Fans		per sq ft	\$0.01	75%	\$0.01	20,229	19,634	19,634	174	169	168	0.02	0.02	0.02	-	-	-
Health - E	New		Water-Cooled Chiller - Maintenance		per sq ft	\$0.28	75%	\$0.21	19,695	19,116	19,116	2,267	2,199	2,194	0.69	0.67	0.67	-	-	-
Health - E	New		RTU - Maintenance		per sq ft	\$0.28	75%	\$0.21	33,136	32,161	32,161	5,964	5,727	5,675	1.81	1.74	1.73	-	-	-
Health - E	New		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.01	75%	\$0.00	47,306	45,914	45,914	30,319	29,395	29,309	-	-	-	-	-	-
Health - E	New		Heat Pump - Maintenance		per sq ft	\$0.04	75%	\$0.03	1,048	1,017	1,017	206	196	194	0.04	0.03	0.03	-	-	-
Health - E	New		Ventilation - Variable Speed Control		per sq ft	\$0.01	75%	\$0.01	278,628	270,433	270,433	140,634	136,268	135,815	4.77	4.62	4.60	-	-	-
Health - E	New		Water Heater - Drainwater Heat Recovery		per sq ft	\$0.04	75%	\$0.03	14,463	14,037	14,037	2,440	2,264	2,192	-	-	-	-	-	-
Health - E	New		Water Heater - Faucet Aerators		per sq ft	\$0.00	75%	\$0.00	2,023	1,964	1,964	822	762	738	0.07	0.06	0.06	-	-	-
Health - E	New		Water Heater - Low Flow Showerheads		per sq ft	\$0.00	75%	\$0.00	1,723	1,673	1,673	1,415	1,313	1,272	0.12	0.11	0.10	-	-	-
Health - E	New		Water Heater - Desuperheater		per sq ft	\$0.04	75%	\$0.03	2,897	2,811	2,811	1,086	1,007	976	0.09	0.08	0.08	-	-	-
Health - E	New		Water Heater - Pipe Insulation		per sq ft	\$0.04	75%	\$0.03	6,796	6,596	6,596	721	669	648	0.06	0.06	0.05	-	-	-

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Health - E	New		Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.00	75%	\$0.00	1,714	1,663	1,663	696	646	625	0.06	0.05	0.05	-	-	-
Health - E	New		Interior Lighting - Daylighting Controls		per sq ft	\$0.11	75%	\$0.08	301,320	292,457	292,457	91,570	86,758	85,342	9.63	9.12	8.97	-	-	-
Health - E	New		Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	75%	\$0.00	137,931	133,874	133,874	279	265	260	0.03	0.03	0.03	-	-	-
Health - E	New		Interior Lighting - Occupancy Sensors		per sq ft	\$0.00	75%	\$0.00	-	-	164,242	-	-	15,976	-	-	0.84	-	-	-
Health - E	New		Refrigerator - Auto Door Closer		per sq ft	\$0.00	75%	\$0.00	44,636	43,323	43,323	4,092	3,826	3,729	0.43	0.40	0.39	-	-	-
Health - E	New		Refrigerator - Evaporator Fan Controls		per sq ft	\$0.00	75%	\$0.00	93,658	90,903	90,903	325	307	302	0.03	0.03	0.03	-	-	-
Health - E	New		Vending Machine - Controller		per sq ft	\$0.00	75%	\$0.00	27,549	26,739	26,739	517	465	442	0.05	0.05	0.05	-	-	-
Health - E	New		Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.00	75%	\$0.00	95,662	92,848	92,848	17,691	17,103	17,023	1.92	1.86	1.85	-	-	-
Health - E	New		Commissioning - HVAC		per sq ft	\$0.38	75%	\$0.28	101,680	98,689	98,689	49,302	47,400	47,005	-	-	-	-	-	-
Health - E	New		Commissioning - Lighting		per sq ft	\$0.04	75%	\$0.03	619,126	600,916	600,916	94,075	89,132	87,677	-	-	-	-	-	-
Health - E	New		Refrigerator - eCube		per sq ft	\$0.00	75%	\$0.00	910,383	883,607	883,607	15,789	14,940	14,676	-	-	-	-	-	-
Health - E	New		Electronics - Smart Power Strip		per sq ft	\$0.00	75%	\$0.00	764,819	742,325	742,325	776	737	723	-	-	-	-	-	-
Health - E	New		Electronics - Monitor Power Management		per sq ft	\$0.00	75%	\$0.00	356,881	346,385	346,385	13,604	13,169	13,090	-	-	-	-	-	-
Health - E	New		Insulation - Foundation		per sq ft	\$0.32	75%	\$0.24	57,571	55,878	55,878	9,305	8,946	8,871	2.37	2.28	2.26	-	-	-
Health - E	New		Water Heating - Booster Water Heater		per sq ft	\$0.01	75%	\$0.00	3,546	3,442	3,442	532	493	478	0.04	0.04	0.04	-	-	-
Health - E	New		Refrigeration - High Efficiency Evaporator Fan Motors		per sq ft	\$0.00	75%	\$0.00	2,294	2,227	2,227	192	181	178	-	-	-	-	-	-
Lodging - E	Existing		HVAC - Duct Repair and Sealing		per sq ft	\$0.00	75%	\$0.00	2,125,326	2,062,816	2,062,816	23,106	22,189	21,916	0.75	0.72	0.71	-	-	-
Lodging - E	Existing		Windows - High Efficiency		per sq ft	\$0.00	75%	\$0.00	-	-	4,949,999	-	-	279,845	-	-	67.85	-	-	-
Lodging - E	Existing		Water-Cooled Chiller - Condenser Water Temperature Reset		per sq ft	\$0.00	75%	\$0.00	42,053	40,816	40,816	4,858	4,569	4,440	0.68	0.64	0.62	-	-	-
Lodging - E	Existing		Water-Cooled Chiller - Economizer		per sq ft	\$0.00	75%	\$0.00	39,501	38,339	38,339	626	589	572	-	-	-	-	-	-
Lodging - E	Existing		Water-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.01	75%	\$0.01	57,647	55,951	55,951	4,211	3,961	3,849	-	-	-	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Lodging - E	Existing		Water-Cooled Chiller - High Efficiency Cooling Tower Fans		per sq ft	\$0.00	75%	\$0.00	-	-	38,487	-	-	93	-	-	0.01	-	-	-
Lodging - E	Existing		Water-Cooled Chiller - Maintenance		per sq ft	\$0.33	75%	\$0.25	63,358	61,495	61,495	1,995	1,876	1,823	0.86	0.81	0.79	-	-	-
Lodging - E	Existing		RTU - Maintenance		per sq ft	\$0.33	75%	\$0.25	407,144	395,169	395,169	42,766	41,142	40,714	18.53	17.82	17.64	-	-	-
Lodging - E	Existing		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.01	75%	\$0.00	381,828	370,597	370,597	76,183	73,803	73,511	-	-	-	-	-	-
Lodging - E	Existing		Ventilation - Variable Speed Control		per sq ft	\$0.01	75%	\$0.01	2,511,913	2,438,033	2,438,033	318,399	307,100	304,538	9.72	9.37	9.29	-	-	-
Lodging - E	Existing		Water Heater - Drainwater Heat Recovery		per sq ft	\$0.04	75%	\$0.03	422,153	409,737	409,737	81,005	77,514	76,308	-	-	-	-	-	-
Lodging - E	Existing		Water Heater - Faucet Aerators		per sq ft	\$0.00	75%	\$0.00	54,185	52,591	52,591	25,030	23,952	23,579	1.74	1.67	1.64	-	-	-
Lodging - E	Existing		Water Heater - Low Flow Showerheads		per sq ft	\$0.00	75%	\$0.00	426,624	414,076	414,076	398,583	381,406	375,474	27.74	26.54	26.13	-	-	-
Lodging - E	Existing		Water Heater - Desuperheater		per sq ft	\$0.04	75%	\$0.03	84,549	82,062	82,062	36,053	34,499	33,962	2.51	2.40	2.36	-	-	-
Lodging - E	Existing		Water Heater - Pipe Insulation		per sq ft	\$0.05	75%	\$0.04	359,751	349,170	349,170	43,415	41,544	40,898	2.91	2.78	2.74	-	-	-
Lodging - E	Existing		Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.00	75%	\$0.00	45,903	44,552	44,552	21,204	20,291	19,975	1.48	1.41	1.39	-	-	-
Lodging - E	Existing		Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	75%	\$0.00	4,288,197	4,162,074	4,162,074	5,947	5,294	4,989	0.48	0.43	0.41	-	-	-
Lodging - E	Existing		Refrigerator - Auto Door Closer		per sq ft	\$0.00	75%	\$0.00	278,314	270,129	270,129	32,800	31,146	30,466	3.33	3.16	3.09	-	-	-
Lodging - E	Existing		Refrigerator - Evaporator Fan Controls		per sq ft	\$0.00	75%	\$0.00	666,418	646,817	646,817	2,962	2,768	2,654	0.30	0.28	0.27	-	-	-
Lodging - E	Existing		Vending Machine - Controller		per sq ft	\$0.00	75%	\$0.00	336,438	326,543	326,543	14,379	13,287	12,216	1.46	1.35	1.24	-	-	-
Lodging - E	Existing		Pool Pump - Timer		per sq ft	\$0.00	75%	\$0.00	409,058	397,027	397,027	1,622	1,568	1,558	-	-	-	-	-	-
Lodging - E	Existing		Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.00	75%	\$0.00	1,062,326	1,031,081	1,031,081	14,710	14,261	14,215	1.38	1.34	1.34	-	-	-
Lodging - E	Existing		Thermostat - Clock/Programmable		per sq ft	\$0.03	75%	\$0.02	772,580	749,857	749,857	45,042	43,008	42,255	16.31	15.58	15.30	-	-	-
Lodging - E	Existing		Lodging - Guest Room Controls		per sq ft	\$0.00	75%	\$0.00	2,916,753	2,830,967	2,830,967	485,588	463,990	456,195	21.91	20.93	20.58	-	-	-
Lodging - E	Existing		Refrigerator - eCube		per sq ft	\$0.00	75%	\$0.00	6,459,659	6,269,669	6,269,669	143,554	134,161	128,624	-	-	-	-	-	-
Lodging - E	Existing		Electronics - Monitor Power Management		per sq ft	\$0.00	75%	\$0.00	2,955,972	2,869,031	2,869,031	16,626	16,068	15,965	-	-	-	-	-	-
Lodging - E	Existing		Water Heating - Booster Water Heater		per sq ft	\$0.01	75%	\$0.00	192,816	187,145	187,145	32,888	31,470	30,981	2.29	2.19	2.16	-	-	-

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Lodging - E	Existing		Refrigeration - High Efficiency Evaporator Fan Motors		per sq ft	\$0.00	75%	\$0.00	36,314	35,246	35,246	6,380	5,630	5,153	-	-	-	-	-	-
Lodging - E	New		HVAC - Duct Repair and Sealing		per sq ft	\$0.00	75%	\$0.00	172,844	167,761	167,761	2,249	2,177	2,167	0.12	0.11	0.11	-	-	-
Lodging - E	New		Water-Cooled Chiller - Condenser Water Temperature Reset		per sq ft	\$0.00	75%	\$0.00	2,496	2,422	2,422	176	171	170	0.02	0.02	0.02	-	-	-
Lodging - E	New		Water-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.01	75%	\$0.01	5,661	5,494	5,494	213	207	207	-	-	-	-	-	-
Lodging - E	New		Water-Cooled Chiller - High Efficiency Cooling Tower Fans		per sq ft	\$0.02	75%	\$0.01	2,843	2,760	2,760	4	4	4	0.00	0.00	0.00	-	-	-
Lodging - E	New		Water-Cooled Chiller - Maintenance		per sq ft	\$0.33	75%	\$0.25	5,810	5,639	5,639	116	112	112	0.05	0.05	0.05	-	-	-
Lodging - E	New		RTU - Maintenance		per sq ft	\$0.33	75%	\$0.25	37,018	35,929	35,929	3,554	3,439	3,424	1.54	1.49	1.48	-	-	-
Lodging - E	New		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.01	75%	\$0.00	143,513	139,292	139,292	26,239	25,404	25,307	-	-	-	-	-	-
Lodging - E	New		Ventilation - Variable Speed Control		per sq ft	\$0.01	75%	\$0.01	258,205	250,611	250,611	53,417	51,758	51,580	1.63	1.58	1.57	-	-	-
Lodging - E	New		Water Heater - Drainwater Heat Recovery		per sq ft	\$0.04	75%	\$0.03	43,399	42,123	42,123	7,430	6,894	6,676	-	-	-	-	-	-
Lodging - E	New		Water Heater - Faucet Aerators		per sq ft	\$0.00	75%	\$0.00	5,570	5,406	5,406	2,296	2,130	2,062	0.16	0.15	0.14	-	-	-
Lodging - E	New		Water Heater - Low Flow Showerheads		per sq ft	\$0.00	75%	\$0.00	43,853	42,563	42,563	36,555	33,916	32,843	2.54	2.36	2.29	-	-	-
Lodging - E	New		Water Heater - Desuperheater		per sq ft	\$0.04	75%	\$0.03	8,692	8,436	8,436	3,307	3,068	2,971	0.23	0.21	0.21	-	-	-
Lodging - E	New		Water Heater - Pipe Insulation		per sq ft	\$0.05	75%	\$0.04	35,453	34,410	34,410	3,817	3,542	3,430	0.27	0.25	0.25	-	-	-
Lodging - E	New		Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.00	75%	\$0.00	4,718	4,580	4,580	1,945	1,804	1,747	0.14	0.13	0.12	-	-	-
Lodging - E	New		Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	75%	\$0.00	127,820	124,061	124,061	162	147	141	0.01	0.01	0.01	-	-	-
Lodging - E	New		Refrigerator - Auto Door Closer		per sq ft	\$0.00	75%	\$0.00	28,179	27,350	27,350	2,952	2,760	2,689	0.30	0.28	0.27	-	-	-
Lodging - E	New		Refrigerator - Evaporator Fan Controls		per sq ft	\$0.00	75%	\$0.00	63,093	61,237	61,237	245	229	223	0.02	0.02	0.02	-	-	-
Lodging - E	New		Vending Machine - Controller		per sq ft	\$0.00	75%	\$0.00	17,392	16,880	16,880	782	704	669	0.08	0.07	0.07	-	-	-
Lodging - E	New		Pool Pump - Timer		per sq ft	\$0.00	75%	\$0.00	38,054	36,934	36,934	147	138	135	-	-	-	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Lodging - E	New		Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.00	75%	\$0.00	109,191	105,979	105,979	1,511	1,460	1,453	0.14	0.14	0.14	-	-	-
Lodging - E	New		Lodging - Guest Room Controls		per sq ft	\$0.00	75%	\$0.00	141,049	136,901	136,901	21,438	20,697	20,590	0.04	0.04	0.04	-	-	-
Lodging - E	New		Commissioning - HVAC		per sq ft	\$0.38	75%	\$0.28	112,375	109,070	109,070	23,842	22,985	22,834	-	-	-	-	-	-
Lodging - E	New		Commissioning - Lighting		per sq ft	\$0.04	75%	\$0.03	572,028	555,204	555,204	54,371	49,365	47,409	-	-	-	-	-	-
Lodging - E	New		Refrigerator - eCube		per sq ft	\$0.00	75%	\$0.00	613,234	595,198	595,198	11,894	11,113	10,826	-	-	-	-	-	-
Lodging - E	New		Electronics - Monitor Power Management		per sq ft	\$0.00	75%	\$0.00	304,637	295,677	295,677	1,708	1,653	1,643	-	-	-	-	-	-
Lodging - E	New		Water Heating - Booster Water Heater		per sq ft	\$0.01	75%	\$0.00	19,001	18,442	18,442	2,892	2,683	2,598	0.20	0.19	0.18	-	-	-
Lodging - E	New		Refrigeration - High Efficiency Evaporator Fan Motors		per sq ft	\$0.00	75%	\$0.00	3,462	3,360	3,360	331	313	307	-	-	-	-	-	-
Warehouse - E	Existing		HVAC - Duct Repair and Sealing		per sq ft	\$0.00	75%	\$0.00	1,594,071	1,547,187	1,547,187	10,688	10,297	10,205	1.00	1.00	1.03	-	-	-
Warehouse - E	Existing		RTU - Maintenance		per sq ft	\$0.08	75%	\$0.06	142,631	138,436	138,436	49,970	46,776	45,253	92.67	86.75	83.93	-	-	-
Warehouse - E	Existing		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.01	75%	\$0.01	82,420	79,996	79,996	53,597	51,807	51,421	-	-	-	-	-	-
Warehouse - E	Existing		Heat Pump - Maintenance		per sq ft	\$0.02	75%	\$0.02	8,138	7,899	7,899	2,132	2,034	1,999	3.08	2.96	2.92	-	-	-
Warehouse - E	Existing		Ventilation - Variable Speed Control		per sq ft	\$0.02	75%	\$0.01	3,946,590	3,830,514	3,830,514	188,399	181,097	178,995	5.69	5.47	5.41	-	-	-
Warehouse - E	Existing		Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	75%	\$0.00	7,032,190	6,825,361	6,825,361	7,759	7,040	6,663	1.40	1.27	1.20	-	-	-
Warehouse - E	Existing		Refrigerator - Evaporator Fan Controls		per sq ft	\$0.00	75%	\$0.00	316,974	307,651	307,651	5,980	5,604	5,343	0.66	0.62	0.59	-	-	-
Warehouse - E	Existing		Vending Machine - Controller		per sq ft	\$0.00	75%	\$0.00	170,391	165,379	165,379	66,970	62,013	57,208	7.42	6.87	6.34	-	-	-
Warehouse - E	Existing		Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.00	75%	\$0.00	951,519	923,533	923,533	25,457	24,681	24,600	4.15	4.02	4.01	-	-	-
Warehouse - E	Existing		Thermostat - Clock/Programmable		per sq ft	\$0.01	75%	\$0.01	246,258	239,015	239,015	986	915	879	1.83	1.70	1.63	-	-	-
Warehouse - E	Existing		HVAC - Occupancy Sensors		per sq ft	\$0.14	75%	\$0.11	341,997	331,938	331,938	23,558	21,868	20,993	43.72	40.58	38.96	-	-	-
Warehouse - E	Existing		Refrigerator - eCube		per sq ft	\$0.01	75%	\$0.00	3,072,464	2,982,097	2,982,097	289,809	271,621	258,946	-	-	-	-	-	-
Warehouse - E	Existing		Electronics - Smart Power Strip		per sq ft	\$0.00	75%	\$0.00	10,288,743	9,986,133	9,986,133	4,596	4,303	4,177	-	-	-	-	-	-
Warehouse - E	Existing		Electronics - Monitor Power Management		per sq ft	\$0.00	75%	\$0.00	3,979,549	3,862,503	3,862,503	41,274	39,888	39,633	-	-	-	-	-	-

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Warehouse - E	Existing		Water Heating - Booster Water Heater		per sq ft	\$0.01	75%	\$0.01	39,655	38,489	38,489	700	670	660	0.07	0.07	0.07	-	-	-
Warehouse - E	Existing		Refrigeration - High Efficiency Evaporator Fan Motors		per sq ft	\$0.02	75%	\$0.01	2,087	2,025	2,025	938	904	898	-	-	-	-	-	-
Warehouse - E	New		HVAC - Duct Repair and Sealing		per sq ft	\$0.00	75%	\$0.00	134,054	130,111	130,111	829	799	792	0.16	0.17	0.18	-	-	-
Warehouse - E	New		RTU - Maintenance		per sq ft	\$0.08	75%	\$0.06	19,888	19,303	19,303	4,346	4,167	4,128	8.05	7.72	7.65	-	-	-
Warehouse - E	New		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.01	75%	\$0.01	29,125	28,269	28,269	17,417	16,837	16,755	-	-	-	-	-	-
Warehouse - E	New		Heat Pump - Maintenance		per sq ft	\$0.02	75%	\$0.02	1,031	1,001	1,001	201	194	194	0.30	0.30	0.30	-	-	-
Warehouse - E	New		Ventilation - Variable Speed Control		per sq ft	\$0.02	75%	\$0.01	422,881	410,443	410,443	19,968	19,360	19,303	0.60	0.58	0.58	-	-	-
Warehouse - E	New		Interior Lighting - Daylighting Controls		per sq ft	\$0.00	75%	\$0.00	-	787,013	787,013	-	106,793	105,198	-	19.31	19.02	-	-	-
Warehouse - E	New		Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	75%	\$0.00	209,612	203,447	203,447	194	184	181	0.04	0.03	0.03	-	-	-
Warehouse - E	New		Refrigerator - Evaporator Fan Controls		per sq ft	\$0.00	75%	\$0.00	30,273	29,383	29,383	436	414	407	0.05	0.05	0.05	-	-	-
Warehouse - E	New		Vending Machine - Controller		per sq ft	\$0.00	75%	\$0.00	8,826	8,567	8,567	1,910	1,786	1,742	0.21	0.20	0.19	-	-	-
Warehouse - E	New		Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.00	75%	\$0.00	97,801	94,925	94,925	2,614	2,527	2,515	0.43	0.41	0.41	-	-	-
Warehouse - E	New		Thermostat - Clock/Programmable		per sq ft	\$0.01	75%	\$0.01	12,054	11,700	11,700	198	188	185	0.37	0.35	0.34	-	-	-
Warehouse - E	New		HVAC - Occupancy Sensors		per sq ft	\$0.14	75%	\$0.11	23,299	22,613	22,613	1,027	975	959	1.91	1.81	1.78	-	-	-
Warehouse - E	New		Commissioning - HVAC		per sq ft	\$0.38	75%	\$0.28	90,034	87,386	87,386	17,558	16,662	16,400	-	-	-	-	-	-
Warehouse - E	New		Commissioning - Lighting		per sq ft	\$0.04	75%	\$0.03	1,598,536	1,551,520	1,551,520	110,778	105,266	103,694	-	-	-	-	-	-
Warehouse - E	New		Refrigerator - eCube		per sq ft	\$0.01	75%	\$0.00	292,932	284,316	284,316	21,086	20,024	19,703	-	-	-	-	-	-
Warehouse - E	New		Electronics - Smart Power Strip		per sq ft	\$0.00	75%	\$0.00	1,064,422	1,033,116	1,033,116	468	440	430	-	-	-	-	-	-
Warehouse - E	New		Electronics - Monitor Power Management		per sq ft	\$0.00	75%	\$0.00	410,362	398,293	398,293	4,241	4,105	4,081	-	-	-	-	-	-
Warehouse - E	New		Insulation - Foundation		per sq ft	\$0.32	75%	\$0.24	21,478	20,846	20,846	1,396	1,325	1,304	2.59	2.46	2.42	-	-	-
Warehouse - E	New		Refrigeration - High Efficiency Evaporator Fan Motors		per sq ft	\$0.02	75%	\$0.01	235	228	228	105	101	100	-	-	-	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Misc. - E	Existing		Insulation - Ceiling		per sq ft	\$0.07	75%	\$0.05	4,052,961	3,933,756	3,933,756	186,091	178,786	176,691	156.15	147.66	143.74	-	-	-
Misc. - E	Existing		Insulation - Radiant Barrier		per sq ft	\$0.02	75%	\$0.01	4,064,022	3,944,492	3,944,492	73,400	70,521	69,697	60.22	56.95	55.43	-	-	-
Misc. - E	Existing		Insulation - Wall Cavity		per sq ft	\$0.03	75%	\$0.02	4,062,776	3,943,283	3,943,283	77,409	74,764	74,260	12.04	11.39	11.08	-	-	-
Misc. - E	Existing		HVAC - Duct Repair and Sealing		per sq ft	\$0.00	75%	\$0.00	4,597,094	4,461,885	4,461,885	28,843	27,365	26,732	13.62	12.88	12.54	-	-	-
Misc. - E	Existing		Windows - High Efficiency		per sq ft	\$0.01	75%	\$0.01	5,304,064	5,148,062	5,148,062	435,806	415,027	406,833	235.79	222.97	217.05	-	-	-
Misc. - E	Existing		Water-Cooled Chiller - Condenser Water Temperature Reset		per sq ft	\$0.05	75%	\$0.04	98,993	96,082	96,082	22,978	21,741	21,239	6.53	6.18	6.04	-	-	-
Misc. - E	Existing		Water-Cooled Chiller - Economizer		per sq ft	\$0.00	75%	\$0.00	92,235	89,522	89,522	8,501	8,044	7,858	-	-	-	-	-	-
Misc. - E	Existing		Water-Cooled Chiller - VSD on Fans		per sq ft	\$1.17	75%	\$0.88	104,789	101,707	101,707	46,097	43,615	42,609	33.91	32.08	31.34	-	-	-
Misc. - E	Existing		Water-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.01	75%	\$0.00	141,539	137,376	137,376	20,776	19,657	19,204	-	-	-	-	-	-
Misc. - E	Existing		Water-Cooled Chiller - High Efficiency Cooling Tower Fans		per sq ft	\$0.01	75%	\$0.01	66,511	64,554	64,554	1,066	1,008	985	0.30	0.29	0.28	-	-	-
Misc. - E	Existing		Water-Cooled Chiller - Maintenance		per sq ft	\$0.01	75%	\$0.01	101,102	98,128	98,128	19,713	18,652	18,221	14.63	13.84	13.52	-	-	-
Misc. - E	Existing		RTU - Maintenance		per sq ft	\$0.01	75%	\$0.01	3,561,901	3,457,140	3,457,140	1,132,173	1,068,184	1,037,397	840.29	792.80	769.95	-	-	-
Misc. - E	Existing		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.14	75%	\$0.10	157,214	152,590	152,590	53,888	52,201	51,992	-	-	-	-	-	-
Misc. - E	Existing		Water Heater - Faucet Aerators		per sq ft	\$0.00	75%	\$0.00	139,104	135,012	135,012	29,826	28,562	28,136	4.41	4.22	4.16	-	-	-
Misc. - E	Existing		Water Heater - Desuperheater		per sq ft	\$0.04	75%	\$0.03	200,094	194,209	194,209	39,602	37,925	37,359	5.85	5.60	5.52	-	-	-
Misc. - E	Existing		Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	75%	\$0.00	13,349,358	12,956,730	12,956,730	23,047	21,400	20,623	2.92	2.71	2.62	-	-	-
Misc. - E	Existing		Refrigerator - Auto Door Closer		per sq ft	\$0.00	75%	\$0.00	326,891	317,277	317,277	37,947	36,032	35,246	3.96	3.76	3.68	-	-	-
Misc. - E	Existing		Refrigerator - Evaporator Fan Controls		per sq ft	\$0.00	75%	\$0.00	957,518	929,356	929,356	4,400	4,056	3,848	0.46	0.42	0.40	-	-	-
Misc. - E	Existing		Vending Machine - Controller		per sq ft	\$0.00	75%	\$0.00	385,513	374,174	374,174	16,436	15,237	14,082	1.72	1.59	1.47	-	-	-
Misc. - E	Existing		Pool Pump - Timer		per sq ft	\$0.00	75%	\$0.00	2,455,876	2,383,645	2,383,645	2,322	2,245	2,230	-	-	-	-	-	-
Misc. - E	Existing		Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.00	75%	\$0.00	2,155,377	2,091,984	2,091,984	142,319	137,979	137,531	24.40	23.66	23.58	-	-	-

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Misc. - E	Existing		Thermostat - Clock/Programmable		per sq ft	\$0.00	75%	\$0.00	2,168,490	2,104,711	2,104,711	319,313	301,369	292,793	234.88	221.68	215.37	-	-	-
Misc. - E	Existing		Electronics - Smart Power Strip		per sq ft	\$0.00	75%	\$0.00	18,507,694	17,963,350	17,963,350	17,196	16,185	15,708	-	-	-	-	-	-
Misc. - E	Existing		Electronics - Monitor Power Management		per sq ft	\$0.00	75%	\$0.00	6,691,995	6,495,172	6,495,172	190,771	184,366	183,186	-	-	-	-	-	-
Misc. - E	Existing		Water Heating - Booster Water Heater		per sq ft	\$0.12	75%	\$0.09	440,101	427,157	427,157	34,842	33,366	32,868	5.15	4.93	4.86	-	-	-
Misc. - E	Existing		Refrigeration - High Efficiency Evaporator Fan Motors		per sq ft	\$0.00	75%	\$0.00	122,133	118,541	118,541	21,233	18,745	17,161	-	-	-	-	-	-
Misc. - E	New		Insulation - Ceiling		per sq ft	\$0.07	75%	\$0.05	410,825	398,742	398,742	14,727	14,213	14,125	8.40	8.09	8.05	-	-	-
Misc. - E	New		Insulation - Radiant Barrier		per sq ft	\$0.02	75%	\$0.01	418,303	406,000	406,000	5,858	5,654	5,618	2.14	2.06	2.05	-	-	-
Misc. - E	New		Insulation - Wall Cavity		per sq ft	\$0.03	75%	\$0.02	417,206	404,935	404,935	5,679	5,482	5,445	-	-	-	-	-	-
Misc. - E	New		HVAC - Duct Repair and Sealing		per sq ft	\$0.00	75%	\$0.00	375,581	364,535	364,535	1,535	1,476	1,462	-	-	-	-	-	-
Misc. - E	New		Windows - High Efficiency		per sq ft	\$0.01	75%	\$0.01	665,950	646,364	646,364	35,224	33,946	33,711	18.72	18.04	17.95	-	-	-
Misc. - E	New		Water-Cooled Chiller - Condenser Water Temperature Reset		per sq ft	\$0.00	75%	\$0.00	-	5,865	5,865	-	617	616	-	0.18	0.18	-	-	-
Misc. - E	New		Water-Cooled Chiller - Economizer		per sq ft	\$0.00	75%	\$0.00	6,035	5,858	5,858	114	111	111	-	-	-	-	-	-
Misc. - E	New		Water-Cooled Chiller - VSD on Fans		per sq ft	\$1.17	75%	\$0.88	10,569	10,258	10,258	2,101	2,038	2,033	1.55	1.50	1.50	-	-	-
Misc. - E	New		Water-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.01	75%	\$0.00	11,649	11,306	11,306	656	637	635	-	-	-	-	-	-
Misc. - E	New		Water-Cooled Chiller - High Efficiency Cooling Tower Fans		per sq ft	\$0.01	75%	\$0.01	6,988	6,783	6,783	32	31	31	0.01	0.01	0.01	-	-	-
Misc. - E	New		Water-Cooled Chiller - Maintenance		per sq ft	\$0.01	75%	\$0.01	12,501	12,134	12,134	1,112	1,079	1,076	0.79	0.77	0.77	-	-	-
Misc. - E	New		RTU - Maintenance		per sq ft	\$0.01	75%	\$0.01	437,120	424,263	424,263	108,839	104,513	103,562	77.79	74.70	74.02	-	-	-
Misc. - E	New		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.14	75%	\$0.10	58,774	57,046	57,046	18,836	18,249	18,187	-	-	-	-	-	-
Misc. - E	New		Water Heater - Faucet Aerators		per sq ft	\$0.00	75%	\$0.00	13,675	13,273	13,273	2,594	2,407	2,331	0.38	0.36	0.34	-	-	-
Misc. - E	New		Water Heater - Desuperheater		per sq ft	\$0.04	75%	\$0.03	20,544	19,940	19,940	3,597	3,338	3,232	0.53	0.49	0.48	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Misc. - E	New		Interior Lighting - Daylighting Controls		per sq ft	\$0.00	75%	\$0.00	-	922,237	922,237	-	209,027	205,741	-	26.51	26.09	-	-	-
Misc. - E	New		Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	75%	\$0.00	397,911	386,207	386,207	615	584	574	0.08	0.07	0.07	-	-	-
Misc. - E	New		Exterior Lighting - Daylighting Controls		per sq ft	\$0.02	75%	\$0.02	1,832,654	1,778,752	1,778,752	88,687	83,984	82,746	-	-	-	-	-	-
Misc. - E	New		Refrigerator - Auto Door Closer		per sq ft	\$0.00	75%	\$0.00	33,897	32,900	32,900	3,494	3,266	3,182	0.37	0.34	0.33	-	-	-
Misc. - E	New		Refrigerator - Evaporator Fan Controls		per sq ft	\$0.00	75%	\$0.00	90,830	88,159	88,159	305	288	282	0.03	0.03	0.03	-	-	-
Misc. - E	New		Vending Machine - Controller		per sq ft	\$0.00	75%	\$0.00	19,820	19,237	19,237	505	471	458	0.05	0.05	0.05	-	-	-
Misc. - E	New		Pool Pump - Timer		per sq ft	\$0.00	75%	\$0.00	168,384	163,431	163,431	155	145	142	-	-	-	-	-	-
Misc. - E	New		Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.00	75%	\$0.00	223,065	216,504	216,504	14,715	14,227	14,159	2.52	2.44	2.43	-	-	-
Misc. - E	New		Thermostat - Clock/Programmable		per sq ft	\$0.00	75%	\$0.00	204,245	198,238	198,238	24,043	23,089	22,880	17.69	16.98	16.83	-	-	-
Misc. - E	New		Commissioning - HVAC		per sq ft	\$0.38	75%	\$0.28	290,118	281,585	281,585	71,789	68,939	68,314	-	-	-	-	-	-
Misc. - E	New		Commissioning - Lighting		per sq ft	\$0.04	75%	\$0.03	1,786,093	1,733,561	1,733,561	207,127	196,457	193,369	-	-	-	-	-	-
Misc. - E	New		Electronics - Smart Power Strip		per sq ft	\$0.00	75%	\$0.00	1,906,523	1,850,448	1,850,448	1,735	1,640	1,604	-	-	-	-	-	-
Misc. - E	New		Electronics - Monitor Power Management		per sq ft	\$0.00	75%	\$0.00	687,833	667,602	667,602	19,541	18,916	18,803	-	-	-	-	-	-
Misc. - E	New		Insulation - Foundation		per sq ft	\$0.32	75%	\$0.24	165,606	160,736	160,736	13,660	13,117	12,998	10.05	9.65	9.56	-	-	-
Misc. - E	New		Water Heating - Booster Water Heater		per sq ft	\$0.12	75%	\$0.09	43,194	41,923	41,923	3,025	2,807	2,718	0.45	0.41	0.40	-	-	-
Misc. - E	New		Refrigeration - High Efficiency Evaporator Fan Motors		per sq ft	\$0.00	75%	\$0.00	11,482	11,144	11,144	1,084	1,025	1,007	-	-	-	-	-	-
Office - G	Existing		Insulation - Ceiling		per sq ft	\$0.13	75%	\$0.09	345,806	335,635	335,635	-	-	-	-	-	-	3,918	3,816	3,774
Office - G	Existing		Insulation - Radiant Barrier		per sq ft	\$0.03	75%	\$0.02	346,979	336,773	336,773	-	-	-	-	-	-	1,517	1,478	1,462
Office - G	Existing		Insulation - Wall Cavity		per sq ft	\$0.16	75%	\$0.12	347,865	337,633	337,633	-	-	-	-	-	-	7,726	7,525	7,442
Office - G	Existing		Windows - High Efficiency		per sq ft	\$0.18	75%	\$0.13	328,915	319,241	319,241	-	-	-	-	-	-	3,501	3,410	3,373
Office - G	Existing		Gas Boiler - Hot Water Reset		per sq ft	\$0.01	75%	\$0.00	7,896	7,663	7,663	-	-	-	-	-	-	1,584	1,530	1,513
Office - G	Existing		Gas Boiler - Maintenance		per sq ft	\$0.01	75%	\$0.01	10,551	10,241	10,241	-	-	-	-	-	-	926	894	885
Office - G	Existing		Gas Furnace - Maintenance		per sq ft	\$0.01	75%	\$0.01	1,249,675	1,212,920	1,212,920	-	-	-	-	-	-	37,767	36,794	36,386

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Office - G	Existing		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.02	75%	\$0.01	330,090	320,382	320,382	-	-	-	-	-	-	7,754	7,553	7,470
Office - G	Existing		Water Heater - Drainwater Heat Recovery		per sq ft	\$0.00	75%	\$0.00	-	-	419,218	-	-	-	-	-	-	-	-	3,745
Office - G	Existing		Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	75%	\$0.62	131,581	131,581	131,581	-	-	-	-	-	-	2,190	2,182	2,152
Office - G	Existing		Boiler O2 Trim Controls		per sq ft	\$0.02	75%	\$0.01	5,380	5,221	5,221	-	-	-	-	-	-	72	70	69
Office - G	Existing		Repair malfunctioning steam traps		per sq ft	\$0.00	75%	\$0.00	10,585	10,274	10,274	-	-	-	-	-	-	26	25	25
Office - G	Existing		Exhaust Hood Makeup Air		per sq ft	\$0.16	75%	\$0.12	102	99	99	-	-	-	-	-	-	17	17	16
Office - G	New		Insulation - Ceiling		per sq ft	\$0.13	75%	\$0.09	35,146	34,112	34,112	-	-	-	-	-	-	95	92	91
Office - G	New		Insulation - Radiant Barrier		per sq ft	\$0.03	75%	\$0.02	35,266	34,229	34,229	-	-	-	-	-	-	32	31	30
Office - G	New		Insulation - Wall Cavity		per sq ft	\$0.16	75%	\$0.12	35,166	34,132	34,132	-	-	-	-	-	-	210	202	200
Office - G	New		Gas Boiler - Hot Water Reset		per sq ft	\$0.01	75%	\$0.00	461	448	448	-	-	-	-	-	-	39	38	38
Office - G	New		Gas Boiler - Maintenance		per sq ft	\$0.01	75%	\$0.01	731	710	710	-	-	-	-	-	-	62	60	60
Office - G	New		Gas Furnace - Maintenance		per sq ft	\$0.01	75%	\$0.01	85,735	83,213	83,213	-	-	-	-	-	-	3,031	2,924	2,885
Office - G	New		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.02	75%	\$0.01	124,067	120,418	120,418	-	-	-	-	-	-	3,385	3,266	3,224
Office - G	New		Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	75%	\$0.62	13,537	13,537	13,537	-	-	-	-	-	-	206	206	204
Office - G	New		Boiler O2 Trim Controls		per sq ft	\$0.02	75%	\$0.01	389	377	377	-	-	-	-	-	-	5	5	5
Office - G	New		Repair malfunctioning steam traps		per sq ft	\$0.00	75%	\$0.00	733	712	712	-	-	-	-	-	-	2	2	2
Office - G	New		Exhaust Hood Makeup Air		per sq ft	\$0.16	75%	\$0.12	11	10	10	-	-	-	-	-	-	2	2	2
Restaurant - G	Existing		Insulation - Radiant Barrier		per sq ft	\$2.60	75%	\$1.95	138,316	134,248	134,248	-	-	-	-	-	-	5,355	5,216	5,159
Restaurant - G	Existing		HVAC - Duct Repair and Sealing		per sq ft	\$0.01	75%	\$0.01	177,462	172,242	172,242	-	-	-	-	-	-	172	167	165
Restaurant - G	Existing		Windows - High Efficiency		per sq ft	\$0.39	75%	\$0.30	221,110	214,607	214,607	-	-	-	-	-	-	5,066	4,935	4,880
Restaurant - G	Existing		Gas Boiler - Maintenance		per sq ft	\$0.37	75%	\$0.28	2,096	2,034	2,034	-	-	-	-	-	-	164	159	158
Restaurant - G	Existing		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.01	75%	\$0.01	126,961	123,227	123,227	-	-	-	-	-	-	3,193	3,111	3,076
Restaurant - G	Existing		Water Heater - Drainwater Heat Recovery		per sq ft	\$0.04	75%	\$0.03	173,005	167,917	167,917	-	-	-	-	-	-	5,668	5,484	5,410
Restaurant - G	Existing		Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	75%	\$0.62	96,689	96,689	96,689	-	-	-	-	-	-	5,298	5,281	5,211

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Restaurant - G	Existing		Boiler O2 Trim Controls Repair		per sq ft	\$0.01	75%	\$0.01	1,774	1,721	1,721	-	-	-	-	-	-	21	21	20
Restaurant - G	Existing		malfunctioning steam traps		per sq ft	\$0.01	75%	\$0.01	2,109	2,047	2,047	-	-	-	-	-	-	4	4	4
Restaurant - G	Existing		Exhaust Hood Makeup Air Insulation - Radiant Barrier		per sq ft	\$0.12	75%	\$0.09	34	33	33	-	-	-	-	-	-	5	5	5
Restaurant - G	New		Windows - High Efficiency		per sq ft	\$0.00	75%	\$0.00	-	13,441	13,441	-	-	-	-	-	-	-	26	26
Restaurant - G	New		Gas Boiler - Maintenance		per sq ft	\$0.39	75%	\$0.30	88,889	86,274	86,274	-	-	-	-	-	-	1,371	1,323	1,306
Restaurant - G	New		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.37	75%	\$0.28	352	342	342	-	-	-	-	-	-	17	16	16
Restaurant - G	New		Water Heater - Drainwater Heat Recovery		per sq ft	\$0.01	75%	\$0.01	47,726	46,322	46,322	-	-	-	-	-	-	1,082	1,044	1,031
Restaurant - G	New		Combined Boiler & Water Htg. Unit		per sq ft	\$0.04	75%	\$0.03	17,782	17,259	17,259	-	-	-	-	-	-	532	515	509
Restaurant - G	New		Boiler O2 Trim Controls Repair		per sq ft	\$0.83	75%	\$0.62	9,945	9,945	9,945	-	-	-	-	-	-	496	495	489
Restaurant - G	New		malfunctioning steam traps		per sq ft	\$0.01	75%	\$0.01	114	110	110	-	-	-	-	-	-	1	1	1
Restaurant - G	New		Exhaust Hood Makeup Air Insulation - Radiant Barrier		per sq ft	\$0.01	75%	\$0.01	352	342	342	-	-	-	-	-	-	1	1	1
Restaurant - G	New		HVAC - Duct Repair and Sealing		per sq ft	\$0.12	75%	\$0.09	3	3	3	-	-	-	-	-	-	0	0	0
Retail - G	Existing		Windows - High Efficiency		per sq ft	\$0.09	75%	\$0.07	671,486	651,736	651,736	-	-	-	-	-	-	33,961	33,105	32,842
Retail - G	Existing		Gas Boiler - Maintenance		per sq ft	\$0.00	75%	\$0.00	891,397	865,180	865,180	-	-	-	-	-	-	1,127	1,098	1,089
Retail - G	Existing		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.01	75%	\$0.01	1,310,702	1,272,152	1,272,152	-	-	-	-	-	-	39,230	38,241	37,937
Retail - G	Existing		Water Heater - Drainwater Heat Recovery		per sq ft	\$0.01	75%	\$0.01	95,936	93,115	93,115	-	-	-	-	-	-	6,915	6,691	6,625
Retail - G	Existing		Combined Boiler & Water Htg. Unit		per sq ft	\$0.01	75%	\$0.01	637,731	618,974	618,974	-	-	-	-	-	-	20,955	20,427	20,264
Retail - G	Existing		Boiler O2 Trim Controls Repair		per sq ft	\$0.04	75%	\$0.03	282,662	274,349	274,349	-	-	-	-	-	-	3,472	3,358	3,311
Retail - G	Existing		malfunctioning steam traps		per sq ft	\$0.83	75%	\$0.62	182,580	182,580	182,580	-	-	-	-	-	-	5,282	5,263	5,199
Retail - G	Existing		Destratification Fans (HVLS)		per sq ft	\$0.01	75%	\$0.01	76,889	74,627	74,627	-	-	-	-	-	-	850	822	814
Retail - G	Existing		Exhaust Hood Makeup Air Insulation - Radiant Barrier		per sq ft	\$0.00	75%	\$0.00	96,770	93,924	93,924	-	-	-	-	-	-	170	164	163
Retail - G	Existing				per sq ft	\$0.24	75%	\$0.18	27,237	26,436	26,436	-	-	-	-	-	-	3,386	3,277	3,244
Retail - G	Existing				per sq ft	\$0.12	75%	\$0.09	1,543	1,497	1,497	-	-	-	-	-	-	213	206	204
Retail - G	New				per sq ft	\$0.00	75%	\$0.00	-	65,940	65,940	-	-	-	-	-	-	-	177	176

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Retail - G	New		Windows - High Efficiency		per sq ft	\$0.01	75%	\$0.01	121,787	118,205	118,205	-	-	-	-	-	-	2,588	2,526	2,512
Retail - G	New		Gas Boiler - Maintenance		per sq ft	\$0.01	75%	\$0.01	10,161	9,862	9,862	-	-	-	-	-	-	533	517	512
Retail - G	New		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.01	75%	\$0.01	239,730	232,679	232,679	-	-	-	-	-	-	7,489	7,307	7,266
Retail - G	New		Water Heater - Drainwater Heat Recovery		per sq ft	\$0.04	75%	\$0.03	29,077	28,221	28,221	-	-	-	-	-	-	325	315	311
Retail - G	New		Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	75%	\$0.62	18,760	18,760	18,760	-	-	-	-	-	-	456	455	450
Retail - G	New		Boiler O2 Trim Controls		per sq ft	\$0.01	75%	\$0.01	5,175	5,023	5,023	-	-	-	-	-	-	42	40	40
Retail - G	New		Repair malfunctioning steam traps		per sq ft	\$0.00	75%	\$0.00	10,230	9,930	9,930	-	-	-	-	-	-	17	17	17
Retail - G	New		Destratification Fans (HVLS)		per sq ft	\$0.24	75%	\$0.18	2,794	2,712	2,712	-	-	-	-	-	-	253	245	243
Retail - G	New		Exhaust Hood Makeup Air		per sq ft	\$0.12	75%	\$0.09	158	153	153	-	-	-	-	-	-	16	15	15
Grocery - G	Existing		Insulation - Ceiling		per sq ft	\$0.00	75%	\$0.00	-	66,599	66,599	-	-	-	-	-	-	-	4,443	4,393
Grocery - G	Existing		Insulation - Radiant Barrier		per sq ft	\$0.45	75%	\$0.33	74,837	72,636	72,636	-	-	-	-	-	-	2,022	1,970	1,948
Grocery - G	Existing		Insulation - Wall Cavity		per sq ft	\$1.00	75%	\$0.75	70,303	68,235	68,235	-	-	-	-	-	-	7,480	7,287	7,207
Grocery - G	Existing		HVAC - Duct Repair and Sealing		per sq ft	\$0.00	75%	\$0.00	93,174	90,433	90,433	-	-	-	-	-	-	203	198	196
Grocery - G	Existing		Windows - High Efficiency		per sq ft	\$0.25	75%	\$0.19	166,741	161,837	161,837	-	-	-	-	-	-	3,610	3,517	3,478
Grocery - G	Existing		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.05	75%	\$0.04	66,650	64,690	64,690	-	-	-	-	-	-	1,907	1,858	1,837
Grocery - G	Existing		Water Heater - Drainwater Heat Recovery		per sq ft	\$0.04	75%	\$0.03	93,781	91,023	91,023	-	-	-	-	-	-	1,072	1,037	1,022
Grocery - G	Existing		Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	75%	\$0.62	52,708	52,708	52,708	-	-	-	-	-	-	1,004	1,000	987
Grocery - G	New		HVAC - Duct Repair and Sealing		per sq ft	\$0.00	75%	\$0.00	7,561	7,338	7,338	-	-	-	-	-	-	17	16	16
Grocery - G	New		Windows - High Efficiency		per sq ft	\$0.25	75%	\$0.19	31,117	30,201	30,201	-	-	-	-	-	-	683	658	650
Grocery - G	New		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.05	75%	\$0.04	25,052	24,315	24,315	-	-	-	-	-	-	649	626	618
Grocery - G	New		Water Heater - Drainwater Heat Recovery		per sq ft	\$0.04	75%	\$0.03	9,717	9,432	9,432	-	-	-	-	-	-	101	98	97
Grocery - G	New		Combined Boiler & Water Htg. Unit		per sq ft	\$0.00	75%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
College - G	Existing		Insulation - Ceiling		per sq ft	\$0.70	75%	\$0.52	269,197	261,280	261,280	-	-	-	-	-	-	4,088	3,976	3,932
College - G	Existing		Insulation - Radiant Barrier		per sq ft	\$0.18	75%	\$0.13	274,430	266,358	266,358	-	-	-	-	-	-	1,602	1,558	1,541

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
College - G	Existing		Insulation - Wall Cavity		per sq ft	\$0.16	75%	\$0.12	274,310	266,242	266,242	-	-	-	-	-	-	1,792	1,742	1,723
College - G	Existing		Gas Boiler - Hot Water Reset		per sq ft	\$0.01	75%	\$0.01	92,886	90,154	90,154	-	-	-	-	-	-	8,813	8,492	8,392
College - G	Existing		Gas Boiler - Maintenance		per sq ft	\$0.02	75%	\$0.01	167,476	162,551	162,551	-	-	-	-	-	-	10,675	10,286	10,164
College - G	Existing		Gas Furnace - Maintenance		per sq ft	\$0.04	75%	\$0.03	1,125,823	1,092,711	1,092,711	-	-	-	-	-	-	53,271	51,902	51,334
College - G	Existing		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.02	75%	\$0.01	196,445	190,668	190,668	-	-	-	-	-	-	7,449	7,244	7,164
College - G	Existing		Water Heater - Drainwater Heat Recovery		per sq ft	\$0.04	75%	\$0.03	287,385	278,933	278,933	-	-	-	-	-	-	4,849	4,691	4,628
College - G	Existing		Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	75%	\$0.62	183,951	183,951	183,951	-	-	-	-	-	-	6,364	6,336	6,254
College - G	Existing		Boiler O2 Trim Controls		per sq ft	\$0.02	75%	\$0.01	123,180	119,558	119,558	-	-	-	-	-	-	1,204	1,160	1,146
College - G	Existing		Repair malfunctioning steam traps		per sq ft	\$0.00	75%	\$0.00	164,557	159,717	159,717	-	-	-	-	-	-	408	394	389
College - G	Existing		Destratification Fans (HVLS)		per sq ft	\$0.32	75%	\$0.24	28,418	27,582	27,582	-	-	-	-	-	-	3,125	3,011	2,975
College - G	Existing		Exhaust Hood Makeup Air		per sq ft	\$0.16	75%	\$0.12	805	782	782	-	-	-	-	-	-	98	95	94
College - G	New		Insulation - Ceiling		per sq ft	\$0.70	75%	\$0.52	27,500	26,691	26,691	-	-	-	-	-	-	258	249	246
College - G	New		Insulation - Radiant Barrier		per sq ft	\$0.18	75%	\$0.13	27,479	26,670	26,670	-	-	-	-	-	-	84	81	80
College - G	New		Insulation - Wall Cavity		per sq ft	\$0.16	75%	\$0.12	27,526	26,716	26,716	-	-	-	-	-	-	69	67	66
College - G	New		Gas Boiler - Hot Water Reset		per sq ft	\$0.01	75%	\$0.01	5,426	5,267	5,267	-	-	-	-	-	-	330	322	320
College - G	New		Gas Boiler - Maintenance		per sq ft	\$0.02	75%	\$0.01	17,248	16,741	16,741	-	-	-	-	-	-	828	809	805
College - G	New		Gas Furnace - Maintenance		per sq ft	\$0.04	75%	\$0.03	114,838	111,460	111,460	-	-	-	-	-	-	5,150	4,966	4,900
College - G	New		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.02	75%	\$0.01	73,836	71,664	71,664	-	-	-	-	-	-	2,562	2,475	2,445
College - G	New		Water Heater - Drainwater Heat Recovery		per sq ft	\$0.04	75%	\$0.03	29,539	28,670	28,670	-	-	-	-	-	-	455	440	436
College - G	New		Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	75%	\$0.62	18,938	18,938	18,938	-	-	-	-	-	-	566	566	561
College - G	New		Boiler O2 Trim Controls		per sq ft	\$0.02	75%	\$0.01	5,187	5,034	5,034	-	-	-	-	-	-	38	37	37
College - G	New		Repair malfunctioning steam traps		per sq ft	\$0.00	75%	\$0.00	16,868	16,372	16,372	-	-	-	-	-	-	40	39	39
College - G	New		Destratification Fans (HVLS)		per sq ft	\$0.32	75%	\$0.24	2,923	2,837	2,837	-	-	-	-	-	-	242	236	235
College - G	New		Exhaust Hood Makeup Air		per sq ft	\$0.16	75%	\$0.12	83	80	80	-	-	-	-	-	-	8	7	7
School - G	Existing		Insulation - Ceiling		per sq ft	\$0.70	75%	\$0.52	618,998	600,792	600,792	-	-	-	-	-	-	4,873	4,712	4,659

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
School - G	Existing		Insulation - Radiant Barrier		per sq ft	\$0.18	75%	\$0.13	656,789	637,472	637,472	-	-	-	-	-	-	1,988	1,922	1,900
School - G	Existing		Insulation - Wall Cavity		per sq ft	\$0.16	75%	\$0.12	619,285	601,071	601,071	-	-	-	-	-	-	2,097	2,028	2,004
School - G	Existing		Gas Boiler - Hot Water Reset		per sq ft	\$0.01	75%	\$0.01	1,053,825	1,022,830	1,022,830	-	-	-	-	-	-	44,903	43,267	42,756
School - G	Existing		Gas Boiler - Maintenance		per sq ft	\$0.02	75%	\$0.01	1,242,568	1,206,022	1,206,022	-	-	-	-	-	-	35,567	34,272	33,867
School - G	Existing		Gas Furnace - Maintenance		per sq ft	\$0.04	75%	\$0.03	687,005	666,799	666,799	-	-	-	-	-	-	14,599	14,223	14,068
School - G	Existing		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.02	75%	\$0.01	600,928	583,253	583,253	-	-	-	-	-	-	11,813	11,423	11,293
School - G	Existing		Water Heater - Drainwater Heat Recovery		per sq ft	\$0.04	75%	\$0.03	949,450	921,525	921,525	-	-	-	-	-	-	8,845	8,557	8,442
School - G	Existing		Boiler O2 Trim Controls		per sq ft	\$0.02	75%	\$0.01	914,205	887,316	887,316	-	-	-	-	-	-	4,012	3,866	3,821
School - G	Existing		Repair malfunctioning steam traps		per sq ft	\$0.00	75%	\$0.00	1,228,402	1,192,272	1,192,272	-	-	-	-	-	-	3,049	2,938	2,903
School - G	New		Insulation - Ceiling		per sq ft	\$0.70	75%	\$0.52	63,259	61,398	61,398	-	-	-	-	-	-	275	267	265
School - G	New		Insulation - Radiant Barrier		per sq ft	\$0.18	75%	\$0.13	66,611	64,652	64,652	-	-	-	-	-	-	94	91	90
School - G	New		Insulation - Wall Cavity		per sq ft	\$0.16	75%	\$0.12	63,197	61,338	61,338	-	-	-	-	-	-	73	71	71
School - G	New		Gas Boiler - Hot Water Reset		per sq ft	\$0.01	75%	\$0.01	61,477	59,669	59,669	-	-	-	-	-	-	1,677	1,638	1,630
School - G	New		Gas Boiler - Maintenance		per sq ft	\$0.02	75%	\$0.01	129,950	126,128	126,128	-	-	-	-	-	-	2,801	2,736	2,723
School - G	New		Gas Furnace - Maintenance		per sq ft	\$0.04	75%	\$0.03	71,176	69,082	69,082	-	-	-	-	-	-	1,433	1,382	1,364
School - G	New		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.02	75%	\$0.01	225,864	219,221	219,221	-	-	-	-	-	-	3,625	3,525	3,498
School - G	New		Water Heater - Drainwater Heat Recovery		per sq ft	\$0.04	75%	\$0.03	97,620	94,748	94,748	-	-	-	-	-	-	831	804	795
School - G	New		Boiler O2 Trim Controls		per sq ft	\$0.02	75%	\$0.01	61,692	59,877	59,877	-	-	-	-	-	-	204	199	198
School - G	New		Repair malfunctioning steam traps		per sq ft	\$0.00	75%	\$0.00	127,543	123,792	123,792	-	-	-	-	-	-	305	298	297
School - G	New		Exhaust Hood Makeup Air		per sq ft	\$0.00	75%	\$0.00	-	-	2,351	-	-	-	-	-	-	-	-	97
Health - G	Existing		Insulation - Radiant Barrier		per sq ft	\$0.22	75%	\$0.17	254,586	247,098	247,098	-	-	-	-	-	-	1,414	1,378	1,363
Health - G	Existing		HVAC - Duct Repair and Sealing		per sq ft	\$0.00	75%	\$0.00	333,282	323,480	323,480	-	-	-	-	-	-	722	703	696
Health - G	Existing		Windows - High Efficiency		per sq ft	\$0.90	75%	\$0.68	400,413	388,636	388,636	-	-	-	-	-	-	2,718	2,647	2,620
Health - G	Existing		Gas Boiler - Hot Water Reset		per sq ft	\$0.01	75%	\$0.01	33,378	32,396	32,396	-	-	-	-	-	-	6,660	6,440	6,375
Health - G	Existing		Gas Boiler - Maintenance		per sq ft	\$0.02	75%	\$0.01	39,539	38,376	38,376	-	-	-	-	-	-	4,625	4,472	4,427

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Health - G	Existing		Gas Furnace - Maintenance		per sq ft	\$0.02	75%	\$0.01	788,155	764,974	764,974	-	-	-	-	-	-	56,172	54,741	54,171
Health - G	Existing		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.01	75%	\$0.00	189,879	184,294	184,294	-	-	-	-	-	-	10,698	10,419	10,311
Health - G	Existing		Water Heater - Drainwater Heat Recovery		per sq ft	\$0.04	75%	\$0.03	362,729	352,061	352,061	-	-	-	-	-	-	14,093	13,629	13,441
Health - G	Existing		Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	75%	\$0.62	211,209	211,209	211,209	-	-	-	-	-	-	14,344	14,291	14,099
Health - G	Existing		Boiler O2 Trim Controls		per sq ft	\$0.01	75%	\$0.00	50,349	48,868	48,868	-	-	-	-	-	-	903	873	864
Health - G	Existing		Boiler Parallel Positioning Control		per sq ft	\$0.07	75%	\$0.06	48,172	46,755	46,755	-	-	-	-	-	-	864	835	827
Health - G	Existing		Boiler blowdown heat exchanger (steam)		per sq ft	\$0.31	75%	\$0.23	48,066	46,652	46,652	-	-	-	-	-	-	2,414	2,334	2,310
Health - G	Existing		Repair malfunctioning steam traps		per sq ft	\$0.00	75%	\$0.00	38,886	37,742	37,742	-	-	-	-	-	-	110	107	105
Health - G	Existing		Destratification Fans (HVLS)		per sq ft	\$0.10	75%	\$0.08	10,080	9,784	9,784	-	-	-	-	-	-	2,034	1,967	1,947
Health - G	Existing		Exhaust Hood Makeup Air		per sq ft	\$0.05	75%	\$0.04	295	286	286	-	-	-	-	-	-	66	64	63
Health - G	New		Gas Boiler - Hot Water Reset		per sq ft	\$0.01	75%	\$0.01	1,954	1,897	1,897	-	-	-	-	-	-	148	144	144
Health - G	New		Gas Boiler - Maintenance		per sq ft	\$0.02	75%	\$0.01	4,079	3,959	3,959	-	-	-	-	-	-	191	187	186
Health - G	New		Gas Furnace - Maintenance		per sq ft	\$0.02	75%	\$0.01	77,867	75,577	75,577	-	-	-	-	-	-	4,027	3,881	3,829
Health - G	New		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.01	75%	\$0.00	71,377	69,278	69,278	-	-	-	-	-	-	2,817	2,717	2,682
Health - G	New		Water Heater - Drainwater Heat Recovery		per sq ft	\$0.04	75%	\$0.03	37,346	36,247	36,247	-	-	-	-	-	-	1,323	1,281	1,267
Health - G	New		Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	75%	\$0.62	21,752	21,752	21,752	-	-	-	-	-	-	1,280	1,276	1,263
Health - G	New		Boiler O2 Trim Controls		per sq ft	\$0.01	75%	\$0.00	2,053	1,993	1,993	-	-	-	-	-	-	15	14	14
Health - G	New		Boiler Parallel Positioning Control		per sq ft	\$0.00	75%	\$0.00	-	-	2,844	-	-	-	-	-	-	-	-	20
Health - G	New		Boiler blowdown heat exchanger (steam)		per sq ft	\$0.00	75%	\$0.00	-	2,068	2,068	-	-	-	-	-	-	-	42	42
Health - G	New		Repair malfunctioning steam traps		per sq ft	\$0.00	75%	\$0.00	4,032	3,913	3,913	-	-	-	-	-	-	6	6	6
Health - G	New		Destratification Fans (HVLS)		per sq ft	\$0.10	75%	\$0.08	1,066	1,034	1,034	-	-	-	-	-	-	86	84	84
Health - G	New		Exhaust Hood Makeup Air		per sq ft	\$0.05	75%	\$0.04	30	30	30	-	-	-	-	-	-	3	3	3
Lodging - G	Existing		Insulation - Radiant Barrier		per sq ft	\$0.26	75%	\$0.20	48,419	46,995	46,995	-	-	-	-	-	-	101	98	97

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Lodging - G	Existing		HVAC - Duct Repair and Sealing		per sq ft	\$0.00	75%	\$0.00	64,125	62,239	62,239	-	-	-	-	-	-	52	51	50
Lodging - G	Existing		Windows - High Efficiency		per sq ft	\$1.06	75%	\$0.79	63,723	61,849	61,849	-	-	-	-	-	-	162	157	156
Lodging - G	Existing		Gas Boiler - Hot Water Reset		per sq ft	\$0.01	75%	\$0.01	69,013	66,983	66,983	-	-	-	-	-	-	3,673	3,566	3,537
Lodging - G	Existing		Gas Boiler - Maintenance		per sq ft	\$0.02	75%	\$0.02	106,273	103,148	103,148	-	-	-	-	-	-	3,315	3,219	3,192
Lodging - G	Existing		Gas Furnace - Maintenance		per sq ft	\$0.02	75%	\$0.02	91,149	88,468	88,468	-	-	-	-	-	-	2,150	2,095	2,071
Lodging - G	Existing		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.01	75%	\$0.00	46,042	44,688	44,688	-	-	-	-	-	-	970	943	934
Lodging - G	Existing		Water Heater - Drainwater Heat Recovery		per sq ft	\$0.04	75%	\$0.03	112,547	109,237	109,237	-	-	-	-	-	-	2,499	2,417	2,383
Lodging - G	Existing		Boiler O2 Trim Controls		per sq ft	\$0.01	75%	\$0.00	63,041	61,187	61,187	-	-	-	-	-	-	302	293	290
Lodging - G	Existing		Repair malfunctioning steam traps		per sq ft	\$0.00	75%	\$0.00	104,686	101,607	101,607	-	-	-	-	-	-	79	77	76
Lodging - G	Existing		Exhaust Hood Makeup Air		per sq ft	\$0.05	75%	\$0.04	1,200	1,165	1,165	-	-	-	-	-	-	72	70	69
Lodging - G	New		Gas Boiler - Hot Water Reset		per sq ft	\$0.01	75%	\$0.01	4,027	3,908	3,908	-	-	-	-	-	-	144	140	140
Lodging - G	New		Gas Boiler - Maintenance		per sq ft	\$0.02	75%	\$0.02	9,560	9,278	9,278	-	-	-	-	-	-	212	207	206
Lodging - G	New		Gas Furnace - Maintenance		per sq ft	\$0.02	75%	\$0.02	8,133	7,894	7,894	-	-	-	-	-	-	126	121	120
Lodging - G	New		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.01	75%	\$0.00	17,308	16,799	16,799	-	-	-	-	-	-	254	247	245
Lodging - G	New		Water Heater - Drainwater Heat Recovery		per sq ft	\$0.04	75%	\$0.03	11,570	11,230	11,230	-	-	-	-	-	-	234	227	224
Lodging - G	New		Boiler O2 Trim Controls		per sq ft	\$0.01	75%	\$0.00	4,114	3,993	3,993	-	-	-	-	-	-	14	14	14
Lodging - G	New		Repair malfunctioning steam traps		per sq ft	\$0.00	75%	\$0.00	9,435	9,157	9,157	-	-	-	-	-	-	7	7	7
Lodging - G	New		Exhaust Hood Makeup Air		per sq ft	\$0.05	75%	\$0.04	124	120	120	-	-	-	-	-	-	5	5	5
Warehouse - G	Existing		Insulation - Radiant Barrier		per sq ft	\$0.09	75%	\$0.07	360,091	349,500	349,500	-	-	-	-	-	-	10,842	10,555	10,469
Warehouse - G	Existing		HVAC - Duct Repair and Sealing		per sq ft	\$0.00	75%	\$0.00	480,977	466,831	466,831	-	-	-	-	-	-	362	352	349
Warehouse - G	Existing		Gas Boiler - Hot Water Reset		per sq ft	\$0.01	75%	\$0.00	19,136	18,574	18,574	-	-	-	-	-	-	19,894	19,238	19,042
Warehouse - G	Existing		Gas Boiler - Maintenance		per sq ft	\$0.01	75%	\$0.01	22,537	21,874	21,874	-	-	-	-	-	-	5,640	5,454	5,398
Warehouse - G	Existing		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.01	75%	\$0.01	345,344	335,187	335,187	-	-	-	-	-	-	6,755	6,577	6,523
Warehouse - G	Existing		Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	75%	\$0.62	206,808	206,808	206,808	-	-	-	-	-	-	2,396	2,387	2,360

Program Measure-Level Details

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Warehouse - G	Existing		Boiler O2 Trim Controls		per sq ft	\$0.01	75%	\$0.01	17,794	17,270	17,270	-	-	-	-	-	-	683	660	653
Warehouse - G	Existing		Boiler Parallel Positioning Control		per sq ft	\$0.18	75%	\$0.13	16,832	16,337	16,337	-	-	-	-	-	-	646	625	618
Warehouse - G	Existing		Boiler blowdown heat exchanger (steam) Repair		per sq ft	\$0.73	75%	\$0.54	16,810	16,315	16,315	-	-	-	-	-	-	1,806	1,746	1,729
Warehouse - G	Existing		malfunctioning steam traps		per sq ft	\$0.00	75%	\$0.00	22,832	22,161	22,161	-	-	-	-	-	-	41	40	39
Warehouse - G	Existing		Destratification Fans (HVLS)		per sq ft	\$0.24	75%	\$0.18	5,573	5,409	5,409	-	-	-	-	-	-	2,406	2,326	2,303
Warehouse - G	Existing		Exhaust Hood Makeup Air Insulation -		per sq ft	\$0.12	75%	\$0.09	165	160	160	-	-	-	-	-	-	79	77	76
Warehouse - G	New		Radiant Barrier		per sq ft	\$0.00	75%	\$0.00	-	35,463	35,463	-	-	-	-	-	-	-	55	55
Warehouse - G	New		Gas Boiler - Hot Water Reset		per sq ft	\$0.01	75%	\$0.00	1,117	1,084	1,084	-	-	-	-	-	-	866	844	838
Warehouse - G	New		Gas Boiler - Maintenance		per sq ft	\$0.01	75%	\$0.01	1,929	1,872	1,872	-	-	-	-	-	-	350	341	338
Warehouse - G	New		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.01	75%	\$0.01	129,819	126,000	126,000	-	-	-	-	-	-	2,354	2,293	2,277
Warehouse - G	New		Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	75%	\$0.62	21,439	21,439	21,439	-	-	-	-	-	-	196	196	195
Warehouse - G	New		Boiler O2 Trim Controls		per sq ft	\$0.01	75%	\$0.01	1,153	1,119	1,119	-	-	-	-	-	-	32	31	31
Warehouse - G	New		Boiler Parallel Positioning Control		per sq ft	\$0.18	75%	\$0.13	1,112	1,079	1,079	-	-	-	-	-	-	31	30	30
Warehouse - G	New		Boiler blowdown heat exchanger (steam) Repair		per sq ft	\$0.73	75%	\$0.54	1,097	1,065	1,065	-	-	-	-	-	-	85	83	83
Warehouse - G	New		malfunctioning steam traps		per sq ft	\$0.00	75%	\$0.00	1,952	1,895	1,895	-	-	-	-	-	-	3	3	3
Warehouse - G	New		Destratification Fans (HVLS)		per sq ft	\$0.24	75%	\$0.18	604	587	587	-	-	-	-	-	-	189	184	183
Warehouse - G	New		Exhaust Hood Makeup Air Insulation - Ceiling		per sq ft	\$0.12	75%	\$0.09	17	17	17	-	-	-	-	-	-	6	6	6
Misc. - G	Existing		Insulation - Radiant Barrier		per sq ft	\$0.07	75%	\$0.05	1,279,037	1,241,418	1,241,418	-	-	-	-	-	-	28,948	28,224	28,027
Misc. - G	Existing		Insulation - Wall Cavity		per sq ft	\$0.02	75%	\$0.01	1,284,662	1,246,877	1,246,877	-	-	-	-	-	-	11,499	11,212	11,133
Misc. - G	Existing		Windows - High Efficiency		per sq ft	\$0.03	75%	\$0.02	1,273,733	1,236,270	1,236,270	-	-	-	-	-	-	15,294	14,912	14,808
Misc. - G	Existing		Gas Boiler - Hot Water Reset		per sq ft	\$0.01	75%	\$0.01	1,688,337	1,638,680	1,638,680	-	-	-	-	-	-	22,607	22,042	21,888
Misc. - G	Existing		Gas Boiler - Maintenance		per sq ft	\$0.01	75%	\$0.00	287,172	278,726	278,726	-	-	-	-	-	-	36,421	35,196	34,829
Misc. - G	Existing		Gas Furnace - Maintenance		per sq ft	\$0.01	75%	\$0.01	370,831	359,924	359,924	-	-	-	-	-	-	11,321	10,940	10,826
Misc. - G	Existing				per sq ft	\$0.00	75%	\$0.00	4,365,438	4,237,043	4,237,043	-	-	-	-	-	-	79,513	77,629	77,126

Segment	Vintage	End Use	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
									2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Misc. - G	Existing		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.14	75%	\$0.10	1,213,109	1,177,429	1,177,429	-	-	-	-	-	-	17,833	17,387	17,266
Misc. - G	Existing		Water Heater - Drainwater Heat Recovery		per sq ft	\$0.00	75%	\$0.00	-	-	2,570,770	-	-	-	-	-	-	-	-	16,496
Misc. - G	Existing		Repair malfunctioning steam traps		per sq ft	\$0.00	75%	\$0.00	378,820	367,678	367,678	-	-	-	-	-	-	7,041	6,804	6,733
Misc. - G	New		Insulation - Ceiling		per sq ft	\$0.07	75%	\$0.05	131,300	127,439	127,439	-	-	-	-	-	-	2,255	2,178	2,151
Misc. - G	New		Insulation - Radiant Barrier		per sq ft	\$0.02	75%	\$0.01	132,700	128,797	128,797	-	-	-	-	-	-	869	839	828
Misc. - G	New		Insulation - Wall Cavity		per sq ft	\$0.03	75%	\$0.02	130,860	127,011	127,011	-	-	-	-	-	-	1,024	989	976
Misc. - G	New		Windows - High Efficiency		per sq ft	\$0.01	75%	\$0.01	210,853	204,651	204,651	-	-	-	-	-	-	1,978	1,910	1,887
Misc. - G	New		Gas Boiler - Hot Water Reset		per sq ft	\$0.01	75%	\$0.00	16,867	16,371	16,371	-	-	-	-	-	-	1,594	1,554	1,544
Misc. - G	New		Gas Boiler - Maintenance		per sq ft	\$0.01	75%	\$0.01	39,805	38,634	38,634	-	-	-	-	-	-	880	858	852
Misc. - G	New		Gas Furnace - Maintenance		per sq ft	\$0.00	75%	\$0.00	462,104	448,512	448,512	-	-	-	-	-	-	8,146	7,858	7,756
Misc. - G	New		Space Heating - Heat Recovery Ventilator		per sq ft	\$0.14	75%	\$0.10	456,478	443,052	443,052	-	-	-	-	-	-	6,294	6,078	6,004
Misc. - G	New		Repair malfunctioning steam traps		per sq ft	\$0.00	75%	\$0.00	40,871	39,669	39,669	-	-	-	-	-	-	726	708	703

Table G-12 C&I Custom (MAP)

Segment	Vintage	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
								2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Office - E	Existing	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	80%	\$0.00	1,049,535	-	-	2,907	-	-	0.45	-	-	-	-	-
Office - E	Existing	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	80%	\$0.00	-	1,003,358	1,003,358	-	3,212	3,353	-	0.50	0.52	-	-	-
Office - E	New	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	80%	\$0.00	281,871	-	-	781	-	-	0.12	-	-	-	-	-
Office - E	New	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	80%	\$0.00	-	338,066	338,066	-	1,093	1,143	-	0.17	0.18	-	-	-
Restaurant - E	Existing	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	80%	\$0.00	49,486	-	-	219	-	-	0.02	-	-	-	-	-
Restaurant - E	Existing	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	80%	\$0.00	-	47,309	47,309	-	242	253	-	0.03	0.03	-	-	-
Restaurant - E	New	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	80%	\$0.00	13,290	-	-	59	-	-	0.01	-	-	-	-	-
Restaurant - E	New	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	80%	\$0.00	-	15,940	15,940	-	82	86	-	0.01	0.01	-	-	-
Retail - E	Existing	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	80%	\$0.00	477,426	-	-	2,667	-	-	0.30	-	-	-	-	-
Retail - E	Existing	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	80%	\$0.00	-	456,420	456,420	-	2,947	3,076	-	0.33	0.34	-	-	-
Retail - E	New	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	80%	\$0.00	128,221	-	-	716	-	-	0.08	-	-	-	-	-
Retail - E	New	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	80%	\$0.00	-	153,784	153,784	-	1,003	1,049	-	0.11	0.12	-	-	-
Grocery - E	Existing	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	80%	\$0.00	45,207	-	-	387	-	-	0.06	-	-	-	-	-
Grocery - E	Existing	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	80%	\$0.00	-	43,218	43,218	-	427	446	-	0.07	0.07	-	-	-
Grocery - E	New	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	80%	\$0.00	12,141	-	-	104	-	-	0.02	-	-	-	-	-
Grocery - E	New	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	80%	\$0.00	-	14,562	14,562	-	145	152	-	0.02	0.02	-	-	-
College - E	Existing	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	80%	\$0.00	780,808	-	-	878	-	-	0.12	-	-	-	-	-
College - E	Existing	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	80%	\$0.00	-	746,454	746,454	-	970	1,013	-	0.13	0.14	-	-	-
College - E	New	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	80%	\$0.00	209,699	-	-	236	-	-	0.03	-	-	-	-	-
College - E	New	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	80%	\$0.00	-	251,506	251,506	-	330	345	-	0.05	0.05	-	-	-
School - E	Existing	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	80%	\$0.00	357,180	-	-	275	-	-	0.01	-	-	-	-	-
School - E	Existing	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	80%	\$0.00	-	341,465	341,465	-	304	317	-	0.02	0.02	-	-	-
School - E	New	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	80%	\$0.00	95,927	-	-	74	-	-	0.00	-	-	-	-	-
School - E	New	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	80%	\$0.00	-	115,051	115,051	-	103	108	-	0.01	0.01	-	-	-
Health - E	Existing	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	80%	\$0.00	464,568	-	-	7,856	-	-	0.85	-	-	-	-	-
Health - E	Existing	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	80%	\$0.00	-	444,128	444,128	-	8,679	9,059	-	0.94	0.98	-	-	-
Health - E	New	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	80%	\$0.00	124,768	-	-	2,110	-	-	0.23	-	-	-	-	-
Health - E	New	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	80%	\$0.00	-	149,642	149,642	-	2,953	3,089	-	0.32	0.34	-	-	-
Lodging - E	Existing	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	80%	\$0.00	530,268	-	-	671	-	-	0.06	-	-	-	-	-
Lodging - E	Existing	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	80%	\$0.00	-	506,938	506,938	-	741	774	-	0.07	0.07	-	-	-
Lodging - E	Existing	Pool Pump	High Efficiency, Multi-Speed	per sq ft	\$0.00	80%	\$0.00	168,335	163,384	163,384	457	443	442	0.04	0.04	0.04	-	-	-
Lodging - E	New	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	80%	\$0.00	142,413	-	-	180	-	-	0.02	-	-	-	-	-
Lodging - E	New	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	80%	\$0.00	-	170,805	170,805	-	252	264	-	0.02	0.02	-	-	-
Lodging - E	New	Pool Pump	High Efficiency, Multi-Speed	per sq ft	\$0.00	80%	\$0.00	105,587	102,481	102,481	287	278	277	0.03	0.03	0.03	-	-	-
Warehouse - E	Existing	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	80%	\$0.00	474,958	-	-	1,161	-	-	0.19	-	-	-	-	-
Warehouse - E	Existing	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	80%	\$0.00	-	454,061	454,061	-	1,282	1,339	-	0.21	0.22	-	-	-
Warehouse - E	New	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	80%	\$0.00	127,558	-	-	312	-	-	0.05	-	-	-	-	-
Warehouse - E	New	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	80%	\$0.00	-	152,989	152,989	-	436	456	-	0.07	0.07	-	-	-
Miscellaneous - E	Existing	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	80%	\$0.00	1,083,282	-	-	6,534	-	-	1.12	-	-	-	-	-
Miscellaneous - E	Existing	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	80%	\$0.00	-	1,035,620	1,035,620	-	7,219	7,535	-	1.24	1.29	-	-	-
Miscellaneous - E	New	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	80%	\$0.00	290,934	-	-	1,755	-	-	0.30	-	-	-	-	-
Miscellaneous - E	New	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	80%	\$0.00	-	348,936	348,936	-	2,456	2,569	-	0.42	0.44	-	-	-
Office - E	Existing	Roof - High Reflectivity		per sq ft	\$0.00	80%	\$0.00	4,788,837	4,647,989	4,647,989	87,027	82,313	80,144	43.84	41.47	40.38	-	-	-
Office - E	Existing	Ventilation - CO2 Controlled		per sq ft	\$0.22	80%	\$0.18	741,907	720,086	720,086	439,737	422,764	418,495	-	-	-	-	-	-
Office - E	Existing	Water Heater - Solar System		per sq ft	\$0.07	80%	\$0.06	456,846	443,410	443,410	14,223	13,606	13,392	1.39	1.33	1.30	-	-	-
Office - E	Existing	Energy Management System		per sq ft	\$0.19	15%	\$0.03	11,206,711	11,206,711	11,206,711	809,470	790,572	771,361	166.73	162.22	157.70	-	-	-
Office - E	New	Roof - High Reflectivity		per sq ft	\$0.00	80%	\$0.00	1,081,454	1,049,646	1,049,646	6,460	6,218	6,177	5.95	5.72	5.69	-	-	-
Office - E	New	Ventilation - CO2 Controlled		per sq ft	\$0.22	80%	\$0.18	129,243	125,442	125,442	79,975	77,394	77,069	-	-	-	-	-	-
Office - E	New	Water Heater - Solar System		per sq ft	\$0.07	80%	\$0.06	46,968	45,587	45,587	1,309	1,214	1,176	0.13	0.12	0.11	-	-	-
Office - E	New	Energy Management System		per sq ft	\$0.19	15%	\$0.03	633,380	633,380	633,380	31,037	30,803	30,592	4.19	4.16	4.13	-	-	-
Restaurant - E	Existing	Roof - High Reflectivity		per sq ft	\$0.40	80%	\$0.32	1,535,825	1,490,653	1,490,653	163,733	154,447	149,966	81.53	76.91	74.68	-	-	-
Restaurant - E	Existing	Ventilation - CO2 Controlled		per sq ft	\$0.22	80%	\$0.18	209,338	203,181	203,181	113,318	106,137	102,570	-	-	-	-	-	-
Restaurant - E	Existing	Water Heater - Solar System		per sq ft	\$0.05	80%	\$0.04	80,305	77,943	77,943	27,410	26,232	25,826	2.78	2.66	2.62	-	-	-

Segment	Vintage	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
								2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Restaurant - E	Existing	Energy Management System		per sq ft	\$0.26	15%	\$0.04	1,341,892	1,341,892	1,341,892	170,105	165,021	159,942	18.66	18.09	17.52	-	-	-
Restaurant - E	New	Roof - High Reflectivity		per sq ft	\$0.32	80%	\$0.32	242,444	235,313	235,313	11,761	11,287	11,177	6.31	6.05	5.99	-	-	-
Restaurant - E	New	Ventilation - CO2 Controlled		per sq ft	\$0.22	80%	\$0.18	34,858	33,832	33,832	21,213	20,376	20,170	-	-	-	-	-	-
Restaurant - E	New	Water Heater - Solar System		per sq ft	\$0.05	80%	\$0.04	8,254	8,011	8,011	2,511	2,330	2,256	0.26	0.24	0.23	-	-	-
Restaurant - E	New	Energy Management System		per sq ft	\$0.00	15%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
Retail - E	Existing	Roof - High Reflectivity		per sq ft	\$0.01	80%	\$0.01	3,551,386	3,446,933	3,446,933	144,145	137,532	135,063	99.17	94.62	92.92	-	-	-
Retail - E	Existing	Ventilation - CO2 Controlled		per sq ft	\$0.22	80%	\$0.18	1,004,533	974,988	974,988	615,653	592,776	586,897	-	-	-	-	-	-
Retail - E	Existing	Water Heater - Solar System		per sq ft	\$0.05	80%	\$0.04	512,780	497,698	497,698	19,024	18,204	17,922	1.75	1.67	1.65	-	-	-
Retail - E	Existing	Energy Management System		per sq ft	\$0.26	15%	\$0.04	8,850,858	8,850,858	8,850,858	344,345	339,169	333,713	50.45	49.66	48.83	-	-	-
Retail - E	New	Roof - High Reflectivity		per sq ft	\$0.01	80%	\$0.01	635,123	616,443	616,443	14,588	14,191	14,230	9.40	9.21	9.31	-	-	-
Retail - E	New	Ventilation - CO2 Controlled		per sq ft	\$0.22	80%	\$0.18	168,755	163,792	163,792	105,231	102,025	101,719	-	-	-	-	-	-
Retail - E	New	Water Heater - Solar System		per sq ft	\$0.05	80%	\$0.04	52,726	51,175	51,175	1,721	1,596	1,545	0.16	0.15	0.14	-	-	-
Retail - E	New	Energy Management System		per sq ft	\$0.00	15%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
Grocery - E	Existing	Roof - High Reflectivity		per sq ft	\$0.07	80%	\$0.05	382,907	371,645	371,645	196,805	185,963	180,871	457.36	432.17	420.34	-	-	-
Grocery - E	Existing	Ventilation - CO2 Controlled		per sq ft	\$0.22	80%	\$0.18	109,931	106,697	106,697	59,899	56,058	54,129	-	-	-	-	-	-
Grocery - E	Existing	Water Heater - Solar System		per sq ft	\$0.20	80%	\$0.16	25,525	24,774	24,774	3,083	2,952	2,908	0.33	0.32	0.31	-	-	-
Grocery - E	Existing	Energy Management System		per sq ft	\$0.65	15%	\$0.10	768,750	768,750	768,750	116,725	113,704	110,651	48.55	47.20	45.84	-	-	-
Grocery - E	New	Roof - High Reflectivity		per sq ft	\$0.07	80%	\$0.05	74,882	72,679	72,679	17,032	16,479	16,321	28.73	27.80	27.53	-	-	-
Grocery - E	New	Ventilation - CO2 Controlled		per sq ft	\$0.22	80%	\$0.18	18,367	17,826	17,826	11,563	11,087	10,969	-	-	-	-	-	-
Grocery - E	New	Water Heater - Solar System		per sq ft	\$0.20	80%	\$0.16	2,624	2,546	2,546	280	260	252	0.03	0.03	0.03	-	-	-
Grocery - E	New	Energy Management System		per sq ft	\$0.65	15%	\$0.10	78,487	78,487	78,487	9,885	9,848	9,768	0.59	0.59	0.58	-	-	-
College - E	Existing	Roof - High Reflectivity		per sq ft	\$0.03	80%	\$0.02	6,359,457	6,172,414	6,172,414	734,572	697,142	682,554	203.26	192.91	188.87	-	-	-
College - E	Existing	Ventilation - CO2 Controlled		per sq ft	\$0.22	80%	\$0.18	372,208	361,261	361,261	192,230	179,297	172,973	-	-	-	-	-	-
College - E	Existing	Water Heater - Solar System		per sq ft	\$0.07	80%	\$0.06	78,387	76,082	76,082	6,307	6,040	5,949	0.72	0.69	0.68	-	-	-
College - E	Existing	Energy Management System		per sq ft	\$0.26	15%	\$0.04	4,939,657	4,939,657	4,939,657	254,227	248,839	243,869	0.38	0.37	0.36	-	-	-
College - E	New	Roof - High Reflectivity		per sq ft	\$0.03	80%	\$0.02	1,319,909	1,281,088	1,281,088	82,044	79,190	78,730	23.16	22.36	22.23	-	-	-
College - E	New	Ventilation - CO2 Controlled		per sq ft	\$0.22	80%	\$0.18	66,480	64,524	64,524	41,224	39,901	39,739	-	-	-	-	-	-
College - E	New	Water Heater - Solar System		per sq ft	\$0.07	80%	\$0.06	8,057	7,820	7,820	574	532	515	0.07	0.06	0.06	-	-	-
College - E	New	Energy Management System		per sq ft	\$0.26	15%	\$0.04	510,637	510,637	510,637	21,535	21,388	21,235	5.76	5.72	5.67	-	-	-
School - E	Existing	Roof - High Reflectivity		per sq ft	\$0.03	80%	\$0.02	2,049,949	1,989,656	1,989,656	70,335	67,982	67,689	42.43	41.01	40.83	-	-	-
School - E	Existing	Ventilation - CO2 Controlled		per sq ft	\$0.22	80%	\$0.18	520,340	505,036	505,036	268,734	250,654	241,813	-	-	-	-	-	-
School - E	Existing	Water Heater - Solar System		per sq ft	\$0.07	80%	\$0.06	30,347	29,454	29,454	1,584	1,517	1,494	0.09	0.08	0.08	-	-	-
School - E	Existing	Energy Management System		per sq ft	\$0.26	15%	\$0.04	5,253,792	5,253,792	5,253,792	67,802	67,969	68,097	0.19	0.19	0.19	-	-	-
School - E	New	Roof - High Reflectivity		per sq ft	\$0.03	80%	\$0.02	734,444	712,842	712,842	15,490	15,454	15,878	9.53	9.51	9.77	-	-	-
School - E	New	Ventilation - CO2 Controlled		per sq ft	\$0.22	80%	\$0.18	90,155	87,504	87,504	55,905	54,112	53,891	-	-	-	-	-	-
School - E	New	Water Heater - Solar System		per sq ft	\$0.07	80%	\$0.06	3,120	3,028	3,028	144	134	129	0.01	0.01	0.01	-	-	-
School - E	New	Energy Management System		per sq ft	\$0.26	15%	\$0.04	670,427	670,427	670,427	8,649	8,875	9,105	4.09	4.24	4.38	-	-	-
Health - E	Existing	Roof - High Reflectivity		per sq ft	\$0.03	80%	\$0.03	3,240,612	3,145,300	3,145,300	440,797	416,751	406,092	50.41	47.66	46.44	-	-	-
Health - E	Existing	Ventilation - CO2 Controlled		per sq ft	\$0.22	80%	\$0.18	266,199	258,370	258,370	135,584	126,282	121,747	-	-	-	-	-	-
Health - E	Existing	Water Heater - Solar System		per sq ft	\$0.02	80%	\$0.02	71,226	69,131	69,131	7,545	7,225	7,117	0.62	0.59	0.58	-	-	-
Health - E	New	Roof - High Reflectivity		per sq ft	\$0.03	80%	\$0.03	604,494	586,715	586,715	45,192	43,659	43,502	5.27	5.09	5.08	-	-	-
Health - E	New	Ventilation - CO2 Controlled		per sq ft	\$0.22	80%	\$0.18	47,529	46,131	46,131	29,544	28,627	28,532	-	-	-	-	-	-
Health - E	New	Water Heater - Solar System		per sq ft	\$0.02	80%	\$0.02	7,321	7,106	7,106	686	637	616	0.06	0.05	0.05	-	-	-
Lodging - E	Existing	Roof - High Reflectivity		per sq ft	\$0.04	80%	\$0.03	2,862,087	2,777,908	2,777,908	155,854	148,922	146,420	25.38	24.25	23.84	-	-	-
Lodging - E	Existing	Ventilation - CO2 Controlled		per sq ft	\$0.22	80%	\$0.18	493,121	478,617	478,617	78,979	76,176	75,540	-	-	-	-	-	-
Lodging - E	Existing	Water Heater - Solar System		per sq ft	\$0.02	80%	\$0.02	219,835	213,369	213,369	23,435	22,425	22,076	1.63	1.56	1.54	-	-	-
Lodging - E	New	Roof - High Reflectivity		per sq ft	\$0.04	80%	\$0.03	556,699	540,325	540,325	20,253	19,553	19,451	3.36	3.25	3.23	-	-	-
Lodging - E	New	Ventilation - CO2 Controlled		per sq ft	\$0.22	80%	\$0.18	82,826	80,390	80,390	21,102	20,447	20,377	-	-	-	-	-	-
Lodging - E	New	Water Heater - Solar System		per sq ft	\$0.02	80%	\$0.02	22,596	21,931	21,931	2,149	1,994	1,931	0.15	0.14	0.13	-	-	-
Warehouse - E	Existing	Roof - High Reflectivity		per sq ft	\$0.01	80%	\$0.01	2,110,699	2,048,619	2,048,619	18,025	18,037	18,545	38.36	38.39	39.47	-	-	-
Warehouse - E	Existing	Ventilation - CO2 Controlled		per sq ft	\$0.22	80%	\$0.18	404,690	392,787	392,787	64,569	62,067	61,346	-	-	-	-	-	-
Warehouse - E	Existing	Water Heater - Solar System		per sq ft	\$0.05	80%	\$0.04	95,131	92,333	92,333	1,049	1,005	990	0.11	0.10	0.10	-	-	-
Warehouse - E	Existing	Energy Management System		per sq ft	\$0.26	15%	\$0.04	6,960,755	6,960,755	6,960,755	66,180	68,066	69,792	21.25	22.02	22.74	-	-	-
Warehouse - E	New	Roof - High Reflectivity		per sq ft	\$0.01	80%	\$0.01	504,910	490,060	490,060	3,300	3,362	3,518	6.10	6.47	7.03	-	-	-
Warehouse - E	New	Ventilation - CO2 Controlled		per sq ft	\$0.22	80%	\$0.18	72,136	70,014	70,014	11,675	11,320	11,287	-	-	-	-	-	-
Warehouse - E	New	Water Heater - Solar System		per sq ft	\$0.05	80%	\$0.04	9,778	9,490	9,490	95	89	86	0.01	0.01	0.01	-	-	-
Warehouse - E	New	Energy Management System		per sq ft	\$0.00	15%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-

Program Measure-Level Details

Segment	Vintage	Technology	Option	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
								2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Miscellaneous - E	Existing	Roof - High Reflectivity		per sq ft	\$0.00	80%	\$0.00	7,858,865	7,627,722	7,627,722	492,360	465,558	453,151	395.87	374.32	364.34	-	-	-
Miscellaneous - E	Existing	Ventilation - CO2 Controlled		per sq ft	\$0.22	80%	\$0.18	1,563,823	1,517,828	1,517,828	516,518	492,966	484,588	-	-	-	-	-	-
Miscellaneous - E	Existing	Water Heater - Solar System		per sq ft	\$0.54	80%	\$0.43	500,673	485,947	485,947	24,773	23,724	23,370	3.66	3.51	3.45	-	-	-
Miscellaneous - E	Existing	Energy Management System		per sq ft	\$0.03	15%	\$0.00	14,093,172	14,093,172	14,093,172	590,164	574,666	559,063	108.25	105.32	102.37	-	-	-
Miscellaneous - E	New	Roof - High Reflectivity		per sq ft	\$0.00	80%	\$0.00	2,140,717	2,077,755	2,077,755	67,522	65,078	64,718	63.90	61.59	61.25	-	-	-
Miscellaneous - E	New	Ventilation - CO2 Controlled		per sq ft	\$0.22	80%	\$0.18	262,588	254,865	254,865	112,201	108,213	107,493	-	-	-	-	-	-
Miscellaneous - E	New	Water Heater - Solar System		per sq ft	\$0.54	80%	\$0.43	51,466	49,952	49,952	2,253	2,090	2,024	0.33	0.31	0.30	-	-	-
Miscellaneous - E	New	Energy Management System		per sq ft	\$0.03	15%	\$0.00	1,371,332	1,371,332	1,371,332	47,388	47,070	46,792	1.67	1.66	1.65	-	-	-
Office - G	Existing	Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	80%	\$0.66	6,925	6,925	6,925	-	-	-	-	-	-	115	115	113
Office - G	Existing	Energy Management System		per sq ft	\$0.19	15%	\$0.03	328,991	328,991	328,991	-	-	-	-	-	-	2,558	2,567	2,539
Office - G	New	Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	80%	\$0.66	712	712	712	-	-	-	-	-	-	11	11	11
Office - G	New	Energy Management System		per sq ft	\$0.19	15%	\$0.03	18,350	18,350	18,350	-	-	-	-	-	-	316	314	310
Restaurant - G	Existing	Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	80%	\$0.66	5,089	5,089	5,089	-	-	-	-	-	-	279	278	274
Restaurant - G	Existing	Energy Management System		per sq ft	\$0.26	15%	\$0.04	71,288	71,288	71,288	-	-	-	-	-	-	1	1	1
Restaurant - G	New	Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	80%	\$0.66	523	523	523	-	-	-	-	-	-	26	26	26
Restaurant - G	New	Energy Management System		per sq ft	\$0.00	15%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
Retail - G	Existing	Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	80%	\$0.66	9,609	9,609	9,609	-	-	-	-	-	-	278	277	274
Retail - G	Existing	Energy Management System		per sq ft	\$0.26	15%	\$0.04	530,571	530,571	530,571	-	-	-	-	-	-	13	13	13
Retail - G	New	Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	80%	\$0.66	987	987	987	-	-	-	-	-	-	24	24	24
Retail - G	New	Energy Management System		per sq ft	\$0.00	15%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
Grocery - G	Existing	Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	80%	\$0.66	2,774	2,774	2,774	-	-	-	-	-	-	53	53	52
Grocery - G	Existing	Energy Management System		per sq ft	\$0.00	15%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
Grocery - G	New	Combined Boiler & Water Htg. Unit		per sq ft	\$0.00	80%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
Grocery - G	New	Energy Management System		per sq ft	\$0.00	15%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
College - G	Existing	Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	80%	\$0.66	9,682	9,682	9,682	-	-	-	-	-	-	335	333	329
College - G	Existing	Energy Management System		per sq ft	\$0.26	15%	\$0.04	149,012	149,012	149,012	-	-	-	-	-	-	1,622	1,626	1,608
College - G	New	Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	80%	\$0.66	997	997	997	-	-	-	-	-	-	30	30	30
College - G	New	Energy Management System		per sq ft	\$0.26	15%	\$0.04	15,262	15,262	15,262	-	-	-	-	-	-	473	471	465
School - G	Existing	Energy Management System		per sq ft	\$0.26	15%	\$0.04	432,681	432,681	432,681	-	-	-	-	-	-	2,442	2,433	2,405
School - G	New	Energy Management System		per sq ft	\$0.26	15%	\$0.04	55,030	55,030	55,030	-	-	-	-	-	-	789	791	784
Health - G	Existing	Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	80%	\$0.66	11,116	11,116	11,116	-	-	-	-	-	-	755	752	742
Health - G	Existing	Energy Management System		per sq ft	\$0.00	15%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
Health - G	New	Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	80%	\$0.66	1,145	1,145	1,145	-	-	-	-	-	-	67	67	66
Lodging - G	Existing	Energy Management System		per sq ft	\$0.00	15%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
Warehouse - G	Existing	Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	80%	\$0.66	10,885	10,885	10,885	-	-	-	-	-	-	126	126	124
Warehouse - G	Existing	Energy Management System		per sq ft	\$0.26	15%	\$0.04	286,309	286,309	286,309	-	-	-	-	-	-	4	4	4
Warehouse - G	New	Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	80%	\$0.66	1,128	1,128	1,128	-	-	-	-	-	-	10	10	10
Warehouse - G	New	Energy Management System		per sq ft	\$0.00	15%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
Miscellaneous - G	Existing	Energy Management System		per sq ft	\$0.03	15%	\$0.00	1,007,405	1,007,405	1,007,405	-	-	-	-	-	-	11	11	11
Miscellaneous - G	New	Energy Management System		per sq ft	\$0.03	15%	\$0.00	98,361	98,361	98,361	-	-	-	-	-	-	93	92	91

Table G-13 C&I Behavior Change (MAP)

Segment	Vintage	Technology	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
							2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Food Products - E	Existing	Heat Pump - Maintenance	per kwh saved	\$41.62	50%	\$20.81	36	35	35	19,385	18,566	18,429	15.87	15.17	15.01	-	-	-
Food Products - E	Existing	Fan System - Controls	per kwh saved	\$3.07	50%	\$1.53	105	102	102	29,049	28,092	28,304	3.40	3.29	3.32	-	-	-
Food Products - E	Existing	Fan System - Maintenance	per kwh saved	\$1.18	50%	\$0.59	165	160	160	18,177	17,578	17,711	2.13	2.06	2.07	-	-	-
Food Products - E	Existing	Fan System - Optimization	per kwh saved	\$182.90	50%	\$91.45	110	107	107	151,780	146,779	147,888	17.78	17.20	17.33	-	-	-
Food Products - E	New	Heat Pump - Maintenance	per kwh saved	\$37.23	50%	\$18.62	3	3	3	1,056	1,002	1,002	0.79	0.74	0.74	-	-	-
Food Products - E	New	Fan System - Controls	per kwh saved	\$3.07	50%	\$1.53	9	9	9	2,482	2,400	2,418	0.29	0.28	0.28	-	-	-
Food Products - E	New	Fan System - Maintenance	per kwh saved	\$1.18	50%	\$0.59	14	14	14	1,553	1,502	1,513	0.18	0.18	0.18	-	-	-
Food Products - E	New	Fan System - Optimization	per kwh saved	\$182.87	50%	\$91.44	9	9	9	12,975	12,548	12,643	1.52	1.47	1.48	-	-	-
Petroleum - E	Existing	Heat Pump - Maintenance	per kwh saved	\$187.06	50%	\$93.53	7	7	7	16,847	16,135	16,016	13.79	13.18	13.04	-	-	-
Petroleum - E	Existing	Fan System - Controls	per kwh saved	\$37.31	50%	\$18.66	20	20	20	68,304	66,053	66,553	8.00	7.74	7.80	-	-	-
Petroleum - E	Existing	Fan System - Maintenance	per kwh saved	\$14.32	50%	\$7.16	32	31	31	42,740	41,331	41,644	5.01	4.84	4.88	-	-	-
Petroleum - E	Existing	Fan System - Optimization	per kwh saved	\$2,223.97	50%	\$1,111.98	21	21	21	356,884	345,124	347,731	41.81	40.43	40.74	-	-	-
Petroleum - E	New	Heat Pump - Maintenance	per kwh saved	\$167.33	50%	\$83.66	1	1	1	917	871	871	0.69	0.64	0.64	-	-	-
Petroleum - E	New	Fan System - Controls	per kwh saved	\$37.31	50%	\$18.65	2	2	2	5,835	5,643	5,686	0.68	0.66	0.67	-	-	-
Petroleum - E	New	Fan System - Maintenance	per kwh saved	\$14.32	50%	\$7.16	3	3	3	3,651	3,531	3,558	0.43	0.41	0.42	-	-	-
Petroleum - E	New	Fan System - Optimization	per kwh saved	\$2,223.70	50%	\$1,111.85	2	2	2	30,509	29,505	29,728	3.57	3.46	3.48	-	-	-
Metals - E	Existing	Heat Pump - Maintenance	per kwh saved	\$24.74	50%	\$12.37	36	35	35	11,483	10,998	10,917	9.40	8.99	8.89	-	-	-

Program Measure-Level Details

Segment	Vintage	Technology	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
							2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Metals - E	Existing	Fan System - Controls	per kwh saved	\$2.32	50%	\$1.16	105	102	102	21,846	21,126	21,286	2.56	2.48	2.49	-	-	-
Metals - E	Existing	Fan System - Maintenance	per kwh saved	\$0.89	50%	\$0.44	164	159	159	13,670	13,219	13,319	1.60	1.55	1.56	-	-	-
Metals - E	Existing	Fan System - Optimization	per kwh saved	\$138.00	50%	\$69.00	110	106	106	114,144	110,383	111,217	13.37	12.93	13.03	-	-	-
Metals - E	New	Heat Pump - Maintenance	per kwh saved	\$22.13	50%	\$11.06	3	3	3	625	594	594	0.47	0.44	0.44	-	-	-
Metals - E	New	Fan System - Controls	per kwh saved	\$2.31	50%	\$1.16	9	9	9	1,866	1,805	1,818	0.22	0.21	0.21	-	-	-
Metals - E	New	Fan System - Maintenance	per kwh saved	\$0.89	50%	\$0.44	14	14	14	1,168	1,129	1,138	0.14	0.13	0.13	-	-	-
Metals - E	New	Fan System - Optimization	per kwh saved	\$137.99	50%	\$68.99	9	9	9	9,758	9,437	9,508	1.14	1.11	1.11	-	-	-
Machinery - E	Existing	Heat Pump - Maintenance	per kwh saved	\$95.96	50%	\$47.98	19	19	19	24,058	23,041	22,871	19.69	18.83	18.62	-	-	-
Machinery - E	Existing	Fan System - Controls	per kwh saved	\$2.84	50%	\$1.42	57	55	55	14,464	13,988	14,093	1.69	1.64	1.65	-	-	-
Machinery - E	Existing	Fan System - Maintenance	per kwh saved	\$1.09	50%	\$0.54	89	86	86	9,051	8,752	8,818	1.06	1.03	1.03	-	-	-
Machinery - E	Existing	Fan System - Optimization	per kwh saved	\$169.19	50%	\$84.60	59	57	57	75,574	73,084	73,636	8.85	8.56	8.63	-	-	-
Machinery - E	New	Heat Pump - Maintenance	per kwh saved	\$85.84	50%	\$42.92	2	2	2	1,310	1,244	1,243	0.98	0.92	0.91	-	-	-
Machinery - E	New	Fan System - Controls	per kwh saved	\$2.84	50%	\$1.42	5	5	5	1,236	1,195	1,204	0.14	0.14	0.14	-	-	-
Machinery - E	New	Fan System - Maintenance	per kwh saved	\$1.09	50%	\$0.54	8	7	7	773	748	753	0.09	0.09	0.09	-	-	-
Machinery - E	New	Fan System - Optimization	per kwh saved	\$169.17	50%	\$84.59	5	5	5	6,461	6,248	6,295	0.76	0.73	0.74	-	-	-
Other Industrial - E	Existing	Heat Pump - Maintenance	per kwh saved	\$81.32	50%	\$40.66	92	90	90	97,008	92,908	92,224	79.40	75.92	75.09	-	-	-
Other Industrial - E	Existing	Fan System - Controls	per kwh saved	\$1.71	50%	\$0.85	269	261	261	41,458	40,091	40,394	4.86	4.70	4.73	-	-	-
Other Industrial - E	Existing	Fan System - Maintenance	per kwh saved	\$0.66	50%	\$0.33	421	409	409	25,941	25,086	25,276	3.04	2.94	2.96	-	-	-

Segment	Vintage	Technology	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
							2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Other Industrial - E	Existing	Fan System - Optimization	per kwh saved	\$101.91	50%	\$50.95	281	273	273	216,613	209,474	211,057	25.38	24.54	24.73	-	-	-
Other Industrial - E	New	Heat Pump - Maintenance	per kwh saved	\$72.74	50%	\$36.37	9	8	8	5,534	5,255	5,253	4.15	3.88	3.86	-	-	-
Other Industrial - E	New	Fan System - Controls	per kwh saved	\$1.71	50%	\$0.85	24	23	23	3,710	3,588	3,615	0.43	0.42	0.42	-	-	-
Other Industrial - E	New	Fan System - Maintenance	per kwh saved	\$0.66	50%	\$0.33	38	37	37	2,322	2,245	2,262	0.27	0.26	0.27	-	-	-
Other Industrial - E	New	Fan System - Optimization	per kwh saved	\$101.89	50%	\$50.95	25	24	24	19,399	18,761	18,903	2.27	2.20	2.21	-	-	-
Food Products - G	Existing	Gas Boiler - Maintenance	per kwh saved	\$0.48	50%	\$0.24	32	31	31	-	-	-	-	-	-	26	25	25
Food Products - G	New	Gas Boiler - Maintenance	per kwh saved	\$0.02	50%	\$0.01	27	26	26	-	-	-	-	-	-	1	1	1
Petroleum - G	Existing	Gas Boiler - Maintenance	per kwh saved	\$0.56	50%	\$0.28	32	31	31	-	-	-	-	-	-	30	29	29
Petroleum - G	New	Gas Boiler - Maintenance	per kwh saved	\$0.02	50%	\$0.01	27	26	26	-	-	-	-	-	-	1	1	1
Metals - G	Existing	Gas Boiler - Maintenance	per kwh saved	\$29.75	50%	\$14.87	32	31	31	-	-	-	-	-	-	1,629	1,556	1,538
Metals - G	New	Gas Boiler - Maintenance	per kwh saved	\$1.20	50%	\$0.60	27	26	26	-	-	-	-	-	-	36	56	76
Machinery - G	Existing	Gas Boiler - Maintenance	per kwh saved	\$19.64	50%	\$9.82	32	31	31	-	-	-	-	-	-	1,076	1,027	1,015
Machinery - G	New	Gas Boiler - Maintenance	per kwh saved	\$0.80	50%	\$0.40	27	26	26	-	-	-	-	-	-	24	37	50
Other Industrial - G	Existing	Gas Boiler - Maintenance	per kwh saved	\$141.80	50%	\$70.90	32	31	31	-	-	-	-	-	-	7,801	7,450	7,366
Other Industrial - G	New	Gas Boiler - Maintenance	per kwh saved	\$5.74	50%	\$2.87	27	26	26	-	-	-	-	-	-	172	269	361

Table G-14 Building Codes and Standards (MAP)

Segment	Vintage	Technology	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
							2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Office - E	New	Advanced New Construction Designs	per sq ft	\$0.00	100%	\$0.15	652,756	633,557	633,557	309,934	298,131	295,941	178.43	171.63	170.37	-	-	-
Restaurant - E	New	Advanced New Construction Designs	per sq ft	\$0.00	100%	\$0.15	142,339	138,153	138,153	123,353	118,356	117,217	53.56	51.39	50.90	-	-	-
Retail - E	New	Advanced New Construction Designs	per sq ft	\$0.00	100%	\$0.15	511,555	496,509	496,509	182,822	178,384	179,611	109.67	107.01	107.74	-	-	-
Grocery - E	New	Advanced New Construction Designs	per sq ft	\$0.00	100%	\$0.15	58,404	56,687	56,687	75,891	73,304	72,486	132.51	128.00	126.57	-	-	-
College - E	New	Advanced New Construction Designs	per sq ft	\$0.00	100%	\$0.15	374,216	363,210	363,210	311,607	300,767	299,020	191.80	185.13	184.05	-	-	-
School - E	New	Advanced New Construction Designs	per sq ft	\$0.00	100%	\$0.15	130,935	127,084	127,084	73,006	70,546	70,327	97.96	94.65	94.36	-	-	-
Health - E	New	Advanced New Construction Designs	per sq ft	\$0.00	100%	\$0.15	231,431	224,625	224,625	247,373	238,175	236,528	62.93	60.59	60.17	-	-	-
Lodging - E	New	Advanced New Construction Designs	per sq ft	\$0.00	100%	\$0.15	333,478	323,670	323,670	119,739	115,549	114,900	43.37	41.85	41.61	-	-	-
Warehouse - E	New	Advanced New Construction Designs	per sq ft	\$0.00	100%	\$0.15	128,006	124,241	124,241	34,715	34,989	36,197	64.42	64.93	67.17	-	-	-
Miscellaneous - E	New	Advanced New Construction Designs	per sq ft	\$0.00	100%	\$0.15	851,249	826,212	826,212	378,838	364,577	362,033	278.67	268.18	266.31	-	-	-

Table G-15 Retro Commissioning (MAP)

Segment	Vintage	Technology	Cost Unit	Incremental Cost	Incentive as % of Incremental Cost	Incentive Cost	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
							2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Office - E	Existing	Retrocommissioning - Lighting	per sq ft	\$0.00	75%	\$0.00	-	5,919,823	5,919,823	-	823,789	790,170	-	-	-	-	-	-
Restaurant - E	Existing	Retrocommissioning - HVAC	per sq ft	\$0.75	75%	\$0.56	325,290	315,723	315,723	266,565	251,448	244,152	-	-	-	-	-	-
Restaurant - E	Existing	Retrocommissioning - Lighting	per sq ft	\$0.00	75%	\$0.00	-	-	1,198,158	-	-	260,797	-	-	-	-	-	-
Retail - E	Existing	Retrocommissioning - Lighting	per sq ft	\$0.08	75%	\$0.06	5,091,968	4,942,204	4,942,204	1,053,691	975,284	933,861	-	-	-	-	-	-
Grocery - E	Existing	Retrocommissioning - HVAC	per sq ft	\$0.75	75%	\$0.56	143,267	139,053	139,053	159,795	150,763	146,414	-	-	-	-	-	-
Grocery - E	Existing	Retrocommissioning - Lighting	per sq ft	\$0.08	75%	\$0.06	602,913	585,180	585,180	254,489	237,457	229,118	-	-	-	-	-	-
College - E	Existing	Retrocommissioning - Lighting	per sq ft	\$0.08	75%	\$0.06	3,651,454	3,544,058	3,544,058	716,456	674,252	656,170	-	-	-	-	-	-
School - E	Existing	Retrocommissioning - Lighting	per sq ft	\$0.08	75%	\$0.06	3,521,246	3,417,680	3,417,680	563,617	524,516	504,326	-	-	-	-	-	-
Health - E	Existing	Retrocommissioning - HVAC	per sq ft	\$0.75	75%	\$0.56	948,734	920,830	920,830	686,731	647,670	629,559	-	-	-	-	-	-
Health - E	Existing	Retrocommissioning - Lighting	per sq ft	\$0.08	75%	\$0.06	1,641,787	1,593,499	1,593,499	281,918	261,162	250,905	-	-	-	-	-	-

Realistic Achievable Potential (RAP) Residential

Table G-16 Residential Lighting (RAP)

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
SF - Electric Only	Existing	Interior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	50%	\$31.25	10,427	10,120	10,120	12,695,504	10,271,966	10,015,568	855.52	692.20	674.92	-	-	-
SF - Electric Only	Existing	Interior Lighting	Electric	Specialty	CFL	per HH	\$21.86	50%	\$10.93	6,485	6,294	6,294	1,626,817	1,587,692	1,589,504	109.63	106.99	107.11	-	-	-
SF - Electric Only	Existing	Exterior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	50%	\$1.00	10,684	10,369	10,369	1,663,552	1,624,233	1,628,360	112.10	109.45	109.73	-	-	-
SF - Electric Only	New	Interior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	50%	\$35.50	380	369	369	419,588	333,968	321,515	28.28	22.51	21.67	-	-	-
SF - Electric Only	New	Interior Lighting	Electric	Specialty	CFL	per HH	\$21.73	50%	\$10.86	216	210	210	53,950	52,652	52,709	3.64	3.55	3.55	-	-	-
SF - Electric Only	New	Exterior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	50%	\$1.00	376	365	365	54,829	53,533	53,669	3.69	3.61	3.62	-	-	-
MF - Electric Only	Existing	Interior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	50%	\$14.29	3,920	3,805	3,805	3,324,422	2,689,882	2,622,753	224.02	181.26	176.74	-	-	-
MF - Electric Only	Existing	Interior Lighting	Electric	Specialty	CFL	per HH	\$17.72	50%	\$8.86	2,497	2,424	2,424	444,216	433,533	434,028	29.93	29.21	29.25	-	-	-
MF - Electric Only	Existing	Exterior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	50%	\$1.00	4,601	4,601	-	321,844	323,759	-	21.69	21.82	-	-	-	-
MF - Electric Only	Existing	Exterior Lighting	Electric	Screw-in	LED	per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric Only	New	Interior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	50%	\$18.25	73	71	71	57,755	44,948	43,668	3.89	3.03	2.94	-	-	-
MF - Electric Only	New	Interior Lighting	Electric	Specialty	CFL	per HH	\$17.65	50%	\$8.82	43	42	42	7,700	7,515	7,523	0.52	0.51	0.51	-	-	-
MF - Electric Only	New	Exterior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	50%	\$1.00	74	74	-	4,929	4,958	-	0.33	0.33	-	-	-	-
MF - Electric Only	New	Exterior Lighting	Electric	Screw-in	LED	per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	Existing	Interior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	50%	\$27.36	25,771	25,013	25,013	22,667,588	22,128,677	22,157,606	1,527.51	1,491.20	1,493.15	-	-	-
SF - Electric/Gas	Existing	Interior Lighting	Electric	Specialty	CFL	per HH	\$20.94	50%	\$10.47	8,779	8,520	8,520	2,204,734	2,151,710	2,154,165	148.57	145.00	145.16	-	-	-
SF - Electric/Gas	Existing	Exterior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	50%	\$1.00	43,046	41,780	41,780	6,930,041	6,766,243	6,783,435	467.00	455.96	457.12	-	-	-
SF - Electric/Gas	New	Interior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	50%	\$31.09	926	899	899	730,813	713,438	714,371	49.25	48.08	48.14	-	-	-
SF - Electric/Gas	New	Interior Lighting	Electric	Specialty	CFL	per HH	\$20.78	50%	\$10.39	286	278	278	71,306	69,590	69,665	4.81	4.69	4.69	-	-	-
SF - Electric/Gas	New	Exterior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	50%	\$1.00	1,380	1,340	1,340	207,907	202,993	203,509	14.01	13.68	13.71	-	-	-
MF - Electric/Gas	Existing	Interior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	50%	\$17.81	4,191	4,068	4,068	2,980,818	2,909,950	2,913,754	200.87	196.09	196.35	-	-	-
MF - Electric/Gas	Existing	Interior Lighting	Electric	Specialty	CFL	per HH	\$17.99	50%	\$8.99	1,428	1,386	1,386	292,515	285,480	285,806	19.71	19.24	19.26	-	-	-
MF - Electric/Gas	Existing	Exterior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	50%	\$1.00	6,847	6,645	6,645	516,914	504,697	505,979	34.83	34.01	34.10	-	-	-
MF - Electric/Gas	New	Interior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	50%	\$22.76	77	75	75	52,364	51,119	51,186	3.53	3.44	3.45	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
MF - Electric/Gas	New	Interior Lighting	Electric	Specialty	CFL	per HH	\$17.97	50%	\$8.99	25	24	24	5,089	4,966	4,972	0.34	0.33	0.34	-	-	-
MF - Electric/Gas	New	Exterior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	50%	\$1.00	120	116	116	8,668	8,463	8,485	0.58	0.57	0.57	-	-	-

Table G-17 Residential ENERGY STAR Homes (RAP)

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
SF - Electric Only	New	Cooling	Electric	Central AC	SEER 14.5 (Energy Star)	per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	
SF - Electric Only	New	Cooling	Electric	Air-Source Heat Pump	SEER 16, HSPF 8.5	per HH	\$580.88	50%	\$290.44	8	7	7	2,055	1,446	1,258	2.56	1.80	1.57	-	-	-
SF - Electric Only	New	Heating	Electric	Air-Source Heat Pump	SEER 16, HSPF 8.5	per HH	\$313.88	50%	\$156.94	6	6	6	7,341	5,656	5,150	-	-	-	-	-	-
SF - Electric Only	New	Water Heating	Electric	Water Heater > 55 gal	EF 2.3 (HP)	per HH	\$731.11	50%	\$365.56	45	44	44	68,273	61,655	59,976	5.08	4.59	4.47	-	-	-
SF - Electric Only	New	Interior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	50%	\$35.50	62	60	60	68,416	54,456	52,425	4.61	3.67	3.53	-	-	-
SF - Electric Only	New	Interior Lighting	Electric	Specialty	CFL	per HH	\$21.73	50%	\$10.86	38	37	37	9,521	9,291	9,302	0.64	0.63	0.63	-	-	-
SF - Electric Only	New	Exterior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	50%	\$1.00	66	64	64	9,676	9,447	9,471	0.65	0.64	0.64	-	-	-
SF - Electric/Gas	New	Cooling	Electric	Central AC	SEER 14.5 (Energy Star)	per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	New	Cooling	Electric	Air-Source Heat Pump	SEER 16, HSPF 8.5	per HH	\$548.90	50%	\$274.45	1	1	1	312	220	191	0.39	0.27	0.24	-	-	-
SF - Electric/Gas	New	Heating	Electric	Air-Source Heat Pump	SEER 16, HSPF 8.5	per HH	\$310.74	50%	\$155.37	0	0	0	296	229	209	-	-	-	-	-	-
SF - Electric/Gas	New	Water Heating	Electric	Water Heater > 55 gal	EF 2.3 (HP)	per HH	\$731.11	50%	\$365.56	10	9	9	14,737	13,792	13,593	1.10	1.03	1.01	-	-	-
SF - Electric/Gas	New	Interior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	50%	\$31.09	151	147	147	119,164	116,330	116,483	8.03	7.84	7.85	-	-	-
SF - Electric/Gas	New	Interior Lighting	Electric	Specialty	CFL	per HH	\$20.78	50%	\$10.39	50	49	49	12,583	12,281	12,294	0.85	0.83	0.83	-	-	-
SF - Electric/Gas	New	Exterior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	50%	\$1.00	244	236	236	36,689	35,822	35,913	2.47	2.41	2.42	-	-	-
SF - Electric/Gas	New	Heating	Natural Gas	Furnace	AFUE 0.9	per HH	\$0.00	50%	\$0.00	-	121	121	-	-	-	-	-	-	6,888	6,895	
SF - Gas Only	New	Heating	Natural Gas	Furnace	AFUE 0.9	per HH	\$0.00	50%	\$0.00	-	36	36	-	-	-	-	-	-	1,894	1,896	
SF - Electric Only	New			Insulation - Ducting		per HH	\$95.00	50%	\$47.50	33	32	32	3,755	3,647	3,638	3.01	2.92	2.91	-	-	-
SF - Electric Only	New			Insulation - Foundation		per HH	\$760.32	50%	\$380.16	74	71	71	52,191	50,735	50,647	22.87	22.15	22.05	-	-	-
SF - Electric Only	New			Insulation - Infiltration Control		per HH	\$427.68	50%	\$213.84	38	38	38	4,003	4,011	4,005	1.40	1.40	1.39	-	-	-
SF - Electric Only	New			Insulation - Radiant Barrier		per HH	\$94.61	50%	\$47.31	20	20	20	392	393	392	0.19	0.19	0.19	-	-	-
SF - Electric Only	New			Ducting - Repair and Sealing		per HH	\$497.62	50%	\$248.81	25	24	24	24,031	23,352	23,306	11.82	11.45	11.40	-	-	-
SF - Electric Only	New			Windows - Install Reflective Film		per HH	\$0.00	50%	\$0.00	8	8	8	-	2,804	2,793	-	10.52	10.48	-	-	-
SF - Electric Only	New			Roofs - High Reflectivity		per HH	\$97.66	50%	\$48.83	145	141	141	15,502	15,025	14,965	19.39	18.79	18.72	-	-	-
SF - Electric Only	New			Ceiling Fan - Installation		per HH	\$204.00	50%	\$102.00	24	23	23	8,396	8,137	8,105	10.50	10.18	10.14	-	-	-
SF - Electric Only	New			Thermostat - Clock/Programmable		per HH	\$30.00	50%	\$15.00	72	70	70	10,003	9,743	9,741	-	-	-	-	-	-
SF - Electric Only	New			Boiler - Maintenance		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
SF - Electric Only	New			Water Heater - Drainwater Heat Recovery		per HH	\$899.00	50%	\$449.50	1	1	1	405	394	386	0.03	0.03	0.03	-	-	-
SF - Electric Only	New			Water Heater - Faucet Aerators		per HH	\$16.00	50%	\$8.00	49	48	48	3,729	3,521	3,444	0.28	0.26	0.26	-	-	-
SF - Electric Only	New			Water Heater - Low-Flow Showerheads		per HH	\$12.00	50%	\$6.00	45	44	44	15,483	14,620	14,298	1.15	1.09	1.06	-	-	-
SF - Electric Only	New			Water Heater - Desuperheater		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	New			Water Heater - Solar System		per HH	\$5,400.00	50%	\$2,700.00	0	0	0	953	927	906	0.07	0.07	0.07	-	-	-
SF - Electric/Gas	New			Insulation - Ceiling		per HH	\$0.00	50%	\$0.00	8	8	8	-	-	249	-	-	0.25	-	-	93
SF - Electric/Gas	New			Insulation - Ducting		per HH	\$95.00	50%	\$47.50	41	40	40	3,599	3,494	3,484	4.00	3.88	3.87	605	593	590
SF - Electric/Gas	New			Insulation - Foundation		per HH	\$760.32	50%	\$380.16	83	81	81	30,912	30,025	29,958	30.23	29.32	29.23	9,145	8,971	8,939
SF - Electric/Gas	New			Insulation - Infiltration Control		per HH	\$427.68	50%	\$213.84	43	43	43	2,056	2,058	2,054	1.85	1.85	1.85	1,148	1,160	1,156
SF - Electric/Gas	New			Insulation - Radiant Barrier		per HH	\$94.61	50%	\$47.31	23	23	23	253	253	252	0.26	0.26	0.26	91	92	92
SF - Electric/Gas	New			Ducting - Repair and Sealing		per HH	\$497.62	50%	\$248.81	29	28	28	15,927	15,470	15,435	15.67	15.20	15.15	1,946	1,907	1,899
SF - Electric/Gas	New			Windows - Install Reflective Film		per HH	\$0.00	50%	\$0.00	11	11	11	-	3,714	3,702	-	13.93	13.89	-	-	-
SF - Electric/Gas	New			Roofs - High Reflectivity		per HH	\$97.66	50%	\$48.83	197	191	191	20,531	19,916	19,853	25.67	24.90	24.82	-	-	-
SF - Electric/Gas	New			Ceiling Fan - Installation		per HH	\$204.00	50%	\$102.00	32	31	31	11,119	10,786	10,752	13.90	13.48	13.44	-	-	-
SF - Electric/Gas	New			Thermostat - Clock/Programmable		per HH	\$30.00	50%	\$15.00	81	79	79	1,986	1,938	1,940	-	-	-	2,868	2,814	2,803
SF - Electric/Gas	New			Boiler - Hot Water Reset		per HH	\$37.00	50%	\$18.50	23	22	22	-	-	-	-	-	-	2,540	2,507	2,508
SF - Electric/Gas	New			Boiler - Maintenance		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	New			Water Heater - Drainwater Heat Recovery		per HH	\$899.00	50%	\$449.50	4	4	4	1,381	1,363	1,347	0.10	0.10	0.10	600	607	605
SF - Electric/Gas	New			Water Heater - Faucet Aerators		per HH	\$16.00	50%	\$8.00	166	161	161	12,579	12,048	11,903	0.94	0.90	0.89	874	858	856
SF - Electric/Gas	New			Water Heater - Low-Flow Showerheads		per HH	\$12.00	50%	\$6.00	152	147	147	52,224	50,016	49,418	3.89	3.72	3.68	3,559	3,494	3,486
SF - Electric/Gas	New			Water Heater - Desuperheater		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	New			Water Heater - Solar System		per HH	\$5,400.00	50%	\$2,700.00	0	0	0	393	388	383	0.03	0.03	0.03	-	-	-
SF - Electric/Gas	New			ENERGY STAR Home Design		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	New			Combined Boiler & Water Htg. Unit		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Gas Only	New			Insulation - Ducting		per HH	\$95.00	50%	\$47.50	10	10	10	-	-	-	-	-	-	136	133	132
SF - Gas Only	New			Insulation - Foundation		per HH	\$760.32	50%	\$380.16	22	21	21	-	-	-	-	-	-	2,206	2,162	2,154
SF - Gas Only	New			Insulation - Infiltration Control		per HH	\$427.68	50%	\$213.84	11	11	11	-	-	-	-	-	-	277	280	279
SF - Gas Only	New			Insulation - Radiant Barrier		per HH	\$94.61	50%	\$47.31	6	6	6	-	-	-	-	-	-	22	22	22
SF - Gas Only	New			Ducting - Repair and Sealing		per HH	\$497.62	50%	\$248.81	7	7	7	-	-	-	-	-	-	435	426	424

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
SF - Gas Only	New			Thermostat -		per HH	\$30.00	50%	\$15.00	21	21	21	-	-	-	-	-	-	692	678	676
SF - Gas Only	New			Clock/Programmable		per HH	\$37.00	50%	\$18.50	5	5	5	-	-	-	-	-	-	506	499	500
SF - Gas Only	New			Boiler - Hot Water Reset		per HH	\$899.00	50%	\$449.50	1	1	1	-	-	-	-	-	-	142	144	143
SF - Gas Only	New			Water Heater - Drainwater Heat Recovery		per HH	\$16.00	50%	\$8.00	42	41	41	-	-	-	-	-	-	207	203	203
SF - Gas Only	New			Water Heater - Faucet Aerators		per HH	\$12.00	50%	\$6.00	39	37	37	-	-	-	-	-	-	843	828	826
SF - Gas Only	New			Water Heater - Low-Flow Showerheads		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Gas Only	New			Water Heater - Desuperheater		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Gas Only	New			Combined Boiler & Water Htg. Unit		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-

Table G-18 Residential Home Energy Performance (RAP)

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
SF - Electric Only	Existing	Cooling	Electric	Central AC	SEER 14.5 (Energy Star)	per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	Existing	Cooling	Electric	Air-Source Heat Pump	SEER 16, HSPF 8.5	per HH	\$512.52	50%	\$256.26	85	83	83	18,768	13,678	12,124	23.40	17.05	15.12	-	-	-
SF - Electric Only	Existing	Heating	Electric	Air-Source Heat Pump	SEER 16, HSPF 8.5	per HH	\$276.94	50%	\$138.47	70	68	68	79,918	62,811	57,759	-	-	-	-	-	-
SF - Electric Only	Existing	Water Heating	Electric	Water Heater > 55 gal	EF 2.3 (HP)	per HH	\$731.11	50%	\$365.56	250	242	242	418,776	377,192	367,034	31.19	28.09	27.33	-	-	-
SF - Electric Only	Existing	Interior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	50%	\$31.25	1,440	1,398	1,398	1,753,926	1,419,107	1,383,684	118.19	95.63	93.24	-	-	-
SF - Electric Only	Existing	Interior Lighting	Electric	Specialty	CFL	per HH	\$21.86	50%	\$10.93	1,068	1,037	1,037	267,946	261,502	261,801	18.06	17.62	17.64	-	-	-
SF - Electric Only	Existing	Exterior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	50%	\$1.00	1,200	1,165	1,165	186,916	182,498	182,962	12.60	12.30	12.33	-	-	-
SF - Electric/Gas	Existing	Cooling	Electric	Central AC	SEER 14.5 (Energy Star)	per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	Existing	Cooling	Electric	Air-Source Heat Pump	SEER 16, HSPF 8.5	per HH	\$484.31	50%	\$242.15	14	13	13	2,819	2,044	1,809	3.51	2.55	2.26	-	-	-
SF - Electric/Gas	Existing	Heating	Electric	Air-Source Heat Pump	SEER 16, HSPF 8.5	per HH	\$274.17	50%	\$137.09	3	3	3	3,190	2,557	2,374	-	-	-	-	-	-
SF - Electric/Gas	Existing	Water Heating	Electric	Water Heater > 55 gal	EF 2.3 (HP)	per HH	\$731.11	50%	\$365.56	54	52	52	90,394	84,400	83,172	6.73	6.29	6.19	-	-	-
SF - Electric/Gas	Existing	Interior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	50%	\$27.36	3,560	3,456	3,456	3,131,603	3,057,151	3,061,148	211.03	206.01	206.28	-	-	-
SF - Electric/Gas	Existing	Interior Lighting	Electric	Specialty	CFL	per HH	\$20.94	50%	\$10.47	1,211	1,175	1,175	304,101	296,788	297,126	20.49	20.00	20.02	-	-	-
SF - Electric/Gas	Existing	Exterior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	50%	\$1.00	4,837	4,694	4,694	778,656	760,252	762,184	52.47	51.23	51.36	-	-	-
SF - Electric/Gas	Existing	Heating	Natural Gas	Furnace	AFUE 0.9	per HH	\$377.69	50%	\$188.85	236	229	229	-	-	-	-	-	-	13,072	12,906	12,917
SF - Gas Only	Existing	Heating	Natural Gas	Furnace	AFUE 0.9	per HH	\$348.64	50%	\$174.32	95	92	92	-	-	-	-	-	-	4,863	4,801	4,805
SF - Electric Only	Existing			Insulation - Ceiling		per HH	\$363.42	50%	\$181.71	402	402	402	22,960	22,809	22,597	11.31	11.12	10.92	-	-	-
SF - Electric Only	Existing			Insulation - Ducting		per HH	\$95.00	50%	\$47.50	2,700	2,620	2,620	181,705	173,617	170,646	220.35	210.42	206.72	-	-	-
SF - Electric Only	Existing			Insulation - Infiltration Control		per HH	\$327.87	50%	\$163.94	6,664	6,664	6,664	825,684	821,991	815,854	271.97	267.49	262.66	-	-	-
SF - Electric Only	Existing			Insulation - Radiant Barrier		per HH	\$82.84	50%	\$41.42	4,529	4,529	4,529	243,106	241,500	239,247	120.23	118.25	116.11	-	-	-
SF - Electric Only	Existing			Ducting - Repair and Sealing		per HH	\$497.62	50%	\$248.81	2,049	1,989	1,989	714,290	682,355	670,490	819.38	781.75	767.29	-	-	-
SF - Electric Only	Existing			Windows - Install Reflective Film		per HH	\$1,028.88	50%	\$514.44	682	682	682	170,001	167,303	164,383	643.00	632.81	621.78	-	-	-
SF - Electric Only	Existing			Doors - Storm and Thermal		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	Existing			Roofs - High Reflectivity		per HH	\$85.51	50%	\$42.76	998	968	968	100,036	95,552	93,885	126.12	120.47	118.37	-	-	-
SF - Electric Only	Existing			Ceiling Fan - Installation		per HH	\$204.00	50%	\$102.00	314	305	305	93,478	89,289	87,731	117.86	112.58	110.61	-	-	-
SF - Electric Only	Existing			Thermostat - Clock/Programmable		per HH	\$30.00	50%	\$15.00	634	615	615	72,450	70,303	70,038	-	-	-	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
SF - Electric Only	Existing			Water Heater - Drainwater Heat Recovery		per HH	\$899.00	50%	\$449.50	34	34	34	12,785	12,720	12,607	0.95	0.95	0.94	-	-	-
SF - Electric Only	Existing			Water Heater - Faucet Aerators		per HH	\$16.00	50%	\$8.00	2,521	2,447	2,447	222,493	214,831	212,914	16.57	16.00	15.86	-	-	-
SF - Electric Only	Existing			Water Heater - Low-Flow Showerheads		per HH	\$12.00	50%	\$6.00	1,720	1,669	1,669	691,382	667,573	661,616	51.49	49.71	49.27	-	-	-
SF - Electric Only	Existing			Water Heater - Thermostat Setback		per HH	\$5.00	50%	\$2.50	1,149	1,149	1,149	98,769	98,266	97,399	7.36	7.32	7.25	-	-	-
SF - Electric Only	Existing			Water Heater - Desuperheater		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	Existing			Water Heater - Solar System		per HH	\$5,400.00	50%	\$2,700.00	19	19	19	41,937	41,720	41,348	3.12	3.11	3.08	-	-	-
SF - Electric Only	New			Insulation - Ducting		per HH	\$95.00	50%	\$47.50	25	24	24	2,833	2,752	2,745	2.27	2.20	2.19	-	-	-
SF - Electric Only	New			Insulation - Foundation		per HH	\$760.32	50%	\$380.16	56	54	54	39,372	38,274	38,207	17.25	16.71	16.63	-	-	-
SF - Electric Only	New			Insulation - Infiltration Control		per HH	\$427.68	50%	\$213.84	28	28	28	3,020	3,026	3,022	1.06	1.06	1.05	-	-	-
SF - Electric Only	New			Insulation - Radiant Barrier		per HH	\$94.61	50%	\$47.31	15	15	15	296	296	296	0.15	0.15	0.15	-	-	-
SF - Electric Only	New			Ducting - Repair and Sealing		per HH	\$497.62	50%	\$248.81	19	18	18	18,129	17,616	17,582	8.92	8.64	8.60	-	-	-
SF - Electric Only	New			Windows - Install Reflective Film		per HH	\$0.00	50%	\$0.00	7	7	7	-	2,181	2,172	-	8.18	8.15	-	-	-
SF - Electric Only	New			Roofs - High Reflectivity		per HH	\$97.66	50%	\$48.83	113	110	110	12,057	11,686	11,640	15.08	14.61	14.56	-	-	-
SF - Electric Only	New			Thermostat - Clock/Programmable		per HH	\$30.00	50%	\$15.00	16	15	15	2,223	2,165	2,165	-	-	-	-	-	-
SF - Electric Only	New			Boiler - Maintenance		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	New			Water Heater - Drainwater Heat Recovery		per HH	\$899.00	50%	\$449.50	1	1	1	331	322	315	0.02	0.02	0.02	-	-	-
SF - Electric Only	New			Water Heater - Faucet Aerators		per HH	\$16.00	50%	\$8.00	44	43	43	3,346	3,160	3,090	0.25	0.24	0.23	-	-	-
SF - Electric Only	New			Water Heater - Low-Flow Showerheads		per HH	\$12.00	50%	\$6.00	39	38	38	13,346	12,602	12,325	0.99	0.94	0.92	-	-	-
SF - Electric Only	New			Water Heater - Thermostat Setback		per HH	\$5.00	50%	\$2.50	49	49	49	4,131	4,021	3,934	0.31	0.30	0.29	-	-	-
SF - Electric Only	New			Water Heater - Desuperheater		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	New			Water Heater - Solar System		per HH	\$5,400.00	50%	\$2,700.00	0	0	0	741	721	705	0.06	0.05	0.05	-	-	-
MF - Electric Only	Existing			Water Heater - Thermostat Setback		per HH	\$5.00	50%	\$2.50	973	973	973	83,394	82,962	82,293	6.06	6.03	5.98	-	-	-
MF - Electric Only	New			Water Heater - Thermostat Setback		per HH	\$5.00	50%	\$2.50	21	21	21	1,840	1,818	1,793	0.13	0.13	0.13	-	-	-
Electric/Gas SF - Electric/Gas	Existing			Insulation - Ceiling		per HH	\$363.42	50%	\$181.71	455	455	455	14,382	14,218	14,027	14.85	14.63	14.39	4,695	4,723	4,679
Electric/Gas SF - Electric/Gas	Existing			Insulation - Ducting		per HH	\$95.00	50%	\$47.50	3,440	3,339	3,339	240,252	229,681	225,859	297.72	284.58	279.82	45,806	44,893	44,634
Electric/Gas SF - Electric/Gas	Existing			Insulation - Infiltration Control		per HH	\$327.87	50%	\$163.94	7,541	7,541	7,541	396,629	392,936	388,353	357.24	351.92	346.08	217,311	218,619	216,585
Electric/Gas	Existing			Insulation - Radiant Barrier		per HH	\$82.84	50%	\$41.42	5,125	5,125	5,125	152,745	151,004	148,968	157.92	155.57	152.99	49,596	49,894	49,430

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
SF - Electric/Gas	Existing			Ducting - Repair and Sealing		per HH	\$497.62	50%	\$248.81	2,379	2,309	2,309	895,950	856,623	842,447	1,101.78	1,053.13	1,035.45	153,357	150,303	149,435
SF - Electric/Gas	Existing			Windows - Install Reflective Film		per HH	\$1,028.88	50%	\$514.44	923	923	923	224,261	220,920	217,260	847.55	834.95	821.14	-	-	-
SF - Electric/Gas	Existing			Doors - Storm and Thermal		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	Existing			Roofs - High Reflectivity		per HH	\$85.51	50%	\$42.76	1,350	1,310	1,310	131,932	126,144	124,054	166.20	158.92	156.29	-	-	-
SF - Electric/Gas	Existing			Ceiling Fan - Installation		per HH	\$204.00	50%	\$102.00	448	435	435	129,804	124,109	122,053	163.52	156.35	153.77	-	-	-
SF - Electric/Gas	Existing			Thermostat - Clock/Programmable		per HH	\$30.00	50%	\$15.00	719	698	698	13,455	13,122	13,128	-	-	-	24,712	24,130	23,905
SF - Electric/Gas	Existing			Boiler - Hot Water Reset		per HH	\$37.00	50%	\$18.50	780	757	757	-	-	-	-	-	-	78,477	74,292	71,392
SF - Electric/Gas	Existing			Water Heater - Drainwater Heat Recovery		per HH	\$899.00	50%	\$449.50	116	116	116	43,215	43,091	42,814	3.22	3.21	3.19	22,384	22,511	22,323
SF - Electric/Gas	Existing			Water Heater - Faucet Aerators		per HH	\$16.00	50%	\$8.00	8,513	8,263	8,263	743,594	719,601	714,937	55.38	53.59	53.24	53,551	52,269	51,834
SF - Electric/Gas	Existing			Water Heater - Low-Flow Showerheads		per HH	\$12.00	50%	\$6.00	5,806	5,636	5,636	2,310,624	2,236,067	2,221,577	172.07	166.52	165.44	163,140	159,234	157,909
SF - Electric/Gas	Existing			Water Heater - Thermostat Setback		per HH	\$5.00	50%	\$2.50	475	475	475	40,843	40,725	40,464	3.04	3.03	3.01	-	-	-
SF - Electric/Gas	Existing			Water Heater - Desuperheater		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	Existing			Water Heater - Solar System		per HH	\$5,400.00	50%	\$2,700.00	13	13	13	28,056	27,974	27,792	2.09	2.08	2.07	-	-	-
SF - Electric/Gas	Existing			Combined Boiler & Water Htg. Unit		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	New			Insulation - Ceiling		per HH	\$0.00	50%	\$0.00	6	6	6	-	-	188	-	-	0.19	-	-	70
SF - Electric/Gas	New			Insulation - Ducting		per HH	\$95.00	50%	\$47.50	31	30	30	2,715	2,636	2,628	3.02	2.93	2.92	456	447	445
SF - Electric/Gas	New			Insulation - Foundation		per HH	\$760.32	50%	\$380.16	63	61	61	23,319	22,651	22,600	22.80	22.12	22.05	6,899	6,768	6,743
SF - Electric/Gas	New			Insulation - Infiltration Control		per HH	\$427.68	50%	\$213.84	32	32	32	1,551	1,553	1,550	1.40	1.40	1.39	866	875	872
SF - Electric/Gas	New			Insulation - Radiant Barrier		per HH	\$94.61	50%	\$47.31	17	17	17	191	191	190	0.19	0.19	0.19	69	69	69
SF - Electric/Gas	New			Ducting - Repair and Sealing		per HH	\$497.62	50%	\$248.81	22	21	21	12,015	11,670	11,644	11.82	11.47	11.43	1,468	1,439	1,433
SF - Electric/Gas	New			Windows - Install Reflective Film		per HH	\$0.00	50%	\$0.00	9	9	9	-	2,889	2,880	-	10.83	10.80	-	-	-
SF - Electric/Gas	New			Roofs - High Reflectivity		per HH	\$97.66	50%	\$48.83	153	149	149	15,968	15,490	15,441	19.96	19.37	19.30	-	-	-
SF - Electric/Gas	New			Thermostat - Clock/Programmable		per HH	\$30.00	50%	\$15.00	18	18	18	441	431	431	-	-	-	637	625	623
SF - Electric/Gas	New			Boiler - Hot Water Reset		per HH	\$37.00	50%	\$18.50	19	18	18	-	-	-	-	-	-	2,078	2,051	2,052
SF - Electric/Gas	New			Boiler - Maintenance		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	New			Water Heater - Drainwater Heat Recovery		per HH	\$899.00	50%	\$449.50	3	3	3	1,130	1,115	1,102	0.08	0.08	0.08	491	497	495
SF - Electric/Gas	New			Water Heater - Faucet Aerators		per HH	\$16.00	50%	\$8.00	149	145	145	11,288	10,810	10,681	0.84	0.81	0.80	785	770	769

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
SF - Electric/Gas	New			Water Heater - Low-Flow Showerheads		per HH	\$12.00	50%	\$6.00	131	127	127	45,017	43,114	42,598	3.35	3.21	3.17	3,067	3,012	3,005
SF - Electric/Gas	New			Water Heater - Thermostat Setback		per HH	\$5.00	50%	\$2.50	20	20	20	1,724	1,701	1,681	0.13	0.13	0.13	-	-	-
SF - Electric/Gas	New			Water Heater - Desuperheater		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	New			Water Heater - Solar System		per HH	\$5,400.00	50%	\$2,700.00	0	0	0	306	302	298	0.02	0.02	0.02	-	-	-
SF - Electric/Gas	New			Combined Boiler & Water Htg. Unit		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	Existing			Water Heater - Thermostat Setback		per HH	\$5.00	50%	\$2.50	94	94	94	8,044	7,998	7,930	0.58	0.58	0.58	-	-	-
MF - Electric/Gas	New			Water Heater - Thermostat Setback		per HH	\$5.00	50%	\$2.50	2	2	2	176	174	171	0.01	0.01	0.01	-	-	-
SF - Gas Only	Existing			Insulation - Ceiling		per HH	\$363.42	50%	\$181.71	185	185	185	-	-	-	-	-	-	1,743	1,755	1,740
SF - Gas Only	Existing			Insulation - Ducting		per HH	\$95.00	50%	\$47.50	1,386	1,346	1,346	-	-	-	-	-	-	17,040	16,700	16,604
SF - Gas Only	Existing			Insulation - Infiltration Control		per HH	\$327.87	50%	\$163.94	3,027	3,027	3,027	-	-	-	-	-	-	79,804	80,354	79,673
SF - Gas Only	Existing			Insulation - Radiant Barrier		per HH	\$82.84	50%	\$41.42	2,059	2,059	2,059	-	-	-	-	-	-	18,226	18,352	18,196
SF - Gas Only	Existing			Ducting - Repair and Sealing		per HH	\$497.62	50%	\$248.81	959	931	931	-	-	-	-	-	-	57,049	55,913	55,590
SF - Gas Only	Existing			Doors - Storm and Thermal		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Gas Only	Existing			Thermostat - Clock/Programmable		per HH	\$30.00	50%	\$15.00	288	279	279	-	-	-	-	-	-	9,046	8,840	8,765
SF - Gas Only	Existing			Boiler - Hot Water Reset		per HH	\$37.00	50%	\$18.50	256	248	248	-	-	-	-	-	-	23,735	22,469	21,592
SF - Gas Only	Existing			Water Heater - Drainwater Heat Recovery		per HH	\$899.00	50%	\$449.50	25	25	25	-	-	-	-	-	-	4,427	4,452	4,415
SF - Gas Only	Existing			Water Heater - Faucet Aerators		per HH	\$16.00	50%	\$8.00	3,291	3,194	3,194	-	-	-	-	-	-	19,258	18,797	18,641
SF - Gas Only	Existing			Water Heater - Low-Flow Showerheads		per HH	\$12.00	50%	\$6.00	2,245	2,179	2,179	-	-	-	-	-	-	58,668	57,264	56,787
SF - Gas Only	Existing			Water Heater - Desuperheater		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Gas Only	Existing			Combined Boiler & Water Htg. Unit		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Gas Only	New			Insulation - Ducting		per HH	\$95.00	50%	\$47.50	8	7	7	-	-	-	-	-	-	102	100	100
SF - Gas Only	New			Insulation - Foundation		per HH	\$760.32	50%	\$380.16	17	16	16	-	-	-	-	-	-	1,665	1,631	1,625
SF - Gas Only	New			Insulation - Infiltration Control		per HH	\$427.68	50%	\$213.84	8	8	8	-	-	-	-	-	-	209	211	210
SF - Gas Only	New			Insulation - Radiant Barrier		per HH	\$94.61	50%	\$47.31	5	5	5	-	-	-	-	-	-	17	17	17
SF - Gas Only	New			Ducting - Repair and Sealing		per HH	\$497.62	50%	\$248.81	5	5	5	-	-	-	-	-	-	328	321	320
SF - Gas Only	New			Thermostat - Clock/Programmable		per HH	\$30.00	50%	\$15.00	5	5	5	-	-	-	-	-	-	154	151	150
SF - Gas Only	New			Boiler - Hot Water Reset		per HH	\$37.00	50%	\$18.50	4	4	4	-	-	-	-	-	-	414	408	409
SF - Gas Only	New			Water Heater - Drainwater Heat Recovery		per HH	\$899.00	50%	\$449.50	1	1	1	-	-	-	-	-	-	116	118	117

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
SF - Gas Only	New			Water Heater - Faucet Aerators		per HH	\$16.00	50%	\$8.00	38	37	37	-	-	-	-	-	-	186	182	182
SF - Gas Only	New			Water Heater - Low-Flow Showerheads		per HH	\$12.00	50%	\$6.00	33	32	32	-	-	-	-	-	-	727	713	712
SF - Gas Only	New			Water Heater - Desuperheater		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Gas Only	New			Combined Boiler & Water Htg. Unit		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-

Table G-19 Residential Multi Family (RAP)

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
MF - Electric Only	Existing	Water Heating	Electric	Water Heater > 55 gal	EF 0.95	per HH	\$40.00	50%	\$20.00	63	-	-	5,929	-	-	0.43	-	-	-	-	-
MF - Electric Only	Existing	Water Heating	Electric	Water Heater > 55 gal	EF 2.0	per HH	\$0.00	50%	\$0.00	-	64	64	-	62,427	59,437	-	4.54	4.32	-	-	-
MF - Electric Only	Existing	Interior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	50%	\$14.29	2,115	2,053	2,053	1,793,937	1,451,524	1,415,300	120.89	97.81	95.37	-	-	-
MF - Electric Only	Existing	Interior Lighting	Electric	Specialty	CFL	per HH	\$17.72	50%	\$8.86	1,345	1,305	1,305	239,193	233,441	233,707	16.12	15.73	15.75	-	-	-
MF - Electric Only	Existing	Exterior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	50%	\$1.00	2,477	2,477	-	173,301	174,332	-	11.68	11.75	-	-	-	-
MF - Electric Only	Existing	Exterior Lighting	Electric	Screw-in	LED	per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric Only	Existing	Misc.	Electric	Bathroom Exhaust Fan	High Efficiency	per HH	\$43.50	50%	\$21.75	140	136	136	11,995	11,714	11,758	1.00	0.98	0.98	-	-	-
MF - Electric Only	New	Water Heating	Electric	Water Heater > 55 gal	EF 0.95	per HH	\$40.00	50%	\$20.00	2	2	-	148	148	-	0.01	0.01	-	-	-	-
MF - Electric Only	New	Water Heating	Electric	Water Heater > 55 gal	EF 2.0	per HH	\$0.00	50%	\$0.00	-	-	4	-	-	3,692	-	-	0.27	-	-	-
MF - Electric Only	New	Interior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	50%	\$18.25	39	38	38	31,166	24,255	23,564	2.10	1.63	1.59	-	-	-
MF - Electric Only	New	Interior Lighting	Electric	Specialty	CFL	per HH	\$17.65	50%	\$8.82	23	23	23	4,146	4,046	4,051	0.28	0.27	0.27	-	-	-
MF - Electric Only	New	Exterior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	50%	\$1.00	40	40	-	2,654	2,670	-	0.18	0.18	-	-	-	-
MF - Electric Only	New	Exterior Lighting	Electric	Screw-in	LED	per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric Only	New	Misc.	Electric	Bathroom Exhaust Fan	High Efficiency	per HH	\$43.50	50%	\$21.75	5	5	5	413	403	405	0.03	0.03	0.03	-	-	-
MF - Electric/Gas	Existing	Water Heating	Electric	Water Heater > 55 gal	EF 2.3 (HP)	per HH	\$731.11	50%	\$365.56	54	52	52	88,628	82,940	81,754	6.44	6.03	5.94	-	-	-
MF - Electric/Gas	Existing	Interior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	50%	\$17.81	2,262	2,195	2,195	1,608,520	1,570,278	1,572,331	108.39	105.82	105.96	-	-	-
MF - Electric/Gas	Existing	Interior Lighting	Electric	Specialty	CFL	per HH	\$17.99	50%	\$8.99	769	747	747	157,508	153,720	153,895	10.61	10.36	10.37	-	-	-
MF - Electric/Gas	Existing	Exterior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	50%	\$1.00	3,687	3,578	3,578	278,338	271,760	272,450	18.76	18.31	18.36	-	-	-
MF - Electric/Gas	Existing	Misc.	Electric	Bathroom Exhaust Fan	High Efficiency	per HH	\$43.50	50%	\$21.75	170	165	165	14,589	14,246	14,300	1.21	1.19	1.19	-	-	-
MF - Electric/Gas	New	Water Heating	Electric	Water Heater > 55 gal	EF 2.3 (HP)	per HH	\$731.11	50%	\$365.56	3	3	3	4,857	4,539	4,470	0.35	0.33	0.32	-	-	-
MF - Electric/Gas	New	Interior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	50%	\$22.76	42	41	41	28,257	27,585	27,621	1.90	1.86	1.86	-	-	-
MF - Electric/Gas	New	Interior Lighting	Electric	Specialty	CFL	per HH	\$17.97	50%	\$8.99	13	13	13	2,740	2,674	2,677	0.18	0.18	0.18	-	-	-
MF - Electric/Gas	New	Exterior Lighting	Electric	Screw-in	CFL	per HH	\$0.00	50%	\$1.00	65	63	63	4,668	4,557	4,569	0.31	0.31	0.31	-	-	-
MF - Electric/Gas	New	Misc.	Electric	Bathroom Exhaust Fan	High Efficiency	per HH	\$43.50	50%	\$21.75	6	6	6	503	491	493	0.04	0.04	0.04	-	-	-
MF - Electric Only	Existing			Insulation - Ceiling		per HH	\$574.27	50%	\$287.14	350	350	350	28,657	28,679	28,597	8.06	7.94	7.81	-	-	-
MF - Electric Only	Existing			Insulation - Ducting		per HH	\$95.00	50%	\$47.50	1,086	1,054	1,054	11,939	11,404	11,212	13.82	13.20	12.97	-	-	-
MF - Electric Only	Existing			Insulation - Infiltration Control		per HH	\$152.01	50%	\$76.01	4,109	4,109	4,109	632,569	634,684	634,212	87.30	85.99	84.59	-	-	-
MF - Electric Only	Existing			Insulation - Radiant Barrier		per HH	\$130.90	50%	\$65.45	1,850	1,850	1,850	142,915	143,013	142,588	41.02	40.41	39.75	-	-	-
MF - Electric Only	Existing			Insulation - Wall Cavity		per HH	\$696.64	50%	\$348.32	85	85	85	7,806	7,835	7,831	0.96	0.94	0.93	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
MF - Electric Only	Existing			Insulation - Wall Sheathing		per HH	\$510.87	50%	\$255.44	1,543	1,498	1,498	222,952	217,041	216,815	35.25	33.70	33.15	-	-	-
MF - Electric Only	Existing			Ducting - Repair and Sealing		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric Only	Existing			Windows - High Efficiency/ENERGY STAR		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric Only	Existing			Windows - Install Reflective Film		per HH	\$240.74	50%	\$120.37	233	233	233	11,274	11,105	10,924	39.32	38.73	38.10	-	-	-
MF - Electric Only	Existing			Roofs - High Reflectivity		per HH	\$135.12	50%	\$67.56	384	373	373	17,539	16,769	16,496	20.39	19.49	19.18	-	-	-
MF - Electric Only	Existing			Ceiling Fan - Installation		per HH	\$204.00	50%	\$102.00	601	583	583	88,547	84,658	83,279	102.94	98.42	96.81	-	-	-
MF - Electric Only	Existing			Thermostat - Clock/Programmable		per HH	\$30.00	50%	\$15.00	606	588	588	36,983	36,104	36,151	-	-	-	-	-	-
MF - Electric Only	Existing			Home Energy Management System		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric Only	Existing			Water Heater - Drainwater Heat Recovery		per HH	\$899.00	50%	\$449.50	31	31	31	11,554	11,494	11,402	0.84	0.84	0.83	-	-	-
MF - Electric Only	Existing			Water Heater - Faucet Aerators		per HH	\$16.00	50%	\$8.00	3,598	3,492	3,492	276,562	267,034	264,874	20.11	19.42	19.26	-	-	-
MF - Electric Only	Existing			Water Heater - Low-Flow Showerheads		per HH	\$12.00	50%	\$6.00	2,462	2,390	2,390	863,504	833,754	827,013	62.78	60.62	60.13	-	-	-
MF - Electric Only	Existing			Water Heater - Desuperheater		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric Only	Existing			Water Heater - Solar System		per HH	\$5,400.00	50%	\$2,700.00	30	30	30	42,357	42,137	41,796	3.08	3.06	3.04	-	-	-
MF - Electric Only	New			Insulation - Ceiling		per HH	\$534.21	50%	\$267.11	5	5	5	178	179	179	0.07	0.07	0.07	-	-	-
MF - Electric Only	New			Insulation - Ducting		per HH	\$95.00	50%	\$47.50	12	11	11	110	108	108	0.13	0.13	0.13	-	-	-
MF - Electric Only	New			Insulation - Foundation		per HH	\$251.39	50%	\$125.70	33	32	32	5,732	5,594	5,600	1.67	1.63	1.63	-	-	-
MF - Electric Only	New			Insulation - Infiltration Control		per HH	\$141.40	50%	\$70.70	21	21	21	1,178	1,185	1,186	0.25	0.25	0.25	-	-	-
MF - Electric Only	New			Insulation - Radiant Barrier		per HH	\$121.77	50%	\$60.89	10	10	10	116	116	116	0.04	0.04	0.04	-	-	-
MF - Electric Only	New			Insulation - Wall Sheathing		per HH	\$458.02	50%	\$229.01	33	32	32	3,211	3,134	3,138	0.67	0.65	0.65	-	-	-
MF - Electric Only	New			Ducting - Repair and Sealing		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric Only	New			Windows - High Efficiency/ENERGY STAR		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric Only	New			Windows - Install Reflective Film		per HH	\$327.40	50%	\$163.70	4	4	4	243	244	244	0.85	0.85	0.85	-	-	-
MF - Electric Only	New			Roofs - High Reflectivity		per HH	\$125.70	50%	\$62.85	61	59	59	1,364	1,330	1,331	1.59	1.55	1.55	-	-	-
MF - Electric Only	New			Ceiling Fan - Installation		per HH	\$204.00	50%	\$102.00	16	15	15	1,915	1,868	1,869	2.23	2.17	2.17	-	-	-
MF - Electric Only	New			Thermostat - Clock/Programmable		per HH	\$30.00	50%	\$15.00	4	4	4	167	163	163	-	-	-	-	-	-
MF - Electric Only	New			Home Energy Management System		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric Only	New			Water Heater - Drainwater Heat Recovery		per HH	\$899.00	50%	\$449.50	1	1	1	359	355	350	0.03	0.03	0.03	-	-	-
MF - Electric Only	New			Water Heater - Faucet Aerators		per HH	\$16.00	50%	\$8.00	70	68	68	4,728	4,532	4,471	0.34	0.33	0.33	-	-	-
MF - Electric Only	New			Water Heater - Low-Flow Showerheads		per HH	\$12.00	50%	\$6.00	43	41	41	13,170	12,626	12,454	0.96	0.92	0.91	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
MF - Electric Only	New			Water Heater - Desuperheater		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric Only	New			Water Heater - Solar System		per HH	\$5,400.00	50%	\$2,700.00	1	1	1	636	628	620	0.05	0.05	0.05	-	-	-
MF - Electric/Gas	Existing			Insulation - Ceiling		per HH	\$574.27	50%	\$287.14	45	45	45	3,627	3,573	3,516	3.56	3.50	3.43	1,128	1,135	1,125
MF - Electric/Gas	Existing			Insulation - Ducting		per HH	\$95.00	50%	\$47.50	573	556	556	19,076	18,161	17,801	22.20	21.14	20.72	-	-	-
MF - Electric/Gas	Existing			Insulation - Infiltration Control		per HH	\$152.01	50%	\$76.01	1,723	1,723	1,723	156,471	154,736	152,729	126.81	124.47	122.06	85,714	86,257	85,477
MF - Electric/Gas	Existing			Insulation - Radiant Barrier		per HH	\$130.90	50%	\$65.45	782	782	782	60,844	59,946	58,978	60.05	58.94	57.80	18,472	18,589	18,421
MF - Electric/Gas	Existing			Insulation - Wall Cavity		per HH	\$696.64	50%	\$348.32	36	36	36	1,794	1,775	1,753	1.39	1.37	1.34	1,164	1,171	1,160
MF - Electric/Gas	Existing			Insulation - Wall Sheathing		per HH	\$510.87	50%	\$255.44	652	633	633	60,857	58,367	57,571	51.58	49.14	48.19	53,184	51,947	51,477
MF - Electric/Gas	Existing			Ducting - Repair and Sealing		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	Existing			Windows - High Efficiency/ENERGY STAR		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	Existing			Windows - Install Reflective Film		per HH	\$240.74	50%	\$120.37	138	138	138	16,427	16,124	15,812	57.35	56.29	55.20	-	-	-
MF - Electric/Gas	Existing			Roofs - High Reflectivity		per HH	\$135.12	50%	\$67.56	227	221	221	25,582	24,371	23,900	29.77	28.36	27.81	-	-	-
MF - Electric/Gas	Existing			Ceiling Fan - Installation		per HH	\$204.00	50%	\$102.00	355	345	345	129,152	123,040	120,659	150.30	143.19	140.42	-	-	-
MF - Electric/Gas	Existing			Thermostat - Clock/Programmable		per HH	\$30.00	50%	\$15.00	254	246	246	3,147	3,072	3,076	-	-	-	6,604	6,450	6,392
MF - Electric/Gas	Existing			Home Energy Management System		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	Existing			Boiler - Hot Water Reset		per HH	\$37.00	50%	\$18.50	84	82	82	-	-	-	-	-	-	6,657	6,338	6,128
MF - Electric/Gas	Existing			Water Heater - Drainwater Heat Recovery		per HH	\$899.00	50%	\$449.50	19	19	19	6,902	6,863	6,805	0.50	0.50	0.49	2,598	2,611	2,590
MF - Electric/Gas	Existing			Water Heater - Faucet Aerators		per HH	\$16.00	50%	\$8.00	2,156	2,092	2,092	257,465	248,459	246,308	18.72	18.07	17.91	13,470	13,141	13,034
MF - Electric/Gas	Existing			Water Heater - Low-Flow Showerheads		per HH	\$12.00	50%	\$6.00	1,475	1,432	1,432	803,885	775,765	769,049	58.45	56.41	55.92	42,032	41,005	40,672
MF - Electric/Gas	Existing			Water Heater - Desuperheater		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	Existing			Water Heater - Solar System		per HH	\$5,400.00	50%	\$2,700.00	3	3	3	6,372	6,336	6,281	0.46	0.46	0.46	-	-	-
MF - Electric/Gas	Existing			Combined Boiler & Water Htg. Unit		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	New			Insulation - Ceiling		per HH	\$534.21	50%	\$267.11	2	2	2	92	93	93	0.10	0.10	0.10	37	38	38
MF - Electric/Gas	New			Insulation - Ducting		per HH	\$95.00	50%	\$47.50	6	6	6	174	170	170	0.20	0.20	0.20	-	-	-
MF - Electric/Gas	New			Insulation - Foundation		per HH	\$251.39	50%	\$125.70	14	13	13	2,427	2,369	2,372	2.43	2.37	2.37	813	803	803
MF - Electric/Gas	New			Insulation - Infiltration Control		per HH	\$141.40	50%	\$70.70	9	9	9	390	392	393	0.36	0.37	0.37	290	295	295
MF - Electric/Gas	New			Insulation - Radiant Barrier		per HH	\$121.77	50%	\$60.89	4	4	4	59	59	59	0.06	0.06	0.06	24	25	25
MF - Electric/Gas	New			Insulation - Wall Cavity		per HH	\$0.00	50%	\$0.00	2	2	2	-	-	44	-	-	0.04	-	-	53
MF - Electric/Gas	New			Insulation - Wall Sheathing		per HH	\$458.02	50%	\$229.01	14	13	13	1,045	1,020	1,021	0.97	0.95	0.95	817	806	807
MF - Electric/Gas	New			Ducting - Repair and Sealing		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	New			Windows - High Efficiency/ENERGY STAR		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
MF - Electric/Gas	New			Windows - Install Reflective Film		per HH	\$327.40	50%	\$163.70	2	2	2	352	354	354	1.23	1.24	1.24	-	-	-
MF - Electric/Gas	New			Roofs - High Reflectivity		per HH	\$125.70	50%	\$62.85	36	35	35	1,972	1,925	1,928	2.30	2.24	2.24	-	-	-
MF - Electric/Gas	New			Ceiling Fan - Installation		per HH	\$204.00	50%	\$102.00	9	9	9	2,794	2,727	2,730	3.25	3.18	3.18	-	-	-
MF - Electric/Gas	New			Thermostat - Clock/Programmable		per HH	\$30.00	50%	\$15.00	2	2	2	13	13	13	-	-	-	34	33	33
MF - Electric/Gas	New			Home Energy Management System		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	New			Water Heater - Drainwater Heat Recovery		per HH	\$899.00	50%	\$449.50	1	1	1	213	210	207	0.02	0.02	0.02	71	72	71
MF - Electric/Gas	New			Water Heater - Faucet Aerators		per HH	\$16.00	50%	\$8.00	42	41	41	4,362	4,176	4,119	0.32	0.30	0.30	231	227	226
MF - Electric/Gas	New			Water Heater - Low-Flow Showerheads		per HH	\$12.00	50%	\$6.00	26	25	25	12,150	11,634	11,475	0.88	0.85	0.83	644	632	631
MF - Electric/Gas	New			Water Heater - Desuperheater		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	New			Water Heater - Solar System		per HH	\$5,400.00	50%	\$2,700.00	0	0	0	95	94	92	0.01	0.01	0.01	-	-	-
MF - Gas Only	Existing			Insulation - Ceiling		per HH	\$574.27	50%	\$287.14	6	6	6	-	-	-	-	-	-	133	134	133
MF - Gas Only	Existing			Insulation - Infiltration Control		per HH	\$152.01	50%	\$76.01	241	241	241	-	-	-	-	-	-	10,150	10,211	10,115
MF - Gas Only	Existing			Insulation - Radiant Barrier		per HH	\$130.90	50%	\$65.45	108	108	108	-	-	-	-	-	-	2,170	2,183	2,163
MF - Gas Only	Existing			Insulation - Wall Cavity		per HH	\$696.64	50%	\$348.32	5	5	5	-	-	-	-	-	-	137	138	137
MF - Gas Only	Existing			Insulation - Wall Sheathing		per HH	\$510.87	50%	\$255.44	91	88	88	-	-	-	-	-	-	6,274	6,125	6,068
MF - Gas Only	Existing			Windows - High Efficiency/ENERGY STAR		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Gas Only	Existing			Thermostat - Clock/Programmable		per HH	\$30.00	50%	\$15.00	35	34	34	-	-	-	-	-	-	781	762	755
MF - Gas Only	Existing			Home Energy Management System		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Gas Only	Existing			Boiler - Hot Water Reset		per HH	\$37.00	50%	\$18.50	16	15	15	-	-	-	-	-	-	1,063	1,012	979
MF - Gas Only	Existing			Water Heater - Drainwater Heat Recovery		per HH	\$899.00	50%	\$449.50	3	3	3	-	-	-	-	-	-	396	398	395
MF - Gas Only	Existing			Water Heater - Faucet Aerators		per HH	\$16.00	50%	\$8.00	375	364	364	-	-	-	-	-	-	2,054	2,004	1,987
MF - Gas Only	Existing			Water Heater - Low-Flow Showerheads		per HH	\$12.00	50%	\$6.00	257	249	249	-	-	-	-	-	-	6,409	6,252	6,202
MF - Gas Only	Existing			Water Heater - Desuperheater		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Gas Only	Existing			Combined Boiler & Water Htg. Unit		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Gas Only	New			Insulation - Ceiling		per HH	\$534.21	50%	\$267.11	0	0	0	-	-	-	-	-	-	2	2	2
MF - Gas Only	New			Insulation - Foundation		per HH	\$251.39	50%	\$125.70	1	1	1	-	-	-	-	-	-	35	34	34
MF - Gas Only	New			Insulation - Infiltration Control		per HH	\$141.40	50%	\$70.70	0	0	0	-	-	-	-	-	-	12	13	13
MF - Gas Only	New			Insulation - Radiant Barrier		per HH	\$121.77	50%	\$60.89	0	0	0	-	-	-	-	-	-	1	1	1
MF - Gas Only	New			Insulation - Wall Sheathing		per HH	\$458.02	50%	\$229.01	1	1	1	-	-	-	-	-	-	35	34	34

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
MF - Gas Only	New			Windows - High Efficiency/ENERGY STAR		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Gas Only	New			Thermostat - Clock/Programmable		per HH	\$30.00	50%	\$15.00	0	0	0	-	-	-	-	-	-	1	1	1
MF - Gas Only	New			Home Energy Management System		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Gas Only	New			Water Heater - Drainwater Heat Recovery		per HH	\$899.00	50%	\$449.50	0	0	0	-	-	-	-	-	-	4	4	4
MF - Gas Only	New			Water Heater - Faucet Aerators		per HH	\$16.00	50%	\$8.00	3	3	3	-	-	-	-	-	-	13	12	12
MF - Gas Only	New			Water Heater - Low-Flow Showerheads		per HH	\$12.00	50%	\$6.00	2	2	2	-	-	-	-	-	-	35	35	35
MF - Gas Only	New			Water Heater - Desuperheater		per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-

Table G-20 Residential Moderate Income (RAP)

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
SF - Electric Only	Existing	Cooling	Electric	Central AC	SEER 14.5 (Energy Star)	per HH	\$0.00	90%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	Existing	Cooling	Electric	Air-Source Heat Pump	SEER 16, HSPF 8.5	per HH	\$2,423.61	90%	\$2,181.25	6	6	6	1,251	912	808	1.56	1.14	1.01	-	-	-
SF - Electric Only	Existing	Heating	Electric	Air-Source Heat Pump	SEER 16, HSPF 8.5	per HH	\$1,309.62	90%	\$1,178.65	5	5	5	5,328	4,187	3,851	-	-	-	-	-	-
SF - Electric Only	Existing	Interior Lighting	Electric	Screw-in	CFL	per HH	\$41.57	90%	\$20.00	120	117	117	146,161	118,259	115,307	9.85	7.97	7.77	-	-	-
SF - Electric Only	Existing	Interior Lighting	Electric	Specialty	CFL	per HH	\$25.79	90%	\$23.21	76	74	74	19,139	18,679	18,700	1.29	1.26	1.26	-	-	-
SF - Electric Only	Existing	Exterior Lighting	Electric	Screw-in	CFL	per HH	\$1.78	90%	\$1.00	120	117	117	18,692	18,250	18,296	1.26	1.23	1.23	-	-	-
SF - Electric/Gas	Existing	Cooling	Electric	Central AC	SEER 14.5 (Energy Star)	per HH	\$0.00	90%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	Existing	Cooling	Electric	Air-Source Heat Pump	SEER 16, HSPF 8.5	per HH	\$2,290.20	90%	\$2,061.18	1	1	1	188	136	121	0.23	0.17	0.15	-	-	-
SF - Electric/Gas	Existing	Heating	Electric	Air-Source Heat Pump	SEER 16, HSPF 8.5	per HH	\$1,296.52	90%	\$1,166.87	0	0	0	213	170	158	-	-	-	-	-	-
SF - Electric/Gas	Existing	Interior Lighting	Electric	Screw-in	CFL	per HH	\$39.77	90%	\$20.00	297	288	288	260,967	254,763	255,096	17.59	17.17	17.19	-	-	-
SF - Electric/Gas	Existing	Interior Lighting	Electric	Specialty	CFL	per HH	\$24.70	90%	\$22.23	101	98	98	25,342	24,732	24,761	1.71	1.67	1.67	-	-	-
SF - Electric/Gas	Existing	Exterior Lighting	Electric	Screw-in	CFL	per HH	\$1.35	90%	\$1.00	484	469	469	77,866	76,025	76,218	5.25	5.12	5.14	-	-	-
SF - Electric/Gas	Existing	Heating	Natural Gas	Furnace	AFUE 0.9	per HH	\$2,738.28	90%	\$2,464.45	16	15	15	-	-	-	-	-	-	871	860	861
SF - Gas Only	Existing	Heating	Natural Gas	Furnace	AFUE 0.9	per HH	\$2,527.64	90%	\$2,274.88	6	6	6	-	-	-	-	-	-	324	320	320
SF - Electric Only	Existing			Insulation - Ceiling		per HH	\$363.42	90%	\$327.08	4	4	4	232	230	228	0.11	0.11	0.11	-	-	-
SF - Electric Only	Existing			Insulation - Ducting		per HH	\$95.00	90%	\$85.50	27	26	26	1,835	1,754	1,724	2.23	2.13	2.09	-	-	-
SF - Electric Only	Existing			Insulation - Infiltration Control		per HH	\$327.87	90%	\$295.08	67	67	67	8,340	8,303	8,241	2.75	2.70	2.65	-	-	-
SF - Electric Only	Existing			Insulation - Radiant Barrier		per HH	\$82.84	90%	\$74.56	46	46	46	2,456	2,439	2,417	1.21	1.19	1.17	-	-	-
SF - Electric Only	Existing			Ducting - Repair and Sealing		per HH	\$497.62	90%	\$447.86	21	20	20	7,215	6,892	6,773	8.28	7.90	7.75	-	-	-
SF - Electric Only	Existing			Ceiling Fan - Installation		per HH	\$204.00	90%	\$183.60	17	16	16	4,920	4,699	4,617	6.20	5.93	5.82	-	-	-
SF - Electric Only	Existing			Thermostat - Clock/Programmable		per HH	\$30.00	90%	\$27.00	42	41	41	4,830	4,687	4,669	-	-	-	-	-	-
SF - Electric Only	Existing			Water Heater - Faucet Aerators		per HH	\$16.00	90%	\$14.40	54	53	53	4,777	4,613	4,571	0.36	0.34	0.34	-	-	-
SF - Electric Only	Existing			Water Heater - Low-Flow Showerheads		per HH	\$12.00	90%	\$10.80	38	37	37	15,179	14,656	14,525	1.13	1.09	1.08	-	-	-
SF - Electric/Gas	Existing			Insulation - Ceiling		per HH	\$363.42	90%	\$327.08	5	5	5	145	144	142	0.15	0.15	0.15	47	48	47
SF - Electric/Gas	Existing			Insulation - Ducting		per HH	\$95.00	90%	\$85.50	35	34	34	2,427	2,320	2,281	3.01	2.87	2.83	463	453	451
SF - Electric/Gas	Existing			Insulation - Infiltration Control		per HH	\$327.87	90%	\$295.08	76	76	76	4,006	3,969	3,923	3.61	3.55	3.50	2,195	2,208	2,188

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
SF - Electric/Gas	Existing			Insulation - Radiant Barrier		per HH	\$82.84	90%	\$74.56	52	52	52	1,543	1,525	1,505	1.60	1.57	1.55	501	504	499
SF - Electric/Gas	Existing			Ducting - Repair and Sealing		per HH	\$497.62	90%	\$447.86	24	23	23	9,050	8,653	8,510	11.13	10.64	10.46	1,549	1,518	1,509
SF - Electric/Gas	Existing			Thermostat - Clock/Programmable		per HH	\$30.00	90%	\$27.00	48	47	47	897	875	875	-	-	-	1,647	1,609	1,594
SF - Electric/Gas	Existing			Water Heater - Faucet Aerators		per HH	\$16.00	90%	\$14.40	183	177	177	15,966	15,450	15,350	1.19	1.15	1.14	1,150	1,122	1,113
SF - Electric/Gas	Existing			Water Heater - Low-Flow Showerheads		per HH	\$12.00	90%	\$10.80	127	124	124	50,727	49,090	48,772	3.78	3.66	3.63	3,582	3,496	3,467
SF - Electric/Gas	Existing			Combined Boiler & Water Htg. Unit		per HH	\$0.00	90%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Gas Only	Existing			Insulation - Ducting		per HH	\$95.00	90%	\$85.50	14	14	14	-	-	-	-	-	-	172	169	168
SF - Gas Only	Existing			Insulation - Infiltration Control		per HH	\$327.87	90%	\$295.08	31	31	31	-	-	-	-	-	-	806	812	805
SF - Gas Only	Existing			Insulation - Radiant Barrier		per HH	\$82.84	90%	\$74.56	21	21	21	-	-	-	-	-	-	184	185	184
SF - Gas Only	Existing			Ducting - Repair and Sealing		per HH	\$497.62	90%	\$447.86	10	9	9	-	-	-	-	-	-	576	565	562
SF - Gas Only	Existing			Thermostat - Clock/Programmable		per HH	\$30.00	90%	\$27.00	19	19	19	-	-	-	-	-	-	603	589	584
SF - Gas Only	Existing			Water Heater - Faucet Aerators		per HH	\$16.00	90%	\$14.40	71	69	69	-	-	-	-	-	-	413	404	400
SF - Gas Only	Existing			Water Heater - Low-Flow Showerheads		per HH	\$12.00	90%	\$10.80	49	48	48	-	-	-	-	-	-	1,288	1,257	1,247

Table G-21 Residential Appliance Recycling (RAP)

Segment	Vintage	Technology	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
							2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
SF - Electric Only	Existing	Room AC - Removal of Second Unit	per HH	\$60.00	50%	\$30.00	833	808	808	840,735	806,158	794,127	1,220.75	1,170.55	1,153.08	-	-	-
SF - Electric Only	Existing	Refrigerator - Remove Second Unit	per HH	\$120.00	50%	\$60.00	2,262	2,196	2,196	1,508,284	1,369,016	1,286,158	157.78	143.21	134.54	-	-	-
SF - Electric Only	Existing	Freezer - Remove Second Unit	per HH	\$120.00	50%	\$60.00	2,507	2,433	2,433	1,266,063	1,183,779	1,143,619	147.99	138.38	133.68	-	-	-
SF - Electric Only	New	Room AC - Removal of Second Unit	per HH	\$60.00	50%	\$30.00	8	8	8	8,669	8,378	8,329	12.59	12.16	12.09	-	-	-
SF - Electric Only	New	Refrigerator - Remove Second Unit	per HH	\$120.00	50%	\$60.00	74	71	71	35,358	33,021	32,043	3.70	3.45	3.35	-	-	-
SF - Electric Only	New	Freezer - Remove Second Unit	per HH	\$120.00	50%	\$60.00	81	79	79	36,335	34,389	33,697	4.25	4.02	3.94	-	-	-
MF - Electric Only	Existing	Room AC - Removal of Second Unit	per HH	\$60.00	50%	\$30.00	652	633	633	208,644	200,624	198,135	240.17	230.94	228.07	-	-	-
MF - Electric Only	Existing	Refrigerator - Remove Second Unit	per HH	\$120.00	50%	\$60.00	279	270	270	172,633	155,299	145,724	18.06	16.25	15.25	-	-	-
MF - Electric Only	Existing	Freezer - Remove Second Unit	per HH	\$120.00	50%	\$60.00	312	303	303	163,290	155,554	152,883	19.09	18.18	17.87	-	-	-
MF - Electric Only	New	Room AC - Removal of Second Unit	per HH	\$60.00	50%	\$30.00	7	7	7	1,971	1,908	1,897	2.27	2.20	2.18	-	-	-
MF - Electric Only	New	Refrigerator - Remove Second Unit	per HH	\$120.00	50%	\$60.00	5	5	5	2,328	2,187	2,124	0.24	0.23	0.22	-	-	-
MF - Electric Only	New	Freezer - Remove Second Unit	per HH	\$120.00	50%	\$60.00	5	5	5	2,406	2,286	2,241	0.28	0.27	0.26	-	-	-
SF - Electric/Gas	Existing	Room AC - Removal of Second Unit	per HH	\$60.00	50%	\$30.00	1,078	1,047	1,047	1,029,791	988,355	974,536	1,495.26	1,435.10	1,415.03	-	-	-
SF - Electric/Gas	Existing	Refrigerator - Remove Second Unit	per HH	\$120.00	50%	\$60.00	2,577	2,501	2,501	1,751,031	1,593,268	1,499,648	183.17	166.67	156.87	-	-	-
SF - Electric/Gas	Existing	Freezer - Remove Second Unit	per HH	\$120.00	50%	\$60.00	2,704	2,625	2,625	1,365,839	1,277,070	1,233,745	159.66	149.28	144.22	-	-	-
SF - Electric/Gas	New	Room AC - Removal of Second Unit	per HH	\$60.00	50%	\$30.00	10	10	10	10,123	9,800	9,756	14.70	14.23	14.17	-	-	-
SF - Electric/Gas	New	Refrigerator - Remove Second Unit	per HH	\$120.00	50%	\$60.00	84	81	81	42,122	39,040	37,669	4.41	4.08	3.94	-	-	-
SF - Electric/Gas	New	Freezer - Remove Second Unit	per HH	\$120.00	50%	\$60.00	88	85	85	39,198	37,100	36,352	4.58	4.34	4.25	-	-	-
MF - Electric/Gas	Existing	Room AC - Removal of Second Unit	per HH	\$60.00	50%	\$30.00	170	165	165	122,664	118,029	116,647	141.20	135.86	134.27	-	-	-
MF - Electric/Gas	Existing	Refrigerator - Remove Second Unit	per HH	\$120.00	50%	\$60.00	210	204	204	132,945	119,767	112,515	13.91	12.53	11.77	-	-	-
MF - Electric/Gas	Existing	Freezer - Remove Second Unit	per HH	\$120.00	50%	\$60.00	279	271	271	146,129	139,205	136,815	17.08	16.27	15.99	-	-	-
MF - Electric/Gas	New	Room AC - Removal of Second Unit	per HH	\$60.00	50%	\$30.00	1	1	1	335	325	323	0.39	0.37	0.37	-	-	-
MF - Electric/Gas	New	Refrigerator - Remove Second Unit	per HH	\$120.00	50%	\$60.00	4	3	3	1,842	1,720	1,662	0.19	0.18	0.17	-	-	-
MF - Electric/Gas	New	Freezer - Remove Second Unit	per HH	\$120.00	50%	\$60.00	5	5	5	2,153	2,045	2,005	0.25	0.24	0.23	-	-	-

Table G-22 Residential HVAC (RAP)

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
SF - Electric Only	Existing	Cooling	Electric	Central AC	SEER 14.5 (Energy Star)	per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	Existing	Cooling	Electric	Air-Source Heat Pump	SEER 16, HSPF 8.5	per HH	\$512.52	50%	\$256.26	476	462	462	105,103	76,596	67,896	131.05	95.51	84.66	-	-	-
SF - Electric Only	Existing	Heating	Electric	Air-Source Heat Pump	SEER 16, HSPF 8.5	per HH	\$276.94	50%	\$138.47	395	383	383	447,541	351,740	323,452	-	-	-	-	-	-
SF - Electric Only	New	Cooling	Electric	Central AC	SEER 14.5 (Energy Star)	per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	New	Cooling	Electric	Air-Source Heat Pump	SEER 16, HSPF 8.5	per HH	\$580.88	50%	\$290.44	43	42	42	11,646	8,194	7,129	14.52	10.22	8.89	-	-	-
SF - Electric Only	New	Heating	Electric	Air-Source Heat Pump	SEER 16, HSPF 8.5	per HH	\$313.88	50%	\$156.94	34	33	33	41,598	32,050	29,181	-	-	-	-	-	-
SF - Electric/Gas	Existing	Cooling	Electric	Central AC	SEER 14.5 (Energy Star)	per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	Existing	Cooling	Electric	Air-Source Heat Pump	SEER 16, HSPF 8.5	per HH	\$484.31	50%	\$242.15	76	73	73	15,786	11,447	10,128	19.68	14.27	12.63	-	-	-
SF - Electric/Gas	Existing	Heating	Electric	Air-Source Heat Pump	SEER 16, HSPF 8.5	per HH	\$274.17	50%	\$137.09	16	16	16	17,863	14,322	13,292	-	-	-	-	-	-
SF - Electric/Gas	Existing	Heating	Natural Gas	Furnace	AFUE 0.9	per HH	\$377.69	50%	\$188.85	1,324	1,285	1,285	-	-	-	-	-	-	73,201	72,272	72,336
SF - Electric/Gas	New	Cooling	Electric	Central AC	SEER 14.5 (Energy Star)	per HH	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	New	Cooling	Electric	Air-Source Heat Pump	SEER 16, HSPF 8.5	per HH	\$548.90	50%	\$274.45	7	7	7	1,768	1,244	1,083	2.20	1.55	1.35	-	-	-
SF - Electric/Gas	New	Heating	Electric	Air-Source Heat Pump	SEER 16, HSPF 8.5	per HH	\$310.74	50%	\$155.37	1	1	1	1,676	1,298	1,186	-	-	-	-	-	-
SF - Electric/Gas	New	Heating	Natural Gas	Furnace	AFUE 0.9	per HH	\$0.00	50%	\$0.00	-	686	686	-	-	-	-	-	-	-	39,035	39,069
SF - Gas Only	Existing	Heating	Natural Gas	Furnace	AFUE 0.9	per HH	\$348.64	50%	\$174.32	533	518	518	-	-	-	-	-	-	27,231	26,886	26,909
SF - Gas Only	New	Heating	Natural Gas	Furnace	AFUE 0.9	per HH	\$0.00	50%	\$0.00	-	204	204	-	-	-	-	-	-	-	10,733	10,743
SF - Electric Only	Existing			Thermostat - Clock/Programmable		per HH	\$30.00	50%	\$15.00	2,071	2,010	2,010	236,669	229,657	228,791	-	-	-	-	-	-
SF - Electric Only	New			Thermostat - Clock/Programmable		per HH	\$30.00	50%	\$15.00	40	39	39	5,557	5,413	5,412	-	-	-	-	-	-
MF - Electric Only	Existing			Thermostat - Clock/Programmable		per HH	\$30.00	50%	\$15.00	2,424	2,353	2,353	147,932	144,415	144,604	-	-	-	-	-	-
MF - Electric Only	New			Thermostat - Clock/Programmable		per HH	\$30.00	50%	\$15.00	17	16	16	666	650	651	-	-	-	-	-	-
SF - Electric/Gas	Existing			Thermostat - Clock/Programmable		per HH	\$30.00	50%	\$15.00	2,348	2,279	2,279	43,954	42,864	42,884	-	-	-	80,727	78,824	78,091

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
SF - Electric/Gas	New			Thermostat - Clock/Programmable		per HH	\$30.00	50%	\$15.00	45	44	44	1,103	1,077	1,078	-	-	-	1,593	1,563	1,557
MF - Electric/Gas	Existing			Thermostat - Clock/Programmable		per HH	\$30.00	50%	\$15.00	1,015	985	985	12,589	12,290	12,306	-	-	-	26,414	25,800	25,566
MF - Electric/Gas	New			Thermostat - Clock/Programmable		per HH	\$30.00	50%	\$15.00	7	7	7	53	52	52	-	-	-	134	132	133
SF - Gas Only	Existing			Thermostat - Clock/Programmable		per HH	\$30.00	50%	\$15.00	939	912	912	-	-	-	-	-	-	29,550	28,878	28,633
SF - Gas Only	New			Thermostat - Clock/Programmable		per HH	\$30.00	50%	\$15.00	12	12	12	-	-	-	-	-	-	385	377	375
MF - Gas Only	Existing			Thermostat - Clock/Programmable		per HH	\$30.00	50%	\$15.00	142	137	137	-	-	-	-	-	-	3,123	3,049	3,021
MF - Gas Only	New			Thermostat - Clock/Programmable		per HH	\$30.00	50%	\$15.00	0	0	0	-	-	-	-	-	-	6	6	6

Table G-23 Residential Behavior Change (RAP)

(Zero Allocation)

Table G-24 Residential Efficient Products (RAP)

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
SF - Electric Only	Existing	Water Heating	Electric	Water Heater > 55 gal	EF 2.3 (HP)	per HH	\$731.11	30%	\$219.33	250	242	242	418,776	377,192	367,034	31.19	28.09	27.33	-	-	-
SF - Electric Only	Existing	Electronics	Electric	Personal Computers	Energy Star	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	Existing	Electronics	Electric	Monitor	Energy Star	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	Existing	Electronics	Electric	Laptops	Energy Star	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	Existing	Electronics	Electric	Set-top Boxes/DVR	Energy Star (2011)	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	Existing	Misc.	Electric	Air Purifier/Cleaner	Energy Star	per HH	\$70.00	30%	\$21.00	691	670	670	349,496	341,284	342,573	26.95	26.31	26.41	-	-	-
SF - Electric Only	Existing	Misc.	Electric	Pool Pump	High Efficiency	per HH	\$85.00	30%	\$25.50	732	710	710	109,095	106,532	106,934	8.41	8.21	8.24	-	-	-
SF - Electric Only	Existing	Misc.	Electric	Bathroom Exhaust Fan	High Efficiency	per HH	\$43.50	30%	\$13.05	947	919	919	81,235	79,326	79,626	6.26	6.12	6.14	-	-	-
SF - Electric Only	New	Water Heating	Electric	Water Heater > 55 gal	EF 2.3 (HP)	per HH	\$731.11	30%	\$219.33	45	44	44	68,273	61,655	59,976	5.08	4.59	4.47	-	-	-
SF - Electric Only	New	Electronics	Electric	Personal Computers	Energy Star	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	New	Electronics	Electric	Monitor	Energy Star	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	New	Electronics	Electric	Laptops	Energy Star	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	New	Electronics	Electric	Set-top Boxes/DVR	Energy Star (2011)	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	New	Misc.	Electric	Air Purifier/Cleaner	Energy Star	per HH	\$70.00	30%	\$21.00	60	59	59	30,500	29,784	29,896	2.35	2.30	2.30	-	-	-
SF - Electric Only	New	Misc.	Electric	Pool Pump	High Efficiency	per HH	\$85.00	30%	\$25.50	58	56	56	8,665	8,462	8,494	0.67	0.65	0.65	-	-	-
SF - Electric Only	New	Misc.	Electric	Bathroom Exhaust Fan	High Efficiency	per HH	\$43.50	30%	\$13.05	77	75	75	6,595	6,440	6,464	0.51	0.50	0.50	-	-	-
MF - Electric Only	Existing	Water Heating	Electric	Water Heater > 55 gal	EF 0.95	per HH	\$40.00	30%	\$12.00	16	-	-	1,482	-	-	0.11	-	-	-	-	-
MF - Electric Only	Existing	Water Heating	Electric	Water Heater > 55 gal	EF 2.0	per HH	\$0.00	30%	\$0.00	-	16	16	-	15,607	14,859	-	1.13	1.08	-	-	-
MF - Electric Only	Existing	Electronics	Electric	Personal Computers	Energy Star	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric Only	Existing	Electronics	Electric	Monitor	Energy Star	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric Only	Existing	Electronics	Electric	Laptops	Energy Star	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric Only	Existing	Electronics	Electric	Set-top Boxes/DVR	Energy Star (2011)	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric Only	Existing	Misc.	Electric	Air Purifier/Cleaner	Energy Star	per HH	\$70.00	30%	\$21.00	260	252	252	131,402	128,315	128,799	10.94	10.69	10.73	-	-	-
MF - Electric Only	Existing	Misc.	Electric	Pool Pump	High Efficiency	per HH	\$85.00	30%	\$25.50	25	24	24	3,741	3,653	3,667	0.31	0.30	0.31	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
MF - Electric Only	New	Water Heating	Electric	Water Heater > 55 gal	EF 0.95	per HH	\$40.00	30%	\$12.00	0	0	-	8	8	-	0.00	0.00	-	-	-	-
MF - Electric Only	New	Water Heating	Electric	Water Heater > 55 gal	EF 2.0	per HH	\$0.00	30%	\$0.00	-	-	0	-	-	194	-	-	0.01	-	-	-
MF - Electric Only	New	Electronics	Electric	Personal Computers	Energy Star	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric Only	New	Electronics	Electric	Monitor	Energy Star	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric Only	New	Electronics	Electric	Laptops	Energy Star	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric Only	New	Electronics	Electric	Set-top Boxes/DVR	Energy Star (2011)	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric Only	New	Misc.	Electric	Air Purifier/Cleaner	Energy Star High Efficiency	per HH	\$70.00	30%	\$21.00	10	9	9	4,879	4,765	4,783	0.41	0.40	0.40	-	-	-
MF - Electric Only	New	Misc.	Electric	Pool Pump	Energy Star High Efficiency	per HH	\$85.00	30%	\$25.50	1	1	1	127	124	124	0.01	0.01	0.01	-	-	-
SF - Electric/Gas	Existing	Water Heating	Electric	Water Heater > 55 gal	EF 2.3 (HP)	per HH	\$731.11	30%	\$219.33	54	52	52	90,394	84,400	83,172	6.73	6.29	6.19	-	-	-
SF - Electric/Gas	Existing	Electronics	Electric	Personal Computers	Energy Star	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	Existing	Electronics	Electric	Monitor	Energy Star	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	Existing	Electronics	Electric	Laptops	Energy Star	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	Existing	Electronics	Electric	TVs	Energy Star (5.1)	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	Existing	Electronics	Electric	Printer/Fax/Co pier	Energy Star	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	Existing	Electronics	Electric	Set-top Boxes/DVR	Energy Star (2011)	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	Existing	Misc.	Electric	Air Purifier/Cleaner	Energy Star High Efficiency	per HH	\$70.00	30%	\$21.00	871	846	846	440,854	430,495	432,121	33.99	33.19	33.32	-	-	-
SF - Electric/Gas	Existing	Misc.	Electric	Pool Pump	Energy Star High Efficiency	per HH	\$85.00	30%	\$25.50	455	441	441	67,755	66,163	66,413	5.22	5.10	5.12	-	-	-
SF - Electric/Gas	Existing	Misc.	Electric	Bathroom Exhaust Fan	High Efficiency	per HH	\$43.50	30%	\$13.05	3,028	2,939	2,939	259,723	253,620	254,578	20.02	19.55	19.63	-	-	-
SF - Electric/Gas	New	Water Heating	Electric	Water Heater > 55 gal	EF 2.3 (HP)	per HH	\$731.11	30%	\$219.33	10	9	9	14,737	13,792	13,593	1.10	1.03	1.01	-	-	-
SF - Electric/Gas	New	Electronics	Electric	Personal Computers	Energy Star	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	New	Electronics	Electric	Monitor	Energy Star	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	New	Electronics	Electric	Laptops	Energy Star	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	New	Electronics	Electric	TVs	Energy Star (5.1)	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	New	Electronics	Electric	Printer/Fax/Co pier	Energy Star	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	New	Electronics	Electric	Set-top Boxes/DVR	Energy Star (2011)	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	New	Misc.	Electric	Air Purifier/Cleaner	Energy Star	per HH	\$70.00	30%	\$21.00	76	74	74	38,473	37,569	37,711	2.97	2.90	2.91	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
SF - Electric/Gas	New	Misc.	Electric	Pool Pump	High Efficiency	per HH	\$85.00	30%	\$25.50	36	35	35	5,382	5,255	5,275	0.41	0.41	0.41	-	-	-
SF - Electric/Gas	New	Misc.	Electric	Bathroom Exhaust Fan	High Efficiency	per HH	\$43.50	30%	\$13.05	246	239	239	21,111	20,615	20,693	1.63	1.59	1.60	-	-	-
MF - Electric/Gas	Existing	Water Heating	Electric	Water Heater > 55 gal	EF 2.3 (HP)	per HH	\$731.11	30%	\$219.33	14	13	13	22,157	20,735	20,439	1.61	1.51	1.49	-	-	-
MF - Electric/Gas	Existing	Electronics	Electric	Personal Computers	Energy Star	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	Existing	Electronics	Electric	Monitor	Energy Star	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	Existing	Electronics	Electric	Laptops	Energy Star	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	Existing	Electronics	Electric	TVs	Energy Star (5.1)	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	Existing	Electronics	Electric	Printer/Fax/Co pier	Energy Star	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	Existing	Electronics	Electric	Set-top Boxes/DVR	Energy Star (2011)	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	Existing	Misc.	Electric	Air Purifier/Cleaner	Energy Star	per HH	\$70.00	30%	\$21.00	102	99	99	51,728	50,512	50,703	4.31	4.21	4.22	-	-	-
MF - Electric/Gas	Existing	Misc.	Electric	Pool Pump	High Efficiency	per HH	\$85.00	30%	\$25.50	30	29	29	4,494	4,388	4,405	0.37	0.37	0.37	-	-	-
MF - Electric/Gas	New	Water Heating	Electric	Water Heater > 55 gal	EF 2.3 (HP)	per HH	\$731.11	30%	\$219.33	0	0	0	256	239	235	0.02	0.02	0.02	-	-	-
MF - Electric/Gas	New	Electronics	Electric	Personal Computers	Energy Star	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	New	Electronics	Electric	Monitor	Energy Star	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	New	Electronics	Electric	Laptops	Energy Star	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	New	Electronics	Electric	TVs	Energy Star (5.1)	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	New	Electronics	Electric	Printer/Fax/Co pier	Energy Star	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	New	Electronics	Electric	Set-top Boxes/DVR	Energy Star (2011)	per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
MF - Electric/Gas	New	Misc.	Electric	Air Purifier/Cleaner	Energy Star	per HH	\$70.00	30%	\$21.00	4	4	4	1,921	1,876	1,883	0.16	0.16	0.16	-	-	-
MF - Electric/Gas	New	Misc.	Electric	Pool Pump	High Efficiency	per HH	\$85.00	30%	\$25.50	1	1	1	153	149	150	0.01	0.01	0.01	-	-	-
SF - Electric Only	Existing			Roofs - High Reflectivity		per HH	\$85.51	30%	\$25.65	111	108	108	11,115	10,617	10,432	14.01	13.39	13.15	-	-	-
SF - Electric Only	Existing			Ceiling Fan - Installation		per HH	\$204.00	30%	\$61.20	1,324	1,285	1,285	393,592	375,952	369,392	496.23	474.01	465.74	-	-	-
SF - Electric Only	Existing			Thermostat - Clock/Programmable		per HH	\$30.00	30%	\$9.00	1,479	1,435	1,435	169,049	164,041	163,422	-	-	-	-	-	-
SF - Electric Only	Existing			Water Heater - Desuperheater		per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	Existing			Water Heater - Solar System		per HH	\$5,400.00	30%	\$1,620.00	15	15	15	34,312	34,135	33,830	2.56	2.54	2.52	-	-	-
SF - Electric Only	Existing			Pool Pump - Timer		per HH	\$0.00	30%	\$0.00	-	-	736	-	-	91,897	-	-	7.09	-	-	-
SF - Electric Only	Existing			Pool/Spa cover		per HH	\$115.00	30%	\$34.50	588	570	570	1,580,479	1,519,980	1,506,568	121.85	117.19	116.15	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
SF - Electric Only	New			Windows - Install		per HH	\$0.00	30%	\$0.00	4	4	4	-	1,246	1,241	-	4.68	4.66	-	-	-
SF - Electric Only	New			Reflective Film Roofs - High Reflectivity		per HH	\$97.66	30%	\$29.30	65	63	63	6,890	6,678	6,651	8.62	8.35	8.32	-	-	-
SF - Electric Only	New			Ceiling Fan - Installation		per HH	\$204.00	30%	\$61.20	29	28	28	10,261	9,945	9,906	12.83	12.44	12.39	-	-	-
SF - Electric Only	New			Thermostat - Clock/Program mable		per HH	\$30.00	30%	\$9.00	32	31	31	4,446	4,330	4,329	-	-	-	-	-	-
SF - Electric Only	New			Water Heater - Desuperheater		per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric Only	New			Water Heater - Solar System		per HH	\$5,400.00	30%	\$1,620.00	0	0	0	423	412	403	0.03	0.03	0.03	-	-	-
SF - Electric Only	New			Pool/Spa cover		per HH	\$115.00	30%	\$34.50	19	19	19	47,856	46,732	46,908	3.69	3.60	3.62	-	-	-
MF - Electric Only	Existing			Water Heater - Solar System		per HH	\$5,400.00	30%	\$1,620.00	3	3	3	4,706	4,682	4,644	0.34	0.34	0.34	-	-	-
MF - Electric Only	Existing			Pool Pump - Timer		per HH	\$0.00	30%	\$0.00	-	-	25	-	-	3,083	-	-	0.26	-	-	-
MF - Electric Only	Existing			Pool/Spa cover		per HH	\$115.00	30%	\$34.50	33	32	32	88,856	85,452	84,700	7.40	7.12	7.05	-	-	-
MF - Electric Only	New			Water Heater - Solar System		per HH	\$5,400.00	30%	\$1,620.00	0	0	0	71	70	69	0.01	0.01	0.01	-	-	-
MF - Electric Only	New			Pool/Spa cover		per HH	\$115.00	30%	\$34.50	1	1	1	1,416	1,382	1,388	0.12	0.12	0.12	-	-	-
SF - Electric/Gas	Existing			Roofs - High Reflectivity		per HH	\$85.51	30%	\$25.65	150	146	146	14,659	14,016	13,784	18.47	17.66	17.37	-	-	-
SF - Electric/Gas	Existing			Ceiling Fan - Installation		per HH	\$204.00	30%	\$61.20	1,791	1,738	1,738	519,216	496,437	488,211	654.09	625.42	615.07	-	-	-
SF - Electric/Gas	Existing			Thermostat - Clock/Program mable		per HH	\$30.00	30%	\$9.00	1,677	1,628	1,628	31,396	30,617	30,632	-	-	-	57,662	56,303	55,779
SF - Electric/Gas	Existing			Water Heater - Solar System		per HH	\$5,400.00	30%	\$1,620.00	1	1	1	3,117	3,108	3,088	0.23	0.23	0.23	-	-	-
SF - Electric/Gas	Existing			Pool Pump - Timer		per HH	\$0.00	30%	\$0.00	-	-	457	-	-	57,074	-	-	4.40	-	-	-
SF - Electric/Gas	Existing			Pool/Spa cover		per HH	\$115.00	30%	\$34.50	1,228	1,192	1,192	3,304,331	3,177,847	3,149,805	254.76	245.00	242.84	114,536	112,276	111,539
SF - Electric/Gas	New			Windows - Install		per HH	\$0.00	30%	\$0.00	5	5	5	-	1,651	1,646	-	6.19	6.17	-	-	-
SF - Electric/Gas	New			Reflective Film Roofs - High Reflectivity		per HH	\$97.66	30%	\$29.30	87	85	85	9,125	8,852	8,823	11.41	11.07	11.03	-	-	-
SF - Electric/Gas	New			Ceiling Fan - Installation		per HH	\$204.00	30%	\$61.20	39	38	38	13,590	13,183	13,141	16.99	16.48	16.43	-	-	-
SF - Electric/Gas	New			Thermostat - Clock/Program mable		per HH	\$30.00	30%	\$9.00	36	35	35	883	861	862	-	-	-	1,275	1,250	1,246
SF - Electric/Gas	New			Water Heater - Desuperheater		per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Electric/Gas	New			Water Heater - Solar System		per HH	\$5,400.00	30%	\$1,620.00	0	0	0	175	172	170	0.01	0.01	0.01	-	-	-
SF - Electric/Gas	New			Pool/Spa cover		per HH	\$115.00	30%	\$34.50	40	39	39	100,054	97,703	98,072	7.71	7.53	7.56	3,697	3,613	3,585
MF - Electric/Gas	Existing			Water Heater - Solar System		per HH	\$5,400.00	30%	\$1,620.00	0	0	0	708	704	698	0.05	0.05	0.05	-	-	-
MF - Electric/Gas	Existing			Pool Pump - Timer		per HH	\$0.00	30%	\$0.00	-	-	30	-	-	3,703	-	-	0.31	-	-	-
MF - Electric/Gas	Existing			Pool/Spa cover		per HH	\$115.00	30%	\$34.50	40	39	39	106,740	102,651	101,747	8.89	8.55	8.47	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
MF - Electric/Gas	New			Water Heater - Solar System		per HH	\$5,400.00	30%	\$1,620.00	0	0	0	11	10	10	0.00	0.00	0.00	-	-	-
MF - Electric/Gas	New			Pool/Spa cover Thermostat -		per HH	\$115.00	30%	\$34.50	1	1	1	1,701	1,661	1,667	0.14	0.14	0.14	-	-	-
SF - Gas Only	Existing			Clock/Program mable		per HH	\$30.00	30%	\$9.00	671	651	651	-	-	-	-	-	-	21,107	20,627	20,452
SF - Gas Only	Existing			Water Heater - Drainwater Heat Recovery		per HH	\$899.00	30%	\$269.70	20	20	20	-	-	-	-	-	-	3,622	3,643	3,613
SF - Gas Only	Existing			Water Heater - Desuperheater		per HH	\$0.00	30%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
SF - Gas Only	Existing			Pool/Spa cover Thermostat -		per HH	\$115.00	30%	\$34.50	551	535	535	-	-	-	-	-	-	51,363	50,349	50,019
SF - Gas Only	New			Clock/Program mable		per HH	\$30.00	30%	\$9.00	10	9	9	-	-	-	-	-	-	308	302	300
SF - Gas Only	New			Pool/Spa cover		per HH	\$115.00	30%	\$34.50	12	11	11	-	-	-	-	-	-	1,089	1,063	1,055

Table G-25 Residential School Kits (RAP)

Segment	Vintage	Technology	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations (Households)			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
							2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
SF - Electric Only	Existing	Water Heater - Faucet Aerators	per HH	\$16.00	0%	\$0.00	131	127	127	11,584	11,186	11,086	0.86	0.83	0.83	-	-	-
SF - Electric Only	Existing	Water Heater - Low-Flow Showerheads	per HH	\$12.00	0%	\$0.00	130	126	126	52,366	50,563	50,111	3.90	3.77	3.73	-	-	-
SF - Electric Only	New	Water Heater - Faucet Aerators	per HH	\$16.00	0%	\$0.00	5	5	5	361	341	333	0.03	0.03	0.02	-	-	-
SF - Electric Only	New	Water Heater - Low-Flow Showerheads	per HH	\$12.00	0%	\$0.00	6	6	6	2,137	2,018	1,973	0.16	0.15	0.15	-	-	-
MF - Electric Only	Existing	Water Heater - Faucet Aerators	per HH	\$16.00	0%	\$0.00	183	178	178	14,097	13,611	13,501	1.02	0.99	0.98	-	-	-
MF - Electric Only	Existing	Water Heater - Low-Flow Showerheads	per HH	\$12.00	0%	\$0.00	182	177	177	63,998	61,793	61,293	4.65	4.49	4.46	-	-	-
MF - Electric Only	New	Water Heater - Faucet Aerators	per HH	\$16.00	0%	\$0.00	4	3	3	241	231	228	0.02	0.02	0.02	-	-	-
MF - Electric Only	New	Water Heater - Low-Flow Showerheads	per HH	\$12.00	0%	\$0.00	3	3	3	976	936	923	0.07	0.07	0.07	-	-	-
SF - Electric/Gas	Existing	Water Heater - Faucet Aerators	per HH	\$16.00	0%	\$0.00	443	430	430	38,716	37,467	37,224	2.88	2.79	2.77	2,788	2,721	2,699
SF - Electric/Gas	Existing	Water Heater - Low-Flow Showerheads	per HH	\$12.00	0%	\$0.00	440	427	427	175,009	169,362	168,264	13.03	12.61	12.53	12,356	12,061	11,960
SF - Electric/Gas	New	Water Heater - Faucet Aerators	per HH	\$16.00	0%	\$0.00	16	16	16	1,217	1,165	1,151	0.09	0.09	0.09	85	83	83
SF - Electric/Gas	New	Water Heater - Low-Flow Showerheads	per HH	\$12.00	0%	\$0.00	21	20	20	7,207	6,902	6,820	0.54	0.51	0.51	491	482	481
MF - Electric/Gas	Existing	Water Heater - Faucet Aerators	per HH	\$16.00	0%	\$0.00	110	107	107	13,124	12,665	12,555	0.95	0.92	0.91	687	670	664
MF - Electric/Gas	Existing	Water Heater - Low-Flow Showerheads	per HH	\$12.00	0%	\$0.00	109	106	106	59,579	57,495	56,997	4.33	4.18	4.14	3,115	3,039	3,014
MF - Electric/Gas	New	Water Heater - Faucet Aerators	per HH	\$16.00	0%	\$0.00	2	2	2	222	213	210	0.02	0.02	0.02	12	12	12
MF - Electric/Gas	New	Water Heater - Low-Flow Showerheads	per HH	\$12.00	0%	\$0.00	2	2	2	900	862	850	0.07	0.06	0.06	48	47	47
SF - Gas Only	Existing	Water Heater - Faucet Aerators	per HH	\$16.00	0%	\$0.00	171	166	166	-	-	-	-	-	-	1,003	979	971
SF - Gas Only	Existing	Water Heater - Low-Flow Showerheads	per HH	\$12.00	0%	\$0.00	170	165	165	-	-	-	-	-	-	4,444	4,337	4,301
SF - Gas Only	New	Water Heater - Faucet Aerators	per HH	\$16.00	0%	\$0.00	4	4	4	-	-	-	-	-	-	20	20	20
SF - Gas Only	New	Water Heater - Low-Flow Showerheads	per HH	\$12.00	0%	\$0.00	5	5	5	-	-	-	-	-	-	116	114	114
MF - Gas Only	Existing	Water Heater - Faucet Aerators	per HH	\$16.00	0%	\$0.00	19	19	19	-	-	-	-	-	-	105	102	101
MF - Gas Only	Existing	Water Heater - Low-Flow Showerheads	per HH	\$12.00	0%	\$0.00	19	18	18	-	-	-	-	-	-	475	463	460
MF - Gas Only	New	Water Heater - Faucet Aerators	per HH	\$16.00	0%	\$0.00	0	0	0	-	-	-	-	-	-	1	1	1
MF - Gas Only	New	Water Heater - Low-Flow Showerheads	per HH	\$12.00	0%	\$0.00	0	0	0	-	-	-	-	-	-	3	3	3

Commercial

Table G-26 Small Business Direct Install (RAP)

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Office - E	Existing	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.03	80%	\$0.02	10,198,835	9,898,869	9,898,869	1,165,825	1,042,864	966,406	220.66	197.38	182.91	-	-	-
Office - E	Existing	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.00	80%	\$0.00	6,119,323	5,939,343	5,939,343	198,464	192,557	192,084	37.56	36.45	36.36	-	-	-
Office - E	Existing	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.05	80%	\$0.04	3,672,087	3,564,084	3,564,084	665,990	646,169	644,580	126.05	122.30	122.00	-	-	-
Office - E	Existing	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.01	80%	\$0.01	6,584,606	6,390,941	6,390,941	125,978	112,686	104,417	1.17	1.05	0.97	-	-	-
Office - E	Existing	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	80%	\$0.00	-	-	3,206,913	-	-	4,435	-	-	0.04	-	-	-
Office - E	Existing	Refrigeration	Electric	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	80%	\$0.00	30,078	29,194	29,194	215	209	209	0.02	0.02	0.02	-	-	-
Office - E	Existing	Refrigeration	Electric	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	80%	\$0.00	210,496	204,305	204,305	10,861	10,529	10,504	1.14	1.10	1.10	-	-	-
Office - E	Existing	Refrigeration	Electric	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	80%	\$0.00	317,284	307,952	307,952	3,432	3,322	3,310	0.36	0.35	0.35	-	-	-
Office - E	Existing	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.00	80%	\$0.00	27,343	26,539	26,539	33,005	32,022	31,944	7.59	7.37	7.35	-	-	-
Office - E	Existing	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	80%	\$0.00	363,944	353,240	353,240	252,033	244,532	243,931	30.36	29.46	29.38	-	-	-
Office - E	Existing	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	80%	\$0.00	441,377	428,396	428,396	47,112	45,710	45,598	5.67	5.51	5.49	-	-	-
Office - E	Existing	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	80%	\$0.00	1,293,878	1,255,823	1,255,823	69,722	67,647	67,481	8.40	8.15	8.13	-	-	-
Office - E	Existing	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	80%	\$0.00	175,707	170,539	170,539	13,723	13,315	13,282	1.65	1.60	1.60	-	-	-
Office - E	Existing	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	80%	\$0.00	568,582	551,859	551,859	44,653	43,324	43,218	5.38	5.22	5.21	-	-	-
Office - E	New	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.03	80%	\$0.02	1,092,863	1,060,720	1,060,720	125,950	112,279	103,673	23.84	21.25	19.62	-	-	-
Office - E	New	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.00	80%	\$0.00	790,071	766,833	766,833	25,624	24,861	24,800	4.85	4.71	4.69	-	-	-
Office - E	New	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.05	80%	\$0.04	790,071	766,833	766,833	143,292	139,027	138,685	27.12	26.31	26.25	-	-	-
Office - E	New	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.01	80%	\$0.01	786,935	763,790	763,790	15,179	13,538	12,503	0.14	0.13	0.12	-	-	-
Office - E	New	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	80%	\$0.00	843,956	819,133	819,133	1,170	1,136	1,133	0.01	0.01	0.01	-	-	-
Office - E	New	Refrigeration	Electric	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	80%	\$0.00	7,425	7,207	7,207	53	52	52	0.01	0.01	0.01	-	-	-
Office - E	New	Refrigeration	Electric	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	80%	\$0.00	84,865	82,369	82,369	4,379	4,244	4,234	0.46	0.44	0.44	-	-	-
Office - E	New	Refrigeration	Electric	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	80%	\$0.00	84,865	82,369	82,369	918	888	885	0.10	0.09	0.09	-	-	-
Office - E	New	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.00	80%	\$0.00	6,969	6,764	6,764	8,412	8,162	8,142	1.94	1.88	1.87	-	-	-
Office - E	New	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	80%	\$0.00	38,800	37,659	37,659	26,869	26,069	26,005	3.24	3.14	3.13	-	-	-
Office - E	New	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	80%	\$0.00	48,866	47,429	47,429	5,216	5,061	5,048	0.63	0.61	0.61	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Office - E	New	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	80%	\$0.00	132,875	128,967	128,967	7,160	6,947	6,930	0.86	0.84	0.83	-	-	-
Office - E	New	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	80%	\$0.00	20,541	19,937	19,937	1,604	1,557	1,553	0.19	0.19	0.19	-	-	-
Office - E	New	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	80%	\$0.00	80,988	78,606	78,606	6,360	6,171	6,156	0.77	0.74	0.74	-	-	-
Restaurant - E	Existing	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.09	80%	\$0.07	2,150,835	2,087,576	2,087,576	958,102	855,503	793,276	114.42	102.17	94.74	-	-	-
Restaurant - E	Existing	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.02	80%	\$0.02	1,292,600	1,254,583	1,254,583	238,174	231,086	230,518	28.44	27.60	27.53	-	-	-
Restaurant - E	Existing	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.04	80%	\$0.04	751,699	729,591	729,591	135,124	131,102	130,780	16.14	15.66	15.62	-	-	-
Restaurant - E	Existing	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.02	80%	\$0.02	1,385,613	1,344,859	1,344,859	54,334	48,527	44,975	0.50	0.45	0.42	-	-	-
Restaurant - E	Existing	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	80%	\$0.00	-	-	677,404	-	-	226	-	-	0.00	-	-	-
Restaurant - E	Existing	Refrigeration	Electric	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.17	80%	\$0.14	36,377	35,307	35,307	17,298	16,686	16,568	1.76	1.70	1.68	-	-	-
Restaurant - E	Existing	Refrigeration	Electric	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.02	80%	\$0.02	10,270	9,968	9,968	1,652	1,603	1,601	0.17	0.16	0.16	-	-	-
Restaurant - E	Existing	Refrigeration	Electric	Glass Door Display	6800 kWh/yr	per sq ft	\$0.11	80%	\$0.09	95,224	92,423	92,423	110,336	106,955	106,706	11.21	10.87	10.84	-	-	-
Restaurant - E	Existing	Food Preparation	Electric	Oven	Energy Star	per sq ft	\$0.00	80%	\$0.00	28,843	27,995	27,995	27,954	27,122	27,055	3.36	3.26	3.26	-	-	-
Restaurant - E	Existing	Food Preparation	Electric	Fryer	Energy Star	per sq ft	\$0.02	80%	\$0.01	50,149	48,674	48,674	30,496	29,589	29,516	3.67	3.56	3.55	-	-	-
Restaurant - E	Existing	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.05	80%	\$0.04	47,491	46,094	46,094	120,111	116,537	116,250	14.45	14.02	13.99	-	-	-
Restaurant - E	Existing	Food Preparation	Electric	Hot Food Container	Energy Star	per sq ft	\$0.07	80%	\$0.06	15,753	15,290	15,290	25,579	24,818	24,756	3.08	2.99	2.98	-	-	-
Restaurant - E	Existing	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	80%	\$0.00	60,053	58,287	58,287	6,491	6,298	6,283	0.63	0.61	0.61	-	-	-
Restaurant - E	Existing	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	80%	\$0.00	58,343	56,627	56,627	778	754	753	0.08	0.07	0.07	-	-	-
Restaurant - E	Existing	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	80%	\$0.00	161,078	156,340	156,340	16,258	15,774	15,735	1.58	1.53	1.53	-	-	-
Restaurant - E	Existing	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	80%	\$0.00	28,039	27,215	27,215	342	332	331	0.03	0.03	0.03	-	-	-
Restaurant - E	Existing	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	80%	\$0.00	55,031	53,412	53,412	1,619	1,571	1,567	0.16	0.15	0.15	-	-	-
Restaurant - E	New	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.09	80%	\$0.07	234,866	227,958	227,958	105,068	94,142	86,754	12.55	11.24	10.36	-	-	-
Restaurant - E	New	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.02	80%	\$0.02	166,889	161,980	161,980	30,751	29,836	29,762	3.67	3.56	3.55	-	-	-
Restaurant - E	New	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.04	80%	\$0.04	161,815	157,056	157,056	29,087	28,222	28,152	3.47	3.37	3.36	-	-	-
Restaurant - E	New	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.02	80%	\$0.02	169,208	164,231	164,231	6,663	5,969	5,504	0.06	0.06	0.05	-	-	-
Restaurant - E	New	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	80%	\$0.00	178,271	173,028	173,028	60	58	58	0.00	0.00	0.00	-	-	-
Restaurant - E	New	Refrigeration	Electric	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.17	80%	\$0.14	9,719	9,434	9,434	4,622	4,455	4,419	0.47	0.45	0.45	-	-	-
Restaurant - E	New	Refrigeration	Electric	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.02	80%	\$0.02	2,762	2,681	2,681	444	431	431	0.05	0.04	0.04	-	-	-
Restaurant - E	New	Refrigeration	Electric	Glass Door Display	6800 kWh/yr	per sq ft	\$0.11	80%	\$0.09	38,111	36,990	36,990	44,159	42,802	42,697	4.49	4.35	4.34	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Restaurant - E	New	Food Preparation	Electric	Oven	Energy Star	per sq ft	\$0.00	80%	\$0.00	7,443	7,224	7,224	7,213	6,998	6,981	0.87	0.84	0.84	-	-	-
Restaurant - E	New	Food Preparation	Electric	Fryer	Energy Star	per sq ft	\$0.02	80%	\$0.01	13,104	12,719	12,719	7,969	7,732	7,713	0.96	0.93	0.93	-	-	-
Restaurant - E	New	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.05	80%	\$0.04	12,905	12,525	12,525	32,638	31,666	31,588	3.93	3.81	3.80	-	-	-
Restaurant - E	New	Food Preparation	Electric	Hot Food Container	Energy Star	per sq ft	\$0.07	80%	\$0.06	4,532	4,398	4,398	7,358	7,139	7,122	0.89	0.86	0.86	-	-	-
Restaurant - E	New	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	80%	\$0.00	6,422	6,233	6,233	694	674	672	0.07	0.07	0.07	-	-	-
Restaurant - E	New	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	80%	\$0.00	6,508	6,316	6,316	87	84	84	0.01	0.01	0.01	-	-	-
Restaurant - E	New	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	80%	\$0.00	16,632	16,143	16,143	1,679	1,629	1,625	0.16	0.16	0.16	-	-	-
Restaurant - E	New	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	80%	\$0.00	3,285	3,188	3,188	40	39	39	0.00	0.00	0.00	-	-	-
Restaurant - E	New	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	80%	\$0.00	7,906	7,674	7,674	233	226	225	0.02	0.02	0.02	-	-	-
Retail - E	Existing	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.02	80%	\$0.01	10,865,792	10,546,210	10,546,210	586,843	524,733	487,727	69.31	61.98	57.60	-	-	-
Retail - E	Existing	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.00	80%	\$0.00	6,206,658	6,024,109	6,024,109	186,851	181,290	180,844	22.07	21.41	21.36	-	-	-
Retail - E	Existing	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.09	80%	\$0.08	3,724,495	3,614,951	3,614,951	1,063,803	1,032,143	1,029,604	125.64	121.91	121.61	-	-	-
Retail - E	Existing	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.04	80%	\$0.03	7,073,651	6,865,602	6,865,602	443,050	396,166	367,482	4.11	3.68	3.41	-	-	-
Retail - E	Existing	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	80%	\$0.00	-	-	3,252,682	-	-	1,103	-	-	0.01	-	-	-
Retail - E	Existing	Refrigeration	Electric	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.01	80%	\$0.00	83,717	81,255	81,255	1,755	1,704	1,701	0.18	0.17	0.17	-	-	-
Retail - E	Existing	Refrigeration	Electric	Glass Door Display	6800 kWh/yr	per sq ft	\$0.01	80%	\$0.01	248,386	241,081	241,081	37,539	36,389	36,304	3.78	3.67	3.66	-	-	-
Retail - E	Existing	Refrigeration	Electric	Open Display Case	4330 kWh/yr	per sq ft	\$0.01	80%	\$0.01	374,396	363,385	363,385	11,861	11,482	11,441	1.19	1.16	1.15	-	-	-
Retail - E	Existing	Food Preparation	Electric	Oven	Energy Star	per sq ft	\$0.00	80%	\$0.00	35,653	34,604	34,604	3,659	3,550	3,541	0.52	0.50	0.50	-	-	-
Retail - E	Existing	Food Preparation	Electric	Fryer	Energy Star	per sq ft	\$0.00	80%	\$0.00	34,279	33,271	33,271	2,207	2,142	2,136	0.31	0.30	0.30	-	-	-
Retail - E	Existing	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.00	80%	\$0.00	60,957	59,164	59,164	32,649	31,677	31,599	4.62	4.48	4.47	-	-	-
Retail - E	Existing	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	80%	\$0.00	344,949	334,803	334,803	21,432	20,795	20,743	2.07	2.01	2.00	-	-	-
Retail - E	Existing	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	80%	\$0.00	387,009	375,626	375,626	3,706	3,596	3,587	0.36	0.35	0.35	-	-	-
Retail - E	Existing	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	80%	\$0.00	975,880	947,177	947,177	56,617	54,932	54,797	5.47	5.31	5.30	-	-	-
Retail - E	Existing	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	80%	\$0.00	163,122	158,324	158,324	1,143	1,109	1,106	0.11	0.11	0.11	-	-	-
Retail - E	Existing	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	80%	\$0.00	485,103	470,835	470,835	4,102	3,980	3,970	0.40	0.38	0.38	-	-	-
Retail - E	New	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.02	80%	\$0.01	1,155,178	1,121,202	1,121,202	62,319	55,739	51,897	7.36	6.58	6.13	-	-	-
Retail - E	New	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.00	80%	\$0.00	801,347	777,778	777,778	24,124	23,406	23,349	2.85	2.76	2.76	-	-	-
Retail - E	New	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.09	80%	\$0.08	801,347	777,778	777,778	228,883	222,071	221,525	27.03	26.23	26.16	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Retail - E	New	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.04	80%	\$0.03	834,386	809,845	809,845	52,202	46,689	43,448	0.48	0.43	0.40	-	-	-
Retail - E	New	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	80%	\$0.00	856,001	830,824	830,824	291	283	282	0.00	0.00	0.00	-	-	-
Retail - E	New	Refrigeration	Electric	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.01	80%	\$0.00	22,636	21,970	21,970	475	461	460	0.05	0.05	0.05	-	-	-
Retail - E	New	Refrigeration	Electric	Glass Door Display	6800 kWh/yr	per sq ft	\$0.01	80%	\$0.01	99,948	97,009	97,009	15,106	14,641	14,605	1.52	1.48	1.47	-	-	-
Retail - E	New	Refrigeration	Electric	Open Display Case	4330 kWh/yr	per sq ft	\$0.01	80%	\$0.01	99,948	97,009	97,009	3,166	3,064	3,052	0.32	0.31	0.31	-	-	-
Retail - E	New	Food Preparation	Electric	Oven	Energy Star	per sq ft	\$0.00	80%	\$0.00	9,151	8,881	8,881	939	911	909	0.13	0.13	0.13	-	-	-
Retail - E	New	Food Preparation	Electric	Fryer	Energy Star	per sq ft	\$0.00	80%	\$0.00	8,804	8,545	8,545	567	550	549	0.08	0.08	0.08	-	-	-
Retail - E	New	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.00	80%	\$0.00	15,648	15,188	15,188	8,381	8,132	8,112	1.19	1.15	1.15	-	-	-
Retail - E	New	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	80%	\$0.00	36,365	35,295	35,295	2,259	2,192	2,187	0.22	0.21	0.21	-	-	-
Retail - E	New	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	80%	\$0.00	42,930	41,668	41,668	411	399	398	0.04	0.04	0.04	-	-	-
Retail - E	New	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	80%	\$0.00	99,507	96,580	96,580	5,773	5,601	5,587	0.56	0.54	0.54	-	-	-
Retail - E	New	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	80%	\$0.00	18,949	18,392	18,392	133	129	129	0.01	0.01	0.01	-	-	-
Retail - E	New	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	80%	\$0.00	68,591	66,574	66,574	580	563	561	0.06	0.05	0.05	-	-	-
Grocery - E	Existing	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.02	80%	\$0.02	1,125,470	1,092,368	1,092,368	134,699	120,456	111,776	24.36	21.78	20.21	-	-	-
Grocery - E	Existing	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.00	80%	\$0.00	681,510	661,466	661,466	14,768	14,328	14,293	2.67	2.59	2.58	-	-	-
Grocery - E	Existing	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.14	80%	\$0.11	396,953	385,278	385,278	245,678	238,366	237,780	44.42	43.10	42.99	-	-	-
Grocery - E	Existing	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.01	80%	\$0.01	724,777	703,460	703,460	21,921	19,603	18,173	0.20	0.18	0.17	-	-	-
Grocery - E	Existing	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	80%	\$0.00	-	-	357,155	-	-	970	-	-	0.01	-	-	-
Grocery - E	Existing	Refrigeration	Electric	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.21	80%	\$0.17	12,780	12,404	12,404	10,677	10,300	10,227	1.18	1.14	1.13	-	-	-
Grocery - E	Existing	Refrigeration	Electric	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	80%	\$0.00	2,874	2,790	2,790	232	225	225	0.03	0.02	0.02	-	-	-
Grocery - E	Existing	Refrigeration	Electric	Glass Door Display	6800 kWh/yr	per sq ft	\$0.57	80%	\$0.46	51,023	49,522	49,522	296,791	287,698	287,026	32.88	31.87	31.80	-	-	-
Grocery - E	Existing	Food Preparation	Electric	Oven	Energy Star	per sq ft	\$0.00	80%	\$0.00	28,455	27,618	27,618	3,042	2,952	2,944	0.74	0.72	0.71	-	-	-
Grocery - E	Existing	Food Preparation	Electric	Fryer	Energy Star	per sq ft	\$0.00	80%	\$0.00	42,695	41,439	41,439	2,864	2,779	2,772	0.69	0.67	0.67	-	-	-
Grocery - E	Existing	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.01	80%	\$0.00	12,969	12,587	12,587	7,237	7,021	7,004	1.76	1.70	1.70	-	-	-
Grocery - E	Existing	Food Preparation	Electric	Hot Food Container	Energy Star	per sq ft	\$0.06	80%	\$0.04	24,377	23,660	23,660	8,733	8,473	8,452	2.12	2.06	2.05	-	-	-
Grocery - E	Existing	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	80%	\$0.00	38,571	37,436	37,436	2,652	2,573	2,567	0.32	0.31	0.31	-	-	-
Grocery - E	Existing	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	80%	\$0.00	36,170	35,106	35,106	383	372	371	0.05	0.04	0.04	-	-	-
Grocery - E	Existing	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	80%	\$0.00	90,633	87,967	87,967	2,910	2,823	2,816	0.35	0.34	0.34	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Grocery - E	Existing	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	80%	\$0.00	18,000	17,471	17,471	140	135	135	0.02	0.02	0.02	-	-	-
Grocery - E	Existing	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	80%	\$0.00	62,387	60,552	60,552	584	566	565	0.07	0.07	0.07	-	-	-
Grocery - E	New	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.02	80%	\$0.02	119,382	115,870	115,870	13,665	12,412	11,525	2.47	2.24	2.08	-	-	-
Grocery - E	New	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.00	80%	\$0.00	87,990	85,402	85,402	1,907	1,850	1,845	0.34	0.33	0.33	-	-	-
Grocery - E	New	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.14	80%	\$0.11	85,422	82,910	82,910	52,869	51,295	51,169	9.56	9.27	9.25	-	-	-
Grocery - E	New	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.01	80%	\$0.01	86,752	84,200	84,200	2,510	2,274	2,113	0.02	0.02	0.02	-	-	-
Grocery - E	New	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	80%	\$0.00	93,992	91,227	91,227	256	248	248	0.00	0.00	0.00	-	-	-
Grocery - E	New	Refrigeration	Electric	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.21	80%	\$0.17	3,371	3,272	3,272	2,817	2,715	2,693	0.31	0.30	0.30	-	-	-
Grocery - E	New	Refrigeration	Electric	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	80%	\$0.00	690	670	670	56	55	54	0.01	0.01	0.01	-	-	-
Grocery - E	New	Refrigeration	Electric	Glass Door Display	6800 kWh/yr	per sq ft	\$0.57	80%	\$0.46	20,385	19,786	19,786	118,578	114,934	114,653	13.14	12.73	12.70	-	-	-
Grocery - E	New	Food Preparation	Electric	Oven	Energy Star	per sq ft	\$0.00	80%	\$0.00	7,303	7,088	7,088	781	758	756	0.19	0.18	0.18	-	-	-
Grocery - E	New	Food Preparation	Electric	Fryer	Energy Star	per sq ft	\$0.00	80%	\$0.00	10,966	10,643	10,643	736	714	712	0.18	0.17	0.17	-	-	-
Grocery - E	New	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.01	80%	\$0.00	3,329	3,231	3,231	1,858	1,802	1,798	0.45	0.44	0.44	-	-	-
Grocery - E	New	Food Preparation	Electric	Hot Food Container	Energy Star	per sq ft	\$0.06	80%	\$0.04	6,877	6,674	6,674	2,464	2,390	2,384	0.60	0.58	0.58	-	-	-
Grocery - E	New	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	80%	\$0.00	4,066	3,947	3,947	280	271	271	0.03	0.03	0.03	-	-	-
Grocery - E	New	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	80%	\$0.00	4,022	3,904	3,904	43	41	41	0.01	0.00	0.00	-	-	-
Grocery - E	New	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	80%	\$0.00	9,241	8,970	8,970	297	288	287	0.04	0.03	0.03	-	-	-
Grocery - E	New	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	80%	\$0.00	2,091	2,030	2,030	16	16	16	0.00	0.00	0.00	-	-	-
Grocery - E	New	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	80%	\$0.00	8,821	8,562	8,562	83	80	80	0.01	0.01	0.01	-	-	-
College - E	Existing	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.01	80%	\$0.01	8,170,223	7,929,922	7,929,922	627,824	562,228	520,507	88.49	79.25	73.37	-	-	-
College - E	Existing	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.00	80%	\$0.00	4,590,590	4,455,573	4,455,573	254,445	246,872	246,265	35.87	34.80	34.71	-	-	-
College - E	Existing	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.06	80%	\$0.04	2,754,724	2,673,703	2,673,703	761,906	739,231	737,413	107.39	104.20	103.94	-	-	-
College - E	Existing	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.02	80%	\$0.01	5,260,754	5,106,026	5,106,026	215,546	192,984	178,765	2.00	1.79	1.66	-	-	-
College - E	Existing	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	80%	\$0.00	-	-	2,405,760	-	-	153	-	-	0.00	-	-	-
College - E	Existing	Refrigeration	Electric	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.00	80%	\$0.00	24,231	23,519	23,519	566	546	542	0.06	0.06	0.06	-	-	-
College - E	Existing	Refrigeration	Electric	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	80%	\$0.00	31,295	30,375	30,375	496	481	480	0.05	0.05	0.05	-	-	-
College - E	Existing	Refrigeration	Electric	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	80%	\$0.00	94,952	92,160	92,160	5,408	5,243	5,230	0.58	0.56	0.56	-	-	-
College - E	Existing	Refrigeration	Electric	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	80%	\$0.00	143,123	138,914	138,914	1,709	1,654	1,648	0.18	0.18	0.18	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
College - E	Existing	Refrigeration	Electric	Icemaker	5.5 kWh/100 lbs	per sq ft	\$0.00	80%	\$0.00	-	-	156,161	-	-	1,415	-	-	0.15	-	-	-
College - E	Existing	Food Preparation	Electric	Oven	Energy Star	per sq ft	\$0.00	80%	\$0.00	336,961	327,050	327,050	2,696	2,616	2,609	0.47	0.46	0.46	-	-	-
College - E	Existing	Food Preparation	Electric	Fryer	Energy Star	per sq ft	\$0.00	80%	\$0.00	505,596	490,726	490,726	2,538	2,463	2,457	0.44	0.43	0.43	-	-	-
College - E	Existing	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.00	80%	\$0.00	218,235	211,817	211,817	9,113	8,842	8,820	1.59	1.54	1.54	-	-	-
College - E	Existing	Food Preparation	Electric	Hot Food Container	Energy Star	per sq ft	\$0.00	80%	\$0.00	131,848	127,970	127,970	3,535	3,430	3,421	0.62	0.60	0.60	-	-	-
College - E	Existing	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	80%	\$0.00	278,782	270,583	270,583	49,676	48,198	48,079	5.20	5.04	5.03	-	-	-
College - E	Existing	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	80%	\$0.00	239,941	232,884	232,884	6,590	6,394	6,378	0.69	0.67	0.67	-	-	-
College - E	Existing	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	80%	\$0.00	410,612	398,535	398,535	22,773	22,096	22,041	2.38	2.31	2.31	-	-	-
College - E	Existing	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	80%	\$0.00	132,011	128,128	128,128	2,653	2,574	2,568	0.28	0.27	0.27	-	-	-
College - E	Existing	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	80%	\$0.00	426,538	413,993	413,993	17,239	16,726	16,685	1.80	1.75	1.75	-	-	-
College - E	Existing	Office Equipment	Electric	POS Terminal	Energy Star	per sq ft	\$0.00	80%	\$0.00	-	-	318,831	-	-	12,585	-	-	1.32	-	-	-
College - E	New	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.01	80%	\$0.01	877,199	851,399	851,399	67,077	60,693	56,000	9.45	8.56	7.89	-	-	-
College - E	New	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.00	80%	\$0.00	592,695	575,263	575,263	32,852	31,874	31,796	4.63	4.49	4.48	-	-	-
College - E	New	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.06	80%	\$0.04	592,695	575,263	575,263	163,929	159,050	158,659	23.11	22.42	22.36	-	-	-
College - E	New	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.02	80%	\$0.01	632,247	613,652	613,652	25,778	23,284	21,507	0.24	0.22	0.20	-	-	-
College - E	New	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	80%	\$0.00	633,118	614,497	614,497	40	39	39	0.00	0.00	0.00	-	-	-
College - E	New	Refrigeration	Electric	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.00	80%	\$0.00	5,632	5,466	5,466	132	127	126	0.01	0.01	0.01	-	-	-
College - E	New	Refrigeration	Electric	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	80%	\$0.00	8,428	8,181	8,181	133	129	129	0.01	0.01	0.01	-	-	-
College - E	New	Refrigeration	Electric	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	80%	\$0.00	38,629	37,493	37,493	2,200	2,133	2,127	0.24	0.23	0.23	-	-	-
College - E	New	Refrigeration	Electric	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	80%	\$0.00	38,629	37,493	37,493	461	446	445	0.05	0.05	0.05	-	-	-
College - E	New	Refrigeration	Electric	Icemaker	5.5 kWh/100 lbs	per sq ft	\$0.00	80%	\$0.00	-	-	43,065	-	-	384	-	-	0.04	-	-	-
College - E	New	Food Preparation	Electric	Oven	Energy Star	per sq ft	\$0.00	80%	\$0.00	88,297	85,700	85,700	706	685	684	0.12	0.12	0.12	-	-	-
College - E	New	Food Preparation	Electric	Fryer	Energy Star	per sq ft	\$0.00	80%	\$0.00	132,589	128,690	128,690	666	646	644	0.12	0.11	0.11	-	-	-
College - E	New	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.00	80%	\$0.00	57,067	55,388	55,388	2,383	2,312	2,306	0.42	0.40	0.40	-	-	-
College - E	New	Food Preparation	Electric	Hot Food Container	Energy Star	per sq ft	\$0.00	80%	\$0.00	37,894	36,780	36,780	1,016	986	983	0.18	0.17	0.17	-	-	-
College - E	New	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	80%	\$0.00	29,714	28,840	28,840	5,295	5,137	5,124	0.55	0.54	0.54	-	-	-
College - E	New	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	80%	\$0.00	26,690	25,905	25,905	733	711	709	0.08	0.07	0.07	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
College - E	New	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	80%	\$0.00	42,616	41,363	41,363	2,364	2,293	2,288	0.25	0.24	0.24	-	-	-
College - E	New	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	80%	\$0.00	15,433	14,979	14,979	310	301	300	0.03	0.03	0.03	-	-	-
College - E	New	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	80%	\$0.00	60,755	58,968	58,968	2,455	2,382	2,377	0.26	0.25	0.25	-	-	-
College - E	New	Office Equipment	Electric	POS Terminal	Energy Star	per sq ft	\$0.00	80%	\$0.00	-	-	63,062	-	-	2,489	-	-	0.26	-	-	-
School - E	Existing	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.01	80%	\$0.01	7,603,754	7,380,114	7,380,114	117,711	105,413	97,590	8.88	7.95	7.36	-	-	-
School - E	Existing	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.01	80%	\$0.01	4,272,310	4,146,653	4,146,653	141,516	137,304	136,966	10.67	10.36	10.33	-	-	-
School - E	Existing	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.11	80%	\$0.09	2,563,730	2,488,326	2,488,326	585,167	567,751	566,355	44.13	42.82	42.72	-	-	-
School - E	Existing	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.01	80%	\$0.01	4,896,009	4,752,008	4,752,008	68,692	61,501	56,970	0.64	0.57	0.53	-	-	-
School - E	Existing	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	80%	\$0.00	-	-	2,238,961	-	-	114	-	-	0.00	-	-	-
School - E	Existing	Refrigeration	Electric	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.01	80%	\$0.01	97,340	94,477	94,477	2,565	2,474	2,457	0.27	0.26	0.26	-	-	-
School - E	Existing	Refrigeration	Electric	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	80%	\$0.00	42,838	41,578	41,578	764	741	740	0.08	0.08	0.08	-	-	-
School - E	Existing	Refrigeration	Electric	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	80%	\$0.00	213,559	207,277	207,277	13,712	13,292	13,261	1.46	1.41	1.41	-	-	-
School - E	Existing	Refrigeration	Electric	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	80%	\$0.00	-	-	289,547	-	-	5,090	-	-	0.54	-	-	-
School - E	Existing	Food Preparation	Electric	Oven	Energy Star	per sq ft	\$0.00	80%	\$0.00	111,211	107,940	107,940	2,349	2,279	2,274	0.13	0.13	0.13	-	-	-
School - E	Existing	Food Preparation	Electric	Fryer	Energy Star	per sq ft	\$0.00	80%	\$0.00	35,572	34,526	34,526	471	457	456	0.03	0.03	0.03	-	-	-
School - E	Existing	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.00	80%	\$0.00	210,490	204,299	204,299	23,205	22,515	22,459	1.31	1.27	1.27	-	-	-
School - E	Existing	Food Preparation	Electric	Hot Food Container	Energy Star	per sq ft	\$0.00	80%	\$0.00	60,765	58,977	58,977	4,301	4,173	4,163	0.24	0.24	0.23	-	-	-
School - E	Existing	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	80%	\$0.00	255,151	247,646	247,646	20,136	19,537	19,489	1.14	1.11	1.10	-	-	-
School - E	Existing	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	80%	\$0.00	317,582	308,241	308,241	2,575	2,499	2,493	0.15	0.14	0.14	-	-	-
School - E	Existing	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	80%	\$0.00	888,433	862,302	862,302	43,647	42,348	42,244	2.47	2.40	2.39	-	-	-
School - E	Existing	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	80%	\$0.00	122,858	119,245	119,245	1,094	1,061	1,058	0.06	0.06	0.06	-	-	-
School - E	Existing	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	80%	\$0.00	396,965	385,289	385,289	14,211	13,788	13,754	0.81	0.78	0.78	-	-	-
School - E	Existing	Office Equipment	Electric	POS Terminal	Energy Star	per sq ft	\$0.00	80%	\$0.00	204,738	198,716	198,716	2,872	2,786	2,779	0.16	0.16	0.16	-	-	-
School - E	New	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.01	80%	\$0.01	816,380	792,369	792,369	12,576	11,379	10,500	0.95	0.86	0.79	-	-	-
School - E	New	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.01	80%	\$0.01	551,601	535,378	535,378	18,271	17,727	17,684	1.38	1.34	1.33	-	-	-
School - E	New	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.11	80%	\$0.09	551,601	535,378	535,378	125,902	122,155	121,855	9.50	9.21	9.19	-	-	-
School - E	New	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.01	80%	\$0.01	588,412	571,105	571,105	8,215	7,420	6,854	0.08	0.07	0.06	-	-	-
School - E	New	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	80%	\$0.00	589,222	571,892	571,892	30	29	29	0.00	0.00	0.00	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
School - E	New	Refrigeration	Electric	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.01	80%	\$0.01	26,085	25,318	25,318	687	663	657	0.07	0.07	0.07	-	-	-
School - E	New	Refrigeration	Electric	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	80%	\$0.00	11,891	11,541	11,541	212	206	205	0.02	0.02	0.02	-	-	-
School - E	New	Refrigeration	Electric	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	80%	\$0.00	85,732	83,210	83,210	5,505	5,336	5,323	0.59	0.57	0.57	-	-	-
School - E	New	Refrigeration	Electric	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	80%	\$0.00	-	-	94,873	-	-	1,558	-	-	0.17	-	-	-
School - E	New	Food Preparation	Electric	Oven	Energy Star	per sq ft	\$0.00	80%	\$0.00	30,192	29,304	29,304	638	619	617	0.04	0.03	0.03	-	-	-
School - E	New	Food Preparation	Electric	Fryer	Energy Star	per sq ft	\$0.00	80%	\$0.00	8,723	8,466	8,466	116	112	112	0.01	0.01	0.01	-	-	-
School - E	New	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.00	80%	\$0.00	55,006	53,388	53,388	6,064	5,884	5,869	0.34	0.33	0.33	-	-	-
School - E	New	Food Preparation	Electric	Hot Food Container	Energy Star	per sq ft	\$0.00	80%	\$0.00	17,793	17,270	17,270	1,259	1,222	1,219	0.07	0.07	0.07	-	-	-
School - E	New	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	80%	\$0.00	27,200	26,400	26,400	2,147	2,083	2,078	0.12	0.12	0.12	-	-	-
School - E	New	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	80%	\$0.00	35,147	34,113	34,113	285	277	276	0.02	0.02	0.02	-	-	-
School - E	New	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	80%	\$0.00	91,250	88,566	88,566	4,483	4,349	4,339	0.25	0.25	0.25	-	-	-
School - E	New	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	80%	\$0.00	14,363	13,940	13,940	128	124	124	0.01	0.01	0.01	-	-	-
School - E	New	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	80%	\$0.00	56,543	54,880	54,880	2,024	1,964	1,959	0.11	0.11	0.11	-	-	-
School - E	New	Office Equipment	Electric	POS Terminal	Energy Star	per sq ft	\$0.00	80%	\$0.00	27,455	26,648	26,648	385	374	373	0.02	0.02	0.02	-	-	-
Health - E	Existing	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.03	80%	\$0.02	5,438,329	5,278,378	5,278,378	629,727	562,440	521,506	66.22	59.14	54.84	-	-	-
Health - E	Existing	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.01	80%	\$0.00	3,274,152	3,177,853	3,177,853	152,392	147,856	147,493	16.02	15.55	15.51	-	-	-
Health - E	Existing	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.06	80%	\$0.05	1,906,984	1,850,897	1,850,897	412,638	400,357	399,372	43.39	42.10	42.00	-	-	-
Health - E	Existing	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.00	80%	\$0.00	3,513,138	3,409,811	3,409,811	9,726	8,688	8,052	0.09	0.08	0.07	-	-	-
Health - E	Existing	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	80%	\$0.00	-	-	1,715,863	-	-	62	-	-	0.00	-	-	-
Health - E	Existing	Refrigeration	Electric	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.00	80%	\$0.00	34,875	33,849	33,849	984	949	942	0.10	0.10	0.10	-	-	-
Health - E	Existing	Refrigeration	Electric	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	80%	\$0.00	16,861	16,365	16,365	162	157	157	0.02	0.02	0.02	-	-	-
Health - E	Existing	Refrigeration	Electric	Glass Door Display	6800 kWh/yr	per sq ft	\$0.01	80%	\$0.00	215,980	209,627	209,627	14,846	14,391	14,358	1.56	1.51	1.51	-	-	-
Health - E	Existing	Food Preparation	Electric	Oven	Energy Star	per sq ft	\$0.00	80%	\$0.00	92,488	89,768	89,768	6,441	6,249	6,234	0.74	0.71	0.71	-	-	-
Health - E	Existing	Food Preparation	Electric	Fryer	Energy Star	per sq ft	\$0.00	80%	\$0.00	139,383	135,284	135,284	6,091	5,909	5,895	0.70	0.68	0.67	-	-	-
Health - E	Existing	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.01	80%	\$0.01	145,461	141,182	141,182	52,870	51,297	51,171	6.04	5.86	5.85	-	-	-
Health - E	Existing	Food Preparation	Electric	Hot Food Container	Energy Star	per sq ft	\$0.01	80%	\$0.01	25,560	24,809	24,809	5,965	5,787	5,773	0.68	0.66	0.66	-	-	-
Health - E	Existing	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	80%	\$0.00	195,032	189,295	189,295	25,824	25,055	24,994	2.60	2.52	2.52	-	-	-
Health - E	Existing	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	80%	\$0.00	190,164	184,571	184,571	3,881	3,766	3,756	0.39	0.38	0.38	-	-	-

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										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Health - E	Existing	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	80%	\$0.00	640,197	621,367	621,367	19,788	19,199	19,152	1.99	1.93	1.93	-	-	-
Health - E	Existing	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	80%	\$0.00	93,641	90,887	90,887	1,398	1,357	1,353	0.14	0.14	0.14	-	-	-
Health - E	Existing	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	80%	\$0.00	304,220	295,273	295,273	13,705	13,297	13,264	1.38	1.34	1.34	-	-	-
Health - E	New	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.03	80%	\$0.02	582,576	565,442	565,442	67,811	60,435	55,833	7.13	6.36	5.87	-	-	-
Health - E	New	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.01	80%	\$0.00	422,728	410,295	410,295	19,675	19,090	19,043	2.07	2.01	2.00	-	-	-
Health - E	New	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.06	80%	\$0.05	410,343	398,274	398,274	88,791	86,148	85,936	9.34	9.06	9.04	-	-	-
Health - E	New	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.00	80%	\$0.00	419,919	407,569	407,569	1,169	1,042	963	0.01	0.01	0.01	-	-	-
Health - E	New	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	80%	\$0.00	451,560	438,278	438,278	16	16	16	0.00	0.00	0.00	-	-	-
Health - E	New	Refrigeration	Electric	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.00	80%	\$0.00	9,096	8,829	8,829	257	247	245	0.03	0.03	0.03	-	-	-
Health - E	New	Refrigeration	Electric	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	80%	\$0.00	3,712	3,603	3,603	35	34	34	0.00	0.00	0.00	-	-	-
Health - E	New	Refrigeration	Electric	Glass Door Display	6800 kWh/yr	per sq ft	\$0.01	80%	\$0.00	86,505	83,961	83,961	5,946	5,764	5,749	0.63	0.61	0.61	-	-	-
Health - E	New	Food Preparation	Electric	Oven	Energy Star	per sq ft	\$0.00	80%	\$0.00	24,919	24,186	24,186	1,735	1,684	1,680	0.20	0.19	0.19	-	-	-
Health - E	New	Food Preparation	Electric	Fryer	Energy Star	per sq ft	\$0.00	80%	\$0.00	37,597	36,491	36,491	1,643	1,594	1,590	0.19	0.18	0.18	-	-	-
Health - E	New	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.01	80%	\$0.01	38,458	37,327	37,327	13,978	13,562	13,529	1.60	1.55	1.55	-	-	-
Health - E	New	Food Preparation	Electric	Hot Food Container	Energy Star	per sq ft	\$0.01	80%	\$0.01	7,393	7,175	7,175	1,725	1,674	1,670	0.20	0.19	0.19	-	-	-
Health - E	New	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	80%	\$0.00	20,792	20,180	20,180	2,753	2,671	2,665	0.28	0.27	0.27	-	-	-
Health - E	New	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	80%	\$0.00	21,117	20,496	20,496	431	418	417	0.04	0.04	0.04	-	-	-
Health - E	New	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	80%	\$0.00	65,787	63,852	63,852	2,033	1,973	1,968	0.20	0.20	0.20	-	-	-
Health - E	New	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	80%	\$0.00	10,948	10,626	10,626	163	159	158	0.02	0.02	0.02	-	-	-
Health - E	New	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	80%	\$0.00	43,332	42,058	42,058	1,952	1,894	1,889	0.20	0.19	0.19	-	-	-
Lodging - E	Existing	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.11	80%	\$0.09	5,039,489	4,891,268	4,891,268	1,804,122	1,610,982	1,492,338	146.62	130.93	121.28	-	-	-
Lodging - E	Existing	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.00	80%	\$0.00	3,034,159	2,944,920	2,944,920	44,751	43,419	43,312	3.64	3.53	3.52	-	-	-
Lodging - E	Existing	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.02	80%	\$0.02	1,769,569	1,717,523	1,717,523	96,118	93,257	93,028	7.81	7.58	7.56	-	-	-
Lodging - E	Existing	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.03	80%	\$0.02	3,252,845	3,157,173	3,157,173	105,757	94,457	87,512	0.98	0.88	0.81	-	-	-
Lodging - E	Existing	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	80%	\$0.00	-	-	1,590,092	-	-	77	-	-	0.00	-	-	-
Lodging - E	Existing	Refrigeration	Electric	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.01	80%	\$0.01	49,804	48,339	48,339	1,606	1,549	1,538	0.16	0.16	0.16	-	-	-
Lodging - E	Existing	Refrigeration	Electric	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	80%	\$0.00	21,002	20,385	20,385	227	220	220	0.02	0.02	0.02	-	-	-
Lodging - E	Existing	Refrigeration	Electric	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	80%	\$0.00	136,205	132,199	132,199	10,699	10,372	10,347	1.09	1.05	1.05	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Lodging - E	Existing	Refrigeration	Electric	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	80%	\$0.00	-	192,104	192,104	-	3,643	3,392	-	0.37	0.34	-	-	-
Lodging - E	Existing	Food Preparation	Electric	Oven	Energy Star	per sq ft	\$0.00	80%	\$0.00	197,602	191,790	191,790	1,688	1,638	1,634	0.20	0.19	0.19	-	-	-
Lodging - E	Existing	Food Preparation	Electric	Fryer	Energy Star	per sq ft	\$0.00	80%	\$0.00	104,248	101,181	101,181	559	542	541	0.07	0.06	0.06	-	-	-
Lodging - E	Existing	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.00	80%	\$0.00	237,684	230,693	230,693	10,599	10,283	10,258	1.24	1.21	1.20	-	-	-
Lodging - E	Existing	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	80%	\$0.00	171,659	166,610	166,610	3,342	3,243	3,235	0.30	0.29	0.29	-	-	-
Lodging - E	Existing	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	80%	\$0.00	186,686	181,195	181,195	560	544	542	0.05	0.05	0.05	-	-	-
Lodging - E	Existing	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	80%	\$0.00	556,819	540,442	540,442	5,061	4,911	4,899	0.45	0.44	0.44	-	-	-
Lodging - E	Existing	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	80%	\$0.00	79,916	77,566	77,566	175	170	170	0.02	0.02	0.02	-	-	-
Lodging - E	Existing	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	80%	\$0.00	255,718	248,197	248,197	678	657	656	0.06	0.06	0.06	-	-	-
Lodging - E	New	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.11	80%	\$0.09	543,200	527,223	527,223	193,106	173,798	160,844	15.69	14.12	13.07	-	-	-
Lodging - E	New	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.00	80%	\$0.00	391,743	380,221	380,221	5,778	5,606	5,592	0.47	0.46	0.45	-	-	-
Lodging - E	New	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.02	80%	\$0.02	379,720	368,552	368,552	20,625	20,011	19,962	1.68	1.63	1.62	-	-	-
Lodging - E	New	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.03	80%	\$0.02	390,963	379,464	379,464	12,622	11,349	10,509	0.12	0.11	0.10	-	-	-
Lodging - E	New	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	80%	\$0.00	418,461	406,153	406,153	20	20	20	0.00	0.00	0.00	-	-	-
Lodging - E	New	Refrigeration	Electric	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.01	80%	\$0.01	13,478	13,082	13,082	434	419	415	0.04	0.04	0.04	-	-	-
Lodging - E	New	Refrigeration	Electric	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	80%	\$0.00	5,334	5,177	5,177	58	56	56	0.01	0.01	0.01	-	-	-
Lodging - E	New	Refrigeration	Electric	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	80%	\$0.00	54,737	53,128	53,128	4,300	4,168	4,157	0.44	0.42	0.42	-	-	-
Lodging - E	New	Refrigeration	Electric	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	80%	\$0.00	-	57,089	57,089	-	1,052	986	-	0.11	0.10	-	-	-
Lodging - E	New	Food Preparation	Electric	Oven	Energy Star	per sq ft	\$0.00	80%	\$0.00	52,514	50,970	50,970	449	435	434	0.05	0.05	0.05	-	-	-
Lodging - E	New	Food Preparation	Electric	Fryer	Energy Star	per sq ft	\$0.00	80%	\$0.00	27,866	27,046	27,046	149	145	145	0.02	0.02	0.02	-	-	-
Lodging - E	New	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.00	80%	\$0.00	61,374	59,569	59,569	2,737	2,655	2,649	0.32	0.31	0.31	-	-	-
Lodging - E	New	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	80%	\$0.00	18,311	17,772	17,772	357	346	345	0.03	0.03	0.03	-	-	-
Lodging - E	New	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	80%	\$0.00	20,713	20,104	20,104	62	60	60	0.01	0.01	0.01	-	-	-
Lodging - E	New	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	80%	\$0.00	57,251	55,567	55,567	520	505	504	0.05	0.05	0.05	-	-	-
Lodging - E	New	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	80%	\$0.00	9,348	9,073	9,073	21	20	20	0.00	0.00	0.00	-	-	-
Lodging - E	New	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	80%	\$0.00	36,451	35,379	35,379	97	94	93	0.01	0.01	0.01	-	-	-
Warehouse - E	Existing	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.01	80%	\$0.01	8,288,688	8,044,903	8,044,903	276,813	247,322	229,129	50.05	44.72	41.43	-	-	-
Warehouse - E	Existing	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.01	80%	\$0.01	4,975,700	4,829,356	4,829,356	374,519	363,373	362,479	67.71	65.70	65.54	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Warehouse - E	Existing	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.04	80%	\$0.03	2,985,821	2,898,003	2,898,003	246,802	239,457	238,868	44.62	43.29	43.19	-	-	-
Warehouse - E	Existing	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.00	80%	\$0.00	5,347,307	5,190,033	5,190,033	650	580	538	0.01	0.01	0.00	-	-	-
Warehouse - E	Existing	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	80%	\$0.00	-	-	2,607,582	-	-	18	-	-	0.00	-	-	-
Warehouse - E	Existing	Refrigeration	Electric	Icemaker	5.5 kWh/100 lbs	per sq ft	\$0.08	80%	\$0.06	123,211	119,588	119,588	14,069	13,652	13,636	1.56	1.51	1.51	-	-	-
Warehouse - E	Existing	Food Preparation	Electric	Fryer	Energy Star	per sq ft	\$0.00	80%	\$0.00	43,969	42,676	42,676	34	33	33	0.01	0.01	0.01	-	-	-
Warehouse - E	Existing	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.00	80%	\$0.00	143,337	139,122	139,122	922	894	892	0.22	0.22	0.22	-	-	-
Warehouse - E	Existing	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	80%	\$0.00	240,196	233,131	233,131	8,623	8,366	8,346	1.04	1.01	1.01	-	-	-
Warehouse - E	Existing	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	80%	\$0.00	158,539	153,876	153,876	702	681	679	0.08	0.08	0.08	-	-	-
Warehouse - E	Existing	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	80%	\$0.00	722,516	701,265	701,265	24,220	23,499	23,442	2.92	2.83	2.82	-	-	-
Warehouse - E	Existing	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	80%	\$0.00	107,589	104,425	104,425	436	423	422	0.05	0.05	0.05	-	-	-
Warehouse - E	Existing	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	80%	\$0.00	314,450	305,202	305,202	1,536	1,491	1,487	0.19	0.18	0.18	-	-	-
Warehouse - E	Existing	Office Equipment	Electric	POS Terminal	Energy Star	per sq ft	\$0.00	80%	\$0.00	49,987	48,517	48,517	478	464	463	0.06	0.06	0.06	-	-	-
Warehouse - E	New	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.01	80%	\$0.01	893,996	867,702	867,702	29,974	26,731	24,760	5.42	4.83	4.48	-	-	-
Warehouse - E	New	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.01	80%	\$0.01	642,417	623,522	623,522	48,354	46,915	46,800	8.74	8.48	8.46	-	-	-
Warehouse - E	New	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.04	80%	\$0.03	642,417	623,522	623,522	53,101	51,521	51,394	9.60	9.32	9.29	-	-	-
Warehouse - E	New	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.00	80%	\$0.00	644,140	625,195	625,195	79	70	65	0.00	0.00	0.00	-	-	-
Warehouse - E	New	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	80%	\$0.00	686,231	666,048	666,048	5	5	5	0.00	0.00	0.00	-	-	-
Warehouse - E	New	Refrigeration	Electric	Icemaker	5.5 kWh/100 lbs	per sq ft	\$0.08	80%	\$0.06	29,117	28,261	28,261	3,266	3,170	3,166	0.36	0.35	0.35	-	-	-
Warehouse - E	New	Food Preparation	Electric	Fryer	Energy Star	per sq ft	\$0.00	80%	\$0.00	10,870	10,551	10,551	8	8	8	0.00	0.00	0.00	-	-	-
Warehouse - E	New	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.00	80%	\$0.00	37,928	36,812	36,812	244	237	236	0.06	0.06	0.06	-	-	-
Warehouse - E	New	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	80%	\$0.00	25,673	24,918	24,918	922	894	892	0.11	0.11	0.11	-	-	-
Warehouse - E	New	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	80%	\$0.00	17,829	17,305	17,305	79	77	76	0.01	0.01	0.01	-	-	-
Warehouse - E	New	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	80%	\$0.00	74,463	72,273	72,273	2,496	2,422	2,416	0.30	0.29	0.29	-	-	-
Warehouse - E	New	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	80%	\$0.00	12,604	12,233	12,233	51	50	49	0.01	0.01	0.01	-	-	-
Warehouse - E	New	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	80%	\$0.00	44,944	43,622	43,622	220	213	213	0.03	0.03	0.03	-	-	-
Warehouse - E	New	Office Equipment	Electric	POS Terminal	Energy Star	per sq ft	\$0.00	80%	\$0.00	6,698	6,501	6,501	64	62	62	0.01	0.01	0.01	-	-	-
Misc. - E	Existing	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.03	80%	\$0.02	15,787,825	15,323,478	15,323,478	1,264,096	1,130,434	1,047,436	160.33	143.37	132.85	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Misc. - E	Existing	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.01	80%	\$0.01	9,445,480	9,167,672	9,167,672	545,376	529,144	527,843	69.17	67.11	66.95	-	-	-
Misc. - E	Existing	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.07	80%	\$0.06	5,668,050	5,501,342	5,501,342	898,630	871,885	869,741	113.97	110.58	110.31	-	-	-
Misc. - E	Existing	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.04	80%	\$0.03	10,169,203	9,870,108	9,870,108	439,099	392,670	363,840	4.06	3.63	3.37	-	-	-
Misc. - E	Existing	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	80%	\$0.00	-	-	4,950,030	-	-	89,999	-	-	0.83	-	-	-
Misc. - E	Existing	Refrigeration	Electric	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.01	80%	\$0.01	164,479	159,641	159,641	5,223	5,038	5,002	0.55	0.53	0.52	-	-	-
Misc. - E	Existing	Refrigeration	Electric	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	80%	\$0.00	73,075	70,926	70,926	785	761	761	0.08	0.08	0.08	-	-	-
Misc. - E	Existing	Refrigeration	Electric	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	80%	\$0.00	159,978	155,273	155,273	12,378	11,999	11,971	1.29	1.25	1.25	-	-	-
Misc. - E	Existing	Refrigeration	Electric	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	80%	\$0.00	241,138	234,045	234,045	3,911	3,786	3,772	0.41	0.40	0.39	-	-	-
Misc. - E	Existing	Refrigeration	Electric	Icemaker	5.5 kWh/100 lbs	per sq ft	\$0.01	80%	\$0.00	278,224	270,041	270,041	1,715	1,664	1,662	0.18	0.17	0.17	-	-	-
Misc. - E	Existing	Food Preparation	Electric	Oven	Energy Star	per sq ft	\$0.00	80%	\$0.00	474,369	460,416	460,416	4,581	4,445	4,434	0.91	0.89	0.88	-	-	-
Misc. - E	Existing	Food Preparation	Electric	Fryer	Energy Star	per sq ft	\$0.00	80%	\$0.00	51,948	50,420	50,420	315	305	305	0.06	0.06	0.06	-	-	-
Misc. - E	Existing	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.00	80%	\$0.00	165,972	161,090	161,090	8,365	8,116	8,096	1.67	1.62	1.62	-	-	-
Misc. - E	Existing	Food Preparation	Electric	Hot Food Container	Energy Star	per sq ft	\$0.00	80%	\$0.00	49,056	47,614	47,614	1,587	1,540	1,536	0.32	0.31	0.31	-	-	-
Misc. - E	Existing	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	80%	\$0.00	404,666	392,764	392,764	39,931	38,743	38,647	5.56	5.40	5.39	-	-	-
Misc. - E	Existing	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	80%	\$0.00	437,308	424,446	424,446	6,651	6,453	6,437	0.93	0.90	0.90	-	-	-
Misc. - E	Existing	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	80%	\$0.00	825,822	801,533	801,533	38,046	36,913	36,822	5.30	5.14	5.13	-	-	-
Misc. - E	Existing	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	80%	\$0.00	180,922	175,600	175,600	2,013	1,954	1,949	0.28	0.27	0.27	-	-	-
Misc. - E	Existing	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	80%	\$0.00	392,531	380,986	380,986	10,542	10,229	10,203	1.47	1.43	1.42	-	-	-
Misc. - E	New	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.03	80%	\$0.02	1,705,543	1,655,380	1,655,380	136,320	122,882	113,472	17.29	15.59	14.39	-	-	-
Misc. - E	New	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.01	80%	\$0.01	1,219,514	1,183,646	1,183,646	70,414	68,318	68,150	8.93	8.66	8.64	-	-	-
Misc. - E	New	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.07	80%	\$0.06	1,219,514	1,183,646	1,183,646	193,346	187,591	187,130	24.52	23.79	23.73	-	-	-
Misc. - E	New	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.04	80%	\$0.03	1,228,651	1,192,515	1,192,515	52,960	47,681	44,066	0.49	0.44	0.41	-	-	-
Misc. - E	New	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.01	80%	\$0.01	1,302,688	1,264,373	1,264,373	23,752	23,045	22,988	0.22	0.21	0.21	-	-	-
Misc. - E	New	Refrigeration	Electric	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.01	80%	\$0.01	43,391	42,115	42,115	1,378	1,328	1,317	0.14	0.14	0.14	-	-	-
Misc. - E	New	Refrigeration	Electric	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	80%	\$0.00	19,290	18,723	18,723	204	198	198	0.02	0.02	0.02	-	-	-
Misc. - E	New	Refrigeration	Electric	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	80%	\$0.00	65,409	63,485	63,485	5,061	4,905	4,893	0.53	0.51	0.51	-	-	-
Misc. - E	New	Refrigeration	Electric	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	80%	\$0.00	65,409	63,485	63,485	1,061	1,027	1,023	0.11	0.11	0.11	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Misc. - E	New	Refrigeration	Electric	Icemaker	5.5 kWh/100 lbs	per sq ft	\$0.01	80%	\$0.00	65,409	63,485	63,485	396	385	384	0.04	0.04	0.04	-	-	-
Misc. - E	New	Food Preparation	Electric	Oven	Energy Star	per sq ft	\$0.00	80%	\$0.00	121,749	118,168	118,168	1,176	1,141	1,138	0.23	0.23	0.23	-	-	-
Misc. - E	New	Food Preparation	Electric	Fryer	Energy Star	per sq ft	\$0.00	80%	\$0.00	13,342	12,950	12,950	81	78	78	0.02	0.02	0.02	-	-	-
Misc. - E	New	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.00	80%	\$0.00	42,606	41,353	41,353	2,147	2,084	2,078	0.43	0.42	0.41	-	-	-
Misc. - E	New	Food Preparation	Electric	Hot Food Container	Energy Star	per sq ft	\$0.00	80%	\$0.00	13,839	13,432	13,432	448	434	433	0.09	0.09	0.09	-	-	-
Misc. - E	New	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	80%	\$0.00	42,660	41,405	41,405	4,210	4,084	4,074	0.59	0.57	0.57	-	-	-
Misc. - E	New	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	80%	\$0.00	48,753	47,319	47,319	742	719	718	0.10	0.10	0.10	-	-	-
Misc. - E	New	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	80%	\$0.00	84,206	81,729	81,729	3,879	3,764	3,755	0.54	0.52	0.52	-	-	-
Misc. - E	New	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	80%	\$0.00	21,017	20,399	20,399	234	227	226	0.03	0.03	0.03	-	-	-
Misc. - E	New	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	80%	\$0.00	55,502	53,870	53,870	1,491	1,446	1,443	0.21	0.20	0.20	-	-	-
Office - G	Existing	Food Preparation	Natural Gas	Oven	Energy Star	per sq ft	\$0.00	80%	\$0.00	4,501	4,369	4,369	-	-	-	-	-	-	424	414	412
Office - G	Existing	Food Preparation	Natural Gas	Fryer	Energy Star	per sq ft	\$0.01	80%	\$0.00	6,754	6,555	6,555	-	-	-	-	-	-	1,059	1,035	1,030
Office - G	Existing	Food Preparation	Natural Gas	Griddle	High Efficiency	per sq ft	\$0.00	80%	\$0.00	7,401	7,183	7,183	-	-	-	-	-	-	166	162	162
Office - G	Existing	Food Preparation	Natural Gas	Range	High Efficiency	per sq ft	\$0.00	80%	\$0.00	4,501	4,369	4,369	-	-	-	-	-	-	358	349	347
Office - G	New	Food Preparation	Natural Gas	Oven	Energy Star	per sq ft	\$0.00	80%	\$0.00	1,155	1,121	1,121	-	-	-	-	-	-	109	106	106
Office - G	New	Food Preparation	Natural Gas	Fryer	Energy Star	per sq ft	\$0.01	80%	\$0.00	1,735	1,684	1,684	-	-	-	-	-	-	272	266	264
Office - G	New	Food Preparation	Natural Gas	Griddle	High Efficiency	per sq ft	\$0.00	80%	\$0.00	1,900	1,844	1,844	-	-	-	-	-	-	43	42	41
Office - G	New	Food Preparation	Natural Gas	Range	High Efficiency	per sq ft	\$0.00	80%	\$0.00	1,155	1,121	1,121	-	-	-	-	-	-	92	90	89
Restaurant - G	Existing	Food Preparation	Natural Gas	Oven	Energy Star	per sq ft	\$0.00	80%	\$0.00	12,897	12,518	12,518	-	-	-	-	-	-	640	626	622
Restaurant - G	Existing	Food Preparation	Natural Gas	Fryer	Energy Star	per sq ft	\$0.18	80%	\$0.14	133,762	129,828	129,828	-	-	-	-	-	-	11,059	10,802	10,749
Restaurant - G	Existing	Food Preparation	Natural Gas	Broiler	High Efficiency	per sq ft	\$0.05	80%	\$0.04	76,076	73,838	73,838	-	-	-	-	-	-	5,262	5,140	5,115
Restaurant - G	Existing	Food Preparation	Natural Gas	Griddle	High Efficiency	per sq ft	\$0.00	80%	\$0.00	142,916	138,713	138,713	-	-	-	-	-	-	1,691	1,652	1,644
Restaurant - G	Existing	Food Preparation	Natural Gas	Range	High Efficiency	per sq ft	\$0.01	80%	\$0.01	80,570	78,200	78,200	-	-	-	-	-	-	3,373	3,294	3,278
Restaurant - G	Existing	Food Preparation	Natural Gas	Steamer	Energy Star	per sq ft	\$0.01	80%	\$0.01	6,060	5,882	5,882	-	-	-	-	-	-	1,236	1,208	1,202
Restaurant - G	Existing	Food Preparation	Natural Gas	Other	Energy Star	per sq ft	\$0.00	80%	\$0.00	476	462	462	-	-	-	-	-	-	6	6	6
Restaurant - G	New	Food Preparation	Natural Gas	Oven	Energy Star	per sq ft	\$0.00	80%	\$0.00	3,310	3,213	3,213	-	-	-	-	-	-	164	161	160
Restaurant - G	New	Food Preparation	Natural Gas	Fryer	Energy Star	per sq ft	\$0.18	80%	\$0.14	34,356	33,345	33,345	-	-	-	-	-	-	2,840	2,775	2,761
Restaurant - G	New	Food Preparation	Natural Gas	Broiler	High Efficiency	per sq ft	\$0.05	80%	\$0.04	19,525	18,951	18,951	-	-	-	-	-	-	1,351	1,319	1,313

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Restaurant - G	New	Food Preparation	Natural Gas	Griddle	High Efficiency	per sq ft	\$0.00	80%	\$0.00	36,694	35,615	35,615	-	-	-	-	-	-	434	424	422
Restaurant - G	New	Food Preparation	Natural Gas	Range	High Efficiency	per sq ft	\$0.01	80%	\$0.01	20,679	20,071	20,071	-	-	-	-	-	-	866	846	841
Restaurant - G	New	Food Preparation	Natural Gas	Steamer	Energy Star	per sq ft	\$0.01	80%	\$0.01	1,552	1,506	1,506	-	-	-	-	-	-	317	309	308
Restaurant - G	New	Food Preparation	Natural Gas	Other	Energy Star	per sq ft	\$0.00	80%	\$0.00	132	128	128	-	-	-	-	-	-	2	2	2
Retail - G	Existing	Food Preparation	Natural Gas	Oven	Energy Star	per sq ft	\$0.00	80%	\$0.00	1,596	1,549	1,549	-	-	-	-	-	-	454	443	441
Retail - G	Existing	Food Preparation	Natural Gas	Fryer	Energy Star	per sq ft	\$0.00	80%	\$0.00	2,395	2,325	2,325	-	-	-	-	-	-	1,134	1,108	1,102
Retail - G	New	Food Preparation	Natural Gas	Oven	Energy Star	per sq ft	\$0.00	80%	\$0.00	410	398	398	-	-	-	-	-	-	116	114	113
Retail - G	New	Food Preparation	Natural Gas	Fryer	Energy Star	per sq ft	\$0.00	80%	\$0.00	615	597	597	-	-	-	-	-	-	291	284	283
Grocery - G	Existing	Food Preparation	Natural Gas	Oven	Energy Star	per sq ft	\$0.00	80%	\$0.00	13,928	13,519	13,519	-	-	-	-	-	-	148	144	144
Grocery - G	Existing	Food Preparation	Natural Gas	Fryer	Energy Star	per sq ft	\$0.01	80%	\$0.01	20,899	20,284	20,284	-	-	-	-	-	-	369	361	359
Grocery - G	Existing	Food Preparation	Natural Gas	Griddle	High Efficiency	per sq ft	\$0.00	80%	\$0.00	22,902	22,228	22,228	-	-	-	-	-	-	58	57	56
Grocery - G	Existing	Food Preparation	Natural Gas	Range	High Efficiency	per sq ft	\$0.00	80%	\$0.00	13,928	13,519	13,519	-	-	-	-	-	-	125	122	121
Grocery - G	New	Food Preparation	Natural Gas	Oven	Energy Star	per sq ft	\$0.00	80%	\$0.00	3,575	3,470	3,470	-	-	-	-	-	-	38	37	37
Grocery - G	New	Food Preparation	Natural Gas	Fryer	Energy Star	per sq ft	\$0.01	80%	\$0.01	5,368	5,210	5,210	-	-	-	-	-	-	95	93	92
Grocery - G	New	Food Preparation	Natural Gas	Griddle	High Efficiency	per sq ft	\$0.00	80%	\$0.00	5,880	5,707	5,707	-	-	-	-	-	-	15	15	14
Grocery - G	New	Food Preparation	Natural Gas	Range	High Efficiency	per sq ft	\$0.00	80%	\$0.00	3,575	3,470	3,470	-	-	-	-	-	-	32	31	31
College - G	Existing	Food Preparation	Natural Gas	Oven	Energy Star	per sq ft	\$0.00	80%	\$0.00	40,728	39,530	39,530	-	-	-	-	-	-	611	597	594
College - G	Existing	Food Preparation	Natural Gas	Fryer	Energy Star	per sq ft	\$0.01	80%	\$0.01	39,542	38,379	38,379	-	-	-	-	-	-	988	965	960
College - G	Existing	Food Preparation	Natural Gas	Broiler	High Efficiency	per sq ft	\$0.00	80%	\$0.00	40,728	39,530	39,530	-	-	-	-	-	-	851	832	828
College - G	Existing	Food Preparation	Natural Gas	Griddle	High Efficiency	per sq ft	\$0.00	80%	\$0.00	94,541	91,760	91,760	-	-	-	-	-	-	338	330	329
College - G	Existing	Food Preparation	Natural Gas	Range	High Efficiency	per sq ft	\$0.00	80%	\$0.00	71,074	68,984	68,984	-	-	-	-	-	-	899	878	874
College - G	Existing	Food Preparation	Natural Gas	Steamer	Energy Star	per sq ft	\$0.00	80%	\$0.00	27,794	26,977	26,977	-	-	-	-	-	-	1,714	1,674	1,666
College - G	Existing	Food Preparation	Natural Gas	Other	Energy Star	per sq ft	\$0.00	80%	\$0.00	4,851	4,708	4,708	-	-	-	-	-	-	37	36	36
College - G	New	Food Preparation	Natural Gas	Oven	Energy Star	per sq ft	\$0.00	80%	\$0.00	10,453	10,146	10,146	-	-	-	-	-	-	157	153	152
College - G	New	Food Preparation	Natural Gas	Fryer	Energy Star	per sq ft	\$0.01	80%	\$0.01	10,156	9,857	9,857	-	-	-	-	-	-	254	248	247
College - G	New	Food Preparation	Natural Gas	Broiler	High Efficiency	per sq ft	\$0.00	80%	\$0.00	10,453	10,146	10,146	-	-	-	-	-	-	219	213	212
College - G	New	Food Preparation	Natural Gas	Griddle	High Efficiency	per sq ft	\$0.00	80%	\$0.00	24,274	23,560	23,560	-	-	-	-	-	-	87	85	84
College - G	New	Food Preparation	Natural Gas	Range	High Efficiency	per sq ft	\$0.00	80%	\$0.00	18,242	17,705	17,705	-	-	-	-	-	-	231	225	224

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
College - G	New	Food Preparation	Natural Gas	Steamer	Energy Star	per sq ft	\$0.00	80%	\$0.00	7,118	6,909	6,909	-	-	-	-	-	-	439	429	427
College - G	New	Food Preparation	Natural Gas	Other	Energy Star	per sq ft	\$0.00	80%	\$0.00	1,349	1,309	1,309	-	-	-	-	-	-	10	10	10
School - G	Existing	Food Preparation	Natural Gas	Oven	Energy Star	per sq ft	\$0.00	80%	\$0.00	255,299	247,790	247,790	-	-	-	-	-	-	1,454	1,420	1,413
School - G	Existing	Food Preparation	Natural Gas	Fryer	Energy Star	per sq ft	\$0.00	80%	\$0.00	123,179	119,556	119,556	-	-	-	-	-	-	1,168	1,141	1,135
School - G	Existing	Food Preparation	Natural Gas	Broiler	High Efficiency	per sq ft	\$0.00	80%	\$0.00	183,285	177,895	177,895	-	-	-	-	-	-	1,454	1,420	1,413
School - G	Existing	Food Preparation	Natural Gas	Griddle	High Efficiency	per sq ft	\$0.00	80%	\$0.00	258,993	251,375	251,375	-	-	-	-	-	-	352	343	342
School - G	Existing	Food Preparation	Natural Gas	Range	High Efficiency	per sq ft	\$0.00	80%	\$0.00	192,197	186,544	186,544	-	-	-	-	-	-	923	901	897
School - G	Existing	Food Preparation	Natural Gas	Steamer	Energy Star	per sq ft	\$0.00	80%	\$0.00	58,677	56,952	56,952	-	-	-	-	-	-	1,373	1,341	1,334
School - G	New	Food Preparation	Natural Gas	Oven	Energy Star	per sq ft	\$0.00	80%	\$0.00	65,524	63,597	63,597	-	-	-	-	-	-	373	364	363
School - G	New	Food Preparation	Natural Gas	Fryer	Energy Star	per sq ft	\$0.00	80%	\$0.00	31,638	30,707	30,707	-	-	-	-	-	-	300	293	292
School - G	New	Food Preparation	Natural Gas	Broiler	High Efficiency	per sq ft	\$0.00	80%	\$0.00	47,041	45,658	45,658	-	-	-	-	-	-	373	364	363
School - G	New	Food Preparation	Natural Gas	Griddle	High Efficiency	per sq ft	\$0.00	80%	\$0.00	66,498	64,542	64,542	-	-	-	-	-	-	90	88	88
School - G	New	Food Preparation	Natural Gas	Range	High Efficiency	per sq ft	\$0.00	80%	\$0.00	49,328	47,878	47,878	-	-	-	-	-	-	237	231	230
School - G	New	Food Preparation	Natural Gas	Steamer	Energy Star	per sq ft	\$0.00	80%	\$0.00	15,028	14,586	14,586	-	-	-	-	-	-	352	343	342
Health - G	Existing	Food Preparation	Natural Gas	Oven	Energy Star	per sq ft	\$0.00	80%	\$0.00	9,754	9,467	9,467	-	-	-	-	-	-	457	447	445
Health - G	Existing	Food Preparation	Natural Gas	Fryer	Energy Star	per sq ft	\$0.04	80%	\$0.03	84,710	82,219	82,219	-	-	-	-	-	-	6,614	6,461	6,429
Health - G	Existing	Food Preparation	Natural Gas	Broiler	High Efficiency	per sq ft	\$0.00	80%	\$0.00	12,710	12,336	12,336	-	-	-	-	-	-	830	811	807
Health - G	Existing	Food Preparation	Natural Gas	Griddle	High Efficiency	per sq ft	\$0.00	80%	\$0.00	20,898	20,284	20,284	-	-	-	-	-	-	234	228	227
Health - G	Existing	Food Preparation	Natural Gas	Range	High Efficiency	per sq ft	\$0.00	80%	\$0.00	53,731	52,151	52,151	-	-	-	-	-	-	2,124	2,075	2,065
Health - G	Existing	Food Preparation	Natural Gas	Steamer	Energy Star	per sq ft	\$0.00	80%	\$0.00	6,422	6,233	6,233	-	-	-	-	-	-	1,237	1,209	1,203
Health - G	New	Food Preparation	Natural Gas	Oven	Energy Star	per sq ft	\$0.00	80%	\$0.00	2,503	2,430	2,430	-	-	-	-	-	-	117	115	114
Health - G	New	Food Preparation	Natural Gas	Fryer	Energy Star	per sq ft	\$0.04	80%	\$0.03	21,757	21,117	21,117	-	-	-	-	-	-	1,699	1,659	1,651
Health - G	New	Food Preparation	Natural Gas	Broiler	High Efficiency	per sq ft	\$0.00	80%	\$0.00	3,262	3,166	3,166	-	-	-	-	-	-	213	208	207
Health - G	New	Food Preparation	Natural Gas	Griddle	High Efficiency	per sq ft	\$0.00	80%	\$0.00	5,366	5,208	5,208	-	-	-	-	-	-	60	59	58
Health - G	New	Food Preparation	Natural Gas	Range	High Efficiency	per sq ft	\$0.00	80%	\$0.00	13,790	13,385	13,385	-	-	-	-	-	-	545	533	530
Health - G	New	Food Preparation	Natural Gas	Steamer	Energy Star	per sq ft	\$0.00	80%	\$0.00	1,645	1,596	1,596	-	-	-	-	-	-	317	310	308
Lodging - G	Existing	Food Preparation	Natural Gas	Oven	Energy Star	per sq ft	\$0.00	80%	\$0.00	18,366	17,825	17,825	-	-	-	-	-	-	250	244	243
Lodging - G	Existing	Food Preparation	Natural Gas	Fryer	Energy Star	per sq ft	\$0.01	80%	\$0.00	10,467	10,159	10,159	-	-	-	-	-	-	237	232	230

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Lodging - G	Existing	Food Preparation	Natural Gas	Broiler	High Efficiency	per sq ft	\$0.00	80%	\$0.00	6,976	6,771	6,771	-	-	-	-	-	-	132	129	129
Lodging - G	Existing	Food Preparation	Natural Gas	Griddle	High Efficiency	per sq ft	\$0.00	80%	\$0.00	30,666	29,764	29,764	-	-	-	-	-	-	99	97	97
Lodging - G	Existing	Food Preparation	Natural Gas	Range	High Efficiency	per sq ft	\$0.00	80%	\$0.00	285	276	276	-	-	-	-	-	-	3	3	3
Lodging - G	Existing	Food Preparation	Natural Gas	Steamer	Energy Star	per sq ft	\$0.00	80%	\$0.00	310	301	301	-	-	-	-	-	-	17	17	17
Lodging - G	New	Food Preparation	Natural Gas	Oven	Energy Star	per sq ft	\$0.00	80%	\$0.00	4,714	4,575	4,575	-	-	-	-	-	-	64	63	62
Lodging - G	New	Food Preparation	Natural Gas	Fryer	Energy Star	per sq ft	\$0.01	80%	\$0.00	2,688	2,609	2,609	-	-	-	-	-	-	61	59	59
Lodging - G	New	Food Preparation	Natural Gas	Broiler	High Efficiency	per sq ft	\$0.00	80%	\$0.00	1,790	1,738	1,738	-	-	-	-	-	-	34	33	33
Lodging - G	New	Food Preparation	Natural Gas	Griddle	High Efficiency	per sq ft	\$0.00	80%	\$0.00	7,874	7,642	7,642	-	-	-	-	-	-	26	25	25
Lodging - G	New	Food Preparation	Natural Gas	Range	High Efficiency	per sq ft	\$0.00	80%	\$0.00	73	71	71	-	-	-	-	-	-	1	1	1
Lodging - G	New	Food Preparation	Natural Gas	Steamer	Energy Star	per sq ft	\$0.00	80%	\$0.00	79	77	77	-	-	-	-	-	-	4	4	4
Misc. - G	Existing	Food Preparation	Natural Gas	Oven	Energy Star	per sq ft	\$0.00	80%	\$0.00	651,690	632,522	632,522	-	-	-	-	-	-	677	661	658
Misc. - G	Existing	Food Preparation	Natural Gas	Fryer	Energy Star	per sq ft	\$0.00	80%	\$0.00	41,983	40,748	40,748	-	-	-	-	-	-	73	71	71
Misc. - G	Existing	Food Preparation	Natural Gas	Broiler	High Efficiency	per sq ft	\$0.00	80%	\$0.00	318,912	309,532	309,532	-	-	-	-	-	-	462	451	449
Misc. - G	Existing	Food Preparation	Natural Gas	Griddle	High Efficiency	per sq ft	\$0.00	80%	\$0.00	581,621	564,515	564,515	-	-	-	-	-	-	144	141	140
Misc. - G	Existing	Food Preparation	Natural Gas	Range	High Efficiency	per sq ft	\$0.00	80%	\$0.00	393,240	381,674	381,674	-	-	-	-	-	-	344	336	335
Misc. - G	New	Food Preparation	Natural Gas	Oven	Energy Star	per sq ft	\$0.00	80%	\$0.00	167,260	162,340	162,340	-	-	-	-	-	-	174	170	169
Misc. - G	New	Food Preparation	Natural Gas	Fryer	Energy Star	per sq ft	\$0.00	80%	\$0.00	10,783	10,466	10,466	-	-	-	-	-	-	19	18	18
Misc. - G	New	Food Preparation	Natural Gas	Broiler	High Efficiency	per sq ft	\$0.00	80%	\$0.00	81,851	79,443	79,443	-	-	-	-	-	-	118	116	115
Misc. - G	New	Food Preparation	Natural Gas	Griddle	High Efficiency	per sq ft	\$0.00	80%	\$0.00	149,334	144,942	144,942	-	-	-	-	-	-	37	36	36
Misc. - G	New	Food Preparation	Natural Gas	Range	High Efficiency	per sq ft	\$0.00	80%	\$0.00	100,927	97,959	97,959	-	-	-	-	-	-	88	86	86
Office - E	Existing			Water Heater - Faucet Aerators		per sq ft	\$0.00	80%	\$0.00	82,694	80,262	80,262	11,156	10,672	10,504	1.09	1.04	1.02	-	-	-
Office - E	Existing			Interior Lighting - Daylighting Controls		per sq ft	\$0.11	80%	\$0.09	1,051,733	1,020,800	1,020,800	307,572	284,104	272,510	58.21	53.77	51.58	-	-	-
Office - E	Existing			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	80%	\$0.00	6,091,641	5,912,475	5,912,475	11,876	10,970	10,523	2.25	2.08	1.99	-	-	-
Office - E	New			Water Heater - Faucet Aerators		per sq ft	\$0.00	80%	\$0.00	7,284	7,070	7,070	880	816	790	0.09	0.08	0.08	-	-	-
Office - E	New			Interior Lighting - Daylighting Controls		per sq ft	\$0.11	80%	\$0.09	340,119	330,115	330,115	87,653	82,935	81,528	16.59	15.70	15.43	-	-	-
Office - E	New			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	80%	\$0.00	181,576	176,236	176,236	312	295	290	0.06	0.06	0.05	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Office - E	New			Interior Lighting - Occupancy Sensors		per sq ft	\$0.00	80%	\$0.00	-	-	260,028	-	-	21,406	-	-	2.03	-	-	-
Restaurant - E	Existing			Water Heater - Faucet Aerators		per sq ft	\$0.00	80%	\$0.00	17,733	17,211	17,211	26,227	25,100	24,712	2.66	2.55	2.51	-	-	-
Restaurant - E	Existing			Water Heater - Tank Blanket/Insulation		per sq ft	\$0.02	80%	\$0.02	96,144	93,316	93,316	32,816	31,405	30,920	-	-	-	-	-	-
Restaurant - E	Existing			Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.02	80%	\$0.01	245,575	238,352	238,352	363,221	347,608	342,236	36.89	35.31	34.76	-	-	-
Restaurant - E	Existing			Interior Lighting - Daylighting Controls		per sq ft	\$0.11	80%	\$0.09	970,991	942,432	942,432	477,264	432,270	410,269	57.00	51.62	49.00	-	-	-
Restaurant - E	Existing			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	80%	\$0.00	1,286,753	1,248,907	1,248,907	4,216	3,819	3,625	0.50	0.46	0.43	-	-	-
Restaurant - E	New			Water Heater - Faucet Aerators		per sq ft	\$0.00	80%	\$0.00	1,824	1,770	1,770	2,404	2,231	2,160	0.24	0.23	0.22	-	-	-
Restaurant - E	New			Water Heater - Tank Blanket/Insulation		per sq ft	\$0.02	80%	\$0.02	9,889	9,598	9,598	3,008	2,791	2,703	-	-	-	-	-	-
Restaurant - E	New			Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.02	80%	\$0.01	25,258	24,515	24,515	33,298	30,894	29,916	3.38	3.14	3.04	-	-	-
Restaurant - E	New			Interior Lighting - Daylighting Controls		per sq ft	\$0.11	80%	\$0.09	87,157	84,593	84,593	38,280	35,573	34,622	4.57	4.25	4.13	-	-	-
Restaurant - E	New			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	80%	\$0.00	38,355	37,227	37,227	112	104	102	0.01	0.01	0.01	-	-	-
Retail - E	Existing			Water Heater - Faucet Aerators		per sq ft	\$0.00	80%	\$0.00	122,115	118,523	118,523	19,631	18,786	18,494	1.80	1.73	1.70	-	-	-
Retail - E	Existing			Water Heater - Tank Blanket/Insulation		per sq ft	\$0.02	80%	\$0.02	613,832	595,778	595,778	22,772	21,792	21,453	-	-	-	-	-	-
Retail - E	Existing			Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.00	80%	\$0.00	94,027	91,261	91,261	15,116	14,465	14,240	1.39	1.33	1.31	-	-	-
Retail - E	Existing			Interior Lighting - Daylighting Controls		per sq ft	\$0.11	80%	\$0.09	4,029,385	3,910,873	3,910,873	1,667,618	1,543,527	1,477,968	196.96	182.30	174.56	-	-	-
Retail - E	Existing			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	80%	\$0.00	6,178,582	5,996,859	5,996,859	17,047	15,779	15,109	2.01	1.86	1.78	-	-	-
Retail - E	New			Water Heater - Faucet Aerators		per sq ft	\$0.00	80%	\$0.00	10,413	10,107	10,107	1,473	1,366	1,322	0.14	0.13	0.12	-	-	-
Retail - E	New			Water Heater - Tank Blanket/Insulation		per sq ft	\$0.02	80%	\$0.02	63,169	61,311	61,311	2,062	1,912	1,851	-	-	-	-	-	-
Retail - E	New			Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.00	80%	\$0.00	8,026	7,790	7,790	1,135	1,053	1,019	0.10	0.10	0.09	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Retail - E	New			Interior Lighting - Daylighting Controls		per sq ft	\$0.11	80%	\$0.09	418,499	406,190	406,190	147,920	141,170	139,390	17.47	16.67	16.46	-	-	-
Retail - E	New			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	80%	\$0.00	184,168	178,751	178,751	434	414	409	0.05	0.05	0.05	-	-	-
Grocery - E	Existing			Water Heater - Faucet Aerators		per sq ft	\$0.00	80%	\$0.00	6,162	5,980	5,980	3,225	3,088	3,042	0.35	0.33	0.33	-	-	-
Grocery - E	Existing			Water Heater - Pipe Insulation		per sq ft	\$0.09	80%	\$0.07	39,790	38,619	38,619	5,440	5,210	5,132	0.61	0.58	0.57	-	-	-
Grocery - E	Existing			Water Heater - Tank Blanket/Insulation		per sq ft	\$0.02	80%	\$0.02	30,586	29,686	29,686	3,694	3,537	3,485	-	-	-	-	-	-
Grocery - E	Existing			Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.01	80%	\$0.00	4,745	4,606	4,606	2,483	2,378	2,343	0.27	0.26	0.25	-	-	-
Grocery - E	Existing			Interior Lighting - Daylighting Controls		per sq ft	\$0.11	80%	\$0.09	399,649	387,895	387,895	337,384	314,803	303,749	61.00	56.92	54.92	-	-	-
Grocery - E	Existing			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	80%	\$0.00	678,428	658,474	658,474	3,818	3,563	3,438	0.69	0.64	0.62	-	-	-
Grocery - E	Existing			Interior Lighting - Occupancy Sensors		per sq ft	\$0.07	80%	\$0.06	453,975	440,623	440,623	127,748	119,198	115,013	11.55	10.78	10.40	-	-	-
Grocery - E	New			Water Heater - Faucet Aerators		per sq ft	\$0.00	80%	\$0.00	633	615	615	293	272	263	0.03	0.03	0.03	-	-	-
Grocery - E	New			Water Heater - Pipe Insulation		per sq ft	\$0.09	80%	\$0.07	2,631	2,554	2,554	318	295	286	0.04	0.03	0.03	-	-	-
Grocery - E	New			Water Heater - Tank Blanket/Insulation		per sq ft	\$0.02	80%	\$0.02	3,143	3,050	3,050	336	312	302	-	-	-	-	-	-
Grocery - E	New			Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.01	80%	\$0.00	488	474	474	226	210	203	0.02	0.02	0.02	-	-	-
Grocery - E	New			Interior Lighting - Daylighting Controls		per sq ft	\$0.11	80%	\$0.09	46,067	44,712	44,712	34,362	32,772	32,353	6.21	5.93	5.85	-	-	-
Grocery - E	New			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	80%	\$0.00	20,222	19,627	19,627	101	96	95	0.02	0.02	0.02	-	-	-
Grocery - E	New			Interior Lighting - Occupancy Sensors		per sq ft	\$0.07	80%	\$0.06	20,164	19,571	19,571	5,014	4,782	4,721	0.45	0.43	0.43	-	-	-
College - E	Existing			Water Heater - Faucet Aerators		per sq ft	\$0.00	80%	\$0.00	10,797	10,479	10,479	3,764	3,605	3,551	0.43	0.41	0.40	-	-	-
College - E	Existing			Water Heater - Low Flow Showerheads		per sq ft	\$0.00	80%	\$0.00	9,185	8,915	8,915	6,477	6,203	6,110	0.74	0.71	0.69	-	-	-
College - E	Existing			Water Heater - Pipe Insulation		per sq ft	\$0.02	80%	\$0.02	86,512	83,967	83,967	7,881	7,547	7,435	0.85	0.81	0.80	-	-	-
College - E	Existing			Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.00	80%	\$0.00	8,329	8,084	8,084	2,904	2,781	2,739	0.33	0.32	0.31	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
College - E	Existing			Interior Lighting - Daylighting Controls		per sq ft	\$0.11	80%	\$0.09	692,370	672,006	672,006	271,701	255,696	248,839	38.30	36.04	35.07	-	-	-
College - E	Existing			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	80%	\$0.00	4,569,824	4,435,418	4,435,418	11,955	11,251	10,949	1.69	1.59	1.54	-	-	-
College - E	Existing			Interior Lighting - Occupancy Sensors		per sq ft	\$0.00	80%	\$0.00	-	-	3,913,724	-	-	483,075	-	-	34.05	-	-	-
College - E	New			Water Heater - Faucet Aerators		per sq ft	\$0.00	80%	\$0.00	1,110	1,077	1,077	342	318	308	0.04	0.04	0.03	-	-	-
College - E	New			Water Heater - Low Flow Showerheads		per sq ft	\$0.00	80%	\$0.00	944	916	916	589	546	529	0.07	0.06	0.06	-	-	-
College - E	New			Water Heater - Pipe Insulation		per sq ft	\$0.02	80%	\$0.02	8,092	7,854	7,854	652	605	586	0.07	0.07	0.07	-	-	-
College - E	New			Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.00	80%	\$0.00	856	831	831	264	245	237	0.03	0.03	0.03	-	-	-
College - E	New			Interior Lighting - Daylighting Controls		per sq ft	\$0.11	80%	\$0.09	212,319	206,074	206,074	77,042	73,385	72,397	10.86	10.34	10.20	-	-	-
College - E	New			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	80%	\$0.00	136,215	132,209	132,209	330	314	310	0.05	0.04	0.04	-	-	-
College - E	New			Interior Lighting - Occupancy Sensors		per sq ft	\$0.00	80%	\$0.00	-	142,253	142,253	-	16,886	16,658	-	1.19	1.17	-	-	-
School - E	Existing			Water Heater - Faucet Aerators		per sq ft	\$0.00	80%	\$0.00	6,524	6,332	6,332	1,476	1,413	1,392	0.08	0.08	0.08	-	-	-
School - E	Existing			Water Heater - Low Flow Showerheads		per sq ft	\$0.00	80%	\$0.00	5,553	5,390	5,390	2,540	2,433	2,397	0.14	0.14	0.13	-	-	-
School - E	Existing			Water Heater - Pipe Insulation		per sq ft	\$0.02	80%	\$0.02	21,048	20,429	20,429	1,244	1,191	1,174	0.07	0.06	0.06	-	-	-
School - E	Existing			Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.00	80%	\$0.00	5,029	4,881	4,881	1,138	1,089	1,073	0.06	0.06	0.06	-	-	-
School - E	Existing			Interior Lighting - Daylighting Controls		per sq ft	\$0.11	80%	\$0.09	710,683	689,781	689,781	227,506	211,723	203,573	17.16	15.97	15.35	-	-	-
School - E	Existing			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	80%	\$0.00	4,252,983	4,127,895	4,127,895	9,077	8,447	8,122	0.68	0.64	0.61	-	-	-
School - E	New			Water Heater - Faucet Aerators		per sq ft	\$0.00	80%	\$0.00	644	625	625	129	120	116	0.01	0.01	0.01	-	-	-
School - E	New			Water Heater - Low Flow Showerheads		per sq ft	\$0.00	80%	\$0.00	548	532	532	222	206	199	0.01	0.01	0.01	-	-	-
School - E	New			Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.00	80%	\$0.00	497	482	482	99	92	89	0.01	0.01	0.00	-	-	-
School - E	New			Interior Lighting - Daylighting Controls		per sq ft	\$0.11	80%	\$0.09	235,516	228,589	228,589	65,228	62,409	61,715	4.92	4.71	4.65	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
School - E	New			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	80%	\$0.00	126,771	123,042	123,042	234	224	221	0.02	0.02	0.02	-	-	-
Health - E	Existing			Water Heater - Faucet Aerators		per sq ft	\$0.00	80%	\$0.00	17,679	17,159	17,159	8,115	7,771	7,655	0.67	0.64	0.63	-	-	-
Health - E	Existing			Water Heater - Low Flow Showerheads		per sq ft	\$0.00	80%	\$0.00	15,054	14,612	14,612	13,975	13,383	13,184	1.15	1.10	1.08	-	-	-
Health - E	Existing			Water Heater - Pipe Insulation		per sq ft	\$0.04	80%	\$0.04	47,767	46,362	46,362	5,728	5,485	5,403	0.45	0.43	0.43	-	-	-
Health - E	Existing			Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.00	80%	\$0.00	13,639	13,238	13,238	6,260	5,995	5,906	0.51	0.49	0.49	-	-	-
Health - E	Existing			Interior Lighting - Daylighting Controls		per sq ft	\$0.11	80%	\$0.09	825,570	801,288	801,288	283,524	262,650	252,335	29.81	27.62	26.53	-	-	-
Health - E	Existing			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	80%	\$0.00	3,259,341	3,163,478	3,163,478	7,462	6,913	6,641	0.78	0.73	0.70	-	-	-
Health - E	New			Water Heater - Faucet Aerators		per sq ft	\$0.00	80%	\$0.00	1,643	1,595	1,595	667	619	600	0.05	0.05	0.05	-	-	-
Health - E	New			Water Heater - Low Flow Showerheads		per sq ft	\$0.00	80%	\$0.00	1,399	1,358	1,358	1,149	1,066	1,032	0.09	0.09	0.08	-	-	-
Health - E	New			Water Heater - Pipe Insulation		per sq ft	\$0.04	80%	\$0.04	3,553	3,449	3,449	377	350	339	0.03	0.03	0.03	-	-	-
Health - E	New			Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.00	80%	\$0.00	1,268	1,231	1,231	515	478	463	0.04	0.04	0.04	-	-	-
Health - E	New			Interior Lighting - Daylighting Controls		per sq ft	\$0.11	80%	\$0.09	259,544	251,911	251,911	78,874	74,730	73,510	8.29	7.86	7.73	-	-	-
Health - E	New			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	80%	\$0.00	97,153	94,295	94,295	197	186	183	0.02	0.02	0.02	-	-	-
Health - E	New			Interior Lighting - Occupancy Sensors		per sq ft	\$0.00	80%	\$0.00	-	-	138,298	-	-	13,452	-	-	0.71	-	-	-
Lodging - E	Existing			Water Heater - Faucet Aerators		per sq ft	\$0.00	80%	\$0.00	44,243	42,942	42,942	20,438	19,557	19,253	1.42	1.36	1.34	-	-	-
Lodging - E	Existing			Water Heater - Low Flow Showerheads		per sq ft	\$0.00	80%	\$0.00	346,340	336,154	336,154	323,576	309,632	304,816	22.52	21.55	21.21	-	-	-
Lodging - E	Existing			Water Heater - Pipe Insulation		per sq ft	\$0.05	80%	\$0.04	189,086	183,525	183,525	22,819	21,836	21,496	1.53	1.46	1.44	-	-	-
Lodging - E	Existing			Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.00	80%	\$0.00	34,143	33,139	33,139	15,772	15,093	14,858	1.10	1.05	1.03	-	-	-
Lodging - E	Existing			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	80%	\$0.00	3,020,434	2,931,598	2,931,598	4,189	3,729	3,514	0.34	0.30	0.29	-	-	-
Lodging - E	New			Water Heater - Faucet Aerators		per sq ft	\$0.00	80%	\$0.00	4,548	4,414	4,414	1,874	1,739	1,684	0.13	0.12	0.12	-	-	-
Lodging - E	New			Water Heater - Low Flow Showerheads		per sq ft	\$0.00	80%	\$0.00	35,599	34,552	34,552	29,675	27,533	26,662	2.07	1.92	1.86	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Lodging - E	New			Water Heater - Pipe Insulation		per sq ft	\$0.05	80%	\$0.04	18,634	18,086	18,086	2,006	1,862	1,803	0.14	0.13	0.13	-	-	-
Lodging - E	New			Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.00	80%	\$0.00	3,510	3,406	3,406	1,446	1,342	1,300	0.10	0.09	0.09	-	-	-
Lodging - E	New			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	80%	\$0.00	90,032	87,384	87,384	114	104	99	0.01	0.01	0.01	-	-	-
Warehouse - E	Existing			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	80%	\$0.00	4,953,192	4,807,510	4,807,510	5,465	4,959	4,693	0.99	0.90	0.85	-	-	-
Warehouse - E	New			Interior Lighting - Daylighting Controls		per sq ft	\$0.00	80%	\$0.00	-	675,984	675,984	-	91,727	90,357	-	16.58	16.34	-	-	-
Warehouse - E	New			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	80%	\$0.00	147,642	143,300	143,300	136	130	128	0.02	0.02	0.02	-	-	-
Misc. - E	Existing			Water Heater - Faucet Aerators		per sq ft	\$0.00	80%	\$0.00	112,830	109,511	109,511	24,192	23,168	22,822	3.57	3.42	3.37	-	-	-
Misc. - E	Existing			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	80%	\$0.00	9,402,752	9,126,201	9,126,201	16,233	15,073	14,526	2.06	1.91	1.84	-	-	-
Misc. - E	New			Water Heater - Faucet Aerators		per sq ft	\$0.00	80%	\$0.00	11,092	10,766	10,766	2,104	1,952	1,890	0.31	0.29	0.28	-	-	-
Misc. - E	New			Interior Lighting - Daylighting Controls		per sq ft	\$0.00	80%	\$0.00	-	794,786	794,786	-	180,140	177,308	-	22.85	22.49	-	-	-
Misc. - E	New			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	80%	\$0.00	280,272	272,029	272,029	433	411	405	0.05	0.05	0.05	-	-	-
Office - G	Existing			Exhaust Hood Makeup Air		per sq ft	\$0.16	80%	\$0.13	13	13	13	-	-	-	-	-	-	2	2	2
Office - G	New			Exhaust Hood Makeup Air		per sq ft	\$0.16	80%	\$0.13	1	1	1	-	-	-	-	-	-	0	0	0
Restaurant - G	Existing			Exhaust Hood Makeup Air		per sq ft	\$0.12	80%	\$0.10	4	4	4	-	-	-	-	-	-	1	1	1
Restaurant - G	New			Exhaust Hood Makeup Air		per sq ft	\$0.12	80%	\$0.10	0	0	0	-	-	-	-	-	-	0	0	0
Retail - G	Existing			Exhaust Hood Makeup Air		per sq ft	\$0.12	80%	\$0.10	200	194	194	-	-	-	-	-	-	8	27	26
Retail - G	New			Exhaust Hood Makeup Air		per sq ft	\$0.12	80%	\$0.10	21	20	20	-	-	-	-	-	-	2	2	2
College - G	Existing			Exhaust Hood Makeup Air		per sq ft	\$0.16	80%	\$0.13	106	103	103	-	-	-	-	-	-	13	12	12
College - G	New			Exhaust Hood Makeup Air		per sq ft	\$0.16	80%	\$0.13	11	11	11	-	-	-	-	-	-	1	1	1
School - G	New			Exhaust Hood Makeup Air		per sq ft	\$0.00	80%	\$0.00	-	-	309	-	-	-	-	-	-	-	-	13
Health - G	Existing			Exhaust Hood Makeup Air		per sq ft	\$0.05	80%	\$0.04	39	37	37	-	-	-	-	-	-	9	8	8
Health - G	New			Exhaust Hood Makeup Air		per sq ft	\$0.05	80%	\$0.04	4	4	4	-	-	-	-	-	-	0	0	0
Lodging - G	Existing			Exhaust Hood Makeup Air		per sq ft	\$0.05	80%	\$0.04	158	153	153	-	-	-	-	-	-	9	9	9
Lodging - G	New			Exhaust Hood Makeup Air		per sq ft	\$0.05	80%	\$0.04	16	16	16	-	-	-	-	-	-	1	1	1

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Warehouse - G	Existing			Exhaust Hood Makeup Air		per sq ft	\$0.12	80%	\$0.10	22	21	21	-	-	-	-	-	-	10	10	10
Warehouse - G	New			Exhaust Hood Makeup Air		per sq ft	\$0.12	80%	\$0.10	2	2	2	-	-	-	-	-	-	1	1	1

Table G-27 Business (RAP)

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Office - E	Existing	Cooling	Electric	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	per sq ft	\$0.34	50%	\$0.17	51,743	50,221	50,221	43,571	42,274	42,170	25.08	24.34	24.28	-	-	-
Office - E	Existing	Cooling	Electric	Roof top AC	Ductless Minisplit	per sq ft	\$0.21	50%	\$0.10	1,756,392	1,704,734	1,704,734	680,569	660,314	658,690	391.80	380.14	379.21	-	-	-
Office - E	Existing	Cooling	Electric	PTAC	EER 11.5	per sq ft	\$0.01	50%	\$0.01	39,841	38,670	38,670	13,644	13,238	13,206	7.86	7.62	7.60	-	-	-
Office - E	Existing	Cooling	Electric	PTHP	EER 11.5	per sq ft	\$0.01	50%	\$0.01	62,844	60,996	60,996	21,522	20,881	20,830	12.39	12.02	11.99	-	-	-
Office - E	Existing	Heating	Electric	PTHP	EER 11.5	per sq ft	\$0.01	50%	\$0.00	70,064	68,003	68,003	14,235	13,811	13,777	-	-	-	-	-	-
Office - E	Existing	Ventilation	Electric	Ventilation	Variable Air Volume	per sq ft	\$0.43	50%	\$0.21	262,971	255,237	255,237	302,305	293,308	292,587	24.11	23.40	23.34	-	-	-
Office - E	Existing	Water Heating	Electric	Water Heating	EF 2.4	per sq ft	\$0.01	50%	\$0.00	1,406,199	1,364,841	1,364,841	512,730	497,266	495,977	49.94	48.43	48.31	-	-	-
Office - E	Existing	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.03	50%	\$0.01	10,198,835	9,898,869	9,898,869	1,165,825	1,042,864	966,406	220.66	197.38	182.91	-	-	-
Office - E	Existing	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.00	50%	\$0.00	6,119,323	5,939,343	5,939,343	198,464	192,557	192,084	37.56	36.45	36.36	-	-	-
Office - E	Existing	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.05	50%	\$0.03	3,672,087	3,564,084	3,564,084	665,990	646,169	644,580	126.05	122.30	122.00	-	-	-
Office - E	Existing	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.01	50%	\$0.01	6,584,606	6,390,941	6,390,941	125,978	112,686	104,417	1.17	1.05	0.97	-	-	-
Office - E	Existing	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	50%	\$0.00	-	-	3,206,913	-	-	4,435	-	-	0.04	-	-	-
Office - E	Existing	Refrigeration	Electric	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	50%	\$0.00	170,443	165,430	165,430	1,221	1,185	1,183	0.13	0.12	0.12	-	-	-
Office - E	Existing	Refrigeration	Electric	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	50%	\$0.00	1,192,813	1,157,730	1,157,730	61,548	59,662	59,523	6.43	6.24	6.22	-	-	-
Office - E	Existing	Refrigeration	Electric	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	50%	\$0.00	1,797,945	1,745,064	1,745,064	19,447	18,826	18,758	2.03	1.97	1.96	-	-	-
Office - E	Existing	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.00	50%	\$0.00	63,800	61,924	61,924	77,011	74,719	74,535	17.72	17.19	17.15	-	-	-
Office - E	Existing	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	50%	\$0.00	2,062,348	2,001,691	2,001,691	1,428,189	1,385,683	1,382,276	172.03	166.91	166.50	-	-	-
Office - E	Existing	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	50%	\$0.00	2,501,138	2,427,575	2,427,575	266,971	259,025	258,388	32.16	31.20	31.12	-	-	-
Office - E	Existing	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	50%	\$0.00	7,331,976	7,116,329	7,116,329	395,091	383,332	382,390	47.59	46.17	46.06	-	-	-
Office - E	Existing	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	50%	\$0.00	995,674	966,389	966,389	77,764	75,450	75,264	9.37	9.09	9.07	-	-	-
Office - E	Existing	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	50%	\$0.00	3,221,962	3,127,198	3,127,198	253,034	245,503	244,900	30.48	29.57	29.50	-	-	-
Office - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	50%	\$0.00	3,391,156	-	-	9,394	-	-	1.47	-	-	-	-	-
Office - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	3,251,875	3,251,875	-	10,410	10,866	-	1.62	1.69	-	-	-
Office - E	New	Cooling	Electric	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	per sq ft	\$0.36	50%	\$0.18	39,412	38,253	38,253	28,105	27,457	27,435	16.18	15.81	15.79	-	-	-
Office - E	New	Cooling	Electric	Roof top AC	Ductless Minisplit	per sq ft	\$0.18	50%	\$0.09	824,191	799,950	799,950	260,407	252,656	252,035	149.92	145.45	145.10	-	-	-
Office - E	New	Cooling	Electric	PTAC	EER 11.5	per sq ft	\$0.01	50%	\$0.01	18,696	18,146	18,146	5,882	5,707	5,693	3.39	3.29	3.28	-	-	-
Office - E	New	Cooling	Electric	PTHP	EER 11.5	per sq ft	\$0.01	50%	\$0.01	22,164	21,512	21,512	6,974	6,766	6,749	4.01	3.90	3.89	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Office - E	New	Heating	Electric	PTHP	EER 11.5	per sq ft	\$0.00	50%	\$0.00	21,437	20,807	20,807	3,912	3,795	3,786	-	-	-	-	-	-
Office - E	New	Ventilation	Electric	Ventilation	Variable Air Volume	per sq ft	\$0.73	50%	\$0.36	44,585	43,274	43,274	71,020	68,906	68,736	5.66	5.50	5.48	-	-	-
Office - E	New	Water Heating	Electric	Water Heating	EF 2.4	per sq ft	\$0.00	50%	\$0.00	627,918	609,450	609,450	224,653	217,957	217,411	21.88	21.23	21.18	-	-	-
Office - E	New	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.03	50%	\$0.01	1,092,863	1,060,720	1,060,720	125,950	112,279	103,673	23.84	21.25	19.62	-	-	-
Office - E	New	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.00	50%	\$0.00	790,071	766,833	766,833	25,624	24,861	24,800	4.85	4.71	4.69	-	-	-
Office - E	New	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.05	50%	\$0.03	790,071	766,833	766,833	143,292	139,027	138,685	27.12	26.31	26.25	-	-	-
Office - E	New	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.01	50%	\$0.01	786,935	763,790	763,790	15,179	13,538	12,503	0.14	0.13	0.12	-	-	-
Office - E	New	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	50%	\$0.00	843,956	819,133	819,133	1,170	1,136	1,133	0.01	0.01	0.01	-	-	-
Office - E	New	Refrigeration	Electric	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	50%	\$0.00	42,076	40,838	40,838	301	292	292	0.03	0.03	0.03	-	-	-
Office - E	New	Refrigeration	Electric	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	50%	\$0.00	480,902	466,758	466,758	24,814	24,051	23,992	2.59	2.51	2.51	-	-	-
Office - E	New	Refrigeration	Electric	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	50%	\$0.00	480,902	466,758	466,758	5,202	5,034	5,014	0.54	0.53	0.52	-	-	-
Office - E	New	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.00	50%	\$0.00	16,261	15,783	15,783	19,628	19,044	18,997	4.52	4.38	4.37	-	-	-
Office - E	New	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	50%	\$0.00	219,865	213,398	213,398	152,258	147,726	147,363	18.34	17.79	17.75	-	-	-
Office - E	New	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	50%	\$0.00	276,906	268,762	268,762	29,557	28,677	28,607	3.56	3.45	3.45	-	-	-
Office - E	New	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	50%	\$0.00	752,961	730,815	730,815	40,574	39,367	39,270	4.89	4.74	4.73	-	-	-
Office - E	New	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	50%	\$0.00	116,400	112,977	112,977	9,091	8,821	8,799	1.10	1.06	1.06	-	-	-
Office - E	New	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	50%	\$0.00	458,929	445,431	445,431	36,042	34,969	34,883	4.34	4.21	4.20	-	-	-
Office - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	50%	\$0.00	910,754	-	-	2,523	-	-	0.39	-	-	-	-	-
Office - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	1,095,737	1,095,737	-	3,542	3,705	-	0.55	0.58	-	-	-
Restaurant - E	Existing	Cooling	Electric	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	per sq ft	\$0.53	50%	\$0.27	1,752	1,700	1,700	4,495	4,361	4,350	1.95	1.89	1.89	-	-	-
Restaurant - E	Existing	Cooling	Electric	Roof top AC	Ductless Minisplit	per sq ft	\$0.20	50%	\$0.10	429,637	417,001	417,001	299,361	290,451	289,737	129.98	126.11	125.80	-	-	-
Restaurant - E	Existing	Cooling	Electric	Air Source Heat Pump	Ductless Minisplit	per sq ft	\$0.27	50%	\$0.13	16,354	15,873	15,873	14,335	13,873	13,825	6.22	6.02	6.00	-	-	-
Restaurant - E	Existing	Cooling	Electric	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.17	50%	\$0.08	10,428	10,121	10,121	17,808	17,199	17,086	7.73	7.47	7.42	-	-	-
Restaurant - E	Existing	Cooling	Electric	PTAC	EER 11.5	per sq ft	\$0.02	50%	\$0.01	16,894	16,397	16,397	2,490	2,416	2,410	1.08	1.05	1.05	-	-	-
Restaurant - E	Existing	Cooling	Electric	PTHP	EER 11.5	per sq ft	\$0.02	50%	\$0.01	6,307	6,121	6,121	930	902	900	0.40	0.39	0.39	-	-	-
Restaurant - E	Existing	Heating	Electric	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.13	50%	\$0.06	10,428	10,121	10,121	8,612	8,328	8,282	-	-	-	-	-	-
Restaurant - E	Existing	Heating	Electric	PTHP	EER 11.5	per sq ft	\$0.01	50%	\$0.01	7,119	6,909	6,909	651	632	630	-	-	-	-	-	-
Restaurant - E	Existing	Ventilation	Electric	Ventilation	Variable Air Volume	per sq ft	\$3.16	50%	\$1.58	243,998	236,822	236,822	433,809	420,898	419,863	33.91	32.91	32.82	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Restaurant - E	Existing	Water Heating	Electric	Water Heating	EF 2.4	per sq ft	\$0.03	50%	\$0.01	246,766	239,508	239,508	994,133	964,495	962,080	100.98	97.97	97.72	-	-	-
Restaurant - E	Existing	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.09	50%	\$0.05	2,150,835	2,087,576	2,087,576	958,102	855,503	793,276	114.42	102.17	94.74	-	-	-
Restaurant - E	Existing	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.02	50%	\$0.01	1,292,600	1,254,583	1,254,583	238,174	231,086	230,518	28.44	27.60	27.53	-	-	-
Restaurant - E	Existing	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.04	50%	\$0.02	751,699	729,591	729,591	135,124	131,102	130,780	16.14	15.66	15.62	-	-	-
Restaurant - E	Existing	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.02	50%	\$0.01	1,385,613	1,344,859	1,344,859	54,334	48,527	44,975	0.50	0.45	0.42	-	-	-
Restaurant - E	Existing	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	50%	\$0.00	-	-	677,404	-	-	226	-	-	0.00	-	-	-
Restaurant - E	Existing	Refrigeration	Electric	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.17	50%	\$0.09	206,138	200,075	200,075	98,021	94,556	93,888	9.96	9.61	9.54	-	-	-
Restaurant - E	Existing	Refrigeration	Electric	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.02	50%	\$0.01	58,195	56,483	56,483	9,360	9,083	9,071	0.95	0.92	0.92	-	-	-
Restaurant - E	Existing	Refrigeration	Electric	Glass Door Display	6800 kWh/yr	per sq ft	\$0.11	50%	\$0.06	539,603	523,732	523,732	625,238	606,081	604,666	63.53	61.58	61.44	-	-	-
Restaurant - E	Existing	Food Preparation	Electric	Oven	Energy Star	per sq ft	\$0.00	50%	\$0.00	67,301	65,322	65,322	65,226	63,284	63,129	7.85	7.62	7.60	-	-	-
Restaurant - E	Existing	Food Preparation	Electric	Fryer	Energy Star	per sq ft	\$0.02	50%	\$0.01	117,015	113,574	113,574	71,158	69,040	68,871	8.56	8.31	8.29	-	-	-
Restaurant - E	Existing	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.05	50%	\$0.02	110,812	107,553	107,553	280,260	271,919	271,250	33.73	32.72	32.64	-	-	-
Restaurant - E	Existing	Food Preparation	Electric	Hot Food Container	Energy Star	per sq ft	\$0.07	50%	\$0.03	36,757	35,676	35,676	59,684	57,908	57,765	7.18	6.97	6.95	-	-	-
Restaurant - E	Existing	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	50%	\$0.00	340,302	330,293	330,293	36,784	35,689	35,601	3.58	3.47	3.46	-	-	-
Restaurant - E	Existing	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	50%	\$0.00	330,611	320,887	320,887	4,407	4,275	4,265	0.43	0.42	0.41	-	-	-
Restaurant - E	Existing	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	50%	\$0.00	912,775	885,928	885,928	92,127	89,385	89,166	8.96	8.69	8.67	-	-	-
Restaurant - E	Existing	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	50%	\$0.00	158,890	154,217	154,217	1,937	1,879	1,875	0.19	0.18	0.18	-	-	-
Restaurant - E	Existing	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	50%	\$0.00	311,840	302,668	302,668	9,174	8,901	8,879	0.89	0.87	0.86	-	-	-
Restaurant - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	50%	\$0.00	159,896	-	-	707	-	-	0.08	-	-	-	-	-
Restaurant - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	153,329	153,329	-	784	818	-	0.09	0.09	-	-	-
Restaurant - E	New	Cooling	Electric	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	per sq ft	\$0.77	50%	\$0.38	1,307	1,268	1,268	2,697	2,618	2,613	1.17	1.14	1.13	-	-	-
Restaurant - E	New	Cooling	Electric	Roof top AC	Ductless Minisplit	per sq ft	\$0.24	50%	\$0.12	197,419	191,613	191,613	100,988	97,982	97,741	43.85	42.54	42.44	-	-	-
Restaurant - E	New	Cooling	Electric	Air Source Heat Pump	Ductless Minisplit	per sq ft	\$0.32	50%	\$0.16	5,648	5,482	5,482	3,633	3,517	3,505	1.58	1.53	1.52	-	-	-
Restaurant - E	New	Cooling	Electric	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.21	50%	\$0.11	3,601	3,495	3,495	4,723	4,564	4,534	2.05	1.98	1.97	-	-	-
Restaurant - E	New	Cooling	Electric	PTAC	EER 11.5	per sq ft	\$0.02	50%	\$0.01	7,763	7,534	7,534	1,051	1,020	1,017	0.46	0.44	0.44	-	-	-
Restaurant - E	New	Cooling	Electric	PTHP	EER 11.5	per sq ft	\$0.02	50%	\$0.01	2,178	2,114	2,114	295	286	285	0.13	0.12	0.12	-	-	-
Restaurant - E	New	Heating	Electric	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.16	50%	\$0.08	3,601	3,495	3,495	2,822	2,730	2,715	-	-	-	-	-	-
Restaurant - E	New	Heating	Electric	PTHP	EER 11.5	per sq ft	\$0.01	50%	\$0.00	2,178	2,114	2,114	179	174	173	-	-	-	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Restaurant - E	New	Ventilation	Electric	Ventilation	Variable Air Volume	per sq ft	\$5.38	50%	\$2.69	25,896	25,134	25,134	57,081	55,382	55,246	4.46	4.33	4.32	-	-	-
Restaurant - E	New	Water Heating	Electric	Water Heating	EF 2.4	per sq ft	\$0.03	50%	\$0.01	110,190	106,949	106,949	430,442	417,612	416,565	43.72	42.42	42.31	-	-	-
Restaurant - E	New	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.09	50%	\$0.05	234,866	227,958	227,958	105,068	94,142	86,754	12.55	11.24	10.36	-	-	-
Restaurant - E	New	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.02	50%	\$0.01	166,889	161,980	161,980	30,751	29,836	29,762	3.67	3.56	3.55	-	-	-
Restaurant - E	New	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.04	50%	\$0.02	161,815	157,056	157,056	29,087	28,222	28,152	3.47	3.37	3.36	-	-	-
Restaurant - E	New	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.02	50%	\$0.01	169,208	164,231	164,231	6,663	5,969	5,504	0.06	0.06	0.05	-	-	-
Restaurant - E	New	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	50%	\$0.00	178,271	173,028	173,028	60	58	58	0.00	0.00	0.00	-	-	-
Restaurant - E	New	Refrigeration	Electric	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.17	50%	\$0.09	55,077	53,457	53,457	26,190	25,246	25,040	2.66	2.56	2.54	-	-	-
Restaurant - E	New	Refrigeration	Electric	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.02	50%	\$0.01	15,652	15,192	15,192	2,517	2,443	2,440	0.26	0.25	0.25	-	-	-
Restaurant - E	New	Refrigeration	Electric	Glass Door Display	6800 kWh/yr	per sq ft	\$0.11	50%	\$0.06	215,961	209,609	209,609	250,234	242,544	241,950	25.42	24.64	24.58	-	-	-
Restaurant - E	New	Food Preparation	Electric	Oven	Energy Star	per sq ft	\$0.00	50%	\$0.00	17,366	16,855	16,855	16,831	16,330	16,290	2.03	1.97	1.96	-	-	-
Restaurant - E	New	Food Preparation	Electric	Fryer	Energy Star	per sq ft	\$0.02	50%	\$0.01	30,577	29,677	29,677	18,594	18,040	17,996	2.24	2.17	2.17	-	-	-
Restaurant - E	New	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.05	50%	\$0.02	30,111	29,225	29,225	76,154	73,888	73,706	9.16	8.89	8.87	-	-	-
Restaurant - E	New	Food Preparation	Electric	Hot Food Container	Energy Star	per sq ft	\$0.07	50%	\$0.03	10,574	10,263	10,263	17,169	16,658	16,617	2.07	2.00	2.00	-	-	-
Restaurant - E	New	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	50%	\$0.00	36,393	35,322	35,322	3,934	3,817	3,807	0.38	0.37	0.37	-	-	-
Restaurant - E	New	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	50%	\$0.00	36,876	35,791	35,791	492	477	476	0.05	0.05	0.05	-	-	-
Restaurant - E	New	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	50%	\$0.00	94,247	91,475	91,475	9,512	9,229	9,207	0.93	0.90	0.90	-	-	-
Restaurant - E	New	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	50%	\$0.00	18,613	18,066	18,066	227	220	220	0.02	0.02	0.02	-	-	-
Restaurant - E	New	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	50%	\$0.00	44,802	43,484	43,484	1,318	1,279	1,276	0.13	0.12	0.12	-	-	-
Restaurant - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	50%	\$0.00	42,943	-	-	190	-	-	0.02	-	-	-	-	-
Restaurant - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	51,665	51,665	-	267	279	-	0.03	0.03	-	-	-
Retail - E	Existing	Cooling	Electric	Roof top AC	Ductless Minisplit	per sq ft	\$0.12	50%	\$0.06	965,236	936,847	936,847	437,127	424,117	423,074	262.22	254.42	253.79	-	-	-
Retail - E	Existing	Cooling	Electric	Air Source Heat Pump	Ductless Minisplit	per sq ft	\$0.12	50%	\$0.06	39,415	38,255	38,255	17,487	16,924	16,866	10.49	10.15	10.12	-	-	-
Retail - E	Existing	Cooling	Electric	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.08	50%	\$0.04	13,894	13,485	13,485	12,014	11,604	11,528	7.21	6.96	6.92	-	-	-
Retail - E	Existing	Cooling	Electric	PTAC	EER 11.5	per sq ft	\$0.01	50%	\$0.01	80,812	78,436	78,436	7,741	7,511	7,492	4.64	4.51	4.49	-	-	-
Retail - E	Existing	Cooling	Electric	PTHP	EER 11.5	per sq ft	\$0.01	50%	\$0.01	8,724	8,467	8,467	836	811	809	0.50	0.49	0.49	-	-	-
Retail - E	Existing	Heating	Electric	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.00	50%	\$0.00	-	-	14,112	-	-	9,806	-	-	-	-	-	-
Retail - E	Existing	Heating	Electric	PTHP	EER 11.5	per sq ft	\$0.01	50%	\$0.01	8,606	8,352	8,352	767	744	743	-	-	-	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Retail - E	Existing	Ventilation	Electric	Ventilation	Variable Air Volume	per sq ft	\$1.46	50%	\$0.73	1,424,393	1,382,499	1,382,499	908,597	881,556	879,388	75.29	73.05	72.87	-	-	-
Retail - E	Existing	Water Heating	Electric	Water Heating	EF 2.4	per sq ft	\$0.00	50%	\$0.00	1,579,206	1,532,759	1,532,759	690,198	669,460	667,668	63.38	61.47	61.31	-	-	-
Retail - E	Existing	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.02	50%	\$0.01	10,865,792	10,546,210	10,546,210	586,843	524,733	487,727	69.31	61.98	57.60	-	-	-
Retail - E	Existing	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.00	50%	\$0.00	6,206,658	6,024,109	6,024,109	186,851	181,290	180,844	22.07	21.41	21.36	-	-	-
Retail - E	Existing	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.09	50%	\$0.05	3,724,495	3,614,951	3,614,951	1,063,803	1,032,143	1,029,604	125.64	121.91	121.61	-	-	-
Retail - E	Existing	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.04	50%	\$0.02	7,073,651	6,865,602	6,865,602	443,050	396,166	367,482	4.11	3.68	3.41	-	-	-
Retail - E	Existing	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	50%	\$0.00	-	-	3,252,682	-	-	1,103	-	-	0.01	-	-	-
Retail - E	Existing	Refrigeration	Electric	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.01	50%	\$0.00	474,397	460,444	460,444	9,948	9,653	9,642	1.00	0.97	0.97	-	-	-
Retail - E	Existing	Refrigeration	Electric	Glass Door Display	6800 kWh/yr	per sq ft	\$0.01	50%	\$0.00	1,407,522	1,366,125	1,366,125	212,723	206,206	205,724	21.43	20.77	20.73	-	-	-
Retail - E	Existing	Refrigeration	Electric	Open Display Case	4330 kWh/yr	per sq ft	\$0.01	50%	\$0.01	2,121,580	2,059,180	2,059,180	67,213	65,067	64,832	6.77	6.56	6.53	-	-	-
Retail - E	Existing	Food Preparation	Electric	Oven	Energy Star	per sq ft	\$0.00	50%	\$0.00	83,190	80,744	80,744	8,537	8,283	8,263	1.21	1.17	1.17	-	-	-
Retail - E	Existing	Food Preparation	Electric	Fryer	Energy Star	per sq ft	\$0.00	50%	\$0.00	79,984	77,632	77,632	5,150	4,997	4,985	0.73	0.71	0.70	-	-	-
Retail - E	Existing	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.00	50%	\$0.00	142,233	138,049	138,049	76,180	73,913	73,731	10.77	10.45	10.43	-	-	-
Retail - E	Existing	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	50%	\$0.00	1,954,711	1,897,219	1,897,219	121,451	117,836	117,546	11.74	11.39	11.36	-	-	-
Retail - E	Existing	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	50%	\$0.00	2,193,051	2,128,549	2,128,549	21,002	20,377	20,327	2.03	1.97	1.96	-	-	-
Retail - E	Existing	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	50%	\$0.00	5,529,985	5,367,339	5,367,339	320,830	311,281	310,516	31.00	30.08	30.01	-	-	-
Retail - E	Existing	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	50%	\$0.00	924,357	897,170	897,170	6,477	6,285	6,269	0.63	0.61	0.61	-	-	-
Retail - E	Existing	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	50%	\$0.00	2,748,916	2,668,066	2,668,066	23,243	22,551	22,496	2.25	2.18	2.17	-	-	-
Retail - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	50%	\$0.00	1,542,612	-	-	8,619	-	-	0.96	-	-	-	-	-
Retail - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	1,479,254	1,479,254	-	9,551	9,970	-	1.07	1.11	-	-	-
Retail - E	New	Cooling	Electric	Roof top AC	Ductless Minisplit	per sq ft	\$0.10	50%	\$0.05	468,817	455,028	455,028	161,041	156,248	155,863	96.60	93.73	93.50	-	-	-
Retail - E	New	Cooling	Electric	Air Source Heat Pump	Ductless Minisplit	per sq ft	\$0.11	50%	\$0.06	14,738	14,305	14,305	5,459	5,284	5,265	3.27	3.17	3.16	-	-	-
Retail - E	New	Cooling	Electric	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.08	50%	\$0.04	5,195	5,042	5,042	4,363	4,216	4,187	2.62	2.53	2.51	-	-	-
Retail - E	New	Cooling	Electric	PTAC	EER 11.5	per sq ft	\$0.01	50%	\$0.01	39,251	38,096	38,096	3,454	3,352	3,343	2.07	2.01	2.01	-	-	-
Retail - E	New	Cooling	Electric	PTHP	EER 11.5	per sq ft	\$0.01	50%	\$0.01	3,262	3,166	3,166	287	279	278	0.17	0.17	0.17	-	-	-
Retail - E	New	Heating	Electric	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.26	50%	\$0.13	4,194	4,070	4,070	3,259	3,153	3,136	-	-	-	-	-	-
Retail - E	New	Heating	Electric	PTHP	EER 11.5	per sq ft	\$0.01	50%	\$0.00	2,633	2,556	2,556	211	205	204	-	-	-	-	-	-
Retail - E	New	Ventilation	Electric	Ventilation	Variable Air Volume	per sq ft	\$2.47	50%	\$1.24	220,637	214,148	214,148	16,300	15,815	15,776	1.35	1.31	1.31	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Retail - E	New	Water Heating	Electric	Water Heating	EF 2.4	per sq ft	\$0.00	50%	\$0.00	705,172	684,431	684,431	288,256	280,327	279,974	26.47	25.74	25.71	-	-	-
Retail - E	New	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.02	50%	\$0.01	1,155,178	1,121,202	1,121,202	62,319	55,739	51,897	7.36	6.58	6.13	-	-	-
Retail - E	New	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.00	50%	\$0.00	801,347	777,778	777,778	24,124	23,406	23,349	2.85	2.76	2.76	-	-	-
Retail - E	New	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.09	50%	\$0.05	801,347	777,778	777,778	228,883	222,071	221,525	27.03	26.23	26.16	-	-	-
Retail - E	New	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.04	50%	\$0.02	834,386	809,845	809,845	52,202	46,689	43,448	0.48	0.43	0.40	-	-	-
Retail - E	New	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	50%	\$0.00	856,001	830,824	830,824	291	283	282	0.00	0.00	0.00	-	-	-
Retail - E	New	Refrigeration	Electric	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.01	50%	\$0.00	128,270	124,497	124,497	2,689	2,610	2,607	0.27	0.26	0.26	-	-	-
Retail - E	New	Refrigeration	Electric	Glass Door Display	6800 kWh/yr	per sq ft	\$0.01	50%	\$0.00	566,373	549,715	549,715	85,598	82,967	82,764	8.62	8.36	8.34	-	-	-
Retail - E	New	Refrigeration	Electric	Open Display Case	4330 kWh/yr	per sq ft	\$0.01	50%	\$0.01	566,373	549,715	549,715	17,943	17,365	17,295	1.81	1.75	1.74	-	-	-
Retail - E	New	Food Preparation	Electric	Oven	Energy Star	per sq ft	\$0.00	50%	\$0.00	21,351	20,723	20,723	2,191	2,126	2,121	0.31	0.30	0.30	-	-	-
Retail - E	New	Food Preparation	Electric	Fryer	Energy Star	per sq ft	\$0.00	50%	\$0.00	20,543	19,939	19,939	1,323	1,283	1,280	0.19	0.18	0.18	-	-	-
Retail - E	New	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.00	50%	\$0.00	36,512	35,438	35,438	19,556	18,974	18,927	2.77	2.68	2.68	-	-	-
Retail - E	New	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	50%	\$0.00	206,067	200,006	200,006	12,803	12,422	12,392	1.24	1.20	1.20	-	-	-
Retail - E	New	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	50%	\$0.00	243,273	236,118	236,118	2,330	2,260	2,255	0.23	0.22	0.22	-	-	-
Retail - E	New	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	50%	\$0.00	563,872	547,287	547,287	32,714	31,740	31,662	3.16	3.07	3.06	-	-	-
Retail - E	New	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	50%	\$0.00	107,379	104,220	104,220	752	730	728	0.07	0.07	0.07	-	-	-
Retail - E	New	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	50%	\$0.00	388,685	377,253	377,253	3,286	3,189	3,181	0.32	0.31	0.31	-	-	-
Retail - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	50%	\$0.00	414,295	-	-	2,315	-	-	0.26	-	-	-	-	-
Retail - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	498,443	498,443	-	3,250	3,400	-	0.36	0.38	-	-	-
Grocery - E	Existing	Cooling	Electric	Roof top AC	Ductless Minisplit	per sq ft	\$1.88	50%	\$0.94	196,647	190,863	190,863	188,249	182,646	182,197	328.70	318.92	318.14	-	-	-
Grocery - E	Existing	Cooling	Electric	Air Source Heat Pump	Ductless Minisplit	per sq ft	\$1.93	50%	\$0.97	4,798	4,656	4,656	4,488	4,343	4,328	7.84	7.58	7.56	-	-	-
Grocery - E	Existing	Cooling	Electric	PTHP	EER 11.5	per sq ft	\$0.03	50%	\$0.02	15,992	15,521	15,521	3,238	3,142	3,134	5.65	5.49	5.47	-	-	-
Grocery - E	Existing	Heating	Electric	PTHP	EER 11.5	per sq ft	\$0.02	50%	\$0.01	17,804	17,280	17,280	1,852	1,797	1,793	-	-	-	-	-	-
Grocery - E	Existing	Ventilation	Electric	Ventilation	Variable Air Volume	per sq ft	\$1.75	50%	\$0.87	144,928	140,666	140,666	315,015	305,640	304,888	25.96	25.19	25.13	-	-	-
Grocery - E	Existing	Water Heating	Electric	Water Heating	EF 2.4	per sq ft	\$0.02	50%	\$0.01	78,610	76,298	76,298	113,522	110,137	109,862	12.22	11.86	11.83	-	-	-
Grocery - E	Existing	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.02	50%	\$0.01	1,125,470	1,092,368	1,092,368	134,699	120,456	111,776	24.36	21.78	20.21	-	-	-
Grocery - E	Existing	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.00	50%	\$0.00	681,510	661,466	661,466	14,768	14,328	14,293	2.67	2.59	2.58	-	-	-
Grocery - E	Existing	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.14	50%	\$0.07	396,953	385,278	385,278	245,678	238,366	237,780	44.42	43.10	42.99	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Grocery - E	Existing	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.01	50%	\$0.01	724,777	703,460	703,460	21,921	19,603	18,173	0.20	0.18	0.17	-	-	-
Grocery - E	Existing	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	50%	\$0.00	-	-	357,155	-	-	970	-	-	0.01	-	-	-
Grocery - E	Existing	Refrigeration	Electric	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.21	50%	\$0.10	72,418	70,288	70,288	60,505	58,366	57,953	6.70	6.47	6.42	-	-	-
Grocery - E	Existing	Refrigeration	Electric	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	50%	\$0.00	16,288	15,809	15,809	1,316	1,277	1,276	0.15	0.14	0.14	-	-	-
Grocery - E	Existing	Refrigeration	Electric	Glass Door Display	6800 kWh/yr	per sq ft	\$0.57	50%	\$0.29	289,131	280,627	280,627	1,681,815	1,630,286	1,626,480	186.31	180.60	180.18	-	-	-
Grocery - E	Existing	Food Preparation	Electric	Oven	Energy Star	per sq ft	\$0.00	50%	\$0.00	66,394	64,441	64,441	7,098	6,887	6,870	1.72	1.67	1.67	-	-	-
Grocery - E	Existing	Food Preparation	Electric	Fryer	Energy Star	per sq ft	\$0.00	50%	\$0.00	99,621	96,691	96,691	6,683	6,484	6,468	1.62	1.57	1.57	-	-	-
Grocery - E	Existing	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.01	50%	\$0.00	30,260	29,370	29,370	16,885	16,383	16,342	4.10	3.97	3.96	-	-	-
Grocery - E	Existing	Food Preparation	Electric	Hot Food Container	Energy Star	per sq ft	\$0.06	50%	\$0.03	56,879	55,207	55,207	20,377	19,770	19,722	4.94	4.80	4.78	-	-	-
Grocery - E	Existing	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	50%	\$0.00	218,566	212,138	212,138	15,029	14,581	14,546	1.81	1.76	1.75	-	-	-
Grocery - E	Existing	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	50%	\$0.00	204,961	198,933	198,933	2,172	2,108	2,102	0.26	0.25	0.25	-	-	-
Grocery - E	Existing	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	50%	\$0.00	513,585	498,479	498,479	16,487	15,997	15,957	1.99	1.93	1.92	-	-	-
Grocery - E	Existing	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	50%	\$0.00	102,002	99,002	99,002	791	767	766	0.10	0.09	0.09	-	-	-
Grocery - E	Existing	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	50%	\$0.00	353,528	343,130	343,130	3,308	3,210	3,202	0.40	0.39	0.39	-	-	-
Grocery - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	50%	\$0.00	146,070	-	-	1,249	-	-	0.20	-	-	-	-	-
Grocery - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	140,070	140,070	-	1,385	1,445	-	0.23	0.24	-	-	-
Grocery - E	New	Cooling	Electric	Roof top AC	EER 12.0	per sq ft	\$0.40	50%	\$0.20	84,628	84,628	-	28,293	28,283	-	49.40	49.38	-	-	-	-
Grocery - E	New	Cooling	Electric	Roof top AC	Ductless Minisplit	per sq ft	\$0.00	50%	\$0.00	-	-	102,790	-	-	71,216	-	-	124.35	-	-	-
Grocery - E	New	Cooling	Electric	Air Source Heat Pump	Ductless Minisplit	per sq ft	\$1.97	50%	\$0.98	1,696	1,646	1,646	1,269	1,228	1,224	2.22	2.14	2.14	-	-	-
Grocery - E	New	Cooling	Electric	PTHP	EER 11.5	per sq ft	\$0.03	50%	\$0.01	5,653	5,487	5,487	1,052	1,020	1,018	1.84	1.78	1.78	-	-	-
Grocery - E	New	Heating	Electric	PTHP	EER 11.5	per sq ft	\$0.01	50%	\$0.00	5,447	5,287	5,287	509	494	493	-	-	-	-	-	-
Grocery - E	New	Ventilation	Electric	Ventilation	Variable Air Volume	per sq ft	\$3.04	50%	\$1.52	16,792	16,299	16,299	65,097	63,159	63,004	5.36	5.21	5.19	-	-	-
Grocery - E	New	Water Heating	Electric	Water Heating	EF 2.4	per sq ft	\$0.01	50%	\$0.01	35,102	34,070	34,070	48,157	46,721	46,604	5.19	5.03	5.02	-	-	-
Grocery - E	New	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.02	50%	\$0.01	119,382	115,870	115,870	13,665	12,412	11,525	2.47	2.24	2.08	-	-	-
Grocery - E	New	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.00	50%	\$0.00	87,990	85,402	85,402	1,907	1,850	1,845	0.34	0.33	0.33	-	-	-
Grocery - E	New	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.14	50%	\$0.07	85,422	82,910	82,910	52,869	51,295	51,169	9.56	9.27	9.25	-	-	-
Grocery - E	New	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.01	50%	\$0.01	86,752	84,200	84,200	2,510	2,274	2,113	0.02	0.02	0.02	-	-	-
Grocery - E	New	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	50%	\$0.00	93,992	91,227	91,227	256	248	248	0.00	0.00	0.00	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Grocery - E	New	Refrigeration	Electric	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.21	50%	\$0.10	19,105	18,543	18,543	15,962	15,387	15,262	1.77	1.70	1.69	-	-	-
Grocery - E	New	Refrigeration	Electric	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	50%	\$0.00	3,910	3,795	3,795	318	309	308	0.04	0.03	0.03	-	-	-
Grocery - E	New	Refrigeration	Electric	Glass Door Display	6800 kWh/yr	per sq ft	\$0.57	50%	\$0.29	115,518	112,120	112,120	671,943	651,294	649,701	74.44	72.15	71.97	-	-	-
Grocery - E	New	Food Preparation	Electric	Oven	Energy Star	per sq ft	\$0.00	50%	\$0.00	17,040	16,539	16,539	1,822	1,768	1,763	0.44	0.43	0.43	-	-	-
Grocery - E	New	Food Preparation	Electric	Fryer	Energy Star	per sq ft	\$0.00	50%	\$0.00	25,587	24,834	24,834	1,716	1,665	1,661	0.42	0.40	0.40	-	-	-
Grocery - E	New	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.01	50%	\$0.00	7,768	7,539	7,539	4,335	4,206	4,195	1.05	1.02	1.02	-	-	-
Grocery - E	New	Food Preparation	Electric	Hot Food Container	Energy Star	per sq ft	\$0.06	50%	\$0.03	16,045	15,574	15,574	5,748	5,577	5,563	1.39	1.35	1.35	-	-	-
Grocery - E	New	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	50%	\$0.00	23,041	22,364	22,364	1,584	1,537	1,533	0.19	0.19	0.18	-	-	-
Grocery - E	New	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	50%	\$0.00	22,793	22,123	22,123	242	234	234	0.03	0.03	0.03	-	-	-
Grocery - E	New	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	50%	\$0.00	52,368	50,828	50,828	1,681	1,631	1,627	0.20	0.20	0.20	-	-	-
Grocery - E	New	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	50%	\$0.00	11,849	11,501	11,501	92	89	89	0.01	0.01	0.01	-	-	-
Grocery - E	New	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	50%	\$0.00	49,987	48,517	48,517	468	454	453	0.06	0.05	0.05	-	-	-
Grocery - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	50%	\$0.00	39,230	-	-	336	-	-	0.05	-	-	-	-	-
Grocery - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	47,197	47,197	-	471	493	-	0.08	0.08	-	-	-
College - E	Existing	Cooling	Electric	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	per sq ft	\$0.70	50%	\$0.35	207,543	201,439	201,439	208,672	202,263	201,574	128.44	124.50	124.07	-	-	-
College - E	Existing	Cooling	Electric	Roof top AC	Ductless Minisplit	per sq ft	\$0.36	50%	\$0.18	199,046	193,192	193,192	69,502	67,433	67,267	42.78	41.51	41.40	-	-	-
College - E	Existing	Cooling	Electric	PTAC	EER 11.5	per sq ft	\$0.03	50%	\$0.02	68,058	66,056	66,056	21,002	20,377	20,327	12.93	12.54	12.51	-	-	-
College - E	Existing	Ventilation	Electric	Ventilation	Variable Air Volume	per sq ft	\$1.61	50%	\$0.81	270,147	262,202	262,202	269,460	261,440	260,797	21.99	21.34	21.28	-	-	-
College - E	Existing	Water Heating	Electric	Water Heating	EF 2.4	per sq ft	\$0.01	50%	\$0.01	241,407	234,306	234,306	232,249	225,326	224,762	26.40	25.61	25.55	-	-	-
College - E	Existing	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.01	50%	\$0.01	8,170,223	7,929,922	7,929,922	627,824	562,228	520,507	88.49	79.25	73.37	-	-	-
College - E	Existing	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.00	50%	\$0.00	4,590,590	4,455,573	4,455,573	254,445	246,872	246,265	35.87	34.80	34.71	-	-	-
College - E	Existing	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.06	50%	\$0.03	2,754,724	2,673,703	2,673,703	761,906	739,231	737,413	107.39	104.20	103.94	-	-	-
College - E	Existing	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.02	50%	\$0.01	5,260,754	5,106,026	5,106,026	215,546	192,984	178,765	2.00	1.79	1.66	-	-	-
College - E	Existing	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	50%	\$0.00	-	-	2,405,760	-	-	153	-	-	0.00	-	-	-
College - E	Existing	Refrigeration	Electric	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.00	50%	\$0.00	137,312	133,273	133,273	3,210	3,096	3,074	0.35	0.33	0.33	-	-	-
College - E	Existing	Refrigeration	Electric	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	50%	\$0.00	177,340	172,124	172,124	2,809	2,726	2,722	0.30	0.29	0.29	-	-	-
College - E	Existing	Refrigeration	Electric	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	50%	\$0.00	538,064	522,239	522,239	30,648	29,709	29,639	3.30	3.20	3.19	-	-	-
College - E	Existing	Refrigeration	Electric	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	50%	\$0.00	811,032	787,178	787,178	9,684	9,374	9,341	1.04	1.01	1.01	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
College - E	Existing	Refrigeration	Electric	Icemaker	5.5 kWh/100 lbs	per sq ft	\$0.00	50%	\$0.00	-	-	884,910	-	-	8,019	-	-	0.86	-	-	-
College - E	Existing	Food Preparation	Electric	Oven	Energy Star	per sq ft	\$0.00	50%	\$0.00	786,241	763,117	763,117	6,290	6,103	6,088	1.10	1.07	1.06	-	-	-
College - E	Existing	Food Preparation	Electric	Fryer	Energy Star	per sq ft	\$0.00	50%	\$0.00	1,179,724	1,145,026	1,145,026	5,922	5,746	5,732	1.03	1.00	1.00	-	-	-
College - E	Existing	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.00	50%	\$0.00	509,216	494,239	494,239	21,264	20,631	20,580	3.71	3.60	3.59	-	-	-
College - E	Existing	Food Preparation	Electric	Hot Food Container	Energy Star	per sq ft	\$0.00	50%	\$0.00	307,646	298,597	298,597	8,248	8,002	7,983	1.44	1.40	1.39	-	-	-
College - E	Existing	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	50%	\$0.00	1,579,765	1,533,301	1,533,301	281,498	273,120	272,448	29.46	28.58	28.51	-	-	-
College - E	Existing	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	50%	\$0.00	1,359,665	1,319,675	1,319,675	37,344	36,232	36,143	3.91	3.79	3.78	-	-	-
College - E	Existing	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	50%	\$0.00	2,326,799	2,258,364	2,258,364	129,049	125,208	124,900	13.51	13.10	13.07	-	-	-
College - E	Existing	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	50%	\$0.00	748,061	726,059	726,059	15,033	14,586	14,550	1.57	1.53	1.52	-	-	-
College - E	Existing	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	50%	\$0.00	2,417,050	2,345,960	2,345,960	97,686	94,779	94,546	10.22	9.92	9.89	-	-	-
College - E	Existing	Office Equipment	Electric	POS Terminal	Energy Star	per sq ft	\$0.00	50%	\$0.00	-	-	1,806,710	-	-	71,316	-	-	7.46	-	-	-
College - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	50%	\$0.00	2,522,871	-	-	2,838	-	-	0.39	-	-	-	-	-
College - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	2,419,252	2,419,252	-	3,145	3,283	-	0.43	0.45	-	-	-
College - E	Existing	Misc.	Electric	Pool Pump	High Efficiency, Multi-Speed	per sq ft	\$0.00	50%	\$0.00	1,381,292	1,340,666	1,340,666	1,111	1,078	1,075	0.15	0.15	0.15	-	-	-
College - E	Existing	Misc.	Electric	Pool Heater	Heat Pump	per sq ft	\$0.00	50%	\$0.00	478,963	464,876	464,876	1,476	1,432	1,429	0.20	0.20	0.20	-	-	-
College - E	New	Cooling	Electric	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	per sq ft	\$0.76	50%	\$0.38	154,800	150,247	150,247	142,517	136,209	135,196	87.72	83.84	83.22	-	-	-
College - E	New	Cooling	Electric	Roof top AC	EER 12.0	per sq ft	\$0.08	50%	\$0.04	78,637	-	-	11,711	-	-	7.21	-	-	-	-	-
College - E	New	Cooling	Electric	Roof top AC	Ductless Minisplit	per sq ft	\$0.00	50%	\$0.00	-	95,185	95,185	-	29,430	29,358	-	18.11	18.07	-	-	-
College - E	New	Cooling	Electric	PTAC	EER 11.5	per sq ft	\$0.03	50%	\$0.02	31,273	30,353	30,353	8,665	8,408	8,387	5.33	5.17	5.16	-	-	-
College - E	New	Ventilation	Electric	Ventilation	Variable Air Volume	per sq ft	\$2.86	50%	\$1.43	18,670	18,121	18,121	33,100	32,115	32,036	2.70	2.62	2.61	-	-	-
College - E	New	Water Heating	Electric	Water Heating	EF 2.4	per sq ft	\$0.01	50%	\$0.01	107,797	104,626	104,626	98,519	95,583	95,343	11.20	10.86	10.84	-	-	-
College - E	New	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.01	50%	\$0.01	877,199	851,399	851,399	67,077	60,693	56,000	9.45	8.56	7.89	-	-	-
College - E	New	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.00	50%	\$0.00	592,695	575,263	575,263	32,852	31,874	31,796	4.63	4.49	4.48	-	-	-
College - E	New	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.06	50%	\$0.03	592,695	575,263	575,263	163,929	159,050	158,659	23.11	22.42	22.36	-	-	-
College - E	New	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.02	50%	\$0.01	632,247	613,652	613,652	25,778	23,284	21,507	0.24	0.22	0.20	-	-	-
College - E	New	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	50%	\$0.00	633,118	614,497	614,497	40	39	39	0.00	0.00	0.00	-	-	-
College - E	New	Refrigeration	Electric	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.00	50%	\$0.00	31,915	30,976	30,976	746	719	713	0.08	0.08	0.08	-	-	-
College - E	New	Refrigeration	Electric	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	50%	\$0.00	47,761	46,357	46,357	755	733	732	0.08	0.08	0.08	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
College - E	New	Refrigeration	Electric	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	50%	\$0.00	218,900	212,462	212,462	12,468	12,085	12,055	1.34	1.30	1.30	-	-	-
College - E	New	Refrigeration	Electric	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	50%	\$0.00	218,900	212,462	212,462	2,614	2,529	2,519	0.28	0.27	0.27	-	-	-
College - E	New	Refrigeration	Electric	Icemaker	5.5 kWh/100 lbs	per sq ft	\$0.00	50%	\$0.00	-	-	244,038	-	-	2,174	-	-	0.23	-	-	-
College - E	New	Food Preparation	Electric	Oven	Energy Star	per sq ft	\$0.00	50%	\$0.00	206,027	199,967	199,967	1,648	1,599	1,595	0.29	0.28	0.28	-	-	-
College - E	New	Food Preparation	Electric	Fryer	Energy Star	per sq ft	\$0.00	50%	\$0.00	309,375	300,276	300,276	1,553	1,507	1,503	0.27	0.26	0.26	-	-	-
College - E	New	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.00	50%	\$0.00	133,156	129,240	129,240	5,560	5,395	5,382	0.97	0.94	0.94	-	-	-
College - E	New	Food Preparation	Electric	Hot Food Container	Energy Star	per sq ft	\$0.00	50%	\$0.00	88,420	85,820	85,820	2,370	2,300	2,294	0.41	0.40	0.40	-	-	-
College - E	New	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	50%	\$0.00	168,378	163,426	163,426	30,003	29,110	29,039	3.14	3.05	3.04	-	-	-
College - E	New	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	50%	\$0.00	151,246	146,797	146,797	4,154	4,030	4,020	0.43	0.42	0.42	-	-	-
College - E	New	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	50%	\$0.00	241,491	234,389	234,389	13,394	12,995	12,963	1.40	1.36	1.36	-	-	-
College - E	New	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	50%	\$0.00	87,452	84,880	84,880	1,757	1,705	1,701	0.18	0.18	0.18	-	-	-
College - E	New	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	50%	\$0.00	344,279	334,153	334,153	13,914	13,500	13,467	1.46	1.41	1.41	-	-	-
College - E	New	Office Equipment	Electric	POS Terminal	Energy Star	per sq ft	\$0.00	50%	\$0.00	-	-	357,351	-	-	14,106	-	-	1.48	-	-	-
College - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	50%	\$0.00	677,561	-	-	762	-	-	0.10	-	-	-	-	-
College - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	815,180	815,180	-	1,070	1,119	-	0.15	0.15	-	-	-
College - E	New	Misc.	Electric	Pool Pump	High Efficiency, Multi-Speed	per sq ft	\$0.00	50%	\$0.00	866,703	841,212	841,212	697	676	675	0.10	0.09	0.09	-	-	-
College - E	New	Misc.	Electric	Pool Heater	Heat Pump	per sq ft	\$0.00	50%	\$0.00	336,885	326,977	326,977	1,038	1,007	1,005	0.14	0.14	0.14	-	-	-
School - E	Existing	Cooling	Electric	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	per sq ft	\$0.54	50%	\$0.27	89,273	86,648	86,648	68,703	66,592	66,362	92.18	89.35	89.04	-	-	-
School - E	Existing	Cooling	Electric	Roof top AC	Ductless Minisplit	per sq ft	\$0.28	50%	\$0.14	294,772	286,102	286,102	78,782	76,437	76,249	105.70	102.56	102.31	-	-	-
School - E	Existing	Cooling	Electric	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.15	50%	\$0.08	59,171	57,431	57,431	25,457	24,591	24,432	34.16	33.00	32.78	-	-	-
School - E	Existing	Cooling	Electric	PTAC	EER 11.5	per sq ft	\$0.03	50%	\$0.01	51,444	49,931	49,931	12,151	11,789	11,760	16.30	15.82	15.78	-	-	-
School - E	Existing	Heating	Electric	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.07	50%	\$0.04	62,558	60,718	60,718	65,600	63,447	63,106	-	-	-	-	-	-
School - E	Existing	Ventilation	Electric	Ventilation	Variable Air Volume	per sq ft	\$1.02	50%	\$0.51	251,417	244,022	244,022	159,507	154,759	154,379	13.22	12.82	12.79	-	-	-
School - E	Existing	Water Heating	Electric	Water Heating	EF 2.4	per sq ft	\$0.01	50%	\$0.00	93,761	91,003	91,003	58,523	56,778	56,636	3.25	3.15	3.14	-	-	-
School - E	Existing	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.01	50%	\$0.00	7,603,754	7,380,114	7,380,114	117,711	105,413	97,590	8.88	7.95	7.36	-	-	-
School - E	Existing	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.01	50%	\$0.00	4,272,310	4,146,653	4,146,653	141,516	137,304	136,966	10.67	10.36	10.33	-	-	-
School - E	Existing	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.11	50%	\$0.06	2,563,730	2,488,326	2,488,326	585,167	567,751	566,355	44.13	42.82	42.72	-	-	-
School - E	Existing	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.01	50%	\$0.01	4,896,009	4,752,008	4,752,008	68,692	61,501	56,970	0.64	0.57	0.53	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
School - E	Existing	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	50%	\$0.00	-	-	2,238,961	-	-	114	-	-	0.00	-	-	-
School - E	Existing	Refrigeration	Electric	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.01	50%	\$0.00	551,592	535,369	535,369	14,535	14,021	13,922	1.55	1.49	1.48	-	-	-
School - E	Existing	Refrigeration	Electric	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	50%	\$0.00	242,750	235,610	235,610	4,327	4,199	4,194	0.46	0.45	0.45	-	-	-
School - E	Existing	Refrigeration	Electric	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	50%	\$0.00	1,210,166	1,174,572	1,174,572	77,704	75,323	75,147	8.27	8.01	7.99	-	-	-
School - E	Existing	Refrigeration	Electric	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	50%	\$0.00	-	-	1,640,769	-	-	28,844	-	-	3.07	-	-	-
School - E	Existing	Food Preparation	Electric	Oven	Energy Star	per sq ft	\$0.00	50%	\$0.00	259,492	251,860	251,860	5,481	5,318	5,305	0.31	0.30	0.30	-	-	-
School - E	Existing	Food Preparation	Electric	Fryer	Energy Star	per sq ft	\$0.00	50%	\$0.00	83,002	80,560	80,560	1,100	1,067	1,065	0.06	0.06	0.06	-	-	-
School - E	Existing	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.00	50%	\$0.00	491,142	476,697	476,697	54,146	52,535	52,405	3.05	2.96	2.95	-	-	-
School - E	Existing	Food Preparation	Electric	Hot Food Container	Energy Star	per sq ft	\$0.00	50%	\$0.00	141,784	137,614	137,614	10,035	9,737	9,713	0.57	0.55	0.55	-	-	-
School - E	Existing	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	50%	\$0.00	1,445,854	1,403,329	1,403,329	114,106	110,710	110,438	6.47	6.28	6.26	-	-	-
School - E	Existing	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	50%	\$0.00	1,799,630	1,746,700	1,746,700	14,594	14,160	14,125	0.83	0.80	0.80	-	-	-
School - E	Existing	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	50%	\$0.00	5,034,452	4,886,380	4,886,380	247,332	239,971	239,380	14.02	13.60	13.57	-	-	-
School - E	Existing	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	50%	\$0.00	696,195	675,719	675,719	6,197	6,012	5,997	0.35	0.34	0.34	-	-	-
School - E	Existing	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	50%	\$0.00	2,249,468	2,183,307	2,183,307	80,530	78,134	77,941	4.57	4.43	4.42	-	-	-
School - E	Existing	Office Equipment	Electric	POS Terminal	Energy Star	per sq ft	\$0.00	50%	\$0.00	1,160,183	1,126,060	1,126,060	16,272	15,788	15,749	0.92	0.90	0.89	-	-	-
School - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	50%	\$0.00	1,154,087	-	-	889	-	-	0.04	-	-	-	-	-
School - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	1,106,686	1,106,686	-	985	1,028	-	0.05	0.05	-	-	-
School - E	Existing	Misc.	Electric	Pool Pump	High Efficiency, Multi-Speed	per sq ft	\$0.00	50%	\$0.00	115,313	111,921	111,921	19	18	18	0.00	0.00	0.00	-	-	-
School - E	New	Cooling	Electric	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	per sq ft	\$0.58	50%	\$0.29	55,451	53,820	53,820	39,075	37,326	37,043	52.43	50.08	49.70	-	-	-
School - E	New	Cooling	Electric	Roof top AC	Ductless Minisplit	per sq ft	\$0.27	50%	\$0.14	132,203	128,315	128,315	31,298	30,367	30,292	41.99	40.74	40.64	-	-	-
School - E	New	Cooling	Electric	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.19	50%	\$0.09	21,414	20,784	20,784	10,446	10,093	10,025	14.02	13.54	13.45	-	-	-
School - E	New	Cooling	Electric	PTAC	EER 11.5	per sq ft	\$0.02	50%	\$0.01	23,072	22,394	22,394	4,893	4,748	4,736	6.57	6.37	6.35	-	-	-
School - E	New	Heating	Electric	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.10	50%	\$0.05	15,860	15,393	15,393	16,253	15,723	15,636	-	-	-	-	-	-
School - E	New	Ventilation	Electric	Ventilation	Variable Air Volume	per sq ft	\$1.82	50%	\$0.91	17,376	16,865	16,865	19,594	19,011	18,964	1.62	1.58	1.57	-	-	-
School - E	New	Water Heating	Electric	Water Heating	EF 2.4	per sq ft	\$0.01	50%	\$0.00	41,867	40,636	40,636	24,825	24,085	24,025	1.38	1.34	1.33	-	-	-
School - E	New	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.01	50%	\$0.00	816,380	792,369	792,369	12,576	11,379	10,500	0.95	0.86	0.79	-	-	-
School - E	New	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.01	50%	\$0.00	551,601	535,378	535,378	18,271	17,727	17,684	1.38	1.34	1.33	-	-	-
School - E	New	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.11	50%	\$0.06	551,601	535,378	535,378	125,902	122,155	121,855	9.50	9.21	9.19	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
School - E	New	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.01	50%	\$0.01	588,412	571,105	571,105	8,215	7,420	6,854	0.08	0.07	0.06	-	-	-
School - E	New	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	50%	\$0.00	589,222	571,892	571,892	30	29	29	0.00	0.00	0.00	-	-	-
School - E	New	Refrigeration	Electric	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.01	50%	\$0.00	147,815	143,467	143,467	3,895	3,755	3,724	0.41	0.40	0.40	-	-	-
School - E	New	Refrigeration	Electric	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	50%	\$0.00	67,380	65,398	65,398	1,201	1,166	1,164	0.13	0.12	0.12	-	-	-
School - E	New	Refrigeration	Electric	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	50%	\$0.00	485,813	471,525	471,525	31,194	30,235	30,161	3.32	3.22	3.21	-	-	-
School - E	New	Refrigeration	Electric	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	50%	\$0.00	-	-	537,613	-	-	8,828	-	-	0.94	-	-	-
School - E	New	Food Preparation	Electric	Oven	Energy Star	per sq ft	\$0.00	50%	\$0.00	70,449	68,377	68,377	1,488	1,444	1,440	0.08	0.08	0.08	-	-	-
School - E	New	Food Preparation	Electric	Fryer	Energy Star	per sq ft	\$0.00	50%	\$0.00	20,354	19,755	19,755	270	262	261	0.02	0.01	0.01	-	-	-
School - E	New	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.00	50%	\$0.00	128,347	124,572	124,572	14,150	13,729	13,695	0.80	0.77	0.77	-	-	-
School - E	New	Food Preparation	Electric	Hot Food Container	Energy Star	per sq ft	\$0.00	50%	\$0.00	41,518	40,297	40,297	2,939	2,851	2,844	0.17	0.16	0.16	-	-	-
School - E	New	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	50%	\$0.00	154,134	149,601	149,601	12,164	11,802	11,773	0.69	0.67	0.67	-	-	-
School - E	New	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	50%	\$0.00	199,167	193,309	193,309	1,615	1,567	1,563	0.09	0.09	0.09	-	-	-
School - E	New	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	50%	\$0.00	517,083	501,875	501,875	25,403	24,647	24,587	1.44	1.40	1.39	-	-	-
School - E	New	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	50%	\$0.00	81,389	78,995	78,995	724	703	701	0.04	0.04	0.04	-	-	-
School - E	New	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	50%	\$0.00	320,409	310,985	310,985	11,471	11,129	11,102	0.65	0.63	0.63	-	-	-
School - E	New	Office Equipment	Electric	POS Terminal	Energy Star	per sq ft	\$0.00	50%	\$0.00	155,581	151,005	151,005	2,182	2,117	2,112	0.12	0.12	0.12	-	-	-
School - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	50%	\$0.00	309,950	-	-	239	-	-	0.01	-	-	-	-	-
School - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	372,904	372,904	-	335	351	-	0.02	0.02	-	-	-
School - E	New	Misc.	Electric	Pool Pump	High Efficiency, Multi-Speed	per sq ft	\$0.00	50%	\$0.00	72,354	70,226	70,226	12	12	12	0.00	0.00	0.00	-	-	-
Health - E	Existing	Cooling	Electric	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	per sq ft	\$0.80	50%	\$0.40	58,106	56,397	56,397	70,926	68,815	68,672	18.04	17.51	17.47	-	-	-
Health - E	Existing	Cooling	Electric	Roof top AC	Ductless Minisplit	per sq ft	\$0.32	50%	\$0.16	480,057	465,938	465,938	329,698	319,885	319,099	83.87	81.38	81.18	-	-	-
Health - E	Existing	Cooling	Electric	Air Source Heat Pump	Ductless Minisplit	per sq ft	\$0.33	50%	\$0.17	2,783	2,701	2,701	1,924	1,861	1,855	0.49	0.47	0.47	-	-	-
Health - E	Existing	Cooling	Electric	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.21	50%	\$0.10	36,644	35,566	35,566	49,291	47,603	47,291	12.54	12.11	12.03	-	-	-
Health - E	Existing	Cooling	Electric	PTAC	EER 11.5	per sq ft	\$0.02	50%	\$0.01	16,121	15,647	15,647	9,785	9,494	9,471	2.49	2.42	2.41	-	-	-
Health - E	Existing	Cooling	Electric	PTHP	EER 11.5	per sq ft	\$0.02	50%	\$0.01	21,449	20,818	20,818	13,020	12,632	12,601	3.31	3.21	3.21	-	-	-
Health - E	Existing	Heating	Electric	Air Source Heat Pump	Ductless Minisplit	per sq ft	\$0.05	50%	\$0.03	2,723	2,643	2,643	286	277	276	0.00	0.00	0.00	-	-	-
Health - E	Existing	Heating	Electric	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.04	50%	\$0.02	35,865	34,810	34,810	34,248	33,117	32,937	0.00	0.00	0.00	-	-	-
Health - E	Existing	Heating	Electric	PTHP	EER 11.5	per sq ft	\$0.02	50%	\$0.01	23,696	22,999	22,999	10,775	10,454	10,428	0.00	0.00	0.00	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Health - E	Existing	Ventilation	Electric	Ventilation	Variable Air Volume	per sq ft	\$0.83	50%	\$0.41	97,874	94,995	94,995	199,539	193,600	193,124	18.35	17.81	17.76	-	-	-
Health - E	Existing	Water Heating	Electric	Water Heating	EF 2.4	per sq ft	\$0.01	50%	\$0.00	218,867	212,430	212,430	277,219	268,955	268,282	22.78	22.10	22.05	-	-	-
Health - E	Existing	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.03	50%	\$0.01	5,438,329	5,278,378	5,278,378	629,727	562,440	521,506	66.22	59.14	54.84	-	-	-
Health - E	Existing	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.01	50%	\$0.00	3,274,152	3,177,853	3,177,853	152,392	147,856	147,493	16.02	15.55	15.51	-	-	-
Health - E	Existing	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.06	50%	\$0.03	1,906,984	1,850,897	1,850,897	412,638	400,357	399,372	43.39	42.10	42.00	-	-	-
Health - E	Existing	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.00	50%	\$0.00	3,513,138	3,409,811	3,409,811	9,726	8,688	8,052	0.09	0.08	0.07	-	-	-
Health - E	Existing	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	50%	\$0.00	-	-	1,715,863	-	-	62	-	-	0.00	-	-	-
Health - E	Existing	Refrigeration	Electric	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.00	50%	\$0.00	197,626	191,813	191,813	5,575	5,378	5,340	0.59	0.57	0.56	-	-	-
Health - E	Existing	Refrigeration	Electric	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	50%	\$0.00	95,544	92,734	92,734	915	888	887	0.10	0.09	0.09	-	-	-
Health - E	Existing	Refrigeration	Electric	Glass Door Display	6800 kWh/yr	per sq ft	\$0.01	50%	\$0.00	1,223,886	1,187,889	1,187,889	84,129	81,552	81,361	8.86	8.58	8.56	-	-	-
Health - E	Existing	Food Preparation	Electric	Oven	Energy Star	per sq ft	\$0.00	50%	\$0.00	215,806	209,459	209,459	15,029	14,581	14,546	1.72	1.67	1.66	-	-	-
Health - E	Existing	Food Preparation	Electric	Fryer	Energy Star	per sq ft	\$0.00	50%	\$0.00	325,228	315,663	315,663	14,211	13,788	13,754	1.62	1.58	1.57	-	-	-
Health - E	Existing	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.01	50%	\$0.00	339,408	329,426	329,426	123,364	119,693	119,399	14.10	13.68	13.65	-	-	-
Health - E	Existing	Food Preparation	Electric	Hot Food Container	Energy Star	per sq ft	\$0.01	50%	\$0.00	59,641	57,887	57,887	13,917	13,503	13,470	1.59	1.54	1.54	-	-	-
Health - E	Existing	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	50%	\$0.00	1,105,180	1,072,674	1,072,674	146,336	141,981	141,632	14.75	14.31	14.27	-	-	-
Health - E	Existing	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	50%	\$0.00	1,077,596	1,045,902	1,045,902	21,993	21,338	21,286	2.22	2.15	2.15	-	-	-
Health - E	Existing	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	50%	\$0.00	3,627,781	3,521,081	3,521,081	112,133	108,796	108,528	11.30	10.96	10.94	-	-	-
Health - E	Existing	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	50%	\$0.00	530,634	515,027	515,027	7,924	7,688	7,669	0.80	0.77	0.77	-	-	-
Health - E	Existing	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	50%	\$0.00	1,723,915	1,673,212	1,673,212	77,659	75,348	75,162	7.83	7.59	7.57	-	-	-
Health - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	50%	\$0.00	1,501,068	-	-	25,382	-	-	2.75	-	-	-	-	-
Health - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	1,439,416	1,439,416	-	28,127	29,361	-	3.05	3.19	-	-	-
Health - E	New	Cooling	Electric	Air-Cooled Chiller	0.97 kw/ton, COP 3.6	per sq ft	\$0.70	50%	\$0.35	44,934	43,612	43,612	49,862	48,378	48,259	12.68	12.31	12.28	-	-	-
Health - E	New	Cooling	Electric	Roof top AC	Ductless Minisplit	per sq ft	\$0.19	50%	\$0.09	228,701	221,974	221,974	137,546	133,452	133,124	34.99	33.95	33.87	-	-	-
Health - E	New	Cooling	Electric	Air Source Heat Pump	Ductless Minisplit	per sq ft	\$0.23	50%	\$0.11	996	967	967	689	667	664	0.18	0.17	0.17	-	-	-
Health - E	New	Cooling	Electric	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.14	50%	\$0.07	13,120	12,735	12,735	17,673	17,079	16,966	4.50	4.34	4.32	-	-	-
Health - E	New	Cooling	Electric	PTAC	EER 11.5	per sq ft	\$0.02	50%	\$0.01	7,680	7,454	7,454	4,283	4,156	4,145	1.09	1.06	1.05	-	-	-
Health - E	New	Cooling	Electric	PTHP	EER 11.5	per sq ft	\$0.02	50%	\$0.01	7,680	7,454	7,454	4,283	4,156	4,145	1.09	1.06	1.05	-	-	-
Health - E	New	Heating	Electric	Air Source Heat Pump	EER 11.7, COP 3.4	per sq ft	\$0.02	50%	\$0.01	541	541	-	26	26	-	0.00	0.00	-	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Health - E	New	Heating	Electric	Air Source Heat Pump	Ductless Minisplit	per sq ft	\$0.00	50%	\$0.00	-	-	1,037	-	-	100	-	-	0.00	-	-	-
Health - E	New	Heating	Electric	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.03	50%	\$0.01	12,386	12,022	12,022	11,060	10,700	10,641	0.00	0.00	0.00	-	-	-
Health - E	New	Heating	Electric	PTHP	EER 11.5	per sq ft	\$0.01	50%	\$0.00	7,250	7,037	7,037	2,961	2,873	2,866	0.00	0.00	0.00	-	-	-
Health - E	New	Ventilation	Electric	Ventilation	Variable Air Volume	per sq ft	\$1.34	50%	\$0.67	7,142	6,931	6,931	22,599	21,926	21,873	2.08	2.02	2.01	-	-	-
Health - E	New	Water Heating	Electric	Water Heating	EF 2.4	per sq ft	\$0.01	50%	\$0.00	97,732	94,858	94,858	117,598	114,093	113,807	9.66	9.38	9.35	-	-	-
Health - E	New	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.03	50%	\$0.01	582,576	565,442	565,442	67,811	60,435	55,833	7.13	6.36	5.87	-	-	-
Health - E	New	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.01	50%	\$0.00	422,728	410,295	410,295	19,675	19,090	19,043	2.07	2.01	2.00	-	-	-
Health - E	New	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.06	50%	\$0.03	410,343	398,274	398,274	88,791	86,148	85,936	9.34	9.06	9.04	-	-	-
Health - E	New	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.00	50%	\$0.00	419,919	407,569	407,569	1,169	1,042	963	0.01	0.01	0.01	-	-	-
Health - E	New	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	50%	\$0.00	451,560	438,278	438,278	16	16	16	0.00	0.00	0.00	-	-	-
Health - E	New	Refrigeration	Electric	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.00	50%	\$0.00	51,546	50,030	50,030	1,454	1,402	1,390	0.15	0.15	0.15	-	-	-
Health - E	New	Refrigeration	Electric	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	50%	\$0.00	21,036	20,417	20,417	201	195	195	0.02	0.02	0.02	-	-	-
Health - E	New	Refrigeration	Electric	Glass Door Display	6800 kWh/yr	per sq ft	\$0.01	50%	\$0.00	490,194	475,777	475,777	33,696	32,660	32,580	3.55	3.44	3.43	-	-	-
Health - E	New	Food Preparation	Electric	Oven	Energy Star	per sq ft	\$0.00	50%	\$0.00	58,145	56,435	56,435	4,049	3,929	3,919	0.46	0.45	0.45	-	-	-
Health - E	New	Food Preparation	Electric	Fryer	Energy Star	per sq ft	\$0.00	50%	\$0.00	87,727	85,147	85,147	3,833	3,719	3,710	0.44	0.43	0.42	-	-	-
Health - E	New	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.01	50%	\$0.00	89,736	87,097	87,097	32,616	31,646	31,568	3.73	3.62	3.61	-	-	-
Health - E	New	Food Preparation	Electric	Hot Food Container	Energy Star	per sq ft	\$0.01	50%	\$0.00	17,249	16,742	16,742	4,025	3,905	3,896	0.46	0.45	0.45	-	-	-
Health - E	New	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	50%	\$0.00	117,820	114,355	114,355	15,600	15,136	15,099	1.57	1.53	1.52	-	-	-
Health - E	New	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	50%	\$0.00	119,663	116,144	116,144	2,442	2,370	2,364	0.25	0.24	0.24	-	-	-
Health - E	New	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	50%	\$0.00	372,793	361,828	361,828	11,523	11,180	11,152	1.16	1.13	1.12	-	-	-
Health - E	New	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	50%	\$0.00	62,036	60,211	60,211	926	899	897	0.09	0.09	0.09	-	-	-
Health - E	New	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	50%	\$0.00	245,551	238,329	238,329	11,062	10,732	10,706	1.11	1.08	1.08	-	-	-
Health - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	50%	\$0.00	403,138	-	-	6,817	-	-	0.74	-	-	-	-	-
Health - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	485,019	485,019	-	9,572	10,012	-	1.04	1.09	-	-	-
Lodging - E	Existing	Cooling	Electric	Roof top AC	Ductless Minisplit	per sq ft	\$0.03	50%	\$0.02	190,098	184,507	184,507	16,503	16,011	15,972	5.98	5.80	5.78	-	-	-
Lodging - E	Existing	Cooling	Electric	PTAC	EER 11.5	per sq ft	\$0.01	50%	\$0.00	423,642	411,182	411,182	100,192	97,210	96,971	36.29	35.21	35.12	-	-	-
Lodging - E	Existing	Cooling	Electric	PTHP	EER 11.5	per sq ft	\$0.01	50%	\$0.00	530,322	514,725	514,725	125,422	121,689	121,390	45.42	44.07	43.96	-	-	-
Lodging - E	Existing	Heating	Electric	PTHP	EER 11.5	per sq ft	\$0.01	50%	\$0.00	594,547	577,060	577,060	130,621	126,733	126,422	-	-	-	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Lodging - E	Existing	Ventilation	Electric	Ventilation	Variable Air Volume	per sq ft	\$0.38	50%	\$0.19	432,166	419,455	419,455	172,637	167,499	167,087	14.29	13.87	13.83	-	-	-
Lodging - E	Existing	Water Heating	Electric	Water Heating	EF 2.4	per sq ft	\$0.02	50%	\$0.01	675,523	655,655	655,655	848,011	822,409	820,170	59.02	57.24	57.08	-	-	-
Lodging - E	Existing	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.11	50%	\$0.06	5,039,489	4,891,268	4,891,268	1,804,122	1,610,982	1,492,338	146.62	130.93	121.28	-	-	-
Lodging - E	Existing	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.00	50%	\$0.00	3,034,159	2,944,920	2,944,920	44,751	43,419	43,312	3.64	3.53	3.52	-	-	-
Lodging - E	Existing	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.02	50%	\$0.01	1,769,569	1,717,523	1,717,523	96,118	93,257	93,028	7.81	7.58	7.56	-	-	-
Lodging - E	Existing	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.03	50%	\$0.01	3,252,845	3,157,173	3,157,173	105,757	94,457	87,512	0.98	0.88	0.81	-	-	-
Lodging - E	Existing	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	50%	\$0.00	-	-	1,590,092	-	-	77	-	-	0.00	-	-	-
Lodging - E	Existing	Refrigeration	Electric	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.01	50%	\$0.00	282,224	273,923	273,923	9,098	8,777	8,715	0.92	0.89	0.88	-	-	-
Lodging - E	Existing	Refrigeration	Electric	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	50%	\$0.00	119,014	115,514	115,514	1,284	1,246	1,244	0.13	0.13	0.13	-	-	-
Lodging - E	Existing	Refrigeration	Electric	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	50%	\$0.00	771,830	749,129	749,129	60,630	58,772	58,635	6.16	5.97	5.95	-	-	-
Lodging - E	Existing	Refrigeration	Electric	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	50%	\$0.00	-	1,088,589	1,088,589	-	20,643	19,224	-	2.10	1.95	-	-	-
Lodging - E	Existing	Food Preparation	Electric	Oven	Energy Star	per sq ft	\$0.00	50%	\$0.00	461,071	447,510	447,510	3,939	3,822	3,813	0.46	0.45	0.45	-	-	-
Lodging - E	Existing	Food Preparation	Electric	Fryer	Energy Star	per sq ft	\$0.00	50%	\$0.00	243,244	236,090	236,090	1,304	1,265	1,262	0.15	0.15	0.15	-	-	-
Lodging - E	Existing	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.00	50%	\$0.00	554,595	538,283	538,283	24,730	23,994	23,935	2.90	2.82	2.81	-	-	-
Lodging - E	Existing	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	50%	\$0.00	972,734	944,124	944,124	18,939	18,375	18,330	1.70	1.65	1.64	-	-	-
Lodging - E	Existing	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	50%	\$0.00	1,057,887	1,026,773	1,026,773	3,175	3,080	3,073	0.28	0.28	0.28	-	-	-
Lodging - E	Existing	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	50%	\$0.00	3,155,309	3,062,506	3,062,506	28,681	27,828	27,759	2.57	2.50	2.49	-	-	-
Lodging - E	Existing	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	50%	\$0.00	452,859	439,539	439,539	994	965	962	0.09	0.09	0.09	-	-	-
Lodging - E	Existing	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	50%	\$0.00	1,449,068	1,406,449	1,406,449	3,839	3,725	3,716	0.34	0.33	0.33	-	-	-
Lodging - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	50%	\$0.00	1,713,351	-	-	2,167	-	-	0.20	-	-	-	-	-
Lodging - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	1,642,980	1,642,980	-	2,402	2,507	-	0.23	0.24	-	-	-
Lodging - E	Existing	Misc.	Electric	Pool Pump	High Efficiency, Multi-Speed	per sq ft	\$0.00	50%	\$0.00	413,312	401,156	401,156	1,122	1,088	1,086	0.11	0.10	0.10	-	-	-
Lodging - E	Existing	Misc.	Electric	Pool Heater	Heat Pump	per sq ft	\$0.00	50%	\$0.00	31,482	30,556	30,556	327	318	317	0.03	0.03	0.03	-	-	-
Lodging - E	New	Cooling	Electric	Roof top AC	Ductless Minisplit	per sq ft	\$0.03	50%	\$0.02	88,371	85,771	85,771	7,793	7,561	7,542	2.82	2.74	2.73	-	-	-
Lodging - E	New	Cooling	Electric	PTAC	EER 11.5	per sq ft	\$0.01	50%	\$0.00	196,938	191,145	191,145	42,792	41,518	41,416	15.50	15.04	15.00	-	-	-
Lodging - E	New	Cooling	Electric	PTHP	EER 11.5	per sq ft	\$0.01	50%	\$0.00	185,286	179,836	179,836	40,260	39,062	38,966	14.58	14.15	14.11	-	-	-
Lodging - E	New	Heating	Electric	PTHP	EER 11.5	per sq ft	\$0.00	50%	\$0.00	181,911	176,561	176,561	35,896	34,828	34,742	-	-	-	-	-	-
Lodging - E	New	Ventilation	Electric	Ventilation	Variable Air Volume	per sq ft	\$0.67	50%	\$0.34	26,660	25,876	25,876	7,735	7,505	7,487	0.64	0.62	0.62	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Lodging - E	New	Water Heating	Electric	Water Heating	EF 2.4	per sq ft	\$0.02	50%	\$0.01	301,645	292,773	292,773	368,378	357,398	356,503	25.64	24.87	24.81	-	-	-
Lodging - E	New	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.11	50%	\$0.06	543,200	527,223	527,223	193,106	173,798	160,844	15.69	14.12	13.07	-	-	-
Lodging - E	New	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.00	50%	\$0.00	391,743	380,221	380,221	5,778	5,606	5,592	0.47	0.46	0.45	-	-	-
Lodging - E	New	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.02	50%	\$0.01	379,720	368,552	368,552	20,625	20,011	19,962	1.68	1.63	1.62	-	-	-
Lodging - E	New	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.03	50%	\$0.01	390,963	379,464	379,464	12,622	11,349	10,509	0.12	0.11	0.10	-	-	-
Lodging - E	New	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	50%	\$0.00	418,461	406,153	406,153	20	20	20	0.00	0.00	0.00	-	-	-
Lodging - E	New	Refrigeration	Electric	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.01	50%	\$0.00	76,376	74,129	74,129	2,462	2,373	2,354	0.25	0.24	0.24	-	-	-
Lodging - E	New	Refrigeration	Electric	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	50%	\$0.00	30,226	29,337	29,337	330	320	319	0.03	0.03	0.03	-	-	-
Lodging - E	New	Refrigeration	Electric	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	50%	\$0.00	310,179	301,056	301,056	24,366	23,617	23,559	2.47	2.40	2.39	-	-	-
Lodging - E	New	Refrigeration	Electric	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	50%	\$0.00	-	323,506	323,506	-	5,962	5,589	-	0.61	0.57	-	-	-
Lodging - E	New	Food Preparation	Electric	Oven	Energy Star	per sq ft	\$0.00	50%	\$0.00	122,534	118,930	118,930	1,047	1,016	1,013	0.12	0.12	0.12	-	-	-
Lodging - E	New	Food Preparation	Electric	Fryer	Energy Star	per sq ft	\$0.00	50%	\$0.00	65,021	63,108	63,108	349	338	337	0.04	0.04	0.04	-	-	-
Lodging - E	New	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.00	50%	\$0.00	143,207	138,995	138,995	6,386	6,196	6,180	0.75	0.73	0.73	-	-	-
Lodging - E	New	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	50%	\$0.00	103,761	100,710	100,710	2,020	1,960	1,955	0.18	0.18	0.18	-	-	-
Lodging - E	New	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	50%	\$0.00	117,373	113,921	113,921	352	342	341	0.03	0.03	0.03	-	-	-
Lodging - E	New	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	50%	\$0.00	324,420	314,878	314,878	2,949	2,861	2,854	0.26	0.26	0.26	-	-	-
Lodging - E	New	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	50%	\$0.00	52,972	51,414	51,414	116	113	113	0.01	0.01	0.01	-	-	-
Lodging - E	New	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	50%	\$0.00	206,557	200,482	200,482	547	531	530	0.05	0.05	0.05	-	-	-
Lodging - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	50%	\$0.00	460,150	-	-	582	-	-	0.05	-	-	-	-	-
Lodging - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	553,611	553,611	-	817	855	-	0.08	0.08	-	-	-
Lodging - E	New	Misc.	Electric	Pool Pump	High Efficiency, Multi-Speed	per sq ft	\$0.00	50%	\$0.00	259,336	251,709	251,709	704	683	681	0.07	0.06	0.06	-	-	-
Lodging - E	New	Misc.	Electric	Pool Heater	Heat Pump	per sq ft	\$0.00	50%	\$0.00	22,143	21,492	21,492	230	223	223	0.02	0.02	0.02	-	-	-
Warehouse - E	Existing	Cooling	Electric	Roof top AC	Ductless Minisplit	per sq ft	\$0.08	50%	\$0.04	307,929	298,872	298,872	99,474	96,513	96,276	184.59	179.10	178.66	-	-	-
Warehouse - E	Existing	Cooling	Electric	Air Source Heat Pump	Ductless Minisplit	per sq ft	\$0.09	50%	\$0.04	4,211	4,087	4,087	1,333	1,290	1,286	2.47	2.39	2.39	-	-	-
Warehouse - E	Existing	Cooling	Electric	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.05	50%	\$0.03	259,618	251,982	251,982	160,138	154,746	153,766	297.17	287.16	285.35	-	-	-
Warehouse - E	Existing	Heating	Electric	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.00	50%	\$0.00	-	-	132,588	-	-	128,506	-	-	-	-	-	-
Warehouse - E	Existing	Ventilation	Electric	Ventilation	Variable Air Volume	per sq ft	\$0.38	50%	\$0.19	944,372	916,596	916,596	156,920	152,250	151,876	12.86	12.48	12.45	-	-	-
Warehouse - E	Existing	Water Heating	Electric	Water Heating	EF 2.4	per sq ft	\$0.00	50%	\$0.00	292,323	283,726	283,726	38,552	37,403	37,309	3.99	3.87	3.86	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Warehouse - E	Existing	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.01	50%	\$0.01	8,288,688	8,044,903	8,044,903	276,813	247,322	229,129	50.05	44.72	41.43	-	-	-
Warehouse - E	Existing	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.01	50%	\$0.01	4,975,700	4,829,356	4,829,356	374,519	363,373	362,479	67.71	65.70	65.54	-	-	-
Warehouse - E	Existing	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.04	50%	\$0.02	2,985,821	2,898,003	2,898,003	246,802	239,457	238,868	44.62	43.29	43.19	-	-	-
Warehouse - E	Existing	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.00	50%	\$0.00	5,347,307	5,190,033	5,190,033	650	580	538	0.01	0.01	0.00	-	-	-
Warehouse - E	Existing	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	50%	\$0.00	-	-	2,607,582	-	-	18	-	-	0.00	-	-	-
Warehouse - E	Existing	Refrigeration	Electric	Icemaker	5.5 kWh/100 lbs	per sq ft	\$0.08	50%	\$0.04	698,198	677,663	677,663	79,722	77,363	77,268	8.84	8.57	8.56	-	-	-
Warehouse - E	Existing	Food Preparation	Electric	Fryer	Energy Star	per sq ft	\$0.00	50%	\$0.00	102,594	99,577	99,577	79	77	77	0.02	0.02	0.02	-	-	-
Warehouse - E	Existing	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.00	50%	\$0.00	334,454	324,617	324,617	2,151	2,087	2,082	0.52	0.51	0.50	-	-	-
Warehouse - E	Existing	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	50%	\$0.00	1,361,108	1,321,076	1,321,076	48,864	47,410	47,293	5.89	5.71	5.70	-	-	-
Warehouse - E	Existing	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	50%	\$0.00	898,389	871,966	871,966	3,977	3,859	3,849	0.48	0.46	0.46	-	-	-
Warehouse - E	Existing	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	50%	\$0.00	4,094,256	3,973,837	3,973,837	137,248	133,163	132,836	16.53	16.04	16.00	-	-	-
Warehouse - E	Existing	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	50%	\$0.00	609,672	591,740	591,740	2,468	2,395	2,389	0.30	0.29	0.29	-	-	-
Warehouse - E	Existing	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	50%	\$0.00	1,781,885	1,729,476	1,729,476	8,705	8,446	8,426	1.05	1.02	1.01	-	-	-
Warehouse - E	Existing	Office Equipment	Electric	POS Terminal	Energy Star	per sq ft	\$0.00	50%	\$0.00	283,260	274,929	274,929	2,711	2,630	2,624	0.33	0.32	0.32	-	-	-
Warehouse - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	50%	\$0.00	1,534,639	-	-	3,751	-	-	0.61	-	-	-	-	-
Warehouse - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	1,471,608	1,471,608	-	4,156	4,339	-	0.68	0.71	-	-	-
Warehouse - E	New	Cooling	Electric	Roof top AC	Ductless Minisplit	per sq ft	\$0.07	50%	\$0.04	112,464	109,156	109,156	27,557	26,737	26,671	51.14	49.62	49.49	-	-	-
Warehouse - E	New	Cooling	Electric	Air Source Heat Pump	Ductless Minisplit	per sq ft	\$0.08	50%	\$0.04	1,391	1,350	1,350	367	356	354	0.68	0.66	0.66	-	-	-
Warehouse - E	New	Cooling	Electric	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.06	50%	\$0.03	85,747	83,225	83,225	48,152	46,519	46,193	89.36	86.33	85.72	-	-	-
Warehouse - E	New	Heating	Electric	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.29	50%	\$0.14	34,938	33,911	33,911	30,298	29,310	29,149	-	-	-	-	-	-
Warehouse - E	New	Ventilation	Electric	Ventilation	Variable Air Volume	per sq ft	\$0.64	50%	\$0.32	102,570	99,553	99,553	1,974	1,915	1,910	0.16	0.16	0.16	-	-	-
Warehouse - E	New	Water Heating	Electric	Water Heating	EF 2.4	per sq ft	\$0.00	50%	\$0.00	130,533	126,694	126,694	16,355	15,867	15,827	1.69	1.64	1.64	-	-	-
Warehouse - E	New	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.01	50%	\$0.01	893,996	867,702	867,702	29,974	26,731	24,760	5.42	4.83	4.48	-	-	-
Warehouse - E	New	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.01	50%	\$0.01	642,417	623,522	623,522	48,354	46,915	46,800	8.74	8.48	8.46	-	-	-
Warehouse - E	New	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.04	50%	\$0.02	642,417	623,522	623,522	53,101	51,521	51,394	9.60	9.32	9.29	-	-	-
Warehouse - E	New	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.00	50%	\$0.00	644,140	625,195	625,195	79	70	65	0.00	0.00	0.00	-	-	-
Warehouse - E	New	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	50%	\$0.00	686,231	666,048	666,048	5	5	5	0.00	0.00	0.00	-	-	-
Warehouse - E	New	Refrigeration	Electric	Icemaker	5.5 kWh/100 lbs	per sq ft	\$0.08	50%	\$0.04	164,996	160,143	160,143	18,510	17,962	17,940	2.05	1.99	1.99	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Warehouse - E	New	Food Preparation	Electric	Fryer	Energy Star	per sq ft	\$0.00	50%	\$0.00	25,364	24,618	24,618	20	19	19	0.00	0.00	0.00	-	-	-
Warehouse - E	New	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.00	50%	\$0.00	88,499	85,896	85,896	569	552	551	0.14	0.13	0.13	-	-	-
Warehouse - E	New	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	50%	\$0.00	145,482	141,203	141,203	5,223	5,067	5,055	0.63	0.61	0.61	-	-	-
Warehouse - E	New	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	50%	\$0.00	101,032	98,061	98,061	447	434	433	0.05	0.05	0.05	-	-	-
Warehouse - E	New	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	50%	\$0.00	421,956	409,546	409,546	14,145	13,724	13,690	1.70	1.65	1.65	-	-	-
Warehouse - E	New	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	50%	\$0.00	71,422	69,322	69,322	289	281	280	0.03	0.03	0.03	-	-	-
Warehouse - E	New	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	50%	\$0.00	254,681	247,191	247,191	1,244	1,207	1,204	0.15	0.15	0.15	-	-	-
Warehouse - E	New	Office Equipment	Electric	POS Terminal	Energy Star	per sq ft	\$0.00	50%	\$0.00	37,956	36,840	36,840	363	352	352	0.04	0.04	0.04	-	-	-
Warehouse - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	50%	\$0.00	412,154	-	-	1,007	-	-	0.16	-	-	-	-	-
Warehouse - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	495,866	495,866	-	1,414	1,479	-	0.23	0.24	-	-	-
Misc. - E	Existing	Cooling	Electric	Roof top AC	Ductless Minisplit	per sq ft	\$0.10	50%	\$0.05	2,577,788	2,501,970	2,501,970	715,612	694,314	692,607	526.39	510.73	509.47	-	-	-
Misc. - E	Existing	Cooling	Electric	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.06	50%	\$0.03	36,574	35,498	35,498	19,387	18,723	18,601	14.26	13.77	13.68	-	-	-
Misc. - E	Existing	Cooling	Electric	PTAC	EER 11.5	per sq ft	\$0.01	50%	\$0.00	78,041	75,745	75,745	19,149	18,579	18,534	14.09	13.67	13.63	-	-	-
Misc. - E	Existing	Cooling	Electric	PTHP	EER 11.5	per sq ft	\$0.01	50%	\$0.00	99,765	96,830	96,830	24,480	23,751	23,693	18.01	17.47	17.43	-	-	-
Misc. - E	Existing	Heating	Electric	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.07	50%	\$0.03	35,970	34,912	34,912	17,995	17,400	17,306	-	-	-	-	-	-
Misc. - E	Existing	Heating	Electric	PTHP	EER 11.5	per sq ft	\$0.01	50%	\$0.01	110,746	107,489	107,489	28,791	27,934	27,865	-	-	-	-	-	-
Misc. - E	Existing	Ventilation	Electric	Ventilation	Variable Air Volume	per sq ft	\$0.25	50%	\$0.13	1,321,448	1,282,582	1,282,582	499,601	484,732	483,540	41.37	40.14	40.04	-	-	-
Misc. - E	Existing	Water Heating	Electric	Water Heating	EF 2.4	per sq ft	\$0.00	50%	\$0.00	1,541,736	1,496,391	1,496,391	912,280	885,083	882,868	134.79	130.77	130.45	-	-	-
Misc. - E	Existing	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.03	50%	\$0.01	15,787,825	15,323,478	15,323,478	1,264,096	1,130,434	1,047,436	160.33	143.37	132.85	-	-	-
Misc. - E	Existing	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.01	50%	\$0.01	9,445,480	9,167,672	9,167,672	545,376	529,144	527,843	69.17	67.11	66.95	-	-	-
Misc. - E	Existing	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.07	50%	\$0.04	5,668,050	5,501,342	5,501,342	898,630	871,885	869,741	113.97	110.58	110.31	-	-	-
Misc. - E	Existing	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.04	50%	\$0.02	10,169,203	9,870,108	9,870,108	439,099	392,670	363,840	4.06	3.63	3.37	-	-	-
Misc. - E	Existing	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.00	50%	\$0.00	-	-	4,950,030	-	-	89,999	-	-	0.83	-	-	-
Misc. - E	Existing	Refrigeration	Electric	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.01	50%	\$0.00	932,047	904,634	904,634	29,595	28,549	28,347	3.09	2.98	2.96	-	-	-
Misc. - E	Existing	Refrigeration	Electric	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	50%	\$0.00	414,094	401,914	401,914	4,447	4,315	4,310	0.46	0.45	0.45	-	-	-
Misc. - E	Existing	Refrigeration	Electric	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	50%	\$0.00	906,544	879,881	879,881	70,142	67,993	67,834	7.33	7.10	7.09	-	-	-
Misc. - E	Existing	Refrigeration	Electric	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	50%	\$0.00	1,366,447	1,326,257	1,326,257	22,162	21,455	21,377	2.32	2.24	2.23	-	-	-
Misc. - E	Existing	Refrigeration	Electric	Icemaker	5.5 kWh/100 lbs	per sq ft	\$0.01	50%	\$0.00	1,576,605	1,530,235	1,530,235	9,718	9,430	9,419	1.02	0.99	0.98	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Misc. - E	Existing	Food Preparation	Electric	Oven	Energy Star	per sq ft	\$0.00	50%	\$0.00	1,106,860	1,074,305	1,074,305	10,689	10,371	10,345	2.13	2.07	2.06	-	-	-
Misc. - E	Existing	Food Preparation	Electric	Fryer	Energy Star	per sq ft	\$0.00	50%	\$0.00	121,211	117,646	117,646	734	713	711	0.15	0.14	0.14	-	-	-
Misc. - E	Existing	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.00	50%	\$0.00	387,268	375,878	375,878	19,519	18,938	18,892	3.90	3.78	3.77	-	-	-
Misc. - E	Existing	Food Preparation	Electric	Hot Food Container	Energy Star	per sq ft	\$0.00	50%	\$0.00	114,465	111,098	111,098	3,704	3,594	3,585	0.74	0.72	0.72	-	-	-
Misc. - E	Existing	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	50%	\$0.00	2,293,109	2,225,665	2,225,665	226,276	219,542	219,002	31.53	30.60	30.52	-	-	-
Misc. - E	Existing	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	50%	\$0.00	2,478,081	2,405,196	2,405,196	37,690	36,569	36,479	5.25	5.10	5.08	-	-	-
Misc. - E	Existing	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	50%	\$0.00	4,679,657	4,542,020	4,542,020	215,592	209,175	208,661	30.04	29.15	29.08	-	-	-
Misc. - E	Existing	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	50%	\$0.00	1,025,222	995,069	995,069	11,410	11,070	11,043	1.59	1.54	1.54	-	-	-
Misc. - E	Existing	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	50%	\$0.00	2,224,340	2,158,918	2,158,918	59,739	57,962	57,819	8.33	8.08	8.06	-	-	-
Misc. - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	50%	\$0.00	3,500,197	-	-	21,113	-	-	3.62	-	-	-	-	-
Misc. - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	3,356,436	3,356,436	-	23,396	24,422	-	4.01	4.19	-	-	-
Misc. - E	Existing	Misc.	Electric	Pool Pump	High Efficiency, Multi-Speed	per sq ft	\$0.00	50%	\$0.00	2,530,517	2,456,090	2,456,090	1,637	1,589	1,585	0.28	0.27	0.27	-	-	-
Misc. - E	New	Cooling	Electric	Roof top AC	Ductless Minisplit	per sq ft	\$0.08	50%	\$0.04	1,218,355	1,182,521	1,182,521	338,536	328,460	327,653	249.02	241.61	241.02	-	-	-
Misc. - E	New	Cooling	Electric	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.06	50%	\$0.03	12,992	12,610	12,610	7,445	7,194	7,147	5.48	5.29	5.26	-	-	-
Misc. - E	New	Cooling	Electric	PTAC	EER 11.5	per sq ft	\$0.01	50%	\$0.00	36,885	35,800	35,800	8,315	8,068	8,048	6.12	5.93	5.92	-	-	-
Misc. - E	New	Cooling	Electric	PTHP	EER 11.5	per sq ft	\$0.01	50%	\$0.00	35,439	34,396	34,396	7,989	7,751	7,732	5.88	5.70	5.69	-	-	-
Misc. - E	New	Heating	Electric	Geothermal Heat Pump	EER 30, COP 5.0	per sq ft	\$0.03	50%	\$0.01	12,422	12,057	12,057	7,285	7,048	7,009	-	-	-	-	-	-
Misc. - E	New	Heating	Electric	PTHP	EER 11.5	per sq ft	\$0.00	50%	\$0.00	33,885	32,888	32,888	7,912	7,677	7,658	-	-	-	-	-	-
Misc. - E	New	Ventilation	Electric	Ventilation	Variable Air Volume	per sq ft	\$0.42	50%	\$0.21	156,226	151,631	151,631	79,041	76,689	76,500	6.55	6.35	6.33	-	-	-
Misc. - E	New	Water Heating	Electric	Water Heating	EF 2.4	per sq ft	\$0.01	50%	\$0.00	688,440	668,192	668,192	386,921	375,388	374,448	57.17	55.46	55.33	-	-	-
Misc. - E	New	Interior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.03	50%	\$0.01	1,705,543	1,655,380	1,655,380	136,320	122,882	113,472	17.29	15.59	14.39	-	-	-
Misc. - E	New	Interior Lighting	Electric	High-Bay Fixtures	T5	per sq ft	\$0.01	50%	\$0.01	1,219,514	1,183,646	1,183,646	70,414	68,318	68,150	8.93	8.66	8.64	-	-	-
Misc. - E	New	Interior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.07	50%	\$0.04	1,219,514	1,183,646	1,183,646	193,346	187,591	187,130	24.52	23.79	23.73	-	-	-
Misc. - E	New	Exterior Lighting	Electric	Screw-in	LED (2010)	per sq ft	\$0.04	50%	\$0.02	1,228,651	1,192,515	1,192,515	52,960	47,681	44,066	0.49	0.44	0.41	-	-	-
Misc. - E	New	Exterior Lighting	Electric	Linear Fluorescent	T5	per sq ft	\$0.01	50%	\$0.00	1,302,688	1,264,373	1,264,373	23,752	23,045	22,988	0.22	0.21	0.21	-	-	-
Misc. - E	New	Refrigeration	Electric	Walk-in Refrigerator	9000 kWh/yr	per sq ft	\$0.01	50%	\$0.00	245,882	238,650	238,650	7,807	7,526	7,465	0.82	0.79	0.78	-	-	-
Misc. - E	New	Refrigeration	Electric	Reach-in Refrigerator	1500 kWh/yr	per sq ft	\$0.00	50%	\$0.00	109,309	106,094	106,094	1,158	1,124	1,123	0.12	0.12	0.12	-	-	-
Misc. - E	New	Refrigeration	Electric	Glass Door Display	6800 kWh/yr	per sq ft	\$0.00	50%	\$0.00	370,651	359,749	359,749	28,678	27,797	27,728	3.00	2.90	2.90	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Misc. - E	New	Refrigeration	Electric	Open Display Case	4330 kWh/yr	per sq ft	\$0.00	50%	\$0.00	370,651	359,749	359,749	6,012	5,818	5,794	0.63	0.61	0.61	-	-	-
Misc. - E	New	Refrigeration	Electric	Icemaker	5.5 kWh/100 lbs	per sq ft	\$0.01	50%	\$0.00	370,651	359,749	359,749	2,246	2,180	2,177	0.23	0.23	0.23	-	-	-
Misc. - E	New	Food Preparation	Electric	Oven	Energy Star	per sq ft	\$0.00	50%	\$0.00	284,082	275,726	275,726	2,743	2,662	2,655	0.55	0.53	0.53	-	-	-
Misc. - E	New	Food Preparation	Electric	Fryer	Energy Star	per sq ft	\$0.00	50%	\$0.00	31,132	30,216	30,216	189	183	183	0.04	0.04	0.04	-	-	-
Misc. - E	New	Food Preparation	Electric	Dishwasher	Energy Star	per sq ft	\$0.00	50%	\$0.00	99,413	96,489	96,489	5,011	4,862	4,850	1.00	0.97	0.97	-	-	-
Misc. - E	New	Food Preparation	Electric	Hot Food Container	Energy Star	per sq ft	\$0.00	50%	\$0.00	32,290	31,340	31,340	1,045	1,014	1,011	0.21	0.20	0.20	-	-	-
Misc. - E	New	Office Equipment	Electric	Desktop Computer	Energy Star	per sq ft	\$0.00	50%	\$0.00	241,741	234,631	234,631	23,854	23,144	23,087	3.32	3.23	3.22	-	-	-
Misc. - E	New	Office Equipment	Electric	Laptop	Energy Star	per sq ft	\$0.00	50%	\$0.00	276,265	268,140	268,140	4,202	4,077	4,067	0.59	0.57	0.57	-	-	-
Misc. - E	New	Office Equipment	Electric	Server	Energy Star	per sq ft	\$0.00	50%	\$0.00	477,167	463,133	463,133	21,983	21,329	21,276	3.06	2.97	2.97	-	-	-
Misc. - E	New	Office Equipment	Electric	Monitor	Energy Star	per sq ft	\$0.00	50%	\$0.00	119,096	115,593	115,593	1,325	1,286	1,283	0.18	0.18	0.18	-	-	-
Misc. - E	New	Office Equipment	Electric	Printer/Copier/Fax	Energy Star	per sq ft	\$0.00	50%	\$0.00	314,512	305,261	305,261	8,447	8,196	8,175	1.18	1.14	1.14	-	-	-
Misc. - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA)	per sq ft	\$0.00	50%	\$0.00	940,038	-	-	5,670	-	-	0.97	-	-	-	-	-
Misc. - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	1,130,969	1,130,969	-	7,962	8,328	-	1.37	1.43	-	-	-
Misc. - E	New	Misc.	Electric	Pool Pump	High Efficiency, Multi-Speed	per sq ft	\$0.00	50%	\$0.00	1,587,794	1,541,094	1,541,094	1,027	997	994	0.18	0.17	0.17	-	-	-
Office - G	Existing	Heating	Natural Gas	Furnace	EF .96	per sq ft	\$0.15	50%	\$0.07	322,295	312,816	312,816	-	-	-	-	-	-	12,732	12,436	12,375
Office - G	Existing	Heating	Natural Gas	Boiler	EF .96	per sq ft	\$0.00	50%	\$0.00	4,858	4,716	4,716	-	-	-	-	-	-	311	304	302
Office - G	Existing	Heating	Natural Gas	Unit Heater	Condensing	per sq ft	\$0.00	50%	\$0.00	12,460	12,094	12,094	-	-	-	-	-	-	341	333	332
Office - G	Existing	Water Heating	Natural Gas	Water Heating	EF 0.94	per sq ft	\$0.00	50%	\$0.00	565,079	548,459	548,459	-	-	-	-	-	-	7,362	7,189	7,154
Office - G	Existing	Food Preparation	Natural Gas	Oven	Energy Star	per sq ft	\$0.00	50%	\$0.00	10,503	10,194	10,194	-	-	-	-	-	-	990	967	962
Office - G	Existing	Food Preparation	Natural Gas	Fryer	Energy Star	per sq ft	\$0.01	50%	\$0.00	15,759	15,296	15,296	-	-	-	-	-	-	2,472	2,415	2,403
Office - G	Existing	Food Preparation	Natural Gas	Griddle	High Efficiency	per sq ft	\$0.00	50%	\$0.00	17,269	16,761	16,761	-	-	-	-	-	-	388	379	377
Office - G	Existing	Food Preparation	Natural Gas	Range	High Efficiency	per sq ft	\$0.00	50%	\$0.00	10,503	10,194	10,194	-	-	-	-	-	-	834	815	811
Office - G	New	Heating	Natural Gas	Furnace	EF .96	per sq ft	\$0.14	50%	\$0.07	302,916	294,006	294,006	-	-	-	-	-	-	14,924	14,580	14,509
Office - G	New	Heating	Natural Gas	Boiler	EF .96	per sq ft	\$0.00	50%	\$0.00	2,113	2,051	2,051	-	-	-	-	-	-	136	133	132
Office - G	New	Heating	Natural Gas	Unit Heater	Condensing	per sq ft	\$0.00	50%	\$0.00	6,236	6,053	6,053	-	-	-	-	-	-	171	167	166
Office - G	New	Water Heating	Natural Gas	Water Heating	EF 0.94	per sq ft	\$0.00	50%	\$0.00	146,936	142,614	142,614	-	-	-	-	-	-	1,799	1,758	1,751
Office - G	New	Food Preparation	Natural Gas	Oven	Energy Star	per sq ft	\$0.00	50%	\$0.00	2,696	2,616	2,616	-	-	-	-	-	-	254	248	247
Office - G	New	Food Preparation	Natural Gas	Fryer	Energy Star	per sq ft	\$0.01	50%	\$0.00	4,048	3,929	3,929	-	-	-	-	-	-	635	620	617

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Office - G	New	Food Preparation	Natural Gas	Griddle	High Efficiency	per sq ft	\$0.00	50%	\$0.00	4,434	4,304	4,304	-	-	-	-	-	-	100	97	97
Office - G	New	Food Preparation	Natural Gas	Range	High Efficiency	per sq ft	\$0.00	50%	\$0.00	2,696	2,616	2,616	-	-	-	-	-	-	214	209	208
Restaurant - G	Existing	Heating	Natural Gas	Furnace	EF .96	per sq ft	\$0.11	50%	\$0.05	126,214	122,502	122,502	-	-	-	-	-	-	5,373	5,249	5,224
Restaurant - G	Existing	Heating	Natural Gas	Boiler	EF .96	per sq ft	\$0.00	50%	\$0.00	1,209	1,173	1,173	-	-	-	-	-	-	69	67	67
Restaurant - G	Existing	Heating	Natural Gas	Unit Heater	Condensing	per sq ft	\$0.00	50%	\$0.00	2,255	2,189	2,189	-	-	-	-	-	-	67	65	65
Restaurant - G	Existing	Water Heating	Natural Gas	Water Heating	EF 0.94	per sq ft	\$0.00	50%	\$0.00	440,071	427,128	427,128	-	-	-	-	-	-	21,566	21,063	20,959
Restaurant - G	Existing	Food Preparation	Natural Gas	Oven	Energy Star	per sq ft	\$0.00	50%	\$0.00	30,093	29,208	29,208	-	-	-	-	-	-	1,494	1,460	1,452
Restaurant - G	Existing	Food Preparation	Natural Gas	Fryer	Energy Star	per sq ft	\$0.18	50%	\$0.09	312,111	302,931	302,931	-	-	-	-	-	-	25,805	25,206	25,082
Restaurant - G	Existing	Food Preparation	Natural Gas	Broiler	High Efficiency	per sq ft	\$0.05	50%	\$0.02	177,511	172,290	172,290	-	-	-	-	-	-	12,278	11,993	11,934
Restaurant - G	Existing	Food Preparation	Natural Gas	Griddle	High Efficiency	per sq ft	\$0.00	50%	\$0.00	333,471	323,663	323,663	-	-	-	-	-	-	3,947	3,855	3,836
Restaurant - G	Existing	Food Preparation	Natural Gas	Range	High Efficiency	per sq ft	\$0.01	50%	\$0.00	187,997	182,467	182,467	-	-	-	-	-	-	7,870	7,687	7,649
Restaurant - G	Existing	Food Preparation	Natural Gas	Steamer	Energy Star	per sq ft	\$0.01	50%	\$0.00	14,140	13,724	13,724	-	-	-	-	-	-	2,885	2,818	2,804
Restaurant - G	Existing	Food Preparation	Natural Gas	Other	Energy Star	per sq ft	\$0.00	50%	\$0.00	1,111	1,078	1,078	-	-	-	-	-	-	14	14	14
Restaurant - G	New	Heating	Natural Gas	Furnace	EF .96	per sq ft	\$0.10	50%	\$0.05	118,625	115,136	115,136	-	-	-	-	-	-	4,881	4,769	4,746
Restaurant - G	New	Heating	Natural Gas	Boiler	EF .96	per sq ft	\$0.00	50%	\$0.00	564	547	547	-	-	-	-	-	-	21	21	21
Restaurant - G	New	Heating	Natural Gas	Unit Heater	Condensing	per sq ft	\$0.00	50%	\$0.00	1,129	1,096	1,096	-	-	-	-	-	-	33	33	32
Restaurant - G	New	Water Heating	Natural Gas	Water Heating	EF 0.94	per sq ft	\$0.00	50%	\$0.00	114,430	111,065	111,065	-	-	-	-	-	-	5,288	5,165	5,141
Restaurant - G	New	Food Preparation	Natural Gas	Oven	Energy Star	per sq ft	\$0.00	50%	\$0.00	7,724	7,496	7,496	-	-	-	-	-	-	384	375	373
Restaurant - G	New	Food Preparation	Natural Gas	Fryer	Energy Star	per sq ft	\$0.18	50%	\$0.09	80,163	77,805	77,805	-	-	-	-	-	-	6,628	6,474	6,442
Restaurant - G	New	Food Preparation	Natural Gas	Broiler	High Efficiency	per sq ft	\$0.05	50%	\$0.02	45,559	44,219	44,219	-	-	-	-	-	-	3,151	3,078	3,063
Restaurant - G	New	Food Preparation	Natural Gas	Griddle	High Efficiency	per sq ft	\$0.00	50%	\$0.00	85,620	83,102	83,102	-	-	-	-	-	-	1,013	990	985
Restaurant - G	New	Food Preparation	Natural Gas	Range	High Efficiency	per sq ft	\$0.01	50%	\$0.00	48,250	46,831	46,831	-	-	-	-	-	-	2,020	1,973	1,963
Restaurant - G	New	Food Preparation	Natural Gas	Steamer	Energy Star	per sq ft	\$0.01	50%	\$0.00	3,621	3,515	3,515	-	-	-	-	-	-	739	722	718
Restaurant - G	New	Food Preparation	Natural Gas	Other	Energy Star	per sq ft	\$0.00	50%	\$0.00	309	300	300	-	-	-	-	-	-	4	4	4
Retail - G	Existing	Heating	Natural Gas	Boiler	EF .96	per sq ft	\$0.00	50%	\$0.00	63,336	61,473	61,473	-	-	-	-	-	-	3,550	3,468	3,451
Retail - G	Existing	Heating	Natural Gas	Unit Heater	Condensing	per sq ft	\$0.01	50%	\$0.00	95,474	92,666	92,666	-	-	-	-	-	-	3,604	3,520	3,503
Retail - G	Existing	Water Heating	Natural Gas	Water Heating	EF 0.94	per sq ft	\$0.00	50%	\$0.00	697,104	676,601	676,601	-	-	-	-	-	-	12,277	11,993	11,935
Retail - G	Existing	Food Preparation	Natural Gas	Oven	Energy Star	per sq ft	\$0.00	50%	\$0.00	3,725	3,615	3,615	-	-	-	-	-	-	1,059	1,034	1,029

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Retail - G	Existing	Food Preparation	Natural Gas	Fryer	Energy Star	per sq ft	\$0.00	50%	\$0.00	5,589	5,424	5,424	-	-	-	-	-	-	2,646	2,584	2,572
Retail - G	New	Heating	Natural Gas	Boiler	EF .96	per sq ft	\$0.00	50%	\$0.00	28,020	27,196	27,196	-	-	-	-	-	-	1,189	1,160	1,155
Retail - G	New	Heating	Natural Gas	Unit Heater	Condensing	per sq ft	\$0.01	50%	\$0.00	47,782	46,376	46,376	-	-	-	-	-	-	1,804	1,762	1,753
Retail - G	New	Water Heating	Natural Gas	Water Heating	EF 0.94	per sq ft	\$0.00	50%	\$0.00	181,266	175,935	175,935	-	-	-	-	-	-	3,005	2,933	2,919
Retail - G	New	Food Preparation	Natural Gas	Oven	Energy Star	per sq ft	\$0.00	50%	\$0.00	956	928	928	-	-	-	-	-	-	272	266	264
Retail - G	New	Food Preparation	Natural Gas	Fryer	Energy Star	per sq ft	\$0.00	50%	\$0.00	1,435	1,393	1,393	-	-	-	-	-	-	680	664	661
Grocery - G	Existing	Heating	Natural Gas	Furnace	EF .96	per sq ft	\$0.13	50%	\$0.06	67,261	65,283	65,283	-	-	-	-	-	-	3,289	3,214	3,197
Grocery - G	Existing	Water Heating	Natural Gas	Water Heating	EF 0.94	per sq ft	\$0.00	50%	\$0.00	232,820	225,972	225,972	-	-	-	-	-	-	3,828	3,739	3,721
Grocery - G	Existing	Food Preparation	Natural Gas	Oven	Energy Star	per sq ft	\$0.00	50%	\$0.00	32,500	31,544	31,544	-	-	-	-	-	-	345	337	335
Grocery - G	Existing	Food Preparation	Natural Gas	Fryer	Energy Star	per sq ft	\$0.01	50%	\$0.01	48,764	47,330	47,330	-	-	-	-	-	-	862	842	838
Grocery - G	Existing	Food Preparation	Natural Gas	Griddle	High Efficiency	per sq ft	\$0.00	50%	\$0.00	53,437	51,866	51,866	-	-	-	-	-	-	135	132	131
Grocery - G	Existing	Food Preparation	Natural Gas	Range	High Efficiency	per sq ft	\$0.00	50%	\$0.00	32,500	31,544	31,544	-	-	-	-	-	-	291	284	283
Grocery - G	New	Heating	Natural Gas	Furnace	EF .96	per sq ft	\$0.12	50%	\$0.06	63,217	61,358	61,358	-	-	-	-	-	-	3,001	2,930	2,915
Grocery - G	New	Water Heating	Natural Gas	Water Heating	EF 0.94	per sq ft	\$0.00	50%	\$0.00	60,539	58,759	58,759	-	-	-	-	-	-	943	923	917
Grocery - G	New	Food Preparation	Natural Gas	Oven	Energy Star	per sq ft	\$0.00	50%	\$0.00	8,341	8,096	8,096	-	-	-	-	-	-	89	86	86
Grocery - G	New	Food Preparation	Natural Gas	Fryer	Energy Star	per sq ft	\$0.01	50%	\$0.01	12,525	12,156	12,156	-	-	-	-	-	-	221	216	215
Grocery - G	New	Food Preparation	Natural Gas	Griddle	High Efficiency	per sq ft	\$0.00	50%	\$0.00	13,720	13,317	13,317	-	-	-	-	-	-	35	34	34
Grocery - G	New	Food Preparation	Natural Gas	Range	High Efficiency	per sq ft	\$0.00	50%	\$0.00	8,341	8,096	8,096	-	-	-	-	-	-	75	73	73
College - G	Existing	Heating	Natural Gas	Furnace	EF .96	per sq ft	\$0.12	50%	\$0.06	216,395	210,030	210,030	-	-	-	-	-	-	13,648	13,331	13,165
College - G	Existing	Heating	Natural Gas	Boiler	EF .96	per sq ft	\$0.00	50%	\$0.00	22,103	21,452	21,452	-	-	-	-	-	-	1,017	994	989
College - G	Existing	Water Heating	Natural Gas	Water Heating	EF 0.94	per sq ft	\$0.00	50%	\$0.00	701,895	681,251	681,251	-	-	-	-	-	-	17,672	17,263	17,178
College - G	Existing	Food Preparation	Natural Gas	Oven	Energy Star	per sq ft	\$0.00	50%	\$0.00	95,032	92,237	92,237	-	-	-	-	-	-	1,426	1,393	1,386
College - G	Existing	Food Preparation	Natural Gas	Fryer	Energy Star	per sq ft	\$0.01	50%	\$0.00	92,265	89,551	89,551	-	-	-	-	-	-	2,306	2,252	2,241
College - G	Existing	Food Preparation	Natural Gas	Broiler	High Efficiency	per sq ft	\$0.00	50%	\$0.00	95,032	92,237	92,237	-	-	-	-	-	-	1,987	1,941	1,931
College - G	Existing	Food Preparation	Natural Gas	Griddle	High Efficiency	per sq ft	\$0.00	50%	\$0.00	220,596	214,107	214,107	-	-	-	-	-	-	789	771	767
College - G	Existing	Food Preparation	Natural Gas	Range	High Efficiency	per sq ft	\$0.00	50%	\$0.00	165,840	160,962	160,962	-	-	-	-	-	-	2,098	2,049	2,039
College - G	Existing	Food Preparation	Natural Gas	Steamer	Energy Star	per sq ft	\$0.00	50%	\$0.00	64,853	62,945	62,945	-	-	-	-	-	-	3,999	3,906	3,887
College - G	Existing	Food Preparation	Natural Gas	Other	Energy Star	per sq ft	\$0.00	50%	\$0.00	11,319	10,986	10,986	-	-	-	-	-	-	86	84	84

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
College - G	New	Heating	Natural Gas	Furnace	EF .96	per sq ft	\$0.12	50%	\$0.06	203,383	197,401	197,401	-	-	-	-	-	-	12,805	12,509	12,446
College - G	New	Heating	Natural Gas	Boiler	EF .96	per sq ft	\$0.00	50%	\$0.00	6,872	6,669	6,669	-	-	-	-	-	-	290	284	282
College - G	New	Water Heating	Natural Gas	Water Heating	EF 0.94	per sq ft	\$0.00	50%	\$0.00	182,512	177,144	177,144	-	-	-	-	-	-	4,332	4,232	4,210
College - G	New	Food Preparation	Natural Gas	Oven	Energy Star	per sq ft	\$0.00	50%	\$0.00	24,390	23,673	23,673	-	-	-	-	-	-	366	358	356
College - G	New	Food Preparation	Natural Gas	Fryer	Energy Star	per sq ft	\$0.01	50%	\$0.00	23,697	23,000	23,000	-	-	-	-	-	-	592	578	576
College - G	New	Food Preparation	Natural Gas	Broiler	High Efficiency	per sq ft	\$0.00	50%	\$0.00	24,390	23,673	23,673	-	-	-	-	-	-	510	498	496
College - G	New	Food Preparation	Natural Gas	Griddle	High Efficiency	per sq ft	\$0.00	50%	\$0.00	56,639	54,973	54,973	-	-	-	-	-	-	203	198	197
College - G	New	Food Preparation	Natural Gas	Range	High Efficiency	per sq ft	\$0.00	50%	\$0.00	42,564	41,312	41,312	-	-	-	-	-	-	539	526	523
College - G	New	Food Preparation	Natural Gas	Steamer	Energy Star	per sq ft	\$0.00	50%	\$0.00	16,609	16,121	16,121	-	-	-	-	-	-	1,024	1,000	995
College - G	New	Food Preparation	Natural Gas	Other	Energy Star	per sq ft	\$0.00	50%	\$0.00	3,147	3,054	3,054	-	-	-	-	-	-	24	23	23
School - G	Existing	Heating	Natural Gas	Furnace	EF .96	per sq ft	\$0.05	50%	\$0.03	201,995	196,054	196,054	-	-	-	-	-	-	5,722	5,588	5,519
School - G	Existing	Heating	Natural Gas	Boiler	EF .96	per sq ft	\$0.00	50%	\$0.00	250,892	243,513	243,513	-	-	-	-	-	-	5,186	5,066	5,041
School - G	Existing	Heating	Natural Gas	Unit Heater	Condensing	per sq ft	\$0.00	50%	\$0.00	61,380	59,575	59,575	-	-	-	-	-	-	1,181	1,154	1,148
School - G	Existing	Water Heating	Natural Gas	Water Heating	EF 0.94	per sq ft	\$0.00	50%	\$0.00	2,325,555	2,257,157	2,257,157	-	-	-	-	-	-	32,329	31,581	31,425
School - G	Existing	Food Preparation	Natural Gas	Oven	Energy Star	per sq ft	\$0.00	50%	\$0.00	595,698	578,177	578,177	-	-	-	-	-	-	3,392	3,314	3,297
School - G	Existing	Food Preparation	Natural Gas	Fryer	Energy Star	per sq ft	\$0.00	50%	\$0.00	287,418	278,965	278,965	-	-	-	-	-	-	2,725	2,662	2,649
School - G	Existing	Food Preparation	Natural Gas	Broiler	High Efficiency	per sq ft	\$0.00	50%	\$0.00	427,666	415,088	415,088	-	-	-	-	-	-	3,393	3,314	3,297
School - G	Existing	Food Preparation	Natural Gas	Griddle	High Efficiency	per sq ft	\$0.00	50%	\$0.00	604,316	586,542	586,542	-	-	-	-	-	-	820	801	797
School - G	Existing	Food Preparation	Natural Gas	Range	High Efficiency	per sq ft	\$0.00	50%	\$0.00	448,459	435,269	435,269	-	-	-	-	-	-	2,153	2,103	2,093
School - G	Existing	Food Preparation	Natural Gas	Steamer	Energy Star	per sq ft	\$0.00	50%	\$0.00	136,914	132,887	132,887	-	-	-	-	-	-	3,204	3,129	3,114
School - G	Existing	Misc.	Natural Gas	Pool Heater	EF .95	per sq ft	\$0.00	50%	\$0.00	424,771	412,277	412,277	-	-	-	-	-	-	490	479	476
School - G	New	Heating	Natural Gas	Furnace	EF .96	per sq ft	\$0.05	50%	\$0.03	189,849	184,265	184,265	-	-	-	-	-	-	5,368	5,244	5,218
School - G	New	Heating	Natural Gas	Boiler	EF .96	per sq ft	\$0.00	50%	\$0.00	78,001	75,707	75,707	-	-	-	-	-	-	1,480	1,446	1,438
School - G	New	Heating	Natural Gas	Unit Heater	Condensing	per sq ft	\$0.00	50%	\$0.00	30,719	29,815	29,815	-	-	-	-	-	-	591	577	575
School - G	New	Water Heating	Natural Gas	Water Heating	EF 0.94	per sq ft	\$0.00	50%	\$0.00	604,708	586,922	586,922	-	-	-	-	-	-	7,924	7,742	7,701
School - G	New	Food Preparation	Natural Gas	Oven	Energy Star	per sq ft	\$0.00	50%	\$0.00	152,889	148,392	148,392	-	-	-	-	-	-	871	850	846
School - G	New	Food Preparation	Natural Gas	Fryer	Energy Star	per sq ft	\$0.00	50%	\$0.00	73,821	71,650	71,650	-	-	-	-	-	-	700	684	680
School - G	New	Food Preparation	Natural Gas	Broiler	High Efficiency	per sq ft	\$0.00	50%	\$0.00	109,763	106,535	106,535	-	-	-	-	-	-	871	850	846

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
School - G	New	Food Preparation	Natural Gas	Griddle	High Efficiency	per sq ft	\$0.00	50%	\$0.00	155,161	150,598	150,598	-	-	-	-	-	-	211	206	205
School - G	New	Food Preparation	Natural Gas	Range	High Efficiency	per sq ft	\$0.00	50%	\$0.00	115,100	111,714	111,714	-	-	-	-	-	-	553	540	537
School - G	New	Food Preparation	Natural Gas	Steamer	Energy Star	per sq ft	\$0.00	50%	\$0.00	35,065	34,034	34,034	-	-	-	-	-	-	820	801	797
School - G	New	Misc.	Natural Gas	Pool Heater	EF .95	per sq ft	\$0.00	50%	\$0.00	64,870	62,962	62,962	-	-	-	-	-	-	75	73	73
Health - G	Existing	Heating	Natural Gas	Furnace	EF .96	per sq ft	\$0.12	50%	\$0.06	228,893	222,161	222,161	-	-	-	-	-	-	22,705	22,170	22,057
Health - G	Existing	Heating	Natural Gas	Boiler	EF .96	per sq ft	\$0.00	50%	\$0.00	23,433	22,744	22,744	-	-	-	-	-	-	2,068	2,019	2,026
Health - G	Existing	Water Heating	Natural Gas	Water Heating	EF 0.94	per sq ft	\$0.00	50%	\$0.00	892,132	865,893	865,893	-	-	-	-	-	-	49,836	48,680	48,440
Health - G	Existing	Food Preparation	Natural Gas	Oven	Energy Star	per sq ft	\$0.00	50%	\$0.00	22,760	22,090	22,090	-	-	-	-	-	-	1,067	1,043	1,037
Health - G	Existing	Food Preparation	Natural Gas	Fryer	Energy Star	per sq ft	\$0.04	50%	\$0.02	197,657	191,844	191,844	-	-	-	-	-	-	15,433	15,075	15,001
Health - G	Existing	Food Preparation	Natural Gas	Broiler	High Efficiency	per sq ft	\$0.00	50%	\$0.00	29,657	28,784	28,784	-	-	-	-	-	-	1,937	1,892	1,883
Health - G	Existing	Food Preparation	Natural Gas	Griddle	High Efficiency	per sq ft	\$0.00	50%	\$0.00	48,763	47,329	47,329	-	-	-	-	-	-	545	532	530
Health - G	Existing	Food Preparation	Natural Gas	Range	High Efficiency	per sq ft	\$0.00	50%	\$0.00	125,373	121,686	121,686	-	-	-	-	-	-	4,956	4,841	4,818
Health - G	Existing	Food Preparation	Natural Gas	Steamer	Energy Star	per sq ft	\$0.00	50%	\$0.00	14,985	14,544	14,544	-	-	-	-	-	-	2,887	2,820	2,806
Health - G	New	Heating	Natural Gas	Furnace	EF .96	per sq ft	\$0.11	50%	\$0.05	215,130	208,802	208,802	-	-	-	-	-	-	16,363	15,981	15,901
Health - G	New	Heating	Natural Gas	Boiler	EF .96	per sq ft	\$0.00	50%	\$0.00	10,399	10,093	10,093	-	-	-	-	-	-	407	398	396
Health - G	New	Water Heating	Natural Gas	Water Heating	EF 0.94	per sq ft	\$0.00	50%	\$0.00	231,979	225,156	225,156	-	-	-	-	-	-	12,313	12,026	11,967
Health - G	New	Food Preparation	Natural Gas	Oven	Energy Star	per sq ft	\$0.00	50%	\$0.00	5,841	5,670	5,670	-	-	-	-	-	-	274	268	266
Health - G	New	Food Preparation	Natural Gas	Fryer	Energy Star	per sq ft	\$0.04	50%	\$0.02	50,766	49,273	49,273	-	-	-	-	-	-	3,964	3,872	3,853
Health - G	New	Food Preparation	Natural Gas	Broiler	High Efficiency	per sq ft	\$0.00	50%	\$0.00	7,612	7,388	7,388	-	-	-	-	-	-	497	486	483
Health - G	New	Food Preparation	Natural Gas	Griddle	High Efficiency	per sq ft	\$0.00	50%	\$0.00	12,520	12,152	12,152	-	-	-	-	-	-	140	137	136
Health - G	New	Food Preparation	Natural Gas	Range	High Efficiency	per sq ft	\$0.00	50%	\$0.00	32,178	31,231	31,231	-	-	-	-	-	-	1,272	1,243	1,236
Health - G	New	Food Preparation	Natural Gas	Steamer	Energy Star	per sq ft	\$0.00	50%	\$0.00	3,838	3,725	3,725	-	-	-	-	-	-	739	722	719
Lodging - G	Existing	Heating	Natural Gas	Furnace	EF .96	per sq ft	\$0.03	50%	\$0.01	20,350	19,752	19,752	-	-	-	-	-	-	627	613	610
Lodging - G	Existing	Heating	Natural Gas	Boiler	EF .96	per sq ft	\$0.00	50%	\$0.00	45,220	43,890	43,890	-	-	-	-	-	-	1,027	1,025	1,026
Lodging - G	Existing	Heating	Natural Gas	Unit Heater	Condensing	per sq ft	\$0.00	50%	\$0.00	3,293	3,196	3,196	-	-	-	-	-	-	70	69	68
Lodging - G	Existing	Water Heating	Natural Gas	Water Heating	EF 0.94	per sq ft	\$0.00	50%	\$0.00	284,884	276,505	276,505	-	-	-	-	-	-	9,095	8,884	8,840
Lodging - G	Existing	Food Preparation	Natural Gas	Oven	Energy Star	per sq ft	\$0.00	50%	\$0.00	42,853	41,593	41,593	-	-	-	-	-	-	583	570	567
Lodging - G	Existing	Food Preparation	Natural Gas	Fryer	Energy Star	per sq ft	\$0.01	50%	\$0.00	24,424	23,705	23,705	-	-	-	-	-	-	553	540	538

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Lodging - G	Existing	Food Preparation	Natural Gas	Broiler	High Efficiency	per sq ft	\$0.00	50%	\$0.00	16,277	15,799	15,799	-	-	-	-	-	-	308	301	300
Lodging - G	Existing	Food Preparation	Natural Gas	Griddle	High Efficiency	per sq ft	\$0.00	50%	\$0.00	71,553	69,449	69,449	-	-	-	-	-	-	232	227	226
Lodging - G	Existing	Food Preparation	Natural Gas	Range	High Efficiency	per sq ft	\$0.00	50%	\$0.00	664	645	645	-	-	-	-	-	-	8	7	7
Lodging - G	Existing	Food Preparation	Natural Gas	Steamer	Energy Star	per sq ft	\$0.00	50%	\$0.00	723	701	701	-	-	-	-	-	-	40	39	39
Lodging - G	Existing	Misc.	Natural Gas	Pool Heater	EF .82	per sq ft	\$0.00	50%	\$0.00	273,352	265,312	265,312	-	-	-	-	-	-	114	112	111
Lodging - G	New	Heating	Natural Gas	Furnace	EF .96	per sq ft	\$0.01	50%	\$0.01	19,127	18,564	18,564	-	-	-	-	-	-	412	403	401
Lodging - G	New	Heating	Natural Gas	Boiler	EF .96	per sq ft	\$0.00	50%	\$0.00	18,428	17,886	17,886	-	-	-	-	-	-	328	321	320
Lodging - G	New	Heating	Natural Gas	Unit Heater	Condensing	per sq ft	\$0.00	50%	\$0.00	1,648	1,599	1,599	-	-	-	-	-	-	35	34	34
Lodging - G	New	Water Heating	Natural Gas	Water Heating	EF 0.94	per sq ft	\$0.00	50%	\$0.00	74,078	71,899	71,899	-	-	-	-	-	-	2,247	2,195	2,184
Lodging - G	New	Food Preparation	Natural Gas	Oven	Energy Star	per sq ft	\$0.00	50%	\$0.00	10,998	10,675	10,675	-	-	-	-	-	-	150	146	145
Lodging - G	New	Food Preparation	Natural Gas	Fryer	Energy Star	per sq ft	\$0.01	50%	\$0.00	6,273	6,089	6,089	-	-	-	-	-	-	142	139	138
Lodging - G	New	Food Preparation	Natural Gas	Broiler	High Efficiency	per sq ft	\$0.00	50%	\$0.00	4,178	4,055	4,055	-	-	-	-	-	-	79	77	77
Lodging - G	New	Food Preparation	Natural Gas	Griddle	High Efficiency	per sq ft	\$0.00	50%	\$0.00	18,372	17,831	17,831	-	-	-	-	-	-	60	58	58
Lodging - G	New	Food Preparation	Natural Gas	Range	High Efficiency	per sq ft	\$0.00	50%	\$0.00	171	166	166	-	-	-	-	-	-	2	2	2
Lodging - G	New	Food Preparation	Natural Gas	Steamer	Energy Star	per sq ft	\$0.00	50%	\$0.00	185	180	180	-	-	-	-	-	-	10	10	10
Lodging - G	New	Misc.	Natural Gas	Pool Heater	EF .82	per sq ft	\$0.00	50%	\$0.00	41,716	40,489	40,489	-	-	-	-	-	-	17	17	17
Warehouse - G	Existing	Heating	Natural Gas	Boiler	EF .96	per sq ft	\$0.00	50%	\$0.00	13,497	13,100	13,100	-	-	-	-	-	-	2,540	2,480	2,468
Warehouse - G	Existing	Heating	Natural Gas	Unit Heater	Condensing	per sq ft	\$0.01	50%	\$0.01	221,542	215,026	215,026	-	-	-	-	-	-	4,372	4,270	4,249
Warehouse - G	Existing	Water Heating	Natural Gas	Water Heating	EF 0.94	per sq ft	\$0.00	50%	\$0.00	899,413	872,960	872,960	-	-	-	-	-	-	3,206	3,131	3,117
Warehouse - G	New	Heating	Natural Gas	Boiler	EF .96	per sq ft	\$0.00	50%	\$0.00	6,158	5,977	5,977	-	-	-	-	-	-	923	898	893
Warehouse - G	New	Heating	Natural Gas	Unit Heater	Condensing	per sq ft	\$0.01	50%	\$0.01	110,875	107,614	107,614	-	-	-	-	-	-	2,188	2,137	2,127
Warehouse - G	New	Water Heating	Natural Gas	Water Heating	EF 0.94	per sq ft	\$0.00	50%	\$0.00	233,872	226,993	226,993	-	-	-	-	-	-	781	765	761
Misc. - G	Existing	Heating	Natural Gas	Furnace	EF .96	per sq ft	\$0.08	50%	\$0.04	1,124,150	1,091,087	1,091,087	-	-	-	-	-	-	28,285	27,632	27,498
Misc. - G	Existing	Heating	Natural Gas	Boiler	EF .96	per sq ft	\$0.00	50%	\$0.00	180,136	174,838	174,838	-	-	-	-	-	-	3,952	3,862	3,815
Misc. - G	Existing	Heating	Natural Gas	Unit Heater	Condensing	per sq ft	\$0.00	50%	\$0.00	11,970	11,618	11,618	-	-	-	-	-	-	196	191	190
Misc. - G	Existing	Water Heating	Natural Gas	Water Heating	EF 0.94	per sq ft	\$0.00	50%	\$0.00	3,447,023	3,345,640	3,345,640	-	-	-	-	-	-	32,366	31,609	31,459
Misc. - G	Existing	Food Preparation	Natural Gas	Oven	Energy Star	per sq ft	\$0.00	50%	\$0.00	1,520,609	1,475,885	1,475,885	-	-	-	-	-	-	1,580	1,543	1,536
Misc. - G	Existing	Food Preparation	Natural Gas	Fryer	Energy Star	per sq ft	\$0.00	50%	\$0.00	97,961	95,080	95,080	-	-	-	-	-	-	169	166	165

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Misc. - G	Existing	Food Preparation	Natural Gas	Broiler	High Efficiency	per sq ft	\$0.00	50%	\$0.00	744,128	722,242	722,242	-	-	-	-	-	-	1,077	1,052	1,047
Misc. - G	Existing	Food Preparation	Natural Gas	Griddle	High Efficiency	per sq ft	\$0.00	50%	\$0.00	1,357,116	1,317,201	1,317,201	-	-	-	-	-	-	336	328	327
Misc. - G	Existing	Food Preparation	Natural Gas	Range	High Efficiency	per sq ft	\$0.00	50%	\$0.00	917,559	890,572	890,572	-	-	-	-	-	-	804	785	781
Misc. - G	Existing	Misc.	Natural Gas	Pool Heater	EF .82	per sq ft	\$0.00	50%	\$0.00	7,119,422	6,910,027	6,910,027	-	-	-	-	-	-	2,938	2,870	2,856
Misc. - G	New	Heating	Natural Gas	Furnace	EF .96	per sq ft	\$0.04	50%	\$0.02	1,056,555	1,025,480	1,025,480	-	-	-	-	-	-	25,992	25,389	25,259
Misc. - G	New	Heating	Natural Gas	Boiler	EF .96	per sq ft	\$0.00	50%	\$0.00	84,778	82,285	82,285	-	-	-	-	-	-	1,487	1,450	1,442
Misc. - G	New	Heating	Natural Gas	Unit Heater	Condensing	per sq ft	\$0.00	50%	\$0.00	5,991	5,815	5,815	-	-	-	-	-	-	98	96	95
Misc. - G	New	Water Heating	Natural Gas	Water Heating	EF 0.94	per sq ft	\$0.00	50%	\$0.00	896,320	869,958	869,958	-	-	-	-	-	-	8,001	7,807	7,772
Misc. - G	New	Food Preparation	Natural Gas	Oven	Energy Star	per sq ft	\$0.00	50%	\$0.00	390,273	378,794	378,794	-	-	-	-	-	-	406	396	394
Misc. - G	New	Food Preparation	Natural Gas	Fryer	Energy Star	per sq ft	\$0.00	50%	\$0.00	25,160	24,420	24,420	-	-	-	-	-	-	44	43	42
Misc. - G	New	Food Preparation	Natural Gas	Broiler	High Efficiency	per sq ft	\$0.00	50%	\$0.00	190,985	185,367	185,367	-	-	-	-	-	-	276	270	269
Misc. - G	New	Food Preparation	Natural Gas	Griddle	High Efficiency	per sq ft	\$0.00	50%	\$0.00	348,446	338,198	338,198	-	-	-	-	-	-	86	84	84
Misc. - G	New	Food Preparation	Natural Gas	Range	High Efficiency	per sq ft	\$0.00	50%	\$0.00	235,497	228,570	228,570	-	-	-	-	-	-	206	202	201
Misc. - G	New	Misc.	Natural Gas	Pool Heater	EF .82	per sq ft	\$0.00	50%	\$0.00	1,086,479	1,054,524	1,054,524	-	-	-	-	-	-	448	438	436
Office - E	Existing			Insulation - Ceiling		per sq ft	\$0.13	50%	\$0.06	2,345,486	2,276,501	2,276,501	30,698	29,591	29,337	17.36	16.42	15.99	-	-	-
Office - E	Existing			Insulation - Radiant Barrier		per sq ft	\$0.03	50%	\$0.02	2,353,997	2,284,761	2,284,761	12,223	11,780	11,676	6.82	6.45	6.28	-	-	-
Office - E	Existing			Insulation - Wall Cavity		per sq ft	\$0.16	50%	\$0.08	2,352,268	2,283,084	2,283,084	80,501	77,616	76,986	18.17	17.19	16.74	-	-	-
Office - E	Existing			HVAC - Duct Repair and Sealing		per sq ft	\$0.00	50%	\$0.00	1,916,601	1,860,230	1,860,230	73,806	70,479	69,293	4.93	4.67	4.55	-	-	-
Office - E	Existing			Windows - High Efficiency		per sq ft	\$0.18	50%	\$0.09	2,256,419	2,190,053	2,190,053	1,232,184	1,178,261	1,159,681	230.19	217.75	212.04	-	-	-
Office - E	Existing			Air-Cooled Chiller - Condenser Air Temperature Reset		per sq ft	\$0.00	50%	\$0.00	12,916	12,536	12,536	4,683	4,499	4,451	-	-	-	-	-	-
Office - E	Existing			Air-Cooled Chiller - Economizer		per sq ft	\$0.00	50%	\$0.00	54,645	53,037	53,037	43,731	42,011	41,563	-	-	-	-	-	-
Office - E	Existing			Air-Cooled Chiller - VSD on fans		per sq ft	\$0.01	50%	\$0.01	82,127	79,711	79,711	23	22	22	1.16	1.12	1.11	-	-	-
Office - E	Existing			Air-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.00	50%	\$0.00	107,573	104,409	104,409	58,894	56,578	55,976	20.98	20.15	19.94	-	-	-
Office - E	Existing			Air-Cooled Chiller - High Efficiency Cooling Tower Fans		per sq ft	\$0.01	50%	\$0.00	48,834	47,398	47,398	1,910	1,835	1,815	0.43	0.41	0.41	-	-	-
Office - E	Existing			Air-Cooled Chiller - Maintenance		per sq ft	\$0.06	50%	\$0.03	71,374	69,275	69,275	33,973	32,637	32,290	19.59	18.82	18.62	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Office - E	Existing			Water-Cooled Chiller - Condenser Water Temperature Reset		per sq ft	\$0.01	50%	\$0.00	14,194	13,777	13,777	6,886	6,445	6,238	1.53	1.43	1.39	-	-	-
Office - E	Existing			Water-Cooled Chiller - Economizer		per sq ft	\$0.02	50%	\$0.01	9,969	9,676	9,676	6,830	6,392	6,187	-	-	-	-	-	-
Office - E	Existing			Water-Cooled Chiller - VSD on Fans		per sq ft	\$1.17	50%	\$0.59	14,945	14,505	14,505	13,772	12,889	12,476	7.93	7.42	7.18	-	-	-
Office - E	Existing			Water-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.00	50%	\$0.00	19,643	19,065	19,065	6,097	5,706	5,523	-	-	-	-	-	-
Office - E	Existing			Water-Cooled Chiller - High Efficiency Cooling Tower Fans		per sq ft	\$0.01	50%	\$0.00	8,886	8,625	8,625	298	278	270	0.07	0.06	0.06	-	-	-
Office - E	Existing			Water-Cooled Chiller - Maintenance RTU -		per sq ft	\$0.06	50%	\$0.03	12,980	12,598	12,598	5,289	4,950	4,791	3.05	2.85	2.76	-	-	-
Office - E	Existing			Maintenance Space Heating -		per sq ft	\$0.06	50%	\$0.03	1,520,968	1,476,234	1,476,234	674,727	636,593	618,245	389.13	367.14	356.55	-	-	-
Office - E	Existing			Heat Recovery Ventilator -		per sq ft	\$0.02	50%	\$0.01	156,087	151,496	151,496	51,480	49,940	49,809	-	-	-	-	-	-
Office - E	Existing			Ventilation - Variable Speed Control		per sq ft	\$0.02	50%	\$0.01	3,699,835	3,591,016	3,591,016	1,348,888	1,296,824	1,283,729	39.66	38.13	37.75	-	-	-
Office - E	Existing			Water Heater - Faucet Aerators		per sq ft	\$0.00	50%	\$0.00	82,694	80,262	80,262	11,156	10,672	10,504	1.09	1.04	1.02	-	-	-
Office - E	Existing			Water Heater - Desuperheater		per sq ft	\$0.00	50%	\$0.00	-	125,420	125,420	-	15,394	15,151	-	1.50	1.48	-	-	-
Office - E	Existing			Interior Lighting - Daylighting Controls		per sq ft	\$0.11	50%	\$0.06	1,051,733	1,020,800	1,020,800	307,572	284,104	272,510	58.21	53.77	51.58	-	-	-
Office - E	Existing			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	50%	\$0.00	6,091,641	5,912,475	5,912,475	11,876	10,970	10,523	2.25	2.08	1.99	-	-	-
Office - E	Existing			Refrigerator - Auto Door Closer		per sq ft	\$0.00	50%	\$0.00	354,760	344,325	344,325	27,463	26,078	25,509	2.87	2.73	2.67	-	-	-
Office - E	Existing			Refrigerator - Evaporator Fan Controls		per sq ft	\$0.00	50%	\$0.00	820,055	795,935	795,935	2,224	2,093	2,017	0.23	0.22	0.21	-	-	-
Office - E	Existing			Vending Machine - Controller		per sq ft	\$0.00	50%	\$0.00	438,880	425,972	425,972	12,489	11,580	10,706	1.31	1.21	1.12	-	-	-
Office - E	Existing			Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.00	50%	\$0.00	1,509,879	1,465,471	1,465,471	45,784	44,388	44,244	7.14	6.92	6.90	-	-	-
Office - E	Existing			Thermostat - Clock/Programmable		per sq ft	\$0.00	50%	\$0.00	-	-	2,453,061	-	-	13,848	-	-	7.97	-	-	-
Office - E	Existing			Electronics - Smart Power Strip		per sq ft	\$0.00	50%	\$0.00	16,581,236	16,093,553	16,093,553	69,402	65,694	63,906	-	-	-	-	-	-
Office - E	Existing			Electronics - Monitor Power Management		per sq ft	\$0.00	50%	\$0.00	5,446,389	5,286,201	5,286,201	1,089,618	1,053,035	1,046,295	-	-	-	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Office - E	Existing			Water Heating - Booster Water Heater		per sq ft	\$0.02	50%	\$0.01	276,747	268,608	268,608	13,785	13,188	12,980	1.34	1.28	1.26	-	-	-
Office - E	New			Insulation - Ceiling		per sq ft	\$0.00	50%	\$0.00	-	230,853	230,853	-	2,200	2,189	-	0.89	0.88	-	-	-
Office - E	New			Insulation - Radiant Barrier		per sq ft	\$0.03	50%	\$0.02	240,552	233,477	233,477	726	701	697	0.29	0.28	0.28	-	-	-
Office - E	New			Insulation - Wall Cavity		per sq ft	\$0.16	50%	\$0.08	241,945	234,829	234,829	3,375	3,263	3,246	0.70	0.68	0.67	-	-	-
Office - E	New			HVAC - Duct Repair and Sealing		per sq ft	\$0.00	50%	\$0.00	156,285	151,688	151,688	7,727	7,457	7,410	0.26	0.25	0.25	-	-	-
Office - E	New			Air-Cooled Chiller - Condenser Air Temperature Reset		per sq ft	\$0.00	50%	\$0.00	771	749	749	189	180	178	-	-	-	-	-	-
Office - E	New			Air-Cooled Chiller - Economizer		per sq ft	\$0.00	50%	\$0.00	3,996	3,878	3,878	2,804	2,675	2,640	0.00	0.00	0.00	-	-	-
Office - E	New			Air-Cooled Chiller - VSD on fans		per sq ft	\$0.01	50%	\$0.01	8,354	8,108	8,108	8	8	8	0.09	0.09	0.09	-	-	-
Office - E	New			Air-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.00	50%	\$0.00	8,781	8,523	8,523	3,257	3,108	3,067	1.04	0.99	0.98	-	-	-
Office - E	New			Air-Cooled Chiller - High Efficiency Cooling Tower Fans		per sq ft	\$0.01	50%	\$0.00	4,992	4,845	4,845	92	88	87	0.03	0.03	0.03	-	-	-
Office - E	New			Air-Cooled Chiller - Maintenance		per sq ft	\$0.06	50%	\$0.03	6,424	6,235	6,235	2,336	2,229	2,199	1.34	1.28	1.26	-	-	-
Office - E	New			Water-Cooled Chiller - Condenser Water Temperature Reset		per sq ft	\$0.01	50%	\$0.00	846	821	821	185	180	180	0.04	0.04	0.04	-	-	-
Office - E	New			Water-Cooled Chiller - Economizer		per sq ft	\$0.02	50%	\$0.01	726	705	705	260	252	251	0.00	0.00	0.00	-	-	-
Office - E	New			Water-Cooled Chiller - VSD on Fans		per sq ft	\$1.17	50%	\$0.59	1,535	1,490	1,490	637	618	617	0.37	0.36	0.36	-	-	-
Office - E	New			Water-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.00	50%	\$0.00	1,613	1,566	1,566	201	195	195	-	-	-	-	-	-
Office - E	New			Water-Cooled Chiller - High Efficiency Cooling Tower Fans		per sq ft	\$0.01	50%	\$0.00	910	883	883	9	8	8	0.00	0.00	0.00	-	-	-
Office - E	New			Water-Cooled Chiller - Maintenance		per sq ft	\$0.06	50%	\$0.03	1,176	1,142	1,142	218	211	211	0.13	0.12	0.12	-	-	-
Office - E	New			RTU - Maintenance		per sq ft	\$0.06	50%	\$0.03	136,221	132,215	132,215	38,495	36,966	36,629	22.10	21.22	21.03	-	-	-
Office - E	New			Space Heating - Heat Recovery Ventilator		per sq ft	\$0.02	50%	\$0.01	59,107	57,368	57,368	17,910	17,373	17,328	-	-	-	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Office - E	New			Ventilation - Variable Speed Control		per sq ft	\$0.02	50%	\$0.01	381,931	370,698	370,698	159,559	154,409	153,761	4.69	4.54	4.52	-	-	-
Office - E	New			Water Heater - Faucet Aerators		per sq ft	\$0.00	50%	\$0.00	7,284	7,070	7,070	880	816	790	0.09	0.08	0.08	-	-	-
Office - E	New			Water Heater - Desuperheater		per sq ft	\$0.00	50%	\$0.00	-	12,905	12,905	-	1,375	1,331	-	0.13	0.13	-	-	-
Office - E	New			Interior Lighting - Daylighting Controls		per sq ft	\$0.11	50%	\$0.06	340,119	330,115	330,115	87,653	82,935	81,528	16.59	15.70	15.43	-	-	-
Office - E	New			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	50%	\$0.00	181,576	176,236	176,236	312	295	290	0.06	0.06	0.05	-	-	-
Office - E	New			Interior Lighting - Occupancy Sensors		per sq ft	\$0.00	50%	\$0.00	-	-	260,028	-	-	21,406	-	-	2.03	-	-	-
Office - E	New			Refrigerator - Auto Door Closer		per sq ft	\$0.00	50%	\$0.00	36,623	35,545	35,545	2,519	2,355	2,295	0.26	0.25	0.24	-	-	-
Office - E	New			Refrigerator - Evaporator Fan Controls		per sq ft	\$0.00	50%	\$0.00	77,653	75,370	75,370	172	162	159	0.02	0.02	0.02	-	-	-
Office - E	New			Vending Machine - Controller		per sq ft	\$0.00	50%	\$0.00	22,615	21,949	21,949	378	354	345	0.04	0.04	0.04	-	-	-
Office - E	New			Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.00	50%	\$0.00	124,163	120,512	120,512	3,762	3,637	3,619	0.59	0.57	0.56	-	-	-
Office - E	New			Thermostat - Clock/Programmable		per sq ft	\$0.01	50%	\$0.00	125,281	121,597	121,597	3,087	2,964	2,937	1.78	1.71	1.69	-	-	-
Office - E	New			Commissioning - HVAC		per sq ft	\$0.38	50%	\$0.19	168,905	163,937	163,937	49,394	47,423	46,986	-	-	-	-	-	-
Office - E	New			Commissioning - Lighting		per sq ft	\$0.04	50%	\$0.02	810,623	786,782	786,782	104,454	98,831	97,156	-	-	-	-	-	-
Office - E	New			Electronics - Smart Power Strip		per sq ft	\$0.00	50%	\$0.00	1,711,351	1,661,017	1,661,017	7,034	6,685	6,562	-	-	-	-	-	-
Office - E	New			Electronics - Monitor Power Management		per sq ft	\$0.00	50%	\$0.00	561,171	544,666	544,666	111,881	108,299	107,653	-	-	-	-	-	-
Office - E	New			Insulation - Foundation		per sq ft	\$0.32	50%	\$0.16	94,162	91,393	91,393	9,179	8,813	8,731	5.28	5.07	5.03	-	-	-
Restaurant - E	Existing			HVAC - Duct Repair and Sealing		per sq ft	\$0.01	50%	\$0.01	413,738	401,569	401,569	17,251	16,216	15,709	0.76	0.72	0.70	-	-	-
Restaurant - E	Existing			Windows - High Efficiency		per sq ft	\$0.39	50%	\$0.20	841,929	817,166	817,166	183,264	173,197	168,589	61.98	58.47	56.77	-	-	-
Restaurant - E	Existing			Air-Cooled Chiller - Economizer		per sq ft	\$0.15	50%	\$0.07	2,492	2,419	2,419	7,386	7,122	7,067	-	-	-	-	-	-
Restaurant - E	Existing			Air-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.15	50%	\$0.07	3,770	3,659	3,659	5,120	4,936	4,898	0.85	0.82	0.81	-	-	-
Restaurant - E	Existing			Air-Cooled Chiller - Maintenance		per sq ft	\$2.24	50%	\$1.12	1,472	1,428	1,428	1,603	1,546	1,534	0.70	0.67	0.67	-	-	-
Restaurant - E	Existing			RTU - Maintenance		per sq ft	\$2.24	50%	\$1.12	228,229	221,516	221,516	182,088	171,796	166,845	79.01	74.55	72.40	-	-	-
Restaurant - E	Existing			Space Heating - Heat Recovery Ventilator		per sq ft	\$0.01	50%	\$0.01	22,126	21,475	21,475	10,445	10,090	10,024	-	-	-	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Restaurant - E	Existing			Heat Pump - Maintenance Ventilation - Variable Speed Control		per sq ft	\$0.71	50%	\$0.35	33,227	32,250	32,250	18,860	17,743	17,176	7.43	6.98	6.74	-	-	-
Restaurant - E	Existing			Water Heater - Drainwater Heat Recovery		per sq ft	\$0.02	50%	\$0.01	784,950	761,863	761,863	266,152	249,285	240,908	7.67	7.18	6.94	-	-	-
Restaurant - E	Existing			Water Heater - Faucet Aerators		per sq ft	\$0.04	50%	\$0.02	92,149	89,439	89,439	56,615	54,181	53,344	-	-	-	-	-	-
Restaurant - E	Existing			Water Heater - Desuperheater		per sq ft	\$0.00	50%	\$0.00	17,733	17,211	17,211	26,227	25,100	24,712	2.66	2.55	2.51	-	-	-
Restaurant - E	Existing			Water Heater - Install Timer		per sq ft	\$0.04	50%	\$0.02	18,930	18,373	18,373	25,845	24,734	24,352	2.63	2.51	2.47	-	-	-
Restaurant - E	Existing			Water Heater - Tank Blanket/Insulation		per sq ft	\$0.28	50%	\$0.14	123,724	120,085	120,085	71,790	68,704	67,643	7.29	6.98	6.87	-	-	-
Restaurant - E	Existing			Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.02	50%	\$0.01	96,144	93,316	93,316	32,816	31,405	30,920	-	-	-	-	-	-
Restaurant - E	Existing			Interior Lighting - Daylighting Controls		per sq ft	\$0.02	50%	\$0.01	245,575	238,352	238,352	363,221	347,608	342,236	36.89	35.31	34.76	-	-	-
Restaurant - E	Existing			Interior Lighting - LED Exit Lighting		per sq ft	\$0.11	50%	\$0.06	970,991	942,432	942,432	477,264	432,270	410,269	57.00	51.62	49.00	-	-	-
Restaurant - E	Existing			Exterior Lighting - Daylighting Controls		per sq ft	\$0.00	50%	\$0.00	1,286,753	1,248,907	1,248,907	4,216	3,819	3,625	0.50	0.46	0.43	-	-	-
Restaurant - E	Existing			Refrigerator - Auto Door Closer		per sq ft	\$0.00	50%	\$0.00	-	748,578	748,578	-	90,489	87,063	-	-	-	-	-	-
Restaurant - E	Existing			Refrigerator - Decommissioning		per sq ft	\$0.03	50%	\$0.02	157,848	153,206	153,206	274,404	260,563	254,878	27.88	26.47	25.90	-	-	-
Restaurant - E	Existing			Refrigerator - Demand Defrost		per sq ft	\$0.13	50%	\$0.07	536,627	520,844	520,844	730,594	684,237	659,528	74.23	69.52	67.01	-	-	-
Restaurant - E	Existing			Refrigerator - Evaporator Fan Controls		per sq ft	\$0.00	50%	\$0.00	-	-	7,437,233	-	-	523,196	-	-	53.16	-	-	-
Restaurant - E	Existing			Vending Machine - Controller		per sq ft	\$0.05	50%	\$0.03	375,522	364,477	364,477	22,723	21,281	20,512	2.31	2.16	2.08	-	-	-
Restaurant - E	Existing			Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.03	50%	\$0.02	193,638	187,943	187,943	61,728	57,209	52,858	6.27	5.81	5.37	-	-	-
Restaurant - E	Existing			HVAC - Occupancy Sensors		per sq ft	\$0.04	50%	\$0.02	77,670	75,386	75,386	3,762	3,647	3,635	0.41	0.40	0.40	-	-	-
Restaurant - E	Existing			Refrigerator - eCube		per sq ft	\$0.00	50%	\$0.00	-	626,819	626,819	-	112,829	109,556	-	48.99	47.57	-	-	-
Restaurant - E	Existing			Electronics - Smart Power Strip		per sq ft	\$0.01	50%	\$0.00	3,696,372	3,587,655	3,587,655	1,118,322	1,047,363	1,009,540	-	-	-	-	-	-
Restaurant - E	Existing			Electronics - Monitor Power Management		per sq ft	\$0.00	50%	\$0.00	2,814,131	2,731,363	2,731,363	3,463	3,256	3,169	-	-	-	-	-	-
Restaurant - E	Existing			Water Heating - Booster Water Heater		per sq ft	\$0.00	50%	\$0.00	869,136	843,573	843,573	27,141	26,229	26,062	-	-	-	-	-	-
Restaurant - E	Existing					per sq ft	\$0.01	50%	\$0.01	84,948	82,449	82,449	46,391	44,397	43,711	4.71	4.51	4.44	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Restaurant - E	Existing			Refrigeration - High Efficiency Evaporator Fan Motors		per sq ft	\$0.06	50%	\$0.03	21,913	21,269	21,269	57,051	50,366	46,111	-	-	-	-	-	-
Restaurant - E	New			HVAC - Duct Repair and Sealing		per sq ft	\$0.01	50%	\$0.01	33,573	32,586	32,586	1,063	1,021	1,011	0.08	0.08	0.08	-	-	-
Restaurant - E	New			Windows - High Efficiency		per sq ft	\$0.39	50%	\$0.20	340,844	330,819	330,819	40,164	38,619	38,280	11.81	11.34	11.23	-	-	-
Restaurant - E	New			Air-Cooled Chiller - Economizer		per sq ft	\$0.15	50%	\$0.07	162	158	158	270	257	252	-	-	-	-	-	-
Restaurant - E	New			Air-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.15	50%	\$0.07	371	361	361	314	298	293	0.05	0.05	0.05	-	-	-
Restaurant - E	New			Space Heating - Heat Recovery Ventilator		per sq ft	\$0.01	50%	\$0.01	8,316	8,072	8,072	3,434	3,326	3,314	-	-	-	-	-	-
Restaurant - E	New			Heat Pump - Maintenance		per sq ft	\$0.71	50%	\$0.35	3,541	3,437	3,437	1,174	1,124	1,111	0.46	0.44	0.44	-	-	-
Restaurant - E	New			Ventilation - Variable Speed Control		per sq ft	\$0.02	50%	\$0.01	80,684	78,311	78,311	30,355	29,157	28,862	0.87	0.84	0.83	-	-	-
Restaurant - E	New			Water Heater - Drainwater Heat Recovery		per sq ft	\$0.04	50%	\$0.02	9,500	9,221	9,221	5,202	4,827	4,674	-	-	-	-	-	-
Restaurant - E	New			Water Heater - Faucet Aerators		per sq ft	\$0.00	50%	\$0.00	1,824	1,770	1,770	2,404	2,231	2,160	0.24	0.23	0.22	-	-	-
Restaurant - E	New			Water Heater - Desuperheater		per sq ft	\$0.04	50%	\$0.02	1,947	1,890	1,890	2,369	2,198	2,129	0.24	0.22	0.22	-	-	-
Restaurant - E	New			Water Heater - Install Timer		per sq ft	\$0.28	50%	\$0.14	7,113	6,904	6,904	3,679	3,413	3,305	0.37	0.35	0.34	-	-	-
Restaurant - E	New			Water Heater - Tank Blanket/Insulation		per sq ft	\$0.02	50%	\$0.01	9,889	9,598	9,598	3,008	2,791	2,703	-	-	-	-	-	-
Restaurant - E	New			Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.02	50%	\$0.01	25,258	24,515	24,515	33,298	30,894	29,916	3.38	3.14	3.04	-	-	-
Restaurant - E	New			Interior Lighting - Daylighting Controls		per sq ft	\$0.11	50%	\$0.06	87,157	84,593	84,593	38,280	35,573	34,622	4.57	4.25	4.13	-	-	-
Restaurant - E	New			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	50%	\$0.00	38,355	37,227	37,227	112	104	102	0.01	0.01	0.01	-	-	-
Restaurant - E	New			Exterior Lighting - Daylighting Controls		per sq ft	\$0.02	50%	\$0.01	148,535	144,166	144,166	16,023	15,441	15,366	-	-	-	-	-	-
Restaurant - E	New			Refrigerator - Auto Door Closer		per sq ft	\$0.03	50%	\$0.02	16,281	15,802	15,802	25,160	23,527	22,929	2.56	2.39	2.33	-	-	-
Restaurant - E	New			Refrigerator - Decommissioning		per sq ft	\$0.13	50%	\$0.07	55,377	53,748	53,748	60,541	57,420	56,493	6.15	5.83	5.74	-	-	-
Restaurant - E	New			Refrigerator - Door Gasket Replacement		per sq ft	\$0.00	50%	\$0.00	-	-	154,949	-	-	12,296	-	-	-	-	-	-
Restaurant - E	New			Refrigerator - Evaporator Fan Controls		per sq ft	\$0.05	50%	\$0.03	35,546	34,501	34,501	1,727	1,638	1,612	0.18	0.17	0.16	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Restaurant - E	New			Vending Machine - Controller		per sq ft	\$0.03	50%	\$0.02	10,013	9,718	9,718	1,826	1,720	1,686	0.19	0.17	0.17	-	-	-
Restaurant - E	New			Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.04	50%	\$0.02	7,983	7,748	7,748	386	373	372	0.04	0.04	0.04	-	-	-
Restaurant - E	New			Thermostat - Clock/Programmable		per sq ft	\$0.22	50%	\$0.11	28,671	27,827	27,827	1,149	1,102	1,091	0.50	0.48	0.47	-	-	-
Restaurant - E	New			Commissioning - HVAC		per sq ft	\$0.38	50%	\$0.19	98,312	95,420	95,420	46,741	44,848	44,416	-	-	-	-	-	-
Restaurant - E	New			Commissioning - Lighting		per sq ft	\$0.04	50%	\$0.02	303,770	294,835	294,835	66,710	61,992	60,335	-	-	-	-	-	-
Restaurant - E	New			Refrigerator - eCube		per sq ft	\$0.01	50%	\$0.00	348,371	338,125	338,125	84,635	80,272	78,976	-	-	-	-	-	-
Restaurant - E	New			Electronics - Smart Power Strip		per sq ft	\$0.00	50%	\$0.00	290,840	282,286	282,286	350	331	325	-	-	-	-	-	-
Restaurant - E	New			Electronics - Monitor Power Management		per sq ft	\$0.00	50%	\$0.00	89,622	86,986	86,986	2,789	2,700	2,684	-	-	-	-	-	-
Restaurant - E	New			Insulation - Foundation		per sq ft	\$0.32	50%	\$0.16	23,013	22,336	22,336	3,647	3,499	3,466	1.58	1.52	1.50	-	-	-
Restaurant - E	New			Water Heating - Booster Water Heater		per sq ft	\$0.01	50%	\$0.01	4,890	4,746	4,746	2,380	2,208	2,138	0.24	0.22	0.22	-	-	-
Restaurant - E	New			Refrigeration - High Efficiency Evaporator Fan Motors		per sq ft	\$0.06	50%	\$0.03	2,071	2,010	2,010	2,926	2,768	2,719	-	-	-	-	-	-
Retail - E	Existing			HVAC - Duct Repair and Sealing		per sq ft	\$0.00	50%	\$0.00	1,433,591	1,391,427	1,391,427	33,872	32,419	31,917	1.40	1.34	1.32	-	-	-
Retail - E	Existing			Windows - High Efficiency		per sq ft	\$0.01	50%	\$0.01	3,440,865	3,339,663	3,339,663	424,376	406,801	401,122	134.44	128.32	126.06	-	-	-
Retail - E	Existing			Water-Cooled Chiller - Economizer		per sq ft	\$0.03	50%	\$0.02	487	472	472	419	396	387	-	-	-	-	-	-
Retail - E	Existing			Water-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.01	50%	\$0.00	747	725	725	178	168	164	-	-	-	-	-	-
Retail - E	Existing			Water-Cooled Chiller - Maintenance		per sq ft	\$0.08	50%	\$0.04	465	451	451	147	139	136	0.09	0.08	0.08	-	-	-
Retail - E	Existing			RTU - Maintenance		per sq ft	\$0.08	50%	\$0.04	730,489	709,004	709,004	377,343	355,792	345,392	226.22	213.30	207.07	-	-	-
Retail - E	Existing			Space Heating - Heat Recovery Ventilator		per sq ft	\$0.01	50%	\$0.01	68,030	66,029	66,029	32,030	31,052	30,948	-	-	-	-	-	-
Retail - E	Existing			Heat Pump - Maintenance		per sq ft	\$0.02	50%	\$0.01	72,641	70,504	70,504	22,694	21,518	20,994	11.61	10.99	10.70	-	-	-
Retail - E	Existing			Ventilation - Variable Speed Control		per sq ft	\$0.02	50%	\$0.01	3,769,082	3,658,227	3,658,227	691,132	665,450	658,851	21.11	20.33	20.13	-	-	-
Retail - E	Existing			Water Heater - Faucet Aerators		per sq ft	\$0.00	50%	\$0.00	122,115	118,523	118,523	19,631	18,786	18,494	1.80	1.73	1.70	-	-	-
Retail - E	Existing			Water Heater - Desuperheater		per sq ft	\$0.04	50%	\$0.02	121,213	117,647	117,647	17,987	17,213	16,945	1.65	1.58	1.56	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Retail - E	Existing			Water Heater - Tank Blanket/Insulation		per sq ft	\$0.02	50%	\$0.01	613,832	595,778	595,778	22,772	21,792	21,453	-	-	-	-	-	-
Retail - E	Existing			Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.00	50%	\$0.00	94,027	91,261	91,261	15,116	14,465	14,240	1.39	1.33	1.31	-	-	-
Retail - E	Existing			Interior Lighting - Daylighting Controls		per sq ft	\$0.11	50%	\$0.06	4,029,385	3,910,873	3,910,873	1,667,618	1,543,527	1,477,968	196.96	182.30	174.56	-	-	-
Retail - E	Existing			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	50%	\$0.00	6,178,582	5,996,859	5,996,859	17,047	15,779	15,109	2.01	1.86	1.78	-	-	-
Retail - E	Existing			Refrigerator - Auto Door Closer		per sq ft	\$0.00	50%	\$0.00	418,617	406,305	406,305	94,920	90,132	88,165	9.56	9.08	8.88	-	-	-
Retail - E	Existing			Refrigerator - Evaporator Fan Controls		per sq ft	\$0.00	50%	\$0.00	1,024,628	994,492	994,492	8,798	8,286	8,005	0.89	0.83	0.81	-	-	-
Retail - E	Existing			Vending Machine - Controller		per sq ft	\$0.00	50%	\$0.00	505,161	490,304	490,304	41,997	38,913	35,935	4.23	3.92	3.62	-	-	-
Retail - E	Existing			Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.00	50%	\$0.00	749,332	727,293	727,293	45,830	44,432	44,288	5.12	4.96	4.95	-	-	-
Retail - E	Existing			Refrigerator - eCube		per sq ft	\$0.01	50%	\$0.00	9,896,583	9,605,507	9,605,507	424,906	400,183	386,609	-	-	-	-	-	-
Retail - E	Existing			Electronics - Smart Power Strip		per sq ft	\$0.00	50%	\$0.00	17,069,675	16,567,625	16,567,625	11,539	10,793	10,457	-	-	-	-	-	-
Retail - E	Existing			Electronics - Monitor Power Management		per sq ft	\$0.00	50%	\$0.00	5,056,282	4,907,568	4,907,568	90,759	87,712	87,151	-	-	-	-	-	-
Retail - E	Existing			Water Heating - Booster Water Heater		per sq ft	\$0.01	50%	\$0.01	549,541	533,378	533,378	32,620	31,215	30,730	3.00	2.87	2.82	-	-	-
Retail - E	New			HVAC - Duct Repair and Sealing		per sq ft	\$0.00	50%	\$0.00	118,938	115,440	115,440	2,347	2,261	2,240	0.17	0.17	0.17	-	-	-
Retail - E	New			Windows - High Efficiency		per sq ft	\$0.01	50%	\$0.01	328,378	318,720	318,720	23,935	23,122	22,994	6.54	6.41	6.49	-	-	-
Retail - E	New			Water-Cooled Chiller - Economizer		per sq ft	\$0.03	50%	\$0.02	36	35	35	14	13	13	-	-	-	-	-	-
Retail - E	New			Water-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.01	50%	\$0.00	79	76	76	9	9	9	-	-	-	-	-	-
Retail - E	New			Water-Cooled Chiller - Maintenance		per sq ft	\$0.08	50%	\$0.04	52	50	50	10	9	9	0.01	0.01	0.01	-	-	-
Retail - E	New			RTU - Maintenance		per sq ft	\$0.08	50%	\$0.04	80,774	78,398	78,398	24,840	23,843	23,622	14.88	14.28	14.15	-	-	-
Retail - E	New			Space Heating - Heat Recovery Ventilator		per sq ft	\$0.01	50%	\$0.01	25,570	24,818	24,818	11,419	11,072	11,040	-	-	-	-	-	-
Retail - E	New			Heat Pump - Maintenance		per sq ft	\$0.02	50%	\$0.01	8,110	7,871	7,871	1,735	1,678	1,676	0.88	0.86	0.86	-	-	-
Retail - E	New			Ventilation - Variable Speed Control		per sq ft	\$0.02	50%	\$0.01	387,420	376,025	376,025	70,480	68,333	68,128	2.15	2.09	2.08	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Retail - E	New			Water Heater - Faucet Aerators		per sq ft	\$0.00	50%	\$0.00	10,413	10,107	10,107	1,473	1,366	1,322	0.14	0.13	0.12	-	-	-
Retail - E	New			Water Heater - Desuperheater		per sq ft	\$0.04	50%	\$0.02	12,474	12,107	12,107	1,629	1,510	1,462	0.15	0.14	0.13	-	-	-
Retail - E	New			Water Heater - Tank Blanket/Insulation		per sq ft	\$0.02	50%	\$0.01	63,169	61,311	61,311	2,062	1,912	1,851	-	-	-	-	-	-
Retail - E	New			Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.00	50%	\$0.00	8,026	7,790	7,790	1,135	1,053	1,019	0.10	0.10	0.09	-	-	-
Retail - E	New			Interior Lighting - Daylighting Controls		per sq ft	\$0.11	50%	\$0.06	418,499	406,190	406,190	147,920	141,170	139,390	17.47	16.67	16.46	-	-	-
Retail - E	New			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	50%	\$0.00	184,168	178,751	178,751	434	414	409	0.05	0.05	0.05	-	-	-
Retail - E	New			Exterior Lighting - Daylighting Controls		per sq ft	\$0.02	50%	\$0.01	730,828	709,333	709,333	24,901	23,043	22,377	-	-	-	-	-	-
Retail - E	New			Refrigerator - Auto Door Closer		per sq ft	\$0.00	50%	\$0.00	43,188	41,918	41,918	8,703	8,137	7,930	0.88	0.82	0.80	-	-	-
Retail - E	New			Refrigerator - Evaporator Fan Controls		per sq ft	\$0.00	50%	\$0.00	96,802	93,955	93,955	678	642	631	0.07	0.06	0.06	-	-	-
Retail - E	New			Vending Machine - Controller		per sq ft	\$0.00	50%	\$0.00	26,019	25,254	25,254	1,181	1,105	1,078	0.12	0.11	0.11	-	-	-
Retail - E	New			Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.00	50%	\$0.00	77,020	74,754	74,754	4,706	4,550	4,528	0.53	0.51	0.51	-	-	-
Retail - E	New			Thermostat - Clock/Programmable		per sq ft	\$0.01	50%	\$0.00	69,779	67,727	67,727	1,861	1,784	1,766	1.12	1.07	1.06	-	-	-
Retail - E	New			Commissioning - HVAC		per sq ft	\$0.38	50%	\$0.19	227,492	220,801	220,801	72,006	69,015	68,312	-	-	-	-	-	-
Retail - E	New			Commissioning - Lighting		per sq ft	\$0.04	50%	\$0.02	1,462,229	1,419,222	1,419,222	258,416	246,623	243,513	-	-	-	-	-	-
Retail - E	New			Refrigerator - eCube		per sq ft	\$0.01	50%	\$0.00	933,652	906,192	906,192	32,674	30,966	30,453	-	-	-	-	-	-
Retail - E	New			Electronics - Smart Power Strip		per sq ft	\$0.00	50%	\$0.00	1,756,970	1,705,294	1,705,294	1,164	1,093	1,066	-	-	-	-	-	-
Retail - E	New			Electronics - Monitor Power Management		per sq ft	\$0.00	50%	\$0.00	519,707	504,421	504,421	9,297	8,999	8,945	-	-	-	-	-	-
Retail - E	New			Insulation - Foundation		per sq ft	\$0.32	50%	\$0.16	52,387	50,846	50,846	5,527	5,298	5,244	3.32	3.18	3.15	-	-	-
Retail - E	New			Water Heating - Booster Water Heater		per sq ft	\$0.01	50%	\$0.01	31,247	30,328	30,328	1,632	1,513	1,465	0.15	0.14	0.13	-	-	-
Grocery - E	Existing			Insulation - Radiant Barrier		per sq ft	\$0.45	50%	\$0.22	307,639	298,591	298,591	53,003	50,929	50,340	123.63	116.85	113.68	-	-	-
Grocery - E	Existing			Insulation - Wall Cavity		per sq ft	\$1.00	50%	\$0.50	286,837	278,401	278,401	141,300	136,553	135,720	91.01	86.01	83.68	-	-	-
Grocery - E	Existing			HVAC - Duct Repair and Sealing		per sq ft	\$0.00	50%	\$0.00	233,313	226,451	226,451	4,629	4,407	4,321	-	-	-	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Grocery - E	Existing			Windows - High Efficiency RTU -		per sq ft	\$0.25	50%	\$0.12	684,262	664,137	664,137	321,757	307,205	301,959	361.83	341.98	332.70	-	-	-
Grocery - E	Existing			Maintenance Space Heating -		per sq ft	\$0.19	50%	\$0.10	195,565	189,813	189,813	214,329	202,215	196,388	374.02	352.88	342.71	-	-	-
Grocery - E	Existing			Heat Recovery Ventilator		per sq ft	\$0.05	50%	\$0.03	31,953	31,013	31,013	21,068	20,427	20,364	-	-	-	-	-	-
Grocery - E	Existing			Heat Pump - Maintenance		per sq ft	\$0.13	50%	\$0.06	10,042	9,747	9,747	6,281	5,925	5,752	9.63	9.06	8.77	-	-	-
Grocery - E	Existing			Ventilation - Variable Speed Control		per sq ft	\$0.07	50%	\$0.03	411,280	399,184	399,184	166,965	156,258	150,882	5.07	4.75	4.58	-	-	-
Grocery - E	Existing			Water Heater - Drainwater Heat Recovery		per sq ft	\$0.04	50%	\$0.02	29,992	29,110	29,110	6,520	6,244	6,150	-	-	-	-	-	-
Grocery - E	Existing			Water Heater - Faucet Aerators		per sq ft	\$0.00	50%	\$0.00	6,162	5,980	5,980	3,225	3,088	3,042	0.35	0.33	0.33	-	-	-
Grocery - E	Existing			Water Heater - Desuperheater		per sq ft	\$0.04	50%	\$0.02	6,022	5,845	5,845	2,909	2,786	2,744	0.31	0.30	0.30	-	-	-
Grocery - E	Existing			Water Heater - Install Timer		per sq ft	\$0.00	50%	\$0.00	-	40,484	40,484	-	8,201	8,078	-	0.88	0.87	-	-	-
Grocery - E	Existing			Water Heater - Pipe Insulation		per sq ft	\$0.09	50%	\$0.04	39,790	38,619	38,619	5,440	5,210	5,132	0.61	0.58	0.57	-	-	-
Grocery - E	Existing			Water Heater - Tank Blanket/Insulation		per sq ft	\$0.02	50%	\$0.01	30,586	29,686	29,686	3,694	3,537	3,485	-	-	-	-	-	-
Grocery - E	Existing			Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.01	50%	\$0.00	4,745	4,606	4,606	2,483	2,378	2,343	0.27	0.26	0.25	-	-	-
Grocery - E	Existing			Interior Lighting - Daylighting Controls		per sq ft	\$0.11	50%	\$0.06	399,649	387,895	387,895	337,384	314,803	303,749	61.00	56.92	54.92	-	-	-
Grocery - E	Existing			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	50%	\$0.00	678,428	658,474	658,474	3,818	3,563	3,438	0.69	0.64	0.62	-	-	-
Grocery - E	Existing			Interior Lighting - Occupancy Sensors		per sq ft	\$0.07	50%	\$0.04	453,975	440,623	440,623	127,748	119,198	115,013	11.55	10.78	10.40	-	-	-
Grocery - E	Existing			Refrigerator - Anti-Sweat Door Heater		per sq ft	\$0.01	50%	\$0.01	1,939,488	1,882,444	1,882,444	6,374,440	6,018,124	5,858,358	-	-	-	-	-	-
Grocery - E	Existing			Refrigerator - Auto Door Closer		per sq ft	\$0.01	50%	\$0.00	84,579	82,091	82,091	738,114	700,883	685,592	81.77	77.64	75.95	-	-	-
Grocery - E	Existing			Refrigerator - Decommissioning		per sq ft	\$0.13	50%	\$0.07	257,340	249,771	249,771	1,217,936	1,149,856	1,119,330	134.92	127.38	124.00	-	-	-
Grocery - E	Existing			Refrigerator - Demand Defrost		per sq ft	\$0.20	50%	\$0.10	1,834,655	1,780,695	1,780,695	482,391	455,427	443,336	53.44	50.45	49.11	-	-	-
Grocery - E	Existing			Refrigerator - Door Gasket Replacement		per sq ft	\$0.10	50%	\$0.05	543,623	527,634	527,634	261,924	246,888	239,924	-	-	-	-	-	-
Grocery - E	Existing			Refrigerator - Evaporator Fan Controls		per sq ft	\$0.02	50%	\$0.01	182,672	177,299	177,299	38,424	36,277	35,314	4.26	4.02	3.91	-	-	-
Grocery - E	Existing			Vending Machine - Controller		per sq ft	\$0.01	50%	\$0.01	97,523	94,654	94,654	15,627	14,486	13,386	1.73	1.60	1.48	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Grocery - E	Existing			Grocery - Display Case - LED Lighting		per sq ft	\$0.02	50%	\$0.01	474,798	460,834	460,834	251,661	238,521	233,094	27.88	26.42	25.82	-	-	-
Grocery - E	Existing			Grocery - Open Display Case - Night Covers		per sq ft	\$0.05	50%	\$0.03	346,761	336,562	336,562	140,475	132,630	129,357	15.56	14.69	14.33	-	-	-
Grocery - E	Existing			Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.01	50%	\$0.01	70,954	68,867	68,867	6,644	6,441	6,420	1.08	1.05	1.05	-	-	-
Grocery - E	Existing			Thermostat - Clock/Programmable		per sq ft	\$0.02	50%	\$0.01	175,486	170,325	170,325	130,798	123,406	119,846	228.39	215.48	209.26	-	-	-
Grocery - E	Existing			HVAC - Occupancy Sensors		per sq ft	\$0.14	50%	\$0.07	229,315	222,571	222,571	57,808	54,541	52,967	100.94	95.23	92.49	-	-	-
Grocery - E	Existing			Refrigerator - eCube		per sq ft	\$0.02	50%	\$0.01	1,896,047	1,840,281	1,840,281	1,994,133	1,882,666	1,832,686	-	-	-	-	-	-
Grocery - E	Existing			Electronics - Smart Power Strip		per sq ft	\$0.00	50%	\$0.00	1,907,997	1,851,880	1,851,880	1,171	1,102	1,071	-	-	-	-	-	-
Grocery - E	Existing			Electronics - Monitor Power Management		per sq ft	\$0.00	50%	\$0.00	557,956	541,545	541,545	11,084	10,711	10,643	-	-	-	-	-	-
Grocery - E	Existing			Insulation - Foundation		per sq ft	\$1.36	50%	\$0.68	101,366	98,384	98,384	37,687	35,556	34,531	65.80	62.09	60.29	-	-	-
Grocery - E	Existing			Water Heating - Booster Water Heater		per sq ft	\$0.04	50%	\$0.02	23,527	22,835	22,835	4,546	4,354	4,289	0.49	0.47	0.46	-	-	-
Grocery - E	Existing			Refrigeration - High Efficiency Evaporator Fan Motors		per sq ft	\$0.11	50%	\$0.05	7,698	7,472	7,472	35,215	31,089	28,463	-	-	-	-	-	-
Grocery - E	New			HVAC - Duct Repair and Sealing		per sq ft	\$0.00	50%	\$0.00	19,025	18,465	18,465	384	369	366	-	-	-	-	-	-
Grocery - E	New			Windows - High Efficiency		per sq ft	\$0.25	50%	\$0.12	126,840	123,109	123,109	32,646	31,409	31,101	10.78	10.44	10.34	-	-	-
Grocery - E	New			RTU - Maintenance		per sq ft	\$0.19	50%	\$0.10	20,376	19,777	19,777	12,806	12,364	12,210	22.33	21.56	21.29	-	-	-
Grocery - E	New			Space Heating - Heat Recovery Ventilator		per sq ft	\$0.05	50%	\$0.03	12,011	11,657	11,657	6,976	6,765	6,746	-	-	-	-	-	-
Grocery - E	New			Heat Pump - Maintenance		per sq ft	\$0.13	50%	\$0.06	1,039	1,009	1,009	412	395	391	0.64	0.61	0.60	-	-	-
Grocery - E	New			Ventilation - Variable Speed Control		per sq ft	\$0.07	50%	\$0.03	42,552	41,301	41,301	24,677	23,662	23,410	0.75	0.72	0.71	-	-	-
Grocery - E	New			Water Heater - Drainwater Heat Recovery		per sq ft	\$0.04	50%	\$0.02	3,088	2,997	2,997	594	551	534	-	-	-	-	-	-
Grocery - E	New			Water Heater - Faucet Aerators		per sq ft	\$0.00	50%	\$0.00	633	615	615	293	272	263	0.03	0.03	0.03	-	-	-
Grocery - E	New			Water Heater - Desuperheater		per sq ft	\$0.04	50%	\$0.02	621	602	602	265	246	238	0.03	0.03	0.03	-	-	-
Grocery - E	New			Water Heater - Install Timer		per sq ft	\$0.00	50%	\$0.00	-	2,680	2,680	-	465	451	-	0.05	0.05	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Grocery - E	New			Water Heater - Pipe Insulation		per sq ft	\$0.09	50%	\$0.04	2,631	2,554	2,554	318	295	286	0.04	0.03	0.03	-	-	-
Grocery - E	New			Water Heater - Tank		per sq ft	\$0.02	50%	\$0.01	3,143	3,050	3,050	336	312	302	-	-	-	-	-	-
Grocery - E	New			Blanket/Insulation		per sq ft	\$0.01	50%	\$0.00	488	474	474	226	210	203	0.02	0.02	0.02	-	-	-
Grocery - E	New			Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.11	50%	\$0.06	46,067	44,712	44,712	34,362	32,772	32,353	6.21	5.93	5.85	-	-	-
Grocery - E	New			Interior Lighting - Daylighting Controls		per sq ft	\$0.00	50%	\$0.00	20,222	19,627	19,627	101	96	95	0.02	0.02	0.02	-	-	-
Grocery - E	New			Interior Lighting - LED Exit Lighting		per sq ft	\$0.07	50%	\$0.04	20,164	19,571	19,571	5,014	4,782	4,721	0.45	0.43	0.43	-	-	-
Grocery - E	New			Interior Lighting - Occupancy Sensors		per sq ft	\$0.00	50%	\$0.00	-	64,012	64,012	-	3,268	3,240	-	-	-	-	-	-
Grocery - E	New			Exterior Lighting - Daylighting Controls		per sq ft	\$0.01	50%	\$0.01	181,233	175,902	175,902	511,456	483,243	474,125	-	-	-	-	-	-
Grocery - E	New			Refrigerator - Anti-Sweat Door Heater		per sq ft	\$0.01	50%	\$0.00	8,714	8,458	8,458	67,607	63,221	61,619	7.49	7.00	6.83	-	-	-
Grocery - E	New			Refrigerator - Auto Door Closer		per sq ft	\$0.13	50%	\$0.07	28,243	27,412	27,412	114,773	108,442	106,396	12.71	12.01	11.79	-	-	-
Grocery - E	New			Refrigerator - Decommissioning		per sq ft	\$0.10	50%	\$0.05	51,340	49,830	49,830	21,328	19,906	19,358	-	-	-	-	-	-
Grocery - E	New			Refrigerator - Door Gasket Replacement		per sq ft	\$0.02	50%	\$0.01	18,129	17,596	17,596	3,274	3,094	3,035	0.36	0.34	0.34	-	-	-
Grocery - E	New			Refrigerator - Evaporator Fan Controls		per sq ft	\$0.01	50%	\$0.01	5,069	4,920	4,920	478	448	437	0.05	0.05	0.05	-	-	-
Grocery - E	New			Vending Machine - Controller		per sq ft	\$0.02	50%	\$0.01	42,067	40,830	40,830	19,609	18,527	18,183	2.17	2.05	2.01	-	-	-
Grocery - E	New			Grocery - Display Case - LED Lighting		per sq ft	\$0.05	50%	\$0.03	32,678	31,717	31,717	11,382	10,989	10,939	1.26	1.22	1.21	-	-	-
Grocery - E	New			Grocery - Open Display Case - Night Covers		per sq ft	\$0.01	50%	\$0.01	7,293	7,078	7,078	682	660	656	0.11	0.11	0.11	-	-	-
Grocery - E	New			Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.02	50%	\$0.01	13,271	12,881	12,881	3,418	3,297	3,256	5.97	5.76	5.69	-	-	-
Grocery - E	New			Thermostat - Clock/Programmable		per sq ft	\$0.14	50%	\$0.07	11,616	11,274	11,274	1,700	1,639	1,619	2.97	2.86	2.83	-	-	-
Grocery - E	New			HVAC - Occupancy Sensors		per sq ft	\$0.38	50%	\$0.19	43,757	42,470	42,470	28,328	27,326	26,985	-	-	-	-	-	-
Grocery - E	New			Commissioning - HVAC		per sq ft	\$0.04	50%	\$0.02	160,557	155,835	155,835	59,882	57,111	56,381	-	-	-	-	-	-
Grocery - E	New			Commissioning - Lighting		per sq ft	\$0.02	50%	\$0.01	178,468	173,219	173,219	161,169	152,278	149,405	-	-	-	-	-	-
Grocery - E	New			Refrigerator - eCube		per sq ft															

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Grocery - E	New			Electronics - Smart Power Strip		per sq ft	\$0.00	50%	\$0.00	196,378	190,602	190,602	117	111	109	-	-	-	-	-	-
Grocery - E	New			Electronics - Monitor Power Management		per sq ft	\$0.00	50%	\$0.00	57,349	55,662	55,662	1,135	1,099	1,092	-	-	-	-	-	-
Grocery - E	New			Insulation - Foundation		per sq ft	\$0.32	50%	\$0.16	10,461	10,153	10,153	2,257	2,178	2,150	3.94	3.80	3.75	-	-	-
Grocery - E	New			Water Heating - Booster Water Heater		per sq ft	\$0.04	50%	\$0.02	1,555	1,509	1,509	266	247	239	0.03	0.03	0.03	-	-	-
Grocery - E	New			Refrigeration - High Efficiency Evaporator Fan Motors		per sq ft	\$0.11	50%	\$0.05	736	714	714	1,827	1,729	1,698	-	-	-	-	-	-
College - E	Existing			Insulation - Ceiling		per sq ft	\$0.00	50%	\$0.00	-	1,675,971	1,675,971	-	71,336	70,529	-	40.88	39.97	-	-	-
College - E	Existing			Insulation - Radiant Barrier		per sq ft	\$0.18	50%	\$0.09	1,746,794	1,695,417	1,695,417	29,368	28,142	27,814	16.36	15.51	15.16	-	-	-
College - E	Existing			Insulation - Wall Cavity		per sq ft	\$0.16	50%	\$0.08	1,805,976	1,752,859	1,752,859	5,706	5,768	5,988	4.23	4.01	3.92	-	-	-
College - E	Existing			HVAC - Duct Repair and Sealing		per sq ft	\$0.00	50%	\$0.00	1,381,817	1,341,175	1,341,175	53,208	50,147	48,802	16.72	15.84	15.49	-	-	-
College - E	Existing			Windows - High Efficiency		per sq ft	\$0.10	50%	\$0.05	4,448,063	4,317,237	4,317,237	575,502	545,913	534,383	256.91	243.51	238.11	-	-	-
College - E	Existing			Air-Cooled Chiller - Condenser Air Temperature Reset		per sq ft	\$0.01	50%	\$0.00	52,542	50,997	50,997	18,659	17,885	17,662	-	-	-	-	-	-
College - E	Existing			Air-Cooled Chiller - Economizer		per sq ft	\$0.01	50%	\$0.00	424,202	411,726	411,726	19,925	19,098	18,860	-	-	-	-	-	-
College - E	Existing			Air-Cooled Chiller - High Efficiency Cooling Tower Fans		per sq ft	\$0.01	50%	\$0.01	158,073	153,424	153,424	7,604	7,288	7,197	1.82	1.74	1.72	-	-	-
College - E	Existing			Air-Cooled Chiller - Maintenance		per sq ft	\$0.08	50%	\$0.04	277,605	269,440	269,440	162,501	155,761	153,817	99.92	95.77	94.58	-	-	-
College - E	Existing			Water-Cooled Chiller - Condenser Water Temperature Reset		per sq ft	\$0.01	50%	\$0.00	999,341	969,948	969,948	631,582	597,677	583,983	150.27	142.21	138.95	-	-	-
College - E	Existing			Water-Cooled Chiller - Economizer		per sq ft	\$0.00	50%	\$0.00	1,345,345	1,305,776	1,305,776	57,307	54,230	52,988	-	-	-	-	-	-
College - E	Existing			Water-Cooled Chiller - VSD on Fans		per sq ft	\$1.17	50%	\$0.59	1,357,843	1,317,906	1,317,906	1,616,898	1,530,100	1,495,041	995.23	941.80	920.22	-	-	-
College - E	Existing			Water-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.01	50%	\$0.00	1,345,657	1,306,079	1,306,079	433,381	410,116	400,719	-	-	-	-	-	-
College - E	Existing			Water-Cooled Chiller - High Efficiency Cooling Tower Fans		per sq ft	\$0.01	50%	\$0.01	492,224	477,747	477,747	21,473	20,320	19,854	5.13	4.86	4.75	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
College - E	Existing			Water-Cooled Chiller - Maintenance		per sq ft	\$0.08	50%	\$0.04	865,060	839,617	839,617	459,228	434,575	424,618	282.36	267.20	261.08	-	-	-
College - E	Existing			RTU - Maintenance		per sq ft	\$0.08	50%	\$0.04	164,129	159,302	159,302	65,614	61,905	60,121	40.34	38.06	36.97	-	-	-
College - E	Existing			Space Heating - Heat Recovery Ventilator		per sq ft	\$0.02	50%	\$0.01	19,104	18,542	18,542	14,358	13,931	13,897	-	-	-	-	-	-
College - E	Existing			Variable Speed Control		per sq ft	\$0.02	50%	\$0.01	2,782,647	2,700,804	2,700,804	548,313	511,423	493,384	16.50	15.39	14.84	-	-	-
College - E	Existing			Water Heater - Faucet Aerators		per sq ft	\$0.00	50%	\$0.00	10,797	10,479	10,479	3,764	3,605	3,551	0.43	0.41	0.40	-	-	-
College - E	Existing			Water Heater - Low Flow Showerheads		per sq ft	\$0.00	50%	\$0.00	9,185	8,915	8,915	6,477	6,203	6,110	0.74	0.71	0.69	-	-	-
College - E	Existing			Water Heater - Desuperheater		per sq ft	\$0.04	50%	\$0.02	18,532	17,987	17,987	5,964	5,711	5,626	0.68	0.65	0.64	-	-	-
College - E	Existing			Water Heater - Pipe Insulation		per sq ft	\$0.02	50%	\$0.01	86,512	83,967	83,967	7,881	7,547	7,435	0.85	0.81	0.80	-	-	-
College - E	Existing			Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.00	50%	\$0.00	8,329	8,084	8,084	2,904	2,781	2,739	0.33	0.32	0.31	-	-	-
College - E	Existing			Interior Lighting - Daylighting Controls		per sq ft	\$0.11	50%	\$0.06	692,370	672,006	672,006	271,701	255,696	248,839	38.30	36.04	35.07	-	-	-
College - E	Existing			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	50%	\$0.00	4,569,824	4,435,418	4,435,418	11,955	11,251	10,949	1.69	1.59	1.54	-	-	-
College - E	Existing			Interior Lighting - Occupancy Sensors		per sq ft	\$0.00	50%	\$0.00	-	-	3,913,724	-	-	483,075	-	-	34.05	-	-	-
College - E	Existing			Refrigerator - Auto Door Closer		per sq ft	\$0.00	50%	\$0.00	160,028	155,321	155,321	13,675	12,986	12,702	1.47	1.40	1.37	-	-	-
College - E	Existing			Refrigerator - Evaporator Fan Controls		per sq ft	\$0.00	50%	\$0.00	400,227	388,456	388,456	1,388	1,301	1,251	0.15	0.14	0.13	-	-	-
College - E	Existing			Vending Machine - Controller		per sq ft	\$0.00	50%	\$0.00	196,797	191,009	191,009	6,183	5,733	5,301	0.67	0.62	0.57	-	-	-
College - E	Existing			Pool Pump - Timer		per sq ft	\$0.00	50%	\$0.00	740,292	718,519	718,519	870	841	836	-	-	-	-	-	-
College - E	Existing			Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.00	50%	\$0.00	1,089,857	1,057,802	1,057,802	13,420	13,011	12,969	1.84	1.78	1.77	-	-	-
College - E	Existing			Thermostat - Clock/Programmable		per sq ft	\$0.01	50%	\$0.00	1,154,852	1,120,886	1,120,886	482,245	457,672	448,095	296.83	281.71	275.81	-	-	-
College - E	Existing			Refrigerator - eCube		per sq ft	\$0.01	50%	\$0.00	3,865,676	3,751,980	3,751,980	67,011	62,812	60,408	-	-	-	-	-	-
College - E	Existing			Electronics - Smart Power Strip		per sq ft	\$0.00	50%	\$0.00	6,956,527	6,751,923	6,751,923	10,071	9,538	9,281	-	-	-	-	-	-
College - E	Existing			Electronics - Monitor Power Management		per sq ft	\$0.00	50%	\$0.00	4,091,933	3,971,582	3,971,582	210,646	203,574	202,271	-	-	-	-	-	-
College - E	Existing			Water Heating - Booster Water Heater		per sq ft	\$0.02	50%	\$0.01	50,996	49,496	49,496	6,565	6,287	6,193	0.75	0.71	0.70	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
College - E	Existing			Refrigeration - High Efficiency Evaporator Fan Motors		per sq ft	\$0.00	50%	\$0.00	11,050	10,725	10,725	1,306	1,140	1,039	-	-	-	-	-	-
College - E	New			Insulation - Radiant Barrier		per sq ft	\$0.18	50%	\$0.09	172,388	167,317	167,317	1,357	1,313	1,308	0.70	0.67	0.67	-	-	-
College - E	New			HVAC - Duct Repair and Sealing		per sq ft	\$0.00	50%	\$0.00	111,547	108,267	108,267	3,833	3,704	3,685	0.82	0.79	0.78	-	-	-
College - E	New			Windows - High Efficiency		per sq ft	\$0.10	50%	\$0.05	800,296	776,758	776,758	61,641	59,511	59,168	22.87	22.07	21.93	-	-	-
College - E	New			Air-Cooled Chiller - Condenser Air Temperature Reset		per sq ft	\$0.01	50%	\$0.00	3,087	2,996	2,996	900	861	851	-	-	-	-	-	-
College - E	New			Air-Cooled Chiller - High Efficiency Cooling Tower Fans		per sq ft	\$0.01	50%	\$0.01	15,397	14,944	14,944	352	337	333	0.11	0.11	0.10	-	-	-
College - E	New			Air-Cooled Chiller - Maintenance		per sq ft	\$0.08	50%	\$0.04	28,552	27,712	27,712	12,831	12,273	12,129	7.91	7.56	7.48	-	-	-
College - E	New			Water-Cooled Chiller - Condenser Water Temperature Reset		per sq ft	\$0.01	50%	\$0.00	58,717	56,990	56,990	22,832	22,153	22,098	5.43	5.27	5.26	-	-	-
College - E	New			Water-Cooled Chiller - Economizer		per sq ft	\$0.00	50%	\$0.00	56,985	55,309	55,309	1,140	1,106	1,103	-	-	-	-	-	-
College - E	New			Water-Cooled Chiller - VSD on Fans		per sq ft	\$1.17	50%	\$0.59	133,580	129,651	129,651	98,026	95,109	94,875	60.34	58.54	58.40	-	-	-
College - E	New			Water-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.01	50%	\$0.00	109,604	106,380	106,380	23,361	22,666	22,610	-	-	-	-	-	-
College - E	New			Water-Cooled Chiller - High Efficiency Cooling Tower Fans		per sq ft	\$0.01	50%	\$0.01	47,158	45,771	45,771	788	765	763	0.25	0.24	0.24	-	-	-
College - E	New			Water-Cooled Chiller - Maintenance		per sq ft	\$0.08	50%	\$0.04	89,322	86,694	86,694	29,335	28,462	28,392	18.08	17.54	17.50	-	-	-
College - E	New			RTU - Maintenance		per sq ft	\$0.08	50%	\$0.04	16,876	16,380	16,380	4,722	4,524	4,476	2.91	2.79	2.76	-	-	-
College - E	New			Space Heating - Heat Recovery Ventilator		per sq ft	\$0.02	50%	\$0.01	5,733	5,564	5,564	4,186	4,062	4,052	-	-	-	-	-	-
College - E	New			Variable Speed Control		per sq ft	\$0.02	50%	\$0.01	286,561	278,133	278,133	79,453	76,903	76,591	2.39	2.31	2.30	-	-	-
College - E	New			Water Heater - Faucet Aerators		per sq ft	\$0.00	50%	\$0.00	1,110	1,077	1,077	342	318	308	0.04	0.04	0.03	-	-	-
College - E	New			Water Heater - Low Flow Showerheads		per sq ft	\$0.00	50%	\$0.00	944	916	916	589	546	529	0.07	0.06	0.06	-	-	-
College - E	New			Water Heater - Desuperheater		per sq ft	\$0.04	50%	\$0.02	1,905	1,849	1,849	542	503	487	0.06	0.06	0.06	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
College - E	New			Water Heater - Pipe Insulation		per sq ft	\$0.02	50%	\$0.01	8,092	7,854	7,854	652	605	586	0.07	0.07	0.07	-	-	-
College - E	New			Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.00	50%	\$0.00	856	831	831	264	245	237	0.03	0.03	0.03	-	-	-
College - E	New			Interior Lighting - Daylighting Controls		per sq ft	\$0.11	50%	\$0.06	212,319	206,074	206,074	77,042	73,385	72,397	10.86	10.34	10.20	-	-	-
College - E	New			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	50%	\$0.00	136,215	132,209	132,209	330	314	310	0.05	0.04	0.04	-	-	-
College - E	New			Interior Lighting - Occupancy Sensors		per sq ft	\$0.00	50%	\$0.00	-	142,253	142,253	-	16,886	16,658	-	1.19	1.17	-	-	-
College - E	New			Refrigerator - Auto Door Closer		per sq ft	\$0.00	50%	\$0.00	16,568	16,080	16,080	1,258	1,175	1,145	0.14	0.13	0.12	-	-	-
College - E	New			Refrigerator - Evaporator Fan Controls		per sq ft	\$0.00	50%	\$0.00	38,636	37,499	37,499	107	102	100	0.01	0.01	0.01	-	-	-
College - E	New			Vending Machine - Controller		per sq ft	\$0.00	50%	\$0.00	10,365	10,061	10,061	193	180	176	0.02	0.02	0.02	-	-	-
College - E	New			Pool Pump - Timer		per sq ft	\$0.00	50%	\$0.00	56,684	55,017	55,017	65	61	59	-	-	-	-	-	-
College - E	New			Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.00	50%	\$0.00	112,020	108,726	108,726	1,378	1,332	1,326	0.19	0.18	0.18	-	-	-
College - E	New			Thermostat - Clock/Programmable		per sq ft	\$0.01	50%	\$0.00	106,893	103,749	103,749	30,151	29,102	28,933	18.56	17.91	17.81	-	-	-
College - E	New			Commissioning - HVAC		per sq ft	\$0.38	50%	\$0.19	140,473	136,342	136,342	49,516	47,793	47,516	-	-	-	-	-	-
College - E	New			Commissioning - Lighting		per sq ft	\$0.04	50%	\$0.02	617,999	599,823	599,823	112,123	106,802	105,363	-	-	-	-	-	-
College - E	New			Refrigerator - eCube		per sq ft	\$0.01	50%	\$0.00	366,719	355,933	355,933	5,096	4,830	4,736	-	-	-	-	-	-
College - E	New			Electronics - Smart Power Strip		per sq ft	\$0.00	50%	\$0.00	718,554	697,420	697,420	1,022	971	952	-	-	-	-	-	-
College - E	New			Electronics - Monitor Power Management		per sq ft	\$0.00	50%	\$0.00	421,613	409,212	409,212	21,629	20,936	20,811	-	-	-	-	-	-
College - E	New			Insulation - Foundation		per sq ft	\$0.32	50%	\$0.16	82,336	79,915	79,915	9,674	9,338	9,284	5.95	5.75	5.71	-	-	-
College - E	New			Water Heating - Booster Water Heater		per sq ft	\$0.02	50%	\$0.01	4,770	4,629	4,629	543	504	488	0.06	0.06	0.06	-	-	-
College - E	New			Refrigeration - High Efficiency Evaporator Fan Motors		per sq ft	\$0.00	50%	\$0.00	1,099	1,066	1,066	76	72	70	-	-	-	-	-	-
School - E	Existing			Insulation - Ceiling		per sq ft	\$0.00	50%	\$0.00	-	-	1,243,377	-	-	23,775	-	-	19.46	-	-	-
School - E	Existing			Insulation - Radiant Barrier		per sq ft	\$0.18	50%	\$0.09	1,143,448	1,109,817	1,109,817	8,370	8,158	8,184	6.78	6.55	6.51	-	-	-
School - E	Existing			Insulation - Wall Cavity		per sq ft	\$0.16	50%	\$0.08	1,092,330	1,060,203	1,060,203	4,392	4,311	4,353	1.62	1.56	1.56	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
School - E	Existing			HVAC - Duct Repair and Sealing		per sq ft	\$0.00	50%	\$0.00	880,838	854,931	854,931	17,119	16,109	15,660	6.75	6.52	6.48	-	-	-
School - E	Existing			Windows - High Efficiency		per sq ft	\$0.10	50%	\$0.05	1,041,381	1,010,752	1,010,752	53,876	51,579	50,929	38.10	36.78	36.58	-	-	-
School - E	Existing			Air-Cooled Chiller - Condenser Air Temperature Reset		per sq ft	\$0.01	50%	\$0.00	15,246	14,797	14,797	4,114	3,935	3,878	-	-	-	-	-	-
School - E	Existing			Air-Cooled Chiller - Economizer		per sq ft	\$0.01	50%	\$0.00	80,637	78,265	78,265	2,878	2,753	2,713	-	-	-	-	-	-
School - E	Existing			Air-Cooled Chiller - High Efficiency Cooling Tower Fans		per sq ft	\$0.01	50%	\$0.01	58,763	57,035	57,035	2,148	2,054	2,025	1.12	1.07	1.06	-	-	-
School - E	Existing			Air-Cooled Chiller - Maintenance Water-Cooled Chiller -		per sq ft	\$0.08	50%	\$0.04	39,053	37,904	37,904	17,370	16,614	16,376	23.28	22.27	21.95	-	-	-
School - E	Existing			Condenser Water Temperature Reset		per sq ft	\$0.01	50%	\$0.00	87,012	84,453	84,453	41,459	39,116	38,126	21.50	20.29	19.77	-	-	-
School - E	Existing			Water-Cooled Chiller - Economizer		per sq ft	\$0.00	50%	\$0.00	76,435	74,187	74,187	2,455	2,316	2,257	-	-	-	-	-	-
School - E	Existing			Water-Cooled Chiller - VSD on Fans		per sq ft	\$1.17	50%	\$0.59	91,758	89,059	89,059	82,375	77,720	75,753	110.53	104.28	101.64	-	-	-
School - E	Existing			Water-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.01	50%	\$0.00	117,166	113,720	113,720	28,448	26,841	26,161	-	-	-	-	-	-
School - E	Existing			Water-Cooled Chiller - High Efficiency Cooling Tower Fans		per sq ft	\$0.01	50%	\$0.01	54,922	53,307	53,307	1,806	1,704	1,661	0.94	0.89	0.87	-	-	-
School - E	Existing			Water-Cooled Chiller - Maintenance RTU -		per sq ft	\$0.08	50%	\$0.04	36,517	35,443	35,443	14,615	13,789	13,440	19.59	18.48	18.01	-	-	-
School - E	Existing			Maintenance Space Heating -		per sq ft	\$0.08	50%	\$0.04	93,170	90,430	90,430	28,166	26,511	25,707	37.75	35.53	34.46	-	-	-
School - E	Existing			Heat Recovery Ventilator		per sq ft	\$0.02	50%	\$0.01	27,819	27,001	27,001	14,436	13,904	13,775	-	-	-	-	-	-
School - E	Existing			Ventilation - Variable Speed Control		per sq ft	\$0.02	50%	\$0.01	2,592,709	2,516,453	2,516,453	324,948	303,086	292,396	9.93	9.26	8.93	-	-	-
School - E	Existing			Water Heater - Faucet Aerators		per sq ft	\$0.00	50%	\$0.00	6,524	6,332	6,332	1,476	1,413	1,392	0.08	0.08	0.08	-	-	-
School - E	Existing			Water Heater - Low Flow Showerheads		per sq ft	\$0.00	50%	\$0.00	5,553	5,390	5,390	2,540	2,433	2,397	0.14	0.14	0.13	-	-	-
School - E	Existing			Water Heater - Desuperheater		per sq ft	\$0.04	50%	\$0.02	7,185	6,974	6,974	1,500	1,437	1,415	0.08	0.08	0.08	-	-	-
School - E	Existing			Water Heater - Pipe Insulation		per sq ft	\$0.02	50%	\$0.01	21,048	20,429	20,429	1,244	1,191	1,174	0.07	0.06	0.06	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
School - E	Existing			Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.00	50%	\$0.00	5,029	4,881	4,881	1,138	1,089	1,073	0.06	0.06	0.06	-	-	-
School - E	Existing			Interior Lighting - Daylighting Controls		per sq ft	\$0.11	50%	\$0.06	710,683	689,781	689,781	227,506	211,723	203,573	17.16	15.97	15.35	-	-	-
School - E	Existing			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	50%	\$0.00	4,252,983	4,127,895	4,127,895	9,077	8,447	8,122	0.68	0.64	0.61	-	-	-
School - E	Existing			Refrigerator - Auto Door Closer		per sq ft	\$0.00	50%	\$0.00	359,921	349,335	349,335	34,672	32,923	32,205	3.69	3.50	3.43	-	-	-
School - E	Existing			Refrigerator - Evaporator Fan Controls		per sq ft	\$0.00	50%	\$0.00	912,004	885,181	885,181	3,796	3,549	3,406	0.40	0.38	0.36	-	-	-
School - E	Existing			Vending Machine - Controller		per sq ft	\$0.00	50%	\$0.00	450,013	436,777	436,777	15,938	14,778	13,663	1.70	1.57	1.45	-	-	-
School - E	Existing			Pool Pump - Timer		per sq ft	\$0.00	50%	\$0.00	69,492	67,449	67,449	17	16	16	-	-	-	-	-	-
School - E	Existing			Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.00	50%	\$0.00	538,917	523,067	523,067	4,545	4,406	4,392	0.23	0.22	0.22	-	-	-
School - E	Existing			Thermostat - Clock/Programmable		per sq ft	\$0.01	50%	\$0.00	312,889	303,687	303,687	83,997	79,430	77,434	112.70	106.57	103.90	-	-	-
School - E	Existing			HVAC - Occupancy Sensors		per sq ft	\$0.00	50%	\$0.00	-	658,027	658,027	-	49,697	48,448	-	66.68	65.01	-	-	-
School - E	Existing			Refrigerator - eCube		per sq ft	\$0.01	50%	\$0.00	8,649,020	8,394,637	8,394,637	180,019	168,276	161,509	-	-	-	-	-	-
School - E	Existing			Electronics - Smart Power Strip		per sq ft	\$0.00	50%	\$0.00	11,364,046	11,029,809	11,029,809	9,270	8,722	8,482	-	-	-	-	-	-
School - E	Existing			Electronics - Monitor Power Management		per sq ft	\$0.00	50%	\$0.00	3,808,226	3,696,219	3,696,219	86,826	83,911	83,374	-	-	-	-	-	-
School - E	Existing			Water Heating - Booster Water Heater		per sq ft	\$0.02	50%	\$0.01	12,408	12,043	12,043	1,036	992	978	0.06	0.06	0.05	-	-	-
School - E	Existing			Refrigeration - High Efficiency Evaporator Fan Motors		per sq ft	\$0.00	50%	\$0.00	59,616	57,863	57,863	8,601	7,593	6,952	-	-	-	-	-	-
School - E	New			Insulation - Radiant Barrier		per sq ft	\$0.18	50%	\$0.09	117,279	113,829	113,829	450	442	447	0.34	0.34	0.35	-	-	-
School - E	New			HVAC - Duct Repair and Sealing		per sq ft	\$0.00	50%	\$0.00	73,260	71,105	71,105	1,612	1,558	1,550	0.39	0.39	0.40	-	-	-
School - E	New			Windows - High Efficiency		per sq ft	\$0.10	50%	\$0.05	240,511	233,437	233,437	7,950	7,815	7,914	4.98	4.97	5.10	-	-	-
School - E	New			Air-Cooled Chiller - Condenser Air Temperature Reset		per sq ft	\$0.01	50%	\$0.00	1,018	988	988	227	217	214	-	-	-	-	-	-
School - E	New			Air-Cooled Chiller - High Efficiency Cooling Tower Fans		per sq ft	\$0.01	50%	\$0.01	6,517	6,326	6,326	114	109	107	0.08	0.07	0.07	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
School - E	New			Air-Cooled Chiller - Maintenance		per sq ft	\$0.08	50%	\$0.04	5,679	5,512	5,512	1,949	1,862	1,839	2.62	2.50	2.47	-	-	-
School - E	New			Water-Cooled Chiller - Condenser Water Temperature Reset		per sq ft	\$0.01	50%	\$0.00	5,809	5,638	5,638	1,729	1,677	1,673	0.90	0.87	0.87	-	-	-
School - E	New			Water-Cooled Chiller - Economizer		per sq ft	\$0.00	50%	\$0.00	5,913	5,739	5,739	91	88	88	-	-	-	-	-	-
School - E	New			Water-Cooled Chiller - VSD on Fans		per sq ft	\$1.17	50%	\$0.59	10,314	10,011	10,011	5,793	5,621	5,607	7.77	7.54	7.52	-	-	-
School - E	New			Water-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.01	50%	\$0.00	10,842	10,523	10,523	1,769	1,716	1,712	-	-	-	-	-	-
School - E	New			Water-Cooled Chiller - High Efficiency Cooling Tower Fans		per sq ft	\$0.01	50%	\$0.01	6,117	5,937	5,937	78	76	76	0.05	0.05	0.05	-	-	-
School - E	New			Water-Cooled Chiller - Maintenance RTU - Maintenance		per sq ft	\$0.08	50%	\$0.04	5,331	5,174	5,174	1,340	1,300	1,297	1.80	1.75	1.74	-	-	-
School - E	New			Space Heating - Heat Recovery Ventilator		per sq ft	\$0.08	50%	\$0.04	13,544	13,146	13,146	2,868	2,752	2,726	3.85	3.70	3.66	-	-	-
School - E	New			Ventilation - Variable Speed Control		per sq ft	\$0.02	50%	\$0.01	9,225	8,954	8,954	4,498	4,342	4,317	-	-	-	-	-	-
School - E	New			Water Heater - Faucet Aerators		per sq ft	\$0.02	50%	\$0.01	266,693	258,849	258,849	47,032	45,523	45,338	1.44	1.39	1.38	-	-	-
School - E	New			Water Heater - Low Flow Showerheads		per sq ft	\$0.00	50%	\$0.00	644	625	625	129	120	116	0.01	0.01	0.01	-	-	-
School - E	New			Water Heater - Desuperheater		per sq ft	\$0.00	50%	\$0.00	548	532	532	222	206	199	0.01	0.01	0.01	-	-	-
School - E	New			Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.04	50%	\$0.02	739	717	717	137	127	123	0.01	0.01	0.01	-	-	-
School - E	New			Interior Lighting - Daylighting Controls		per sq ft	\$0.00	50%	\$0.00	497	482	482	99	92	89	0.01	0.01	0.00	-	-	-
School - E	New			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	50%	\$0.00	235,516	228,589	228,589	65,228	62,409	61,715	4.92	4.71	4.65	-	-	-
School - E	New			Refrigerator - Auto Door Closer		per sq ft	\$0.00	50%	\$0.00	126,771	123,042	123,042	234	224	221	0.02	0.02	0.02	-	-	-
School - E	New			Refrigerator - Evaporator Fan Controls		per sq ft	\$0.00	50%	\$0.00	37,105	36,014	36,014	3,177	2,971	2,895	0.34	0.32	0.31	-	-	-
School - E	New			Vending Machine - Controller		per sq ft	\$0.00	50%	\$0.00	86,068	83,537	83,537	282	267	263	0.03	0.03	0.03	-	-	-
School - E	New			Pool Pump - Timer		per sq ft	\$0.00	50%	\$0.00	23,215	22,532	22,532	483	452	441	0.05	0.05	0.05	-	-	-
School - E	New					per sq ft	\$0.00	50%	\$0.00	4,732	4,593	4,593	1	1	1	-	-	-	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
School - E	New			Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.00	50%	\$0.00	57,621	55,927	55,927	486	469	467	0.02	0.02	0.02	-	-	-
School - E	New			Thermostat - Clock/Programmable		per sq ft	\$0.01	50%	\$0.00	29,776	28,900	28,900	5,789	5,554	5,502	7.77	7.45	7.38	-	-	-
School - E	New			HVAC - Occupancy Sensors		per sq ft	\$0.00	50%	\$0.00	-	37,658	37,658	-	2,044	2,025	-	2.74	2.72	-	-	-
School - E	New			Commissioning - HVAC		per sq ft	\$0.38	50%	\$0.19	48,041	46,628	46,628	11,671	11,199	11,093	-	-	-	-	-	-
School - E	New			Commissioning - Lighting		per sq ft	\$0.04	50%	\$0.02	573,727	556,852	556,852	79,449	76,016	75,170	-	-	-	-	-	-
School - E	New			Refrigerator - eCube		per sq ft	\$0.01	50%	\$0.00	816,956	792,928	792,928	13,364	12,693	12,462	-	-	-	-	-	-
School - E	New			Electronics - Smart Power Strip		per sq ft	\$0.00	50%	\$0.00	1,172,996	1,138,496	1,138,496	944	889	870	-	-	-	-	-	-
School - E	New			Electronics - Monitor Power Management		per sq ft	\$0.00	50%	\$0.00	392,381	380,840	380,840	8,915	8,630	8,578	-	-	-	-	-	-
School - E	New			Insulation - Foundation		per sq ft	\$0.32	50%	\$0.16	27,170	26,371	26,371	2,200	2,111	2,091	2.95	2.83	2.81	-	-	-
School - E	New			Refrigeration - High Efficiency		per sq ft	\$0.00	50%	\$0.00	5,632	5,467	5,467	441	417	410	-	-	-	-	-	-
Health - E	Existing			Evaporator Fan Motors		per sq ft	\$0.00	50%	\$0.00	1,013,368	983,563	983,563	40,616	38,009	36,760	0.77	0.72	0.71	-	-	-
Health - E	Existing			HVAC - Duct Repair and Sealing		per sq ft	\$0.01	50%	\$0.00	14,255	13,836	13,836	7,403	7,112	7,036	-	-	-	-	-	-
Health - E	Existing			Air-Cooled Chiller - Condenser Air Temperature Reset		per sq ft	\$0.01	50%	\$0.00	133,987	130,046	130,046	251,515	241,617	239,041	-	-	-	-	-	-
Health - E	Existing			Air-Cooled Chiller - Economizer		per sq ft	\$0.02	50%	\$0.01	119,276	115,768	115,768	48	46	46	1.08	1.04	1.03	-	-	-
Health - E	Existing			Air-Cooled Chiller - VSD on fans		per sq ft	\$0.01	50%	\$0.00	92,816	90,086	90,086	74,680	71,741	70,976	2.78	2.67	2.64	-	-	-
Health - E	Existing			Air-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.01	50%	\$0.01	43,118	41,850	41,850	2,444	2,348	2,323	0.24	0.23	0.23	-	-	-
Health - E	Existing			Air-Cooled Chiller - High Efficiency Cooling Tower Fans		per sq ft	\$0.28	50%	\$0.14	69,195	67,160	67,160	47,735	45,857	45,368	12.14	11.66	11.53	-	-	-
Health - E	Existing			Air-Cooled Chiller - Maintenance		per sq ft	\$0.00	50%	\$0.00	270,436	262,482	262,482	190,433	178,267	172,571	18.73	17.53	16.97	-	-	-
Health - E	Existing			Water-Cooled Chiller - Condenser Water Temperature Reset		per sq ft	\$0.00	50%	\$0.00	409,869	397,814	397,814	39,603	37,073	35,888	-	-	-	-	-	-
Health - E	Existing			Water-Cooled Chiller - Economizer		per sq ft	\$0.00	50%	\$0.00												

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Health - E	Existing			Water-Cooled Chiller - VSD on Fans		per sq ft	\$1.17	50%	\$0.59	374,898	363,872	363,872	498,393	466,554	451,645	126.79	118.69	114.90	-	-	-
Health - E	Existing			Water-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.01	50%	\$0.00	291,294	282,727	282,727	129,712	121,426	117,546	-	-	-	-	-	-
Health - E	Existing			Water-Cooled Chiller - High Efficiency Cooling Tower Fans		per sq ft	\$0.00	50%	\$0.00	-	-	187,979	-	-	2,755	-	-	0.29	-	-	-
Health - E	Existing			Water-Cooled Chiller - Maintenance RTU -		per sq ft	\$0.28	50%	\$0.14	211,266	205,052	205,052	40,541	37,951	36,738	12.34	11.55	11.18	-	-	-
Health - E	Existing			Maintenance Space Heating -		per sq ft	\$0.28	50%	\$0.14	364,290	353,575	353,575	92,928	87,676	85,149	28.28	26.68	25.91	-	-	-
Health - E	Existing			Heat Recovery Ventilator		per sq ft	\$0.01	50%	\$0.00	84,536	82,050	82,050	62,317	60,409	60,209	-	-	-	-	-	-
Health - E	Existing			Heat Pump - Maintenance Ventilation -		per sq ft	\$0.04	50%	\$0.02	5,517	5,355	5,355	1,302	1,229	1,193	0.23	0.22	0.21	-	-	-
Health - E	Existing			Variable Speed Control		per sq ft	\$0.01	50%	\$0.00	1,939,664	1,882,615	1,882,615	781,878	728,238	702,084	26.51	24.69	23.80	-	-	-
Health - E	Existing			Water Heater - Drainwater Heat Recovery		per sq ft	\$0.04	50%	\$0.02	83,609	81,150	81,150	15,941	15,266	15,038	-	-	-	-	-	-
Health - E	Existing			Water Heater - Faucet Aerators		per sq ft	\$0.00	50%	\$0.00	17,679	17,159	17,159	8,115	7,771	7,655	0.67	0.64	0.63	-	-	-
Health - E	Existing			Water Heater - Low Flow Showerheads		per sq ft	\$0.00	50%	\$0.00	15,054	14,612	14,612	13,975	13,383	13,184	1.15	1.10	1.08	-	-	-
Health - E	Existing			Water Heater - Desuperheater		per sq ft	\$0.04	50%	\$0.02	16,736	16,243	16,243	7,091	6,791	6,689	0.58	0.56	0.55	-	-	-
Health - E	Existing			Water Heater - Install Timer		per sq ft	\$0.00	50%	\$0.00	-	-	76,227	-	-	13,341	-	-	1.10	-	-	-
Health - E	Existing			Water Heater - Pipe Insulation		per sq ft	\$0.04	50%	\$0.02	47,767	46,362	46,362	5,728	5,485	5,403	0.45	0.43	0.43	-	-	-
Health - E	Existing			Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.00	50%	\$0.00	13,639	13,238	13,238	6,260	5,995	5,906	0.51	0.49	0.49	-	-	-
Health - E	Existing			Interior Lighting - Daylighting Controls		per sq ft	\$0.11	50%	\$0.06	825,570	801,288	801,288	283,524	262,650	252,335	29.81	27.62	26.53	-	-	-
Health - E	Existing			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	50%	\$0.00	3,259,341	3,163,478	3,163,478	7,462	6,913	6,641	0.78	0.73	0.70	-	-	-
Health - E	Existing			Refrigerator - Auto Door Closer		per sq ft	\$0.00	50%	\$0.00	364,001	353,295	353,295	37,539	35,646	34,868	3.95	3.75	3.67	-	-	-
Health - E	Existing			Refrigerator - Evaporator Fan Controls		per sq ft	\$0.00	50%	\$0.00	821,017	796,869	796,869	3,539	3,336	3,227	0.37	0.35	0.34	-	-	-
Health - E	Existing			Vending Machine - Controller		per sq ft	\$0.00	50%	\$0.00	447,637	434,471	434,471	17,036	15,826	14,689	1.79	1.67	1.55	-	-	-
Health - E	Existing			Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.00	50%	\$0.00	711,324	690,403	690,403	131,668	127,653	127,239	14.29	13.85	13.81	-	-	-
Health - E	Existing			Refrigerator - eCube		per sq ft	\$0.00	50%	\$0.00	7,929,963	7,696,729	7,696,729	170,899	161,105	155,835	-	-	-	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Health - E	Existing			Electronics - Smart Power Strip		per sq ft	\$0.00	50%	\$0.00	6,220,050	6,037,107	6,037,107	6,439	6,090	5,932	-	-	-	-	-	-
Health - E	Existing			Electronics - Monitor Power Management		per sq ft	\$0.00	50%	\$0.00	2,902,597	2,817,227	2,817,227	111,032	107,304	106,617	-	-	-	-	-	-
Health - E	Existing			Water Heating - Booster Water Heater		per sq ft	\$0.01	50%	\$0.00	28,287	27,455	27,455	4,794	4,591	4,522	0.39	0.38	0.37	-	-	-
Health - E	Existing			Refrigeration - High Efficiency Evaporator Fan Motors		per sq ft	\$0.00	50%	\$0.00	19,674	19,095	19,095	2,983	2,625	2,399	-	-	-	-	-	-
Health - E	New			HVAC - Duct Repair and Sealing		per sq ft	\$0.00	50%	\$0.00	82,858	80,421	80,421	3,372	3,258	3,238	0.10	0.10	0.10	-	-	-
Health - E	New			Air-Cooled Chiller - Condenser Air Temperature Reset		per sq ft	\$0.01	50%	\$0.00	875	849	849	303	289	286	-	-	-	-	-	-
Health - E	New			Air-Cooled Chiller - Economizer		per sq ft	\$0.01	50%	\$0.00	5,659	5,493	5,493	6,230	5,953	5,879	-	-	-	-	-	-
Health - E	New			Air-Cooled Chiller - VSD on fans		per sq ft	\$0.02	50%	\$0.01	12,319	11,957	11,957	18	17	17	0.09	0.09	0.09	-	-	-
Health - E	New			Air-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.01	50%	\$0.00	6,621	6,427	6,427	3,757	3,590	3,546	0.01	0.01	0.01	-	-	-
Health - E	New			Air-Cooled Chiller - High Efficiency Cooling Tower Fans		per sq ft	\$0.01	50%	\$0.01	4,458	4,327	4,327	124	118	117	0.02	0.02	0.02	-	-	-
Health - E	New			Air-Cooled Chiller - Maintenance Water-Cooled Chiller -		per sq ft	\$0.28	50%	\$0.14	3,798	3,686	3,686	2,075	1,982	1,958	0.53	0.50	0.50	-	-	-
Health - E	New			Condenser Water Temperature Reset		per sq ft	\$0.00	50%	\$0.00	16,336	15,855	15,855	6,665	6,466	6,450	0.66	0.64	0.63	-	-	-
Health - E	New			Water-Cooled Chiller - VSD on Fans		per sq ft	\$1.17	50%	\$0.59	38,129	37,008	37,008	29,471	28,594	28,524	7.50	7.27	7.26	-	-	-
Health - E	New			Water-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.01	50%	\$0.00	20,329	19,731	19,731	4,436	4,304	4,294	-	-	-	-	-	-
Health - E	New			Water-Cooled Chiller - High Efficiency Cooling Tower Fans		per sq ft	\$0.01	50%	\$0.01	13,410	13,015	13,015	115	112	111	0.02	0.02	0.02	-	-	-
Health - E	New			Water-Cooled Chiller - Maintenance RTU -		per sq ft	\$0.28	50%	\$0.14	11,688	11,344	11,344	1,345	1,305	1,302	0.41	0.40	0.40	-	-	-
Health - E	New			Maintenance Space Heating -		per sq ft	\$0.28	50%	\$0.14	19,592	19,016	19,016	3,526	3,386	3,355	1.07	1.03	1.02	-	-	-
Health - E	New			Heat Recovery Ventilator		per sq ft	\$0.01	50%	\$0.00	31,774	30,839	30,839	20,365	19,744	19,686	-	-	-	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Health - E	New			Heat Pump - Maintenance Ventilation - Variable Speed Control		per sq ft	\$0.04	50%	\$0.02	547	531	531	108	103	101	0.02	0.02	0.02	-	-	-
Health - E	New			Water Heater - Drainwater Heat Recovery		per sq ft	\$0.01	50%	\$0.00	204,373	198,362	198,362	103,155	99,952	99,620	3.50	3.39	3.38	-	-	-
Health - E	New			Water Heater - Faucet Aerators		per sq ft	\$0.04	50%	\$0.02	8,604	8,351	8,351	1,451	1,347	1,304	-	-	-	-	-	-
Health - E	New			Water Heater - Low Flow Showerheads		per sq ft	\$0.00	50%	\$0.00	1,643	1,595	1,595	667	619	600	0.05	0.05	0.05	-	-	-
Health - E	New			Water Heater - Desuperheater		per sq ft	\$0.00	50%	\$0.00	1,399	1,358	1,358	1,149	1,066	1,032	0.09	0.09	0.08	-	-	-
Health - E	New			Water Heater - Pipe Insulation		per sq ft	\$0.04	50%	\$0.02	1,722	1,672	1,672	646	599	580	0.05	0.05	0.05	-	-	-
Health - E	New			Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.04	50%	\$0.02	3,553	3,449	3,449	377	350	339	0.03	0.03	0.03	-	-	-
Health - E	New			Interior Lighting - Daylighting Controls		per sq ft	\$0.00	50%	\$0.00	1,268	1,231	1,231	515	478	463	0.04	0.04	0.04	-	-	-
Health - E	New			Interior Lighting - LED Exit Lighting		per sq ft	\$0.11	50%	\$0.06	259,544	251,911	251,911	78,874	74,730	73,510	8.29	7.86	7.73	-	-	-
Health - E	New			Interior Lighting - Occupancy Sensors		per sq ft	\$0.00	50%	\$0.00	97,153	94,295	94,295	197	186	183	0.02	0.02	0.02	-	-	-
Health - E	New			Refrigerator - Auto Door Closer		per sq ft	\$0.00	50%	\$0.00	-	-	138,298	-	-	13,452	-	-	0.71	-	-	-
Health - E	New			Refrigerator - Evaporator Fan Controls		per sq ft	\$0.00	50%	\$0.00	36,935	35,849	35,849	3,386	3,166	3,086	0.36	0.33	0.32	-	-	-
Health - E	New			Vending Machine - Controller		per sq ft	\$0.00	50%	\$0.00	77,552	75,272	75,272	269	255	250	0.03	0.03	0.03	-	-	-
Health - E	New			Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.00	50%	\$0.00	23,108	22,429	22,429	433	390	371	0.05	0.04	0.04	-	-	-
Health - E	New			Commissioning - HVAC		per sq ft	\$0.00	50%	\$0.00	74,945	72,741	72,741	13,860	13,399	13,336	1.50	1.45	1.45	-	-	-
Health - E	New			Commissioning - Lighting		per sq ft	\$0.38	50%	\$0.19	84,465	81,981	81,981	40,956	39,375	39,047	-	-	-	-	-	-
Health - E	New			Refrigerator - eCube		per sq ft	\$0.04	50%	\$0.02	440,776	427,812	427,812	66,975	63,456	62,420	-	-	-	-	-	-
Health - E	New			Electronics - Smart Power Strip		per sq ft	\$0.00	50%	\$0.00	750,911	728,825	728,825	13,023	12,323	12,105	-	-	-	-	-	-
Health - E	New			Electronics - Monitor Power Management		per sq ft	\$0.00	50%	\$0.00	641,833	622,955	622,955	651	618	606	-	-	-	-	-	-
Health - E	New			Insulation - Foundation		per sq ft	\$0.00	50%	\$0.00	299,073	290,277	290,277	11,401	11,036	10,970	-	-	-	-	-	-
Health - E	New			Water Heating - Booster Water Heater		per sq ft	\$0.32	50%	\$0.16	47,646	46,245	46,245	7,701	7,404	7,342	1.96	1.88	1.87	-	-	-
Health - E	New					per sq ft	\$0.01	50%	\$0.00	2,103	2,041	2,041	315	293	283	0.03	0.02	0.02	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Health - E	New			Refrigeration - High Efficiency Evaporator Fan Motors		per sq ft	\$0.00	50%	\$0.00	1,892	1,836	1,836	158	150	147	-	-	-	-	-	-
Lodging - E	Existing			HVAC - Duct Repair and Sealing		per sq ft	\$0.00	50%	\$0.00	1,244,751	1,208,141	1,208,141	13,533	12,996	12,836	0.44	0.42	0.42	-	-	-
Lodging - E	Existing			Windows - High Efficiency Water-Cooled Chiller - Condenser Water Temperature Reset		per sq ft	\$0.00	50%	\$0.00	-	-	4,059,399	-	-	229,495	-	-	55.64	-	-	-
Lodging - E	Existing			Water-Cooled Chiller - Economizer		per sq ft	\$0.00	50%	\$0.00	28,356	27,522	27,522	3,276	3,081	2,994	0.46	0.43	0.42	-	-	-
Lodging - E	Existing			Water-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.00	50%	\$0.00	26,535	25,754	25,754	421	396	384	-	-	-	-	-	-
Lodging - E	Existing			Water-Cooled Chiller - High Efficiency Cooling Tower Fans		per sq ft	\$0.01	50%	\$0.00	38,743	37,603	37,603	2,830	2,662	2,587	-	-	-	-	-	-
Lodging - E	Existing			Water-Cooled Chiller - Maintenance RTU		per sq ft	\$0.00	50%	\$0.00	-	-	25,226	-	-	61	-	-	0.01	-	-	-
Lodging - E	Existing			Water-Cooled Chiller - Maintenance RTU		per sq ft	\$0.33	50%	\$0.16	37,499	36,396	36,396	1,181	1,110	1,079	0.51	0.48	0.47	-	-	-
Lodging - E	Existing			Space Heating - Heat Recovery Ventilator		per sq ft	\$0.33	50%	\$0.16	239,135	232,102	232,102	25,118	24,165	23,913	10.88	10.47	10.36	-	-	-
Lodging - E	Existing			Variable Speed Control		per sq ft	\$0.01	50%	\$0.00	256,462	248,919	248,919	51,170	49,571	49,375	-	-	-	-	-	-
Lodging - E	Existing			Water Heater - Drainwater Heat Recovery		per sq ft	\$0.01	50%	\$0.00	1,842,537	1,788,344	1,788,344	233,552	225,264	223,384	7.13	6.87	6.82	-	-	-
Lodging - E	Existing			Water Heater - Faucet Aerators		per sq ft	\$0.04	50%	\$0.02	252,637	245,206	245,206	48,477	46,388	45,667	-	-	-	-	-	-
Lodging - E	Existing			Water Heater - Low Flow Showerheads		per sq ft	\$0.00	50%	\$0.00	44,243	42,942	42,942	20,438	19,557	19,253	1.42	1.36	1.34	-	-	-
Lodging - E	Existing			Water Heater - Desuperheater		per sq ft	\$0.00	50%	\$0.00	346,340	336,154	336,154	323,576	309,632	304,816	22.52	21.55	21.21	-	-	-
Lodging - E	Existing			Pipe Insulation		per sq ft	\$0.04	50%	\$0.02	50,569	49,082	49,082	21,563	20,634	20,313	1.50	1.44	1.41	-	-	-
Lodging - E	Existing			Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.05	50%	\$0.03	189,086	183,525	183,525	22,819	21,836	21,496	1.53	1.46	1.44	-	-	-
Lodging - E	Existing			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	50%	\$0.00	34,143	33,139	33,139	15,772	15,093	14,858	1.10	1.05	1.03	-	-	-
Lodging - E	Existing			Refrigerator - Auto Door Closer		per sq ft	\$0.00	50%	\$0.00	3,020,434	2,931,598	2,931,598	4,189	3,729	3,514	0.34	0.30	0.29	-	-	-
Lodging - E	Existing			Refrigerator - Evaporator Fan Controls		per sq ft	\$0.00	50%	\$0.00	229,553	222,802	222,802	27,054	25,689	25,129	2.75	2.61	2.55	-	-	-
Lodging - E	Existing					per sq ft	\$0.00	50%	\$0.00	552,133	535,894	535,894	2,454	2,293	2,199	0.25	0.23	0.22	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Lodging - E	Existing			Vending Machine - Controller		per sq ft	\$0.00	50%	\$0.00	282,297	273,994	273,994	12,065	11,148	10,250	1.23	1.13	1.04	-	-	-
Lodging - E	Existing			Pool Pump - Timer		per sq ft	\$0.00	50%	\$0.00	252,271	244,851	244,851	1,000	967	961	-	-	-	-	-	-
Lodging - E	Existing			Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.00	50%	\$0.00	832,269	807,791	807,791	11,524	11,173	11,137	1.08	1.05	1.05	-	-	-
Lodging - E	Existing			Thermostat - Clock/Programmable		per sq ft	\$0.03	50%	\$0.02	700,473	679,871	679,871	40,838	38,994	38,312	14.79	14.12	13.88	-	-	-
Lodging - E	Existing			Lodging - Guest Room Controls		per sq ft	\$0.00	50%	\$0.00	2,506,346	2,432,630	2,432,630	417,262	398,703	392,005	18.83	17.99	17.69	-	-	-
Lodging - E	Existing			Refrigerator - eCube		per sq ft	\$0.00	50%	\$0.00	5,332,889	5,176,040	5,176,040	118,513	110,759	106,188	-	-	-	-	-	-
Lodging - E	Existing			Electronics - Monitor Power Management		per sq ft	\$0.00	50%	\$0.00	2,477,161	2,404,303	2,404,303	13,933	13,465	13,379	-	-	-	-	-	-
Lodging - E	Existing			Water Heating - Booster Water Heater		per sq ft	\$0.01	50%	\$0.00	114,328	110,965	110,965	19,500	18,660	18,370	1.36	1.30	1.28	-	-	-
Lodging - E	Existing			Refrigeration - High Efficiency Evaporator Fan Motors		per sq ft	\$0.00	50%	\$0.00	29,952	29,071	29,071	5,262	4,644	4,250	-	-	-	-	-	-
Lodging - E	New			HVAC - Duct Repair and Sealing		per sq ft	\$0.00	50%	\$0.00	101,231	98,253	98,253	1,317	1,275	1,269	0.07	0.07	0.07	-	-	-
Lodging - E	New			Water-Cooled Chiller - Condenser Water Temperature Reset		per sq ft	\$0.00	50%	\$0.00	1,681	1,631	1,631	119	115	115	0.02	0.02	0.02	-	-	-
Lodging - E	New			Water-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.01	50%	\$0.00	3,802	3,690	3,690	143	139	139	-	-	-	-	-	-
Lodging - E	New			Water-Cooled Chiller - High Efficiency Cooling Tower Fans		per sq ft	\$0.02	50%	\$0.01	1,856	1,802	1,802	3	3	3	0.00	0.00	0.00	-	-	-
Lodging - E	New			Water-Cooled Chiller - Maintenance RTU		per sq ft	\$0.33	50%	\$0.16	3,427	3,326	3,326	68	66	66	0.03	0.03	0.03	-	-	-
Lodging - E	New			Maintenance Space Heating - Heat Recovery Ventilator		per sq ft	\$0.33	50%	\$0.16	21,728	21,089	21,089	2,086	2,018	2,010	0.90	0.87	0.87	-	-	-
Lodging - E	New			Variable Speed Control		per sq ft	\$0.01	50%	\$0.00	96,393	93,558	93,558	17,624	17,063	16,998	-	-	-	-	-	-
Lodging - E	New			Water Heater - Drainwater Heat Recovery		per sq ft	\$0.01	50%	\$0.00	189,392	183,822	183,822	39,181	37,964	37,834	1.20	1.16	1.15	-	-	-
Lodging - E	New			Water Heater - Faucet Aerators		per sq ft	\$0.04	50%	\$0.02	25,970	25,206	25,206	4,446	4,125	3,995	-	-	-	-	-	-
Lodging - E	New					per sq ft	\$0.00	50%	\$0.00	4,548	4,414	4,414	1,874	1,739	1,684	0.13	0.12	0.12	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Lodging - E	New			Water Heater - Low Flow Showerheads		per sq ft	\$0.00	50%	\$0.00	35,599	34,552	34,552	29,675	27,533	26,662	2.07	1.92	1.86	-	-	-
Lodging - E	New			Water Heater - Desuperheater		per sq ft	\$0.04	50%	\$0.02	5,198	5,045	5,045	1,978	1,835	1,777	0.14	0.13	0.12	-	-	-
Lodging - E	New			Water Heater - Pipe Insulation		per sq ft	\$0.05	50%	\$0.03	18,634	18,086	18,086	2,006	1,862	1,803	0.14	0.13	0.13	-	-	-
Lodging - E	New			Water Heater - Pre-Rinse Spray Valve		per sq ft	\$0.00	50%	\$0.00	3,510	3,406	3,406	1,446	1,342	1,300	0.10	0.09	0.09	-	-	-
Lodging - E	New			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	50%	\$0.00	90,032	87,384	87,384	114	104	99	0.01	0.01	0.01	-	-	-
Lodging - E	New			Refrigerator - Auto Door Closer		per sq ft	\$0.00	50%	\$0.00	23,317	22,632	22,632	2,442	2,284	2,226	0.25	0.23	0.23	-	-	-
Lodging - E	New			Refrigerator - Evaporator Fan Controls		per sq ft	\$0.00	50%	\$0.00	52,247	50,710	50,710	203	189	184	0.02	0.02	0.02	-	-	-
Lodging - E	New			Vending Machine - Controller		per sq ft	\$0.00	50%	\$0.00	14,589	14,159	14,159	656	591	561	0.07	0.06	0.06	-	-	-
Lodging - E	New			Pool Pump - Timer		per sq ft	\$0.00	50%	\$0.00	23,468	22,778	22,778	90	85	83	-	-	-	-	-	-
Lodging - E	New			Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.00	50%	\$0.00	85,544	83,028	83,028	1,183	1,144	1,139	0.11	0.11	0.11	-	-	-
Lodging - E	New			Lodging - Guest Room Controls		per sq ft	\$0.00	50%	\$0.00	121,096	117,534	117,534	18,406	17,769	17,677	0.04	0.04	0.04	-	-	-
Lodging - E	New			Commissioning - HVAC		per sq ft	\$0.38	50%	\$0.19	93,378	90,632	90,632	19,812	19,100	18,974	-	-	-	-	-	-
Lodging - E	New			Commissioning - Lighting		per sq ft	\$0.04	50%	\$0.02	407,456	395,472	395,472	38,729	35,163	33,769	-	-	-	-	-	-
Lodging - E	New			Refrigerator - eCube		per sq ft	\$0.00	50%	\$0.00	505,840	490,962	490,962	9,811	9,167	8,930	-	-	-	-	-	-
Lodging - E	New			Electronics - Monitor Power Management		per sq ft	\$0.00	50%	\$0.00	255,292	247,783	247,783	1,431	1,385	1,377	-	-	-	-	-	-
Lodging - E	New			Water Heating - Booster Water Heater		per sq ft	\$0.01	50%	\$0.00	11,266	10,935	10,935	1,715	1,591	1,540	0.12	0.11	0.11	-	-	-
Lodging - E	New			Refrigeration - High Efficiency Evaporator Fan Motors		per sq ft	\$0.00	50%	\$0.00	2,855	2,771	2,771	273	258	254	-	-	-	-	-	-
Warehouse - E	Existing			HVAC - Duct Repair and Sealing		per sq ft	\$0.00	50%	\$0.00	933,608	906,149	906,149	6,259	6,031	5,977	0.59	0.59	0.60	-	-	-
Warehouse - E	Existing			RTU - Maintenance		per sq ft	\$0.08	50%	\$0.04	83,574	81,116	81,116	29,280	27,408	26,516	54.30	50.83	49.18	-	-	-
Warehouse - E	Existing			Space Heating - Heat Recovery Ventilator		per sq ft	\$0.01	50%	\$0.01	55,359	53,731	53,731	35,999	34,797	34,538	-	-	-	-	-	-
Warehouse - E	Existing			Heat Pump - Maintenance		per sq ft	\$0.02	50%	\$0.01	4,247	4,122	4,122	1,113	1,062	1,043	1.61	1.54	1.53	-	-	-
Warehouse - E	Existing			Ventilation - Variable Speed Control		per sq ft	\$0.02	50%	\$0.01	2,894,901	2,809,756	2,809,756	138,194	132,838	131,296	4.17	4.01	3.97	-	-	-
Warehouse - E	Existing			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	50%	\$0.00	4,953,192	4,807,510	4,807,510	5,465	4,959	4,693	0.99	0.90	0.85	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Warehouse - E	Existing			Refrigerator - Evaporator Fan Controls		per sq ft	\$0.00	50%	\$0.00	262,374	254,657	254,657	4,950	4,639	4,423	0.55	0.51	0.49	-	-	-
Warehouse - E	Existing			Vending Machine - Controller		per sq ft	\$0.00	50%	\$0.00	142,971	138,766	138,766	56,193	52,034	48,002	6.23	5.77	5.32	-	-	-
Warehouse - E	Existing			Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.00	50%	\$0.00	745,459	723,533	723,533	19,944	19,336	19,273	3.25	3.15	3.14	-	-	-
Warehouse - E	Existing			Thermostat - Clock/Programmable		per sq ft	\$0.01	50%	\$0.00	223,311	216,743	216,743	894	830	797	1.66	1.54	1.48	-	-	-
Warehouse - E	Existing			HVAC - Occupancy Sensors		per sq ft	\$0.14	50%	\$0.07	287,842	279,376	279,376	19,828	18,405	17,669	36.79	34.16	32.79	-	-	-
Warehouse - E	Existing			Refrigerator - eCube		per sq ft	\$0.01	50%	\$0.00	2,534,193	2,459,658	2,459,658	239,037	224,036	213,580	-	-	-	-	-	-
Warehouse - E	Existing			Electronics - Smart Power Strip		per sq ft	\$0.00	50%	\$0.00	8,632,086	8,378,201	8,378,201	3,856	3,610	3,505	-	-	-	-	-	-
Warehouse - E	Existing			Electronics - Monitor Power Management		per sq ft	\$0.00	50%	\$0.00	3,334,938	3,236,851	3,236,851	34,588	33,427	33,213	-	-	-	-	-	-
Warehouse - E	Existing			Water Heating - Booster Water Heater		per sq ft	\$0.01	50%	\$0.01	23,513	22,822	22,822	415	397	391	0.04	0.04	0.04	-	-	-
Warehouse - E	Existing			Refrigeration - High Efficiency Evaporator Fan Motors		per sq ft	\$0.02	50%	\$0.01	1,721	1,671	1,671	774	746	741	-	-	-	-	-	-
Warehouse - E	New			HVAC - Duct Repair and Sealing		per sq ft	\$0.00	50%	\$0.00	78,512	76,203	76,203	486	468	464	0.09	0.10	0.11	-	-	-
Warehouse - E	New			RTU - Maintenance		per sq ft	\$0.08	50%	\$0.04	11,648	11,306	11,306	2,545	2,440	2,418	4.72	4.52	4.48	-	-	-
Warehouse - E	New			Space Heating - Heat Recovery Ventilator		per sq ft	\$0.01	50%	\$0.01	19,563	18,987	18,987	11,699	11,309	11,254	-	-	-	-	-	-
Warehouse - E	New			Heat Pump - Maintenance		per sq ft	\$0.02	50%	\$0.01	538	522	522	105	101	101	0.16	0.16	0.16	-	-	-
Warehouse - E	New			Ventilation - Variable Speed Control		per sq ft	\$0.02	50%	\$0.01	310,256	301,131	301,131	14,650	14,204	14,162	0.44	0.43	0.43	-	-	-
Warehouse - E	New			Interior Lighting - Daylighting Controls		per sq ft	\$0.00	50%	\$0.00	-	675,984	675,984	-	91,727	90,357	-	16.58	16.34	-	-	-
Warehouse - E	New			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	50%	\$0.00	147,642	143,300	143,300	136	130	128	0.02	0.02	0.02	-	-	-
Warehouse - E	New			Refrigerator - Evaporator Fan Controls		per sq ft	\$0.00	50%	\$0.00	25,051	24,314	24,314	361	342	337	0.04	0.04	0.04	-	-	-
Warehouse - E	New			Vending Machine - Controller		per sq ft	\$0.00	50%	\$0.00	7,404	7,186	7,186	1,602	1,498	1,462	0.18	0.17	0.16	-	-	-
Warehouse - E	New			Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.00	50%	\$0.00	76,622	74,368	74,368	2,048	1,980	1,971	0.33	0.32	0.32	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Warehouse - E	New			Thermostat - Clock/Programmable		per sq ft	\$0.01	50%	\$0.00	10,926	10,605	10,605	180	170	168	0.33	0.32	0.31	-	-	-
Warehouse - E	New			HVAC - Occupancy Sensors		per sq ft	\$0.14	50%	\$0.07	19,801	19,218	19,218	873	828	815	1.62	1.54	1.51	-	-	-
Warehouse - E	New			Commissioning - HVAC		per sq ft	\$0.38	50%	\$0.19	75,335	73,119	73,119	14,692	13,942	13,723	-	-	-	-	-	-
Warehouse - E	New			Commissioning - Lighting		per sq ft	\$0.04	50%	\$0.02	1,142,981	1,109,364	1,109,364	79,209	75,267	74,143	-	-	-	-	-	-
Warehouse - E	New			Refrigerator - eCube		per sq ft	\$0.01	50%	\$0.00	241,614	234,508	234,508	17,392	16,516	16,251	-	-	-	-	-	-
Warehouse - E	New			Electronics - Smart Power Strip		per sq ft	\$0.00	50%	\$0.00	893,034	866,768	866,768	393	369	361	-	-	-	-	-	-
Warehouse - E	New			Electronics - Monitor Power Management		per sq ft	\$0.00	50%	\$0.00	343,891	333,777	333,777	3,554	3,440	3,420	-	-	-	-	-	-
Warehouse - E	New			Insulation - Foundation Refrigeration		per sq ft	\$0.32	50%	\$0.16	17,679	17,159	17,159	1,149	1,091	1,073	2.13	2.02	1.99	-	-	-
Warehouse - E	New			High Efficiency Evaporator Fan Motors		per sq ft	\$0.02	50%	\$0.01	194	188	188	86	83	82	-	-	-	-	-	-
Misc. - E	Existing			Insulation - Ceiling		per sq ft	\$0.07	50%	\$0.04	3,320,246	3,222,592	3,222,592	152,448	146,464	144,748	127.92	120.97	117.75	-	-	-
Misc. - E	Existing			Insulation - Radiant Barrier		per sq ft	\$0.02	50%	\$0.01	3,326,953	3,229,101	3,229,101	60,088	57,731	57,056	49.30	46.62	45.38	-	-	-
Misc. - E	Existing			Insulation - Wall Cavity		per sq ft	\$0.03	50%	\$0.02	3,325,025	3,227,230	3,227,230	63,353	61,188	60,775	9.85	9.32	9.07	-	-	-
Misc. - E	Existing			HVAC - Duct Repair and Sealing		per sq ft	\$0.00	50%	\$0.00	2,692,404	2,613,216	2,613,216	16,893	16,027	15,656	7.98	7.55	7.35	-	-	-
Misc. - E	Existing			Windows - High Efficiency		per sq ft	\$0.01	50%	\$0.01	4,345,057	4,217,261	4,217,261	357,009	339,988	333,275	193.16	182.66	177.81	-	-	-
Misc. - E	Existing			Water-Cooled Chiller - Condenser Water Temperature Reset		per sq ft	\$0.05	50%	\$0.02	67,469	65,484	65,484	15,661	14,817	14,476	4.45	4.21	4.12	-	-	-
Misc. - E	Existing			Water-Cooled Chiller - Economizer		per sq ft	\$0.00	50%	\$0.00	62,400	60,564	60,564	5,751	5,442	5,316	-	-	-	-	-	-
Misc. - E	Existing			Water-Cooled Chiller - VSD on Fans		per sq ft	\$1.17	50%	\$0.59	72,752	70,612	70,612	32,004	30,280	29,582	23.54	22.27	21.76	-	-	-
Misc. - E	Existing			Water-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.01	50%	\$0.00	95,072	92,276	92,276	13,955	13,204	12,899	-	-	-	-	-	-
Misc. - E	Existing			Water-Cooled Chiller - High Efficiency Cooling Tower Fans		per sq ft	\$0.01	50%	\$0.00	43,614	42,332	42,332	699	661	646	0.20	0.19	0.18	-	-	-
Misc. - E	Existing			Water-Cooled Chiller - Maintenance		per sq ft	\$0.01	50%	\$0.00	59,768	58,010	58,010	11,654	11,026	10,772	8.65	8.18	7.99	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Misc. - E	Existing			RTU - Maintenance Space Heating -		per sq ft	\$0.01	50%	\$0.00	2,095,825	2,034,183	2,034,183	666,171	628,520	610,405	494.43	466.48	453.04	-	-	-
Misc. - E	Existing			Heat Recovery Ventilator		per sq ft	\$0.14	50%	\$0.07	105,820	102,708	102,708	36,272	35,136	34,995	-	-	-	-	-	-
Misc. - E	Existing			Water Heater - Faucet Aerators		per sq ft	\$0.00	50%	\$0.00	112,830	109,511	109,511	24,192	23,168	22,822	3.57	3.42	3.37	-	-	-
Misc. - E	Existing			Water Heater - Desuperheater		per sq ft	\$0.04	50%	\$0.02	118,690	115,200	115,200	23,491	22,496	22,160	3.47	3.32	3.27	-	-	-
Misc. - E	Existing			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	50%	\$0.00	9,402,752	9,126,201	9,126,201	16,233	15,073	14,526	2.06	1.91	1.84	-	-	-
Misc. - E	Existing			Refrigerator - Auto Door Closer		per sq ft	\$0.00	50%	\$0.00	269,619	261,689	261,689	31,298	29,720	29,071	3.27	3.10	3.04	-	-	-
Misc. - E	Existing			Refrigerator - Evaporator Fan Controls		per sq ft	\$0.00	50%	\$0.00	790,744	767,487	767,487	3,633	3,349	3,177	0.38	0.35	0.33	-	-	-
Misc. - E	Existing			Vending Machine - Controller		per sq ft	\$0.00	50%	\$0.00	322,303	312,824	312,824	13,741	12,738	11,773	1.44	1.33	1.23	-	-	-
Misc. - E	Existing			Pool Pump - Timer		per sq ft	\$0.00	50%	\$0.00	1,514,570	1,470,024	1,470,024	1,432	1,384	1,376	-	-	-	-	-	-
Misc. - E	Existing			Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.00	50%	\$0.00	1,688,610	1,638,945	1,638,945	111,499	108,099	107,748	19.12	18.54	18.48	-	-	-
Misc. - E	Existing			Thermostat - Clock/Programmable		per sq ft	\$0.00	50%	\$0.00	1,960,780	1,903,110	1,903,110	288,727	272,502	264,748	212.38	200.45	194.74	-	-	-
Misc. - E	Existing			Electronics - Smart Power Strip		per sq ft	\$0.00	50%	\$0.00	15,530,687	15,073,902	15,073,902	14,430	13,582	13,182	-	-	-	-	-	-
Misc. - E	Existing			Electronics - Monitor Power Management		per sq ft	\$0.00	50%	\$0.00	5,608,020	5,443,078	5,443,078	159,869	154,502	153,513	-	-	-	-	-	-
Misc. - E	Existing			Water Heating - Booster Water Heater		per sq ft	\$0.12	50%	\$0.06	261,205	253,522	253,522	20,679	19,803	19,507	3.06	2.93	2.88	-	-	-
Misc. - E	Existing			Refrigeration - High Efficiency Evaporator Fan Motors		per sq ft	\$0.00	50%	\$0.00	100,735	97,773	97,773	17,513	15,461	14,155	-	-	-	-	-	-
Misc. - E	New			Insulation - Ceiling		per sq ft	\$0.07	50%	\$0.04	338,093	328,149	328,149	12,120	11,696	11,624	6.91	6.66	6.63	-	-	-
Misc. - E	New			Insulation - Radiant Barrier		per sq ft	\$0.02	50%	\$0.01	343,060	332,970	332,970	4,804	4,637	4,607	1.75	1.69	1.68	-	-	-
Misc. - E	New			Insulation - Wall Cavity		per sq ft	\$0.03	50%	\$0.02	342,402	332,332	332,332	4,661	4,499	4,468	-	-	-	-	-	-
Misc. - E	New			HVAC - Duct Repair and Sealing		per sq ft	\$0.00	50%	\$0.00	219,969	213,499	213,499	899	864	856	-	-	-	-	-	-
Misc. - E	New			Windows - High Efficiency		per sq ft	\$0.01	50%	\$0.01	545,345	529,305	529,305	28,845	27,798	27,606	15.33	14.78	14.70	-	-	-
Misc. - E	New			Water-Cooled Chiller - Condenser Water Temperature Reset		per sq ft	\$0.00	50%	\$0.00	-	4,024	4,024	-	423	422	-	0.12	0.12	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Misc. - E	New			Water-Cooled Chiller - Economizer		per sq ft	\$0.00	50%	\$0.00	4,100	3,979	3,979	78	75	75	-	-	-	-	-	-
Misc. - E	New			Water-Cooled Chiller - VSD on Fans		per sq ft	\$1.17	50%	\$0.59	7,369	7,152	7,152	1,465	1,421	1,418	1.08	1.05	1.04	-	-	-
Misc. - E	New			Water-Cooled Chiller - Chilled Water Reset		per sq ft	\$0.01	50%	\$0.00	7,826	7,596	7,596	441	428	427	-	-	-	-	-	-
Misc. - E	New			Water-Cooled Chiller - High Efficiency Cooling Tower Fans		per sq ft	\$0.01	50%	\$0.00	4,575	4,440	4,440	21	20	20	0.01	0.01	0.01	-	-	-
Misc. - E	New			Water-Cooled Chiller - Maintenance		per sq ft	\$0.01	50%	\$0.00	7,339	7,124	7,124	653	633	632	0.47	0.45	0.45	-	-	-
Misc. - E	New			RTU - Maintenance		per sq ft	\$0.01	50%	\$0.00	256,068	248,537	248,537	63,759	61,224	60,667	45.57	43.76	43.36	-	-	-
Misc. - E	New			Space Heating - Heat Recovery Ventilator		per sq ft	\$0.14	50%	\$0.07	39,622	38,457	38,457	12,698	12,303	12,261	-	-	-	-	-	-
Misc. - E	New			Water Heater - Faucet Aerators		per sq ft	\$0.00	50%	\$0.00	11,092	10,766	10,766	2,104	1,952	1,890	0.31	0.29	0.28	-	-	-
Misc. - E	New			Water Heater - Desuperheater		per sq ft	\$0.04	50%	\$0.02	12,192	11,833	11,833	2,135	1,981	1,918	0.32	0.29	0.28	-	-	-
Misc. - E	New			Interior Lighting - Daylighting Controls		per sq ft	\$0.00	50%	\$0.00	-	794,786	794,786	-	180,140	177,308	-	22.85	22.49	-	-	-
Misc. - E	New			Interior Lighting - LED Exit Lighting		per sq ft	\$0.00	50%	\$0.00	280,272	272,029	272,029	433	411	405	0.05	0.05	0.05	-	-	-
Misc. - E	New			Exterior Lighting - Daylighting Controls		per sq ft	\$0.02	50%	\$0.01	1,098,796	1,066,478	1,066,478	53,174	50,354	49,611	-	-	-	-	-	-
Misc. - E	New			Refrigerator - Auto Door Closer		per sq ft	\$0.00	50%	\$0.00	27,958	27,136	27,136	2,882	2,693	2,624	0.30	0.28	0.27	-	-	-
Misc. - E	New			Refrigerator - Evaporator Fan Controls		per sq ft	\$0.00	50%	\$0.00	74,983	72,777	72,777	252	237	233	0.03	0.02	0.02	-	-	-
Misc. - E	New			Vending Machine - Controller		per sq ft	\$0.00	50%	\$0.00	16,571	16,084	16,084	422	394	383	0.04	0.04	0.04	-	-	-
Misc. - E	New			Pool Pump - Timer		per sq ft	\$0.00	50%	\$0.00	103,844	100,790	100,790	95	90	88	-	-	-	-	-	-
Misc. - E	New			Non-HVAC Motors - Variable Speed Control		per sq ft	\$0.00	50%	\$0.00	174,758	169,618	169,618	11,529	11,146	11,093	1.98	1.91	1.90	-	-	-
Misc. - E	New			Thermostat - Clock/Programmable		per sq ft	\$0.00	50%	\$0.00	184,661	179,229	179,229	21,738	20,875	20,686	15.99	15.36	15.22	-	-	-
Misc. - E	New			Commissioning - HVAC		per sq ft	\$0.38	50%	\$0.19	244,396	237,207	237,207	60,475	58,074	57,548	-	-	-	-	-	-
Misc. - E	New			Commissioning - Lighting		per sq ft	\$0.04	50%	\$0.02	1,271,580	1,234,180	1,234,180	147,461	139,865	137,666	-	-	-	-	-	-
Misc. - E	New			Electronics - Smart Power Strip		per sq ft	\$0.00	50%	\$0.00	1,599,873	1,552,818	1,552,818	1,456	1,376	1,346	-	-	-	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Misc. - E	New			Electronics - Monitor Power Management		per sq ft	\$0.00	50%	\$0.00	576,417	559,464	559,464	16,376	15,852	15,757	-	-	-	-	-	-
Misc. - E	New			Insulation - Foundation		per sq ft	\$0.32	50%	\$0.16	137,302	133,264	133,264	11,325	10,875	10,777	8.33	8.00	7.93	-	-	-
Misc. - E	New			Water Heating - Booster Water Heater		per sq ft	\$0.12	50%	\$0.06	25,621	24,867	24,867	1,795	1,665	1,612	0.27	0.25	0.24	-	-	-
Misc. - E	New			Refrigeration - High Efficiency Evaporator Fan Motors		per sq ft	\$0.00	50%	\$0.00	9,470	9,192	9,192	894	846	831	-	-	-	-	-	-
Office - G	Existing			Insulation - Ceiling		per sq ft	\$0.13	50%	\$0.06	282,858	274,539	274,539	-	-	-	-	-	-	3,205	3,121	3,087
Office - G	Existing			Insulation - Radiant Barrier		per sq ft	\$0.03	50%	\$0.02	283,642	275,299	275,299	-	-	-	-	-	-	1,240	1,208	1,195
Office - G	Existing			Insulation - Wall Cavity		per sq ft	\$0.16	50%	\$0.08	284,232	275,872	275,872	-	-	-	-	-	-	6,312	6,148	6,081
Office - G	Existing			Windows - High Efficiency		per sq ft	\$0.18	50%	\$0.09	268,415	260,520	260,520	-	-	-	-	-	-	2,857	2,783	2,752
Office - G	Existing			Gas Boiler - Hot Water Reset		per sq ft	\$0.01	50%	\$0.00	4,685	4,547	4,547	-	-	-	-	-	-	940	908	898
Office - G	Existing			Gas Boiler - Maintenance		per sq ft	\$0.01	50%	\$0.01	5,567	5,404	5,404	-	-	-	-	-	-	489	472	467
Office - G	Existing			Gas Furnace - Maintenance		per sq ft	\$0.01	50%	\$0.01	653,923	634,690	634,690	-	-	-	-	-	-	19,763	19,253	19,040
Office - G	Existing			Space Heating - Heat Recovery Ventilator		per sq ft	\$0.02	50%	\$0.01	221,711	215,190	215,190	-	-	-	-	-	-	5,208	5,073	5,017
Office - G	Existing			Water Heater - Drainwater Heat Recovery		per sq ft	\$0.00	50%	\$0.00	-	-	249,400	-	-	-	-	-	-	-	-	2,228
Office - G	Existing			Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	50%	\$0.42	78,195	78,195	78,195	-	-	-	-	-	-	1,301	1,297	1,279
Office - G	Existing			Boiler O2 Trim Controls		per sq ft	\$0.02	50%	\$0.01	3,221	3,126	3,126	-	-	-	-	-	-	43	42	41
Office - G	Existing			Repair malfunctioning steam traps		per sq ft	\$0.00	50%	\$0.00	5,581	5,417	5,417	-	-	-	-	-	-	14	13	13
Office - G	Existing			Exhaust Hood Makeup Air		per sq ft	\$0.16	50%	\$0.08	76	74	74	-	-	-	-	-	-	13	12	12
Office - G	New			Insulation - Ceiling		per sq ft	\$0.13	50%	\$0.06	28,904	28,054	28,054	-	-	-	-	-	-	78	76	75
Office - G	New			Insulation - Radiant Barrier		per sq ft	\$0.03	50%	\$0.02	28,986	28,134	28,134	-	-	-	-	-	-	26	25	25
Office - G	New			Insulation - Wall Cavity		per sq ft	\$0.16	50%	\$0.08	28,918	28,068	28,068	-	-	-	-	-	-	173	166	164
Office - G	New			Gas Boiler - Hot Water Reset		per sq ft	\$0.01	50%	\$0.00	274	266	266	-	-	-	-	-	-	23	23	22
Office - G	New			Gas Boiler - Maintenance		per sq ft	\$0.01	50%	\$0.01	384	373	373	-	-	-	-	-	-	32	32	31
Office - G	New			Gas Furnace - Maintenance		per sq ft	\$0.01	50%	\$0.01	44,897	43,577	43,577	-	-	-	-	-	-	1,587	1,531	1,511
Office - G	New			Space Heating - Heat Recovery Ventilator		per sq ft	\$0.02	50%	\$0.01	83,332	80,881	80,881	-	-	-	-	-	-	2,274	2,194	2,165

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Office - G	New			Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	50%	\$0.42	8,043	8,043	8,043	-	-	-	-	-	-	123	122	121
Office - G	New			Boiler O2 Trim Controls		per sq ft	\$0.02	50%	\$0.01	232	225	225	-	-	-	-	-	-	3	3	3
Office - G	New			Repair malfunctioning steam traps		per sq ft	\$0.00	50%	\$0.00	385	373	373	-	-	-	-	-	-	1	1	1
Office - G	New			Exhaust Hood Makeup Air		per sq ft	\$0.16	50%	\$0.08	8	8	8	-	-	-	-	-	-	1	1	1
Restaurant - G	Existing			Insulation - Radiant Barrier		per sq ft	\$2.60	50%	\$1.30	113,029	109,705	109,705	-	-	-	-	-	-	4,376	4,263	4,216
Restaurant - G	Existing			HVAC - Duct Repair and Sealing		per sq ft	\$0.01	50%	\$0.01	103,935	100,878	100,878	-	-	-	-	-	-	101	98	97
Restaurant - G	Existing			Windows - High Efficiency		per sq ft	\$0.39	50%	\$0.20	180,450	175,143	175,143	-	-	-	-	-	-	4,134	4,027	3,983
Restaurant - G	Existing			Gas Boiler - Maintenance		per sq ft	\$0.37	50%	\$0.18	1,099	1,066	1,066	-	-	-	-	-	-	86	83	83
Restaurant - G	Existing			Space Heating - Heat Recovery Ventilator		per sq ft	\$0.01	50%	\$0.01	85,281	82,772	82,772	-	-	-	-	-	-	2,145	2,090	2,066
Restaurant - G	Existing			Water Heater - Drainwater Heat Recovery		per sq ft	\$0.04	50%	\$0.02	103,983	100,925	100,925	-	-	-	-	-	-	3,407	3,296	3,252
Restaurant - G	Existing			Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	50%	\$0.42	58,210	58,210	58,210	-	-	-	-	-	-	3,190	3,179	3,137
Restaurant - G	Existing			Boiler O2 Trim Controls		per sq ft	\$0.01	50%	\$0.01	1,052	1,021	1,021	-	-	-	-	-	-	13	12	12
Restaurant - G	Existing			Repair malfunctioning steam traps		per sq ft	\$0.01	50%	\$0.01	1,103	1,070	1,070	-	-	-	-	-	-	2	2	2
Restaurant - G	Existing			Exhaust Hood Makeup Air		per sq ft	\$0.12	50%	\$0.06	25	24	24	-	-	-	-	-	-	4	4	4
Restaurant - G	New			Insulation - Radiant Barrier		per sq ft	\$0.00	50%	\$0.00	-	11,025	11,025	-	-	-	-	-	-	-	21	21
Restaurant - G	New			Windows - High Efficiency		per sq ft	\$0.39	50%	\$0.20	72,700	70,562	70,562	-	-	-	-	-	-	1,122	1,082	1,068
Restaurant - G	New			Gas Boiler - Maintenance		per sq ft	\$0.37	50%	\$0.18	185	179	179	-	-	-	-	-	-	9	9	8
Restaurant - G	New			Space Heating - Heat Recovery Ventilator		per sq ft	\$0.01	50%	\$0.01	32,056	31,113	31,113	-	-	-	-	-	-	727	701	692
Restaurant - G	New			Water Heater - Drainwater Heat Recovery		per sq ft	\$0.04	50%	\$0.02	10,688	10,373	10,373	-	-	-	-	-	-	320	309	306
Restaurant - G	New			Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	50%	\$0.42	5,987	5,987	5,987	-	-	-	-	-	-	299	298	294
Restaurant - G	New			Boiler O2 Trim Controls		per sq ft	\$0.01	50%	\$0.01	68	66	66	-	-	-	-	-	-	0	0	0
Restaurant - G	New			Repair malfunctioning steam traps		per sq ft	\$0.01	50%	\$0.01	185	179	179	-	-	-	-	-	-	0	0	0
Restaurant - G	New			Exhaust Hood Makeup Air		per sq ft	\$0.12	50%	\$0.06	3	2	2	-	-	-	-	-	-	0	0	0
Retail - G	Existing			Insulation - Radiant Barrier		per sq ft	\$0.09	50%	\$0.04	549,150	532,998	532,998	-	-	-	-	-	-	27,774	27,073	26,859

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Retail - G	Existing			HVAC - Duct Repair and Sealing		per sq ft	\$0.00	50%	\$0.00	522,069	506,714	506,714	-	-	-	-	-	-	660	643	638
Retail - G	Existing			Windows - High Efficiency		per sq ft	\$0.01	50%	\$0.01	1,069,714	1,038,252	1,038,252	-	-	-	-	-	-	32,017	31,210	30,962
Retail - G	Existing			Gas Boiler - Maintenance		per sq ft	\$0.01	50%	\$0.01	50,272	48,794	48,794	-	-	-	-	-	-	3,623	3,506	3,472
Retail - G	Existing			Space Heating - Heat Recovery Ventilator		per sq ft	\$0.01	50%	\$0.01	428,368	415,769	415,769	-	-	-	-	-	-	14,076	13,721	13,612
Retail - G	Existing			Water Heater - Drainwater Heat Recovery		per sq ft	\$0.04	50%	\$0.02	168,638	163,678	163,678	-	-	-	-	-	-	2,071	2,003	1,976
Retail - G	Existing			Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	50%	\$0.42	108,903	108,903	108,903	-	-	-	-	-	-	3,150	3,139	3,101
Retail - G	Existing			Boiler O2 Trim Controls		per sq ft	\$0.01	50%	\$0.01	45,615	44,273	44,273	-	-	-	-	-	-	504	488	483
Retail - G	Existing			Repair malfunctioning steam traps		per sq ft	\$0.00	50%	\$0.00	50,602	49,114	49,114	-	-	-	-	-	-	89	86	85
Retail - G	Existing			Destratification Fans (HVLS)		per sq ft	\$0.24	50%	\$0.12	20,032	19,443	19,443	-	-	-	-	-	-	2,491	2,410	2,386
Retail - G	Existing			Exhaust Hood Makeup Air		per sq ft	\$0.12	50%	\$0.06	1,134	1,101	1,101	-	-	-	-	-	-	157	152	150
Retail - G	New			Insulation - Radiant Barrier		per sq ft	\$0.00	50%	\$0.00	-	54,011	54,011	-	-	-	-	-	-	-	145	144
Retail - G	New			Windows - High Efficiency		per sq ft	\$0.01	50%	\$0.01	99,607	96,677	96,677	-	-	-	-	-	-	2,117	2,066	2,054
Retail - G	New			Gas Boiler - Maintenance		per sq ft	\$0.01	50%	\$0.01	5,331	5,174	5,174	-	-	-	-	-	-	280	271	269
Retail - G	New			Space Heating - Heat Recovery Ventilator		per sq ft	\$0.01	50%	\$0.01	161,019	156,283	156,283	-	-	-	-	-	-	5,030	4,908	4,880
Retail - G	New			Water Heater - Drainwater Heat Recovery		per sq ft	\$0.04	50%	\$0.02	17,344	16,834	16,834	-	-	-	-	-	-	194	188	186
Retail - G	New			Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	50%	\$0.42	11,192	11,192	11,192	-	-	-	-	-	-	272	271	269
Retail - G	New			Boiler O2 Trim Controls		per sq ft	\$0.01	50%	\$0.01	3,079	2,989	2,989	-	-	-	-	-	-	25	24	24
Retail - G	New			Repair malfunctioning steam traps		per sq ft	\$0.00	50%	\$0.00	5,357	5,199	5,199	-	-	-	-	-	-	9	9	9
Retail - G	New			Destratification Fans (HVLS)		per sq ft	\$0.24	50%	\$0.12	2,058	1,997	1,997	-	-	-	-	-	-	186	181	179
Retail - G	New			Exhaust Hood Makeup Air		per sq ft	\$0.12	50%	\$0.06	116	113	113	-	-	-	-	-	-	12	11	11
Grocery - G	Existing			Insulation - Ceiling		per sq ft	\$0.00	50%	\$0.00	-	54,559	54,559	-	-	-	-	-	-	-	3,639	3,599
Grocery - G	Existing			Insulation - Radiant Barrier		per sq ft	\$0.45	50%	\$0.22	61,276	59,474	59,474	-	-	-	-	-	-	1,656	1,613	1,595
Grocery - G	Existing			Insulation - Wall Cavity		per sq ft	\$1.00	50%	\$0.50	57,456	55,766	55,766	-	-	-	-	-	-	6,113	5,956	5,890
Grocery - G	Existing			HVAC - Duct Repair and Sealing		per sq ft	\$0.00	50%	\$0.00	54,570	52,965	52,965	-	-	-	-	-	-	119	116	115

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Grocery - G	Existing			Windows - High Efficiency Space Heating -		per sq ft	\$0.25	50%	\$0.12	136,086	132,083	132,083	-	-	-	-	-	-	2,946	2,870	2,838
Grocery - G	Existing			Heat Recovery Ventilator		per sq ft	\$0.05	50%	\$0.03	44,772	43,455	43,455	-	-	-	-	-	-	1,281	1,248	1,234
Grocery - G	Existing			Water Heater - Drainwater Heat Recovery		per sq ft	\$0.04	50%	\$0.02	56,127	54,476	54,476	-	-	-	-	-	-	642	620	612
Grocery - G	Existing			Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	50%	\$0.42	31,472	31,472	31,472	-	-	-	-	-	-	600	597	589
Grocery - G	New			HVAC - Duct Repair and Sealing		per sq ft	\$0.00	50%	\$0.00	4,428	4,298	4,298	-	-	-	-	-	-	10	10	10
Grocery - G	New			Windows - High Efficiency Space Heating -		per sq ft	\$0.25	50%	\$0.12	25,452	24,704	24,704	-	-	-	-	-	-	558	539	532
Grocery - G	New			Heat Recovery Ventilator		per sq ft	\$0.05	50%	\$0.03	16,828	16,333	16,333	-	-	-	-	-	-	436	421	415
Grocery - G	New			Water Heater - Drainwater Heat Recovery		per sq ft	\$0.04	50%	\$0.02	5,796	5,625	5,625	-	-	-	-	-	-	60	58	58
Grocery - G	New			Combined Boiler & Water Htg. Unit		per sq ft	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
College - G	Existing			Insulation - Ceiling		per sq ft	\$0.70	50%	\$0.35	222,036	215,505	215,505	-	-	-	-	-	-	3,372	3,279	3,243
College - G	Existing			Insulation - Radiant Barrier		per sq ft	\$0.18	50%	\$0.09	224,558	217,954	217,954	-	-	-	-	-	-	1,311	1,275	1,261
College - G	Existing			Insulation - Wall Cavity		per sq ft	\$0.16	50%	\$0.08	224,478	217,876	217,876	-	-	-	-	-	-	1,466	1,426	1,410
College - G	Existing			Gas Boiler - Hot Water Reset		per sq ft	\$0.01	50%	\$0.00	55,093	53,472	53,472	-	-	-	-	-	-	5,227	5,037	4,977
College - G	Existing			Gas Boiler - Maintenance		per sq ft	\$0.02	50%	\$0.01	87,945	85,358	85,358	-	-	-	-	-	-	5,605	5,401	5,337
College - G	Existing			Gas Furnace - Maintenance		per sq ft	\$0.04	50%	\$0.02	588,329	571,025	571,025	-	-	-	-	-	-	27,838	27,123	26,826
College - G	Existing			Space Heating - Heat Recovery Ventilator		per sq ft	\$0.02	50%	\$0.01	131,946	128,065	128,065	-	-	-	-	-	-	5,003	4,866	4,812
College - G	Existing			Water Heater - Drainwater Heat Recovery		per sq ft	\$0.04	50%	\$0.02	170,695	165,675	165,675	-	-	-	-	-	-	2,880	2,786	2,749
College - G	Existing			Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	50%	\$0.42	110,106	110,106	110,106	-	-	-	-	-	-	3,809	3,792	3,743
College - G	Existing			Boiler O2 Trim Controls		per sq ft	\$0.02	50%	\$0.01	74,163	71,981	71,981	-	-	-	-	-	-	725	698	690
College - G	Existing			Repair malfunctioning steam traps		per sq ft	\$0.00	50%	\$0.00	87,145	84,582	84,582	-	-	-	-	-	-	216	208	206
College - G	Existing			Destratification Fans (HVLS)		per sq ft	\$0.32	50%	\$0.16	21,199	20,575	20,575	-	-	-	-	-	-	2,331	2,246	2,219
College - G	Existing			Exhaust Hood Makeup Air		per sq ft	\$0.16	50%	\$0.08	600	583	583	-	-	-	-	-	-	73	71	70
College - G	New			Insulation - Ceiling		per sq ft	\$0.70	50%	\$0.35	22,721	22,053	22,053	-	-	-	-	-	-	213	206	204
College - G	New			Insulation - Radiant Barrier		per sq ft	\$0.18	50%	\$0.09	22,707	22,039	22,039	-	-	-	-	-	-	69	67	66

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
College - G	New			Insulation - Wall Cavity		per sq ft	\$0.16	50%	\$0.08	22,737	22,069	22,069	-	-	-	-	-	-	57	55	55
College - G	New			Gas Boiler - Hot Water Reset		per sq ft	\$0.01	50%	\$0.00	3,224	3,129	3,129	-	-	-	-	-	-	196	191	190
College - G	New			Gas Boiler - Maintenance		per sq ft	\$0.02	50%	\$0.01	9,046	8,780	8,780	-	-	-	-	-	-	434	424	422
College - G	New			Gas Furnace - Maintenance		per sq ft	\$0.04	50%	\$0.02	60,152	58,383	58,383	-	-	-	-	-	-	2,698	2,601	2,567
College - G	New			Space Heating - Heat Recovery Ventilator		per sq ft	\$0.02	50%	\$0.01	49,593	48,135	48,135	-	-	-	-	-	-	1,721	1,662	1,642
College - G	New			Water Heater - Drainwater Heat Recovery		per sq ft	\$0.04	50%	\$0.02	17,545	17,029	17,029	-	-	-	-	-	-	270	262	259
College - G	New			Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	50%	\$0.42	11,326	11,326	11,326	-	-	-	-	-	-	339	339	335
College - G	New			Boiler O2 Trim Controls		per sq ft	\$0.02	50%	\$0.01	3,122	3,030	3,030	-	-	-	-	-	-	23	22	22
College - G	New			Repair malfunctioning steam traps		per sq ft	\$0.00	50%	\$0.00	8,932	8,669	8,669	-	-	-	-	-	-	21	21	21
College - G	New			Destratification Fans (HVLS)		per sq ft	\$0.32	50%	\$0.16	2,178	2,114	2,114	-	-	-	-	-	-	180	176	175
College - G	New			Exhaust Hood Makeup Air		per sq ft	\$0.16	50%	\$0.08	62	60	60	-	-	-	-	-	-	6	6	5
School - G	Existing			Insulation - Ceiling		per sq ft	\$0.70	50%	\$0.35	510,709	495,688	495,688	-	-	-	-	-	-	4,021	3,888	3,844
School - G	Existing			Insulation - Radiant Barrier		per sq ft	\$0.18	50%	\$0.09	540,696	524,793	524,793	-	-	-	-	-	-	1,637	1,583	1,564
School - G	Existing			Insulation - Wall Cavity		per sq ft	\$0.16	50%	\$0.08	510,902	495,875	495,875	-	-	-	-	-	-	1,730	1,673	1,654
School - G	Existing			Gas Boiler - Hot Water Reset		per sq ft	\$0.01	50%	\$0.00	625,152	606,765	606,765	-	-	-	-	-	-	26,637	25,667	25,364
School - G	Existing			Gas Boiler - Maintenance		per sq ft	\$0.02	50%	\$0.01	652,608	633,414	633,414	-	-	-	-	-	-	18,680	18,000	17,787
School - G	Existing			Gas Furnace - Maintenance		per sq ft	\$0.04	50%	\$0.02	359,069	348,508	348,508	-	-	-	-	-	-	7,630	7,434	7,353
School - G	Existing			Space Heating - Heat Recovery Ventilator		per sq ft	\$0.02	50%	\$0.01	403,624	391,753	391,753	-	-	-	-	-	-	7,934	7,672	7,585
School - G	Existing			Water Heater - Drainwater Heat Recovery		per sq ft	\$0.04	50%	\$0.02	564,272	547,675	547,675	-	-	-	-	-	-	5,257	5,086	5,017
School - G	Existing			Boiler O2 Trim Controls		per sq ft	\$0.02	50%	\$0.01	549,005	532,858	532,858	-	-	-	-	-	-	2,410	2,322	2,294
School - G	Existing			Repair malfunctioning steam traps		per sq ft	\$0.00	50%	\$0.00	648,727	629,647	629,647	-	-	-	-	-	-	1,610	1,551	1,533
School - G	New			Insulation - Ceiling		per sq ft	\$0.70	50%	\$0.35	52,252	50,715	50,715	-	-	-	-	-	-	227	221	219
School - G	New			Insulation - Radiant Barrier		per sq ft	\$0.18	50%	\$0.09	55,028	53,410	53,410	-	-	-	-	-	-	77	75	75
School - G	New			Insulation - Wall Cavity		per sq ft	\$0.16	50%	\$0.08	52,210	50,675	50,675	-	-	-	-	-	-	61	59	59
School - G	New			Gas Boiler - Hot Water Reset		per sq ft	\$0.01	50%	\$0.00	36,551	35,476	35,476	-	-	-	-	-	-	997	974	969

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
School - G	New			Gas Boiler - Maintenance		per sq ft	\$0.02	50%	\$0.01	68,197	66,192	66,192	-	-	-	-	-	-	1,470	1,436	1,429
School - G	New			Gas Furnace - Maintenance		per sq ft	\$0.04	50%	\$0.02	37,308	36,211	36,211	-	-	-	-	-	-	751	724	715
School - G	New			Space Heating - Heat Recovery Ventilator		per sq ft	\$0.02	50%	\$0.01	151,706	147,244	147,244	-	-	-	-	-	-	2,435	2,368	2,349
School - G	New			Water Heater - Drainwater Heat Recovery		per sq ft	\$0.04	50%	\$0.02	58,013	56,307	56,307	-	-	-	-	-	-	494	478	472
School - G	New			Boiler O2 Trim Controls		per sq ft	\$0.02	50%	\$0.01	37,072	35,982	35,982	-	-	-	-	-	-	123	120	119
School - G	New			Repair malfunctioning steam traps		per sq ft	\$0.00	50%	\$0.00	67,420	65,437	65,437	-	-	-	-	-	-	161	158	157
School - G	New			Exhaust Hood Makeup Air		per sq ft	\$0.00	50%	\$0.00	-	-	1,749	-	-	-	-	-	-	-	-	72
Health - G	Existing			Insulation - Radiant Barrier		per sq ft	\$0.22	50%	\$0.11	209,219	203,065	203,065	-	-	-	-	-	-	1,162	1,132	1,120
Health - G	Existing			HVAC - Duct Repair and Sealing		per sq ft	\$0.00	50%	\$0.00	195,195	189,454	189,454	-	-	-	-	-	-	423	412	408
Health - G	Existing			Windows - High Efficiency		per sq ft	\$0.90	50%	\$0.45	329,076	319,397	319,397	-	-	-	-	-	-	2,234	2,176	2,153
Health - G	Existing			Gas Boiler - Hot Water Reset		per sq ft	\$0.01	50%	\$0.00	19,816	19,233	19,233	-	-	-	-	-	-	3,954	3,824	3,785
Health - G	Existing			Gas Boiler - Maintenance		per sq ft	\$0.02	50%	\$0.01	20,802	20,190	20,190	-	-	-	-	-	-	2,433	2,353	2,329
Health - G	Existing			Gas Furnace - Maintenance		per sq ft	\$0.02	50%	\$0.01	411,486	399,384	399,384	-	-	-	-	-	-	29,327	28,580	28,282
Health - G	Existing			Space Heating - Heat Recovery Ventilator		per sq ft	\$0.01	50%	\$0.00	127,543	123,792	123,792	-	-	-	-	-	-	7,186	6,999	6,926
Health - G	Existing			Water Heater - Drainwater Heat Recovery		per sq ft	\$0.04	50%	\$0.02	215,925	209,574	209,574	-	-	-	-	-	-	8,389	8,113	8,001
Health - G	Existing			Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	50%	\$0.42	126,013	126,013	126,013	-	-	-	-	-	-	8,558	8,527	8,412
Health - G	Existing			Boiler O2 Trim Controls		per sq ft	\$0.01	50%	\$0.00	29,864	28,986	28,986	-	-	-	-	-	-	536	518	513
Health - G	Existing			Boiler Parallel Positioning Control		per sq ft	\$0.07	50%	\$0.04	29,078	28,222	28,222	-	-	-	-	-	-	522	504	499
Health - G	Existing			Boiler blowdown heat exchanger (steam)		per sq ft	\$0.31	50%	\$0.15	29,040	28,186	28,186	-	-	-	-	-	-	1,458	1,410	1,396
Health - G	Existing			Repair malfunctioning steam traps		per sq ft	\$0.00	50%	\$0.00	20,600	19,994	19,994	-	-	-	-	-	-	58	56	56
Health - G	Existing			Destratification Fans (HVLS)		per sq ft	\$0.10	50%	\$0.05	7,495	7,275	7,275	-	-	-	-	-	-	1,512	1,462	1,448
Health - G	Existing			Exhaust Hood Makeup Air		per sq ft	\$0.05	50%	\$0.03	218	212	212	-	-	-	-	-	-	49	47	47
Health - G	New			Gas Boiler - Hot Water Reset		per sq ft	\$0.01	50%	\$0.00	1,161	1,127	1,127	-	-	-	-	-	-	88	86	85
Health - G	New			Gas Boiler - Maintenance		per sq ft	\$0.02	50%	\$0.01	2,142	2,079	2,079	-	-	-	-	-	-	100	98	98

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Health - G	New			Gas Furnace - Maintenance		per sq ft	\$0.02	50%	\$0.01	40,723	39,526	39,526	-	-	-	-	-	-	2,106	2,030	2,003
Health - G	New			Space Heating - Heat Recovery Ventilator		per sq ft	\$0.01	50%	\$0.00	47,942	46,532	46,532	-	-	-	-	-	-	1,892	1,825	1,801
Health - G	New			Water Heater - Drainwater Heat Recovery		per sq ft	\$0.04	50%	\$0.02	22,219	21,565	21,565	-	-	-	-	-	-	787	762	754
Health - G	New			Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	50%	\$0.42	12,965	12,965	12,965	-	-	-	-	-	-	763	761	753
Health - G	New			Boiler O2 Trim Controls		per sq ft	\$0.01	50%	\$0.00	1,224	1,188	1,188	-	-	-	-	-	-	9	9	9
Health - G	New			Boiler Parallel Positioning Control		per sq ft	\$0.00	50%	\$0.00	-	-	1,714	-	-	-	-	-	-	-	-	12
Health - G	New			Boiler blowdown heat exchanger (steam)		per sq ft	\$0.00	50%	\$0.00	-	1,246	1,246	-	-	-	-	-	-	-	25	25
Health - G	New			Repair malfunctioning steam traps		per sq ft	\$0.00	50%	\$0.00	2,129	2,066	2,066	-	-	-	-	-	-	3	3	3
Health - G	New			Destratification Fans (HVLS)		per sq ft	\$0.10	50%	\$0.05	791	768	768	-	-	-	-	-	-	64	62	62
Health - G	New			Exhaust Hood Makeup Air		per sq ft	\$0.05	50%	\$0.03	22	22	22	-	-	-	-	-	-	2	2	2
Lodging - G	Existing			Insulation - Radiant Barrier		per sq ft	\$0.26	50%	\$0.13	39,989	38,813	38,813	-	-	-	-	-	-	83	81	80
Lodging - G	Existing			HVAC - Duct Repair and Sealing		per sq ft	\$0.00	50%	\$0.00	37,557	36,452	36,452	-	-	-	-	-	-	30	30	29
Lodging - G	Existing			Windows - High Efficiency		per sq ft	\$1.06	50%	\$0.53	52,631	51,083	51,083	-	-	-	-	-	-	134	130	129
Lodging - G	Existing			Gas Boiler - Hot Water Reset		per sq ft	\$0.01	50%	\$0.01	40,942	39,738	39,738	-	-	-	-	-	-	2,179	2,115	2,098
Lodging - G	Existing			Gas Boiler - Maintenance		per sq ft	\$0.02	50%	\$0.01	55,898	54,254	54,254	-	-	-	-	-	-	1,744	1,693	1,679
Lodging - G	Existing			Gas Furnace - Maintenance		per sq ft	\$0.02	50%	\$0.01	47,596	46,196	46,196	-	-	-	-	-	-	1,123	1,094	1,082
Lodging - G	Existing			Space Heating - Heat Recovery Ventilator		per sq ft	\$0.01	50%	\$0.00	30,927	30,017	30,017	-	-	-	-	-	-	651	633	627
Lodging - G	Existing			Water Heater - Drainwater Heat Recovery		per sq ft	\$0.04	50%	\$0.02	67,382	65,401	65,401	-	-	-	-	-	-	1,496	1,447	1,427
Lodging - G	Existing			Boiler O2 Trim Controls		per sq ft	\$0.01	50%	\$0.00	37,651	36,544	36,544	-	-	-	-	-	-	180	175	173
Lodging - G	Existing			Repair malfunctioning steam traps		per sq ft	\$0.00	50%	\$0.00	55,462	53,831	53,831	-	-	-	-	-	-	42	41	40
Lodging - G	Existing			Exhaust Hood Makeup Air		per sq ft	\$0.05	50%	\$0.03	894	868	868	-	-	-	-	-	-	53	52	51
Lodging - G	New			Gas Boiler - Hot Water Reset		per sq ft	\$0.01	50%	\$0.01	2,394	2,324	2,324	-	-	-	-	-	-	86	84	83
Lodging - G	New			Gas Boiler - Maintenance		per sq ft	\$0.02	50%	\$0.01	5,023	4,875	4,875	-	-	-	-	-	-	111	109	108
Lodging - G	New			Gas Furnace - Maintenance		per sq ft	\$0.02	50%	\$0.01	4,256	4,131	4,131	-	-	-	-	-	-	66	63	63

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Lodging - G	New			Space Heating - Heat Recovery Ventilator		per sq ft	\$0.01	50%	\$0.00	11,625	11,283	11,283	-	-	-	-	-	-	171	166	165
Lodging - G	New			Water Heater - Drainwater Heat Recovery		per sq ft	\$0.04	50%	\$0.02	6,926	6,723	6,723	-	-	-	-	-	-	140	136	134
Lodging - G	New			Boiler O2 Trim Controls Repair		per sq ft	\$0.01	50%	\$0.00	2,455	2,383	2,383	-	-	-	-	-	-	8	8	8
Lodging - G	New			malfunctioning steam traps		per sq ft	\$0.00	50%	\$0.00	4,988	4,842	4,842	-	-	-	-	-	-	4	4	4
Lodging - G	New			Exhaust Hood Makeup Air Insulation - Radiant Barrier HVAC - Duct Repair and Sealing		per sq ft	\$0.05	50%	\$0.03	92	89	89	-	-	-	-	-	-	4	4	4
Warehouse - G	Existing			Gas Boiler - Hot Water Reset		per sq ft	\$0.09	50%	\$0.04	295,530	286,838	286,838	-	-	-	-	-	-	8,898	8,663	8,592
Warehouse - G	Existing			Gas Boiler - Maintenance		per sq ft	\$0.00	50%	\$0.00	281,696	273,411	273,411	-	-	-	-	-	-	212	206	205
Warehouse - G	Existing			Space Heating - Heat Recovery Ventilator		per sq ft	\$0.01	50%	\$0.00	11,359	11,025	11,025	-	-	-	-	-	-	11,809	11,419	11,303
Warehouse - G	Existing			Combined Boiler & Water Htg. Unit		per sq ft	\$0.01	50%	\$0.01	12,049	11,694	11,694	-	-	-	-	-	-	3,015	2,916	2,886
Warehouse - G	Existing			Boiler O2 Trim Controls		per sq ft	\$0.01	50%	\$0.01	231,970	225,147	225,147	-	-	-	-	-	-	4,538	4,418	4,381
Warehouse - G	Existing			Boiler Parallel Positioning Control		per sq ft	\$0.83	50%	\$0.42	124,046	124,046	124,046	-	-	-	-	-	-	1,437	1,432	1,416
Warehouse - G	Existing			Boiler blowdown heat exchanger (steam)		per sq ft	\$0.01	50%	\$0.01	10,556	10,246	10,246	-	-	-	-	-	-	405	392	388
Warehouse - G	Existing			Repair malfunctioning steam traps		per sq ft	\$0.18	50%	\$0.09	10,202	9,902	9,902	-	-	-	-	-	-	391	379	375
Warehouse - G	Existing			Boiler blowdown heat exchanger (steam)		per sq ft	\$0.73	50%	\$0.36	10,194	9,894	9,894	-	-	-	-	-	-	1,095	1,059	1,048
Warehouse - G	Existing			Repair malfunctioning steam traps		per sq ft	\$0.00	50%	\$0.00	12,158	11,801	11,801	-	-	-	-	-	-	22	21	21
Warehouse - G	Existing			Destratification Fans (HVLS)		per sq ft	\$0.24	50%	\$0.12	4,171	4,049	4,049	-	-	-	-	-	-	1,801	1,741	1,723
Warehouse - G	Existing			Exhaust Hood Makeup Air Insulation - Radiant Barrier		per sq ft	\$0.12	50%	\$0.06	123	120	120	-	-	-	-	-	-	59	57	57
Warehouse - G	New			Gas Boiler - Hot Water Reset		per sq ft	\$0.00	50%	\$0.00	-	29,103	29,103	-	-	-	-	-	-	-	45	45
Warehouse - G	New			Gas Boiler - Hot Water Reset		per sq ft	\$0.01	50%	\$0.00	664	645	645	-	-	-	-	-	-	515	502	498
Warehouse - G	New			Gas Boiler - Maintenance		per sq ft	\$0.01	50%	\$0.01	1,024	994	994	-	-	-	-	-	-	186	181	180
Warehouse - G	New			Space Heating - Heat Recovery Ventilator		per sq ft	\$0.01	50%	\$0.01	87,195	84,630	84,630	-	-	-	-	-	-	1,581	1,540	1,529
Warehouse - G	New			Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	50%	\$0.42	12,810	12,810	12,810	-	-	-	-	-	-	117	117	116
Warehouse - G	New			Boiler O2 Trim Controls		per sq ft	\$0.01	50%	\$0.01	685	665	665	-	-	-	-	-	-	19	19	18

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Warehouse - G	New			Boiler Parallel Positioning Control		per sq ft	\$0.18	50%	\$0.09	670	651	651	-	-	-	-	-	-	19	18	18
Warehouse - G	New			Boiler blowdown heat exchanger (steam)		per sq ft	\$0.73	50%	\$0.36	665	646	646	-	-	-	-	-	-	52	50	50
Warehouse - G	New			Repair malfunctioning steam traps		per sq ft	\$0.00	50%	\$0.00	1,032	1,001	1,001	-	-	-	-	-	-	2	2	2
Warehouse - G	New			Destratification Fans (HVLS)		per sq ft	\$0.24	50%	\$0.12	450	437	437	-	-	-	-	-	-	141	137	136
Warehouse - G	New			Exhaust Hood Makeup Air		per sq ft	\$0.12	50%	\$0.06	13	12	12	-	-	-	-	-	-	4	4	4
Misc. - G	Existing			Insulation - Ceiling		per sq ft	\$0.07	50%	\$0.04	1,047,861	1,017,042	1,017,042	-	-	-	-	-	-	23,716	23,123	22,961
Misc. - G	Existing			Insulation - Radiant Barrier		per sq ft	\$0.02	50%	\$0.01	1,051,653	1,020,722	1,020,722	-	-	-	-	-	-	9,413	9,178	9,114
Misc. - G	Existing			Insulation - Wall Cavity		per sq ft	\$0.03	50%	\$0.02	1,044,318	1,013,603	1,013,603	-	-	-	-	-	-	12,540	12,226	12,141
Misc. - G	Existing			Windows - High Efficiency		per sq ft	\$0.01	50%	\$0.01	1,379,497	1,338,923	1,338,923	-	-	-	-	-	-	18,472	18,010	17,884
Misc. - G	Existing			Gas Boiler - Hot Water Reset		per sq ft	\$0.01	50%	\$0.00	170,215	165,208	165,208	-	-	-	-	-	-	21,588	20,861	20,644
Misc. - G	Existing			Gas Boiler - Maintenance		per sq ft	\$0.01	50%	\$0.01	198,143	192,315	192,315	-	-	-	-	-	-	6,049	5,846	5,785
Misc. - G	Existing			Gas Furnace - Maintenance		per sq ft	\$0.00	50%	\$0.00	2,285,217	2,218,005	2,218,005	-	-	-	-	-	-	41,623	40,637	40,374
Misc. - G	Existing			Space Heating - Heat Recovery Ventilator		per sq ft	\$0.14	50%	\$0.07	817,365	793,325	793,325	-	-	-	-	-	-	12,015	11,715	11,633
Misc. - G	Existing			Water Heater - Drainwater Heat Recovery		per sq ft	\$0.00	50%	\$0.00	-	-	1,525,963	-	-	-	-	-	-	-	-	9,791
Misc. - G	Existing			Repair malfunctioning steam traps		per sq ft	\$0.00	50%	\$0.00	201,074	195,160	195,160	-	-	-	-	-	-	3,737	3,611	3,574
Misc. - G	New			Insulation - Ceiling		per sq ft	\$0.07	50%	\$0.04	107,648	104,482	104,482	-	-	-	-	-	-	1,849	1,785	1,763
Misc. - G	New			Insulation - Radiant Barrier		per sq ft	\$0.02	50%	\$0.01	108,436	105,247	105,247	-	-	-	-	-	-	710	685	677
Misc. - G	New			Insulation - Wall Cavity		per sq ft	\$0.03	50%	\$0.02	107,353	104,196	104,196	-	-	-	-	-	-	840	811	801
Misc. - G	New			Windows - High Efficiency		per sq ft	\$0.01	50%	\$0.01	172,116	167,053	167,053	-	-	-	-	-	-	1,615	1,559	1,540
Misc. - G	New			Gas Boiler - Hot Water Reset		per sq ft	\$0.01	50%	\$0.00	9,997	9,703	9,703	-	-	-	-	-	-	945	921	915
Misc. - G	New			Gas Boiler - Maintenance		per sq ft	\$0.01	50%	\$0.01	21,181	20,558	20,558	-	-	-	-	-	-	468	456	454
Misc. - G	New			Gas Furnace - Maintenance		per sq ft	\$0.00	50%	\$0.00	242,259	235,133	235,133	-	-	-	-	-	-	4,270	4,119	4,066
Misc. - G	New			Space Heating - Heat Recovery Ventilator		per sq ft	\$0.14	50%	\$0.07	307,341	298,302	298,302	-	-	-	-	-	-	4,238	4,092	4,042
Misc. - G	New			Repair malfunctioning steam traps		per sq ft	\$0.00	50%	\$0.00	21,544	20,910	20,910	-	-	-	-	-	-	383	373	371

Table G-28 C&I Custom (RAP)

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Office - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA	per sq ft	\$0.00	50%	\$0.00	847,789	-	-	2,348	-	-	0.37	-	-	-	-	-
Office - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	812,969	812,969	-	2,602	2,717	-	0.41	0.42	-	-	-
Office - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA	per sq ft	\$0.00	50%	\$0.00	227,688	-	-	631	-	-	0.10	-	-	-	-	-
Office - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	273,934	273,934	-	886	926	-	0.14	0.14	-	-	-
Restaurant - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA	per sq ft	\$0.00	50%	\$0.00	39,974	-	-	177	-	-	0.02	-	-	-	-	-
Restaurant - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	38,332	38,332	-	196	205	-	0.02	0.02	-	-	-
Restaurant - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA	per sq ft	\$0.00	50%	\$0.00	10,736	-	-	48	-	-	0.01	-	-	-	-	-
Restaurant - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	12,916	12,916	-	67	70	-	0.01	0.01	-	-	-
Retail - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA	per sq ft	\$0.00	50%	\$0.00	385,653	-	-	2,155	-	-	0.24	-	-	-	-	-
Retail - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	369,814	369,814	-	2,388	2,492	-	0.27	0.28	-	-	-
Retail - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA	per sq ft	\$0.00	50%	\$0.00	103,574	-	-	579	-	-	0.06	-	-	-	-	-
Retail - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	124,611	124,611	-	813	850	-	0.09	0.09	-	-	-
Grocery - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA	per sq ft	\$0.00	50%	\$0.00	36,517	-	-	312	-	-	0.05	-	-	-	-	-
Grocery - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	35,018	35,018	-	346	361	-	0.06	0.06	-	-	-
Grocery - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA	per sq ft	\$0.00	50%	\$0.00	9,807	-	-	84	-	-	0.01	-	-	-	-	-
Grocery - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	11,799	11,799	-	118	123	-	0.02	0.02	-	-	-
College - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA	per sq ft	\$0.00	50%	\$0.00	630,718	-	-	709	-	-	0.10	-	-	-	-	-
College - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	604,813	604,813	-	786	821	-	0.11	0.11	-	-	-
College - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA	per sq ft	\$0.00	50%	\$0.00	169,390	-	-	191	-	-	0.03	-	-	-	-	-
College - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	203,795	203,795	-	268	280	-	0.04	0.04	-	-	-
School - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA	per sq ft	\$0.00	50%	\$0.00	288,522	-	-	222	-	-	0.01	-	-	-	-	-
School - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	276,671	276,671	-	246	257	-	0.01	0.01	-	-	-
School - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA	per sq ft	\$0.00	50%	\$0.00	77,487	-	-	60	-	-	0.00	-	-	-	-	-
School - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	93,226	93,226	-	84	88	-	0.00	0.00	-	-	-
Health - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA	per sq ft	\$0.00	50%	\$0.00	375,267	-	-	6,346	-	-	0.69	-	-	-	-	-
Health - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	359,854	359,854	-	7,032	7,340	-	0.76	0.80	-	-	-
Health - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA	per sq ft	\$0.00	50%	\$0.00	100,784	-	-	1,704	-	-	0.18	-	-	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Health - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	121,255	121,255	-	2,393	2,503	-	0.26	0.27	-	-	-
Lodging - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	428,338	-	-	542	-	-	0.05	-	-	-	-	-
Lodging - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	410,745	410,745	-	600	627	-	0.06	0.06	-	-	-
Lodging - E	Existing	Misc.	Electric	Pool Pump	High Efficiency, Multi-Speed	per sq ft	\$0.00	50%	\$0.00	103,328	100,289	100,289	280	272	271	0.03	0.03	0.03	-	-	-
Lodging - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	115,038	-	-	146	-	-	0.01	-	-	-	-	-
Lodging - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	138,403	138,403	-	204	214	-	0.02	0.02	-	-	-
Lodging - E	New	Misc.	Electric	Pool Pump	High Efficiency, Multi-Speed	per sq ft	\$0.00	50%	\$0.00	64,834	62,927	62,927	176	171	170	0.02	0.02	0.02	-	-	-
Warehouse - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	383,660	-	-	938	-	-	0.15	-	-	-	-	-
Warehouse - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	367,902	367,902	-	1,039	1,085	-	0.17	0.18	-	-	-
Warehouse - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	103,038	-	-	252	-	-	0.04	-	-	-	-	-
Warehouse - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	123,967	123,967	-	354	370	-	0.06	0.06	-	-	-
Misc. - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	875,049	-	-	5,278	-	-	0.91	-	-	-	-	-
Misc. - E	Existing	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	839,109	839,109	-	5,849	6,106	-	1.00	1.05	-	-	-
Misc. - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	235,010	-	-	1,418	-	-	0.24	-	-	-	-	-
Misc. - E	New	Misc.	Electric	Non-HVAC Motors	Premium (NEMA 2015)	per sq ft	\$0.00	50%	\$0.00	-	282,742	282,742	-	1,990	2,082	-	0.34	0.36	-	-	-
Office - E	Existing			Roof - High Reflectivity		per sq ft	\$0.00	50%	\$0.00	3,927,358	3,811,848	3,811,848	71,372	67,505	65,726	35.96	34.01	33.11	-	-	-
Office - E	Existing			Ventilation - CO2 Controlled		per sq ft	\$0.22	50%	\$0.11	530,638	515,031	515,031	314,515	302,376	299,322	-	-	-	-	-	-
Office - E	Existing			Water Heater - Solar System		per sq ft	\$0.07	50%	\$0.04	270,871	262,905	262,905	8,433	8,067	7,940	0.82	0.79	0.77	-	-	-
Office - E	Existing			Energy Management System		per sq ft	\$0.19	15%	\$0.03	8,653,002	8,653,002	8,653,002	625,014	610,422	595,588	128.74	125.26	121.76	-	-	-
Office - E	New			Roof - High Reflectivity		per sq ft	\$0.00	50%	\$0.00	885,411	859,370	859,370	5,289	5,091	5,057	4.87	4.69	4.66	-	-	-
Office - E	New			Ventilation - CO2 Controlled		per sq ft	\$0.22	50%	\$0.11	92,351	89,635	89,635	57,146	55,302	55,070	-	-	-	-	-	-
Office - E	New			Water Heater - Solar System		per sq ft	\$0.07	50%	\$0.04	27,847	27,028	27,028	776	720	697	0.08	0.07	0.07	-	-	-
Office - E	New			Energy Management System		per sq ft	\$0.19	15%	\$0.03	488,254	488,254	488,254	23,926	23,745	23,582	3.23	3.20	3.18	-	-	-
Restaurant - E	Existing			Roof - High Reflectivity		per sq ft	\$0.40	50%	\$0.20	1,252,954	1,216,102	1,216,102	133,576	126,001	122,345	66.52	62.74	60.92	-	-	-
Restaurant - E	Existing			Ventilation - CO2 Controlled		per sq ft	\$0.22	50%	\$0.11	149,675	145,272	145,272	81,022	75,887	73,337	-	-	-	-	-	-
Restaurant - E	Existing			Water Heater - Solar System		per sq ft	\$0.05	50%	\$0.03	47,599	46,199	46,199	16,247	15,548	15,308	1.65	1.58	1.55	-	-	-
Restaurant - E	Existing			Energy Management System		per sq ft	\$0.26	15%	\$0.04	1,035,085	1,035,085	1,035,085	131,212	127,291	123,373	14.39	13.96	13.52	-	-	-
Restaurant - E	New			Roof - High Reflectivity		per sq ft	\$0.40	50%	\$0.20	198,313	192,480	192,480	9,620	9,233	9,143	5.16	4.95	4.90	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Restaurant - E	New			Ventilation - CO2 Controlled		per sq ft	\$0.22	50%	\$0.11	24,962	24,228	24,228	15,191	14,592	14,444	-	-	-	-	-	-
Restaurant - E	New			Water Heater - Solar System		per sq ft	\$0.05	50%	\$0.03	4,892	4,749	4,749	1,488	1,381	1,337	0.15	0.14	0.14	-	-	-
Restaurant - E	New			Energy Management System		per sq ft	\$0.00	15%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
Retail - E	Existing			Roof - High Reflectivity		per sq ft	\$0.01	50%	\$0.01	2,896,770	2,811,571	2,811,571	117,576	112,181	110,167	80.89	77.18	75.79	-	-	-
Retail - E	Existing			Ventilation - CO2 Controlled		per sq ft	\$0.22	50%	\$0.11	718,317	697,190	697,190	440,239	423,880	419,676	-	-	-	-	-	-
Retail - E	Existing			Water Heater - Solar System		per sq ft	\$0.05	50%	\$0.03	304,066	295,123	295,123	11,281	10,795	10,627	1.04	0.99	0.98	-	-	-
Retail - E	Existing			Energy Management System		per sq ft	\$0.26	15%	\$0.04	6,832,877	6,832,877	6,832,877	265,835	261,839	257,627	38.95	38.34	37.70	-	-	-
Retail - E	New			Roof - High Reflectivity		per sq ft	\$0.01	50%	\$0.01	519,068	503,802	503,802	11,922	11,598	11,630	7.68	7.53	7.61	-	-	-
Retail - E	New			Ventilation - CO2 Controlled		per sq ft	\$0.22	50%	\$0.11	120,665	117,116	117,116	75,243	72,951	72,732	-	-	-	-	-	-
Retail - E	New			Water Heater - Solar System		per sq ft	\$0.05	50%	\$0.03	31,263	30,343	30,343	1,021	946	916	0.09	0.09	0.08	-	-	-
Retail - E	New			Energy Management System		per sq ft	\$0.00	15%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
Grocery - E	Existing			Roof - High Reflectivity		per sq ft	\$0.07	50%	\$0.03	313,846	304,615	304,615	161,310	152,423	148,250	374.87	354.22	344.52	-	-	-
Grocery - E	Existing			Ventilation - CO2 Controlled		per sq ft	\$0.22	50%	\$0.11	78,649	76,336	76,336	42,854	40,106	38,726	-	-	-	-	-	-
Grocery - E	Existing			Water Heater - Solar System		per sq ft	\$0.20	50%	\$0.10	15,136	14,690	14,690	1,828	1,750	1,724	0.20	0.19	0.19	-	-	-
Grocery - E	Existing			Energy Management System		per sq ft	\$0.65	15%	\$0.10	594,297	594,297	594,297	90,237	87,901	85,541	37.54	36.49	35.44	-	-	-
Grocery - E	New			Roof - High Reflectivity		per sq ft	\$0.07	50%	\$0.03	62,019	60,195	60,195	14,107	13,648	13,518	23.80	23.02	22.80	-	-	-
Grocery - E	New			Ventilation - CO2 Controlled		per sq ft	\$0.22	50%	\$0.11	13,153	12,766	12,766	8,280	7,940	7,855	-	-	-	-	-	-
Grocery - E	New			Water Heater - Solar System		per sq ft	\$0.20	50%	\$0.10	1,556	1,510	1,510	166	154	149	0.02	0.02	0.02	-	-	-
Grocery - E	New			Energy Management System		per sq ft	\$0.65	15%	\$0.10	60,720	60,720	60,720	7,648	7,619	7,557	0.46	0.45	0.45	-	-	-
College - E	Existing			Roof - High Reflectivity		per sq ft	\$0.03	50%	\$0.01	5,237,882	5,083,827	5,083,827	605,020	574,192	562,177	167.41	158.88	155.56	-	-	-
College - E	Existing			Ventilation - CO2 Controlled		per sq ft	\$0.22	50%	\$0.11	266,062	258,237	258,237	137,410	128,165	123,645	-	-	-	-	-	-
College - E	Existing			Water Heater - Solar System		per sq ft	\$0.07	50%	\$0.04	46,482	45,115	45,115	3,740	3,581	3,528	0.43	0.41	0.40	-	-	-
College - E	Existing			Energy Management System		per sq ft	\$0.26	15%	\$0.04	3,834,526	3,834,526	3,834,526	197,350	193,167	189,309	0.29	0.29	0.28	-	-	-
College - E	New			Roof - High Reflectivity		per sq ft	\$0.03	50%	\$0.01	1,084,370	1,052,477	1,052,477	67,403	65,058	64,680	19.03	18.37	18.26	-	-	-
College - E	New			Ventilation - CO2 Controlled		per sq ft	\$0.22	50%	\$0.11	47,520	46,122	46,122	29,467	28,522	28,406	-	-	-	-	-	-
College - E	New			Water Heater - Solar System		per sq ft	\$0.07	50%	\$0.04	4,778	4,637	4,637	340	316	306	0.04	0.04	0.03	-	-	-
College - E	New			Energy Management System		per sq ft	\$0.26	15%	\$0.04	395,605	395,605	395,605	16,683	16,570	16,451	4.46	4.43	4.39	-	-	-
School - E	Existing			Roof - High Reflectivity		per sq ft	\$0.03	50%	\$0.01	1,678,680	1,629,307	1,629,307	57,597	55,669	55,430	34.74	33.58	33.43	-	-	-

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
School - E	Existing			Ventilation - CO2 Controlled		per sq ft	\$0.22	50%	\$0.11	371,852	360,915	360,915	192,046	179,125	172,807	-	-	-	-	-	-
School - E	Existing			Water Heater - Solar System		per sq ft	\$0.07	50%	\$0.04	18,006	17,476	17,476	940	900	887	0.05	0.05	0.05	-	-	-
School - E	Existing			Energy Management System		per sq ft	\$0.26	15%	\$0.04	4,051,511	4,051,511	4,051,511	52,286	52,415	52,514	0.14	0.14	0.14	-	-	-
School - E	New			Roof - High Reflectivity		per sq ft	\$0.03	50%	\$0.01	601,109	583,430	583,430	12,678	12,648	12,995	7.80	7.78	8.00	-	-	-
School - E	New			Ventilation - CO2 Controlled		per sq ft	\$0.22	50%	\$0.11	64,427	62,532	62,532	39,951	38,669	38,512	-	-	-	-	-	-
School - E	New			Water Heater - Solar System		per sq ft	\$0.07	50%	\$0.04	1,851	1,797	1,797	85	79	77	0.00	0.00	0.00	-	-	-
School - E	New			Energy Management System		per sq ft	\$0.26	15%	\$0.04	517,229	517,229	517,229	6,672	6,847	7,025	3.15	3.27	3.38	-	-	-
Health - E	Existing			Roof - High Reflectivity		per sq ft	\$0.03	50%	\$0.02	2,652,423	2,574,411	2,574,411	360,790	341,108	332,384	41.26	39.01	38.01	-	-	-
Health - E	Existing			Ventilation - CO2 Controlled		per sq ft	\$0.22	50%	\$0.11	190,180	184,586	184,586	96,865	90,219	86,979	-	-	-	-	-	-
Health - E	Existing			Water Heater - Solar System		per sq ft	\$0.02	50%	\$0.01	42,217	40,976	40,976	4,472	4,282	4,219	0.37	0.35	0.35	-	-	-
Health - E	New			Roof - High Reflectivity		per sq ft	\$0.03	50%	\$0.02	493,709	479,188	479,188	36,910	35,657	35,529	4.31	4.16	4.15	-	-	-
Health - E	New			Ventilation - CO2 Controlled		per sq ft	\$0.22	50%	\$0.11	33,960	32,961	32,961	21,109	20,454	20,386	-	-	-	-	-	-
Health - E	New			Water Heater - Solar System		per sq ft	\$0.02	50%	\$0.01	4,339	4,212	4,212	407	377	365	0.03	0.03	0.03	-	-	-
Lodging - E	Existing			Roof - High Reflectivity		per sq ft	\$0.04	50%	\$0.02	2,334,151	2,265,500	2,265,500	127,105	121,452	119,411	20.69	19.77	19.44	-	-	-
Lodging - E	Existing			Ventilation - CO2 Controlled		per sq ft	\$0.22	50%	\$0.11	352,347	341,984	341,984	56,432	54,430	53,975	-	-	-	-	-	-
Lodging - E	Existing			Water Heater - Solar System		per sq ft	\$0.02	50%	\$0.01	130,302	126,470	126,470	13,891	13,292	13,085	0.97	0.93	0.91	-	-	-
Lodging - E	New			Roof - High Reflectivity		per sq ft	\$0.04	50%	\$0.02	454,395	441,030	441,030	16,531	15,959	15,877	2.75	2.65	2.64	-	-	-
Lodging - E	New			Ventilation - CO2 Controlled		per sq ft	\$0.22	50%	\$0.11	59,179	57,439	57,439	15,078	14,609	14,559	-	-	-	-	-	-
Lodging - E	New			Water Heater - Solar System		per sq ft	\$0.02	50%	\$0.01	13,393	12,999	12,999	1,274	1,182	1,145	0.09	0.08	0.08	-	-	-
Warehouse - E	Existing			Roof - High Reflectivity		per sq ft	\$0.01	50%	\$0.01	1,721,351	1,670,723	1,670,723	14,700	14,710	15,124	31.29	31.31	32.19	-	-	-
Warehouse - E	Existing			Ventilation - CO2 Controlled		per sq ft	\$0.22	50%	\$0.11	289,092	280,589	280,589	46,125	44,338	43,823	-	-	-	-	-	-
Warehouse - E	Existing			Water Heater - Solar System		per sq ft	\$0.05	50%	\$0.03	56,386	54,728	54,728	622	596	587	0.06	0.06	0.06	-	-	-
Warehouse - E	Existing			Energy Management System		per sq ft	\$0.26	15%	\$0.04	5,358,457	5,358,457	5,358,457	50,946	52,398	53,727	16.36	16.95	17.51	-	-	-
Warehouse - E	New			Roof - High Reflectivity		per sq ft	\$0.01	50%	\$0.01	412,275	400,149	400,149	2,694	2,745	2,873	4.98	5.29	5.74	-	-	-
Warehouse - E	New			Ventilation - CO2 Controlled		per sq ft	\$0.22	50%	\$0.11	51,554	50,037	50,037	8,344	8,090	8,066	-	-	-	-	-	-
Warehouse - E	New			Water Heater - Solar System		per sq ft	\$0.05	50%	\$0.03	5,796	5,625	5,625	57	52	51	0.01	0.01	0.01	-	-	-
Warehouse - E	New			Energy Management System		per sq ft	\$0.00	15%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
Misc. - E	Existing			Roof - High Reflectivity		per sq ft	\$0.00	50%	\$0.00	6,433,530	6,244,309	6,244,309	403,062	381,122	370,964	324.07	306.43	298.26	-	-	-

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Misc. - E	Existing			Ventilation - CO2 Controlled		per sq ft	\$0.22	50%	\$0.11	1,111,496	1,078,805	1,078,805	367,118	350,379	344,423	-	-	-	-	-	-
Misc. - E	Existing			Water Heater - Solar System		per sq ft	\$0.54	50%	\$0.27	296,880	288,148	288,148	14,690	14,067	13,857	2.17	2.08	2.05	-	-	-
Misc. - E	Existing			Energy Management System		per sq ft	\$0.03	15%	\$0.00	10,827,054	10,827,054	10,827,054	453,393	441,486	429,499	83.16	80.91	78.64	-	-	-
Misc. - E	New			Roof - High Reflectivity		per sq ft	\$0.00	50%	\$0.00	1,758,681	1,706,955	1,706,955	55,472	53,464	53,168	52.49	50.59	50.32	-	-	-
Misc. - E	New			Ventilation - CO2 Controlled		per sq ft	\$0.22	50%	\$0.11	186,643	181,153	181,153	79,750	76,916	76,404	-	-	-	-	-	-
Misc. - E	New			Water Heater - Solar System		per sq ft	\$0.54	50%	\$0.27	30,517	29,619	29,619	1,336	1,239	1,200	0.20	0.18	0.18	-	-	-
Misc. - E	New			Energy Management System		per sq ft	\$0.03	15%	\$0.00	1,056,962	1,056,962	1,056,962	36,524	36,280	36,065	1.29	1.28	1.27	-	-	-
Office - G	Existing			Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	50%	\$0.42	4,116	4,116	4,116	-	-	-	-	-	-	68	68	67
Office - G	Existing			Energy Management System		per sq ft	\$0.19	15%	\$0.03	252,983	252,983	252,983	-	-	-	-	-	-	1,967	1,974	1,952
Office - G	New			Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	50%	\$0.42	423	423	423	-	-	-	-	-	-	6	6	6
Office - G	New			Energy Management System		per sq ft	\$0.19	15%	\$0.03	14,137	14,137	14,137	-	-	-	-	-	-	243	242	239
Restaurant - G	Existing			Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	50%	\$0.42	3,064	3,064	3,064	-	-	-	-	-	-	168	167	165
Restaurant - G	Existing			Energy Management System		per sq ft	\$0.26	15%	\$0.04	54,843	54,843	54,843	-	-	-	-	-	-	1	1	1
Restaurant - G	New			Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	50%	\$0.42	315	315	315	-	-	-	-	-	-	16	16	15
Restaurant - G	New			Energy Management System		per sq ft	\$0.00	15%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
Retail - G	Existing			Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	50%	\$0.42	5,732	5,732	5,732	-	-	-	-	-	-	166	165	163
Retail - G	Existing			Energy Management System		per sq ft	\$0.26	15%	\$0.04	408,217	408,217	408,217	-	-	-	-	-	-	10	10	10
Retail - G	New			Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	50%	\$0.42	589	589	589	-	-	-	-	-	-	14	14	14
Retail - G	New			Energy Management System		per sq ft	\$0.00	15%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
Grocery - G	Existing			Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	50%	\$0.42	1,656	1,656	1,656	-	-	-	-	-	-	32	31	31
Grocery - G	Existing			Energy Management System		per sq ft	\$0.00	15%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
Grocery - G	New			Combined Boiler & Water Htg. Unit		per sq ft	\$0.00	50%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
Grocery - G	New			Energy Management System		per sq ft	\$0.00	15%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
College - G	Existing			Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	50%	\$0.42	5,795	5,795	5,795	-	-	-	-	-	-	200	200	197
College - G	Existing			Energy Management System		per sq ft	\$0.26	15%	\$0.04	114,790	114,790	114,790	-	-	-	-	-	-	1,250	1,252	1,238
College - G	New			Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	50%	\$0.42	596	596	596	-	-	-	-	-	-	18	18	18
College - G	New			Energy Management System		per sq ft	\$0.26	15%	\$0.04	11,769	11,769	11,769	-	-	-	-	-	-	365	363	359
School - G	Existing			Energy Management System		per sq ft	\$0.26	15%	\$0.04	335,236	335,236	335,236	-	-	-	-	-	-	1,892	1,885	1,864

Program Measure-Level Details

Segment	Vintage	End Use	Fuel	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
										2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
School - G	New			Energy Management System		per sq ft	\$0.26	15%	\$0.04	42,622	42,622	42,622	-	-	-	-	-	-	611	612	608
Health - G	Existing			Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	50%	\$0.42	6,632	6,632	6,632	-	-	-	-	-	-	450	449	443
Health - G	Existing			Energy Management System		per sq ft	\$0.00	15%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
Health - G	New			Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	50%	\$0.42	682	682	682	-	-	-	-	-	-	40	40	40
Lodging - G	Existing			Energy Management System		per sq ft	\$0.00	15%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
Warehouse - G	Existing			Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	50%	\$0.42	6,529	6,529	6,529	-	-	-	-	-	-	76	75	75
Warehouse - G	Existing			Energy Management System		per sq ft	\$0.26	15%	\$0.04	221,319	221,319	221,319	-	-	-	-	-	-	3	3	3
Warehouse - G	New			Combined Boiler & Water Htg. Unit		per sq ft	\$0.83	50%	\$0.42	674	674	674	-	-	-	-	-	-	6	6	6
Warehouse - G	New			Energy Management System		per sq ft	\$0.00	15%	\$0.00	-	-	-	-	-	-	-	-	-	-	-	-
Misc. - G	Existing			Energy Management System		per sq ft	\$0.03	15%	\$0.00	773,675	773,675	773,675	-	-	-	-	-	-	9	9	9
Misc. - G	New			Energy Management System		per sq ft	\$0.03	15%	\$0.00	75,615	75,615	75,615	-	-	-	-	-	-	71	71	70

Table G-29 C&I Behavior Change (RAP)

Segment	Vintage	Technology	Option	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
								2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Food Products - E	Existing	Heat Pump - Maintenance		per kwh saved	\$41.62	40%	\$16.65	19	18	18	10,114	9,687	9,615	8.28	7.92	7.83	-	-	-
Food Products - E	Existing	Fan System - Controls		per kwh saved	\$3.07	40%	\$1.23	87	85	85	24,116	23,322	23,498	2.83	2.73	2.75	-	-	-
Food Products - E	Existing	Fan System - Maintenance		per kwh saved	\$1.18	40%	\$0.47	137	133	133	15,098	14,600	14,711	1.77	1.71	1.72	-	-	-
Food Products - E	Existing	Fan System - Optimization		per kwh saved	\$182.90	40%	\$73.16	92	89	89	126,544	122,374	123,298	14.83	14.34	14.45	-	-	-
Food Products - E	New	Heat Pump - Maintenance		per kwh saved	\$37.23	40%	\$14.89	2	2	2	551	523	523	0.41	0.39	0.38	-	-	-
Food Products - E	New	Fan System - Controls		per kwh saved	\$3.07	40%	\$1.23	7	7	7	2,060	1,992	2,007	0.24	0.23	0.24	-	-	-
Food Products - E	New	Fan System - Maintenance		per kwh saved	\$1.18	40%	\$0.47	12	11	11	1,290	1,247	1,257	0.15	0.15	0.15	-	-	-
Food Products - E	New	Fan System - Optimization		per kwh saved	\$182.87	40%	\$73.15	8	8	8	10,817	10,460	10,540	1.27	1.23	1.23	-	-	-
Petroleum - E	Existing	Heat Pump - Maintenance		per kwh saved	\$187.06	40%	\$74.82	4	4	4	8,790	8,418	8,356	7.19	6.88	6.80	-	-	-
Petroleum - E	Existing	Fan System - Controls		per kwh saved	\$37.31	40%	\$14.92	17	16	16	56,705	54,837	55,251	6.64	6.42	6.47	-	-	-
Petroleum - E	Existing	Fan System - Maintenance		per kwh saved	\$14.32	40%	\$5.73	26	26	26	35,500	34,330	34,589	4.16	4.02	4.05	-	-	-
Petroleum - E	Existing	Fan System - Optimization		per kwh saved	\$2,223.97	40%	\$889.59	18	17	17	297,546	287,740	289,914	34.86	33.71	33.97	-	-	-
Petroleum - E	New	Heat Pump - Maintenance		per kwh saved	\$167.33	40%	\$66.93	0	0	0	479	454	454	0.36	0.34	0.33	-	-	-
Petroleum - E	New	Fan System - Controls		per kwh saved	\$37.31	40%	\$14.92	1	1	1	4,844	4,685	4,720	0.57	0.55	0.55	-	-	-
Petroleum - E	New	Fan System - Maintenance		per kwh saved	\$14.32	40%	\$5.73	2	2	2	3,033	2,933	2,955	0.36	0.34	0.35	-	-	-
Petroleum - E	New	Fan System - Optimization		per kwh saved	\$2,223.70	40%	\$889.48	2	1	1	25,433	24,596	24,782	2.98	2.88	2.90	-	-	-
Metals - E	Existing	Heat Pump - Maintenance		per kwh saved	\$24.74	40%	\$9.90	19	18	18	5,992	5,738	5,696	4.90	4.69	4.64	-	-	-
Metals - E	Existing	Fan System - Controls		per kwh saved	\$2.32	40%	\$0.93	87	84	84	18,136	17,539	17,671	2.12	2.05	2.07	-	-	-
Metals - E	Existing	Fan System - Maintenance		per kwh saved	\$0.89	40%	\$0.36	136	132	132	11,354	10,980	11,063	1.33	1.29	1.30	-	-	-
Metals - E	Existing	Fan System - Optimization		per kwh saved	\$138.00	40%	\$55.20	91	89	89	95,166	92,030	92,725	11.15	10.78	10.86	-	-	-
Metals - E	New	Heat Pump - Maintenance		per kwh saved	\$22.13	40%	\$8.85	2	2	2	326	310	310	0.24	0.23	0.23	-	-	-
Metals - E	New	Fan System - Controls		per kwh saved	\$2.31	40%	\$0.93	7	7	7	1,549	1,498	1,510	0.18	0.18	0.18	-	-	-
Metals - E	New	Fan System - Maintenance		per kwh saved	\$0.89	40%	\$0.36	12	11	11	970	938	945	0.11	0.11	0.11	-	-	-
Metals - E	New	Fan System - Optimization		per kwh saved	\$137.99	40%	\$55.19	8	8	8	8,134	7,867	7,926	0.95	0.92	0.93	-	-	-
Machinery - E	Existing	Heat Pump - Maintenance		per kwh saved	\$95.96	40%	\$38.39	10	10	10	12,552	12,022	11,933	10.27	9.82	9.72	-	-	-
Machinery - E	Existing	Fan System - Controls		per kwh saved	\$2.84	40%	\$1.14	47	46	46	12,008	11,612	11,700	1.41	1.36	1.37	-	-	-
Machinery - E	Existing	Fan System - Maintenance		per kwh saved	\$1.09	40%	\$0.44	74	71	71	7,517	7,270	7,325	0.88	0.85	0.86	-	-	-
Machinery - E	Existing	Fan System - Optimization		per kwh saved	\$169.19	40%	\$67.68	49	48	48	63,009	60,932	61,393	7.38	7.14	7.19	-	-	-
Machinery - E	New	Heat Pump - Maintenance		per kwh saved	\$85.84	40%	\$34.34	1	1	1	684	649	649	0.51	0.48	0.48	-	-	-
Machinery - E	New	Fan System - Controls		per kwh saved	\$2.84	40%	\$1.14	4	4	4	1,026	992	1,000	0.12	0.12	0.12	-	-	-
Machinery - E	New	Fan System - Maintenance		per kwh saved	\$1.09	40%	\$0.44	6	6	6	642	621	626	0.08	0.07	0.07	-	-	-
Machinery - E	New	Fan System - Optimization		per kwh saved	\$169.17	40%	\$67.67	4	4	4	5,386	5,208	5,248	0.63	0.61	0.61	-	-	-
Other Industrial - E	Existing	Heat Pump - Maintenance		per kwh saved	\$81.32	40%	\$32.53	48	47	47	50,614	48,475	48,118	41.43	39.61	39.18	-	-	-
Other Industrial - E	Existing	Fan System - Controls		per kwh saved	\$1.71	40%	\$0.68	224	217	217	34,418	33,283	33,535	4.03	3.90	3.93	-	-	-
Other Industrial - E	Existing	Fan System - Maintenance		per kwh saved	\$0.66	40%	\$0.26	350	340	340	21,547	20,837	20,994	2.52	2.44	2.46	-	-	-
Other Industrial - E	Existing	Fan System - Optimization		per kwh saved	\$101.91	40%	\$40.76	235	228	228	180,597	174,645	175,965	21.16	20.46	20.62	-	-	-
Other Industrial - E	New	Heat Pump - Maintenance		per kwh saved	\$72.74	40%	\$29.10	4	4	4	2,887	2,741	2,740	2.16	2.03	2.01	-	-	-
Other Industrial - E	New	Fan System - Controls		per kwh saved	\$1.71	40%	\$0.68	20	19	19	3,080	2,979	3,001	0.36	0.35	0.35	-	-	-
Other Industrial - E	New	Fan System - Maintenance		per kwh saved	\$0.66	40%	\$0.26	31	30	30	1,928	1,865	1,879	0.23	0.22	0.22	-	-	-
Other Industrial - E	New	Fan System - Optimization		per kwh saved	\$101.89	40%	\$40.76	21	20	20	16,172	15,639	15,758	1.89	1.83	1.85	-	-	-
Food Products - G	Existing	Gas Boiler - Maintenance		per kwh saved	\$224.10	40%	\$89.64	0	0	0	-	-	-	-	-	-	14	13	13
Food Products - G	New	Gas Boiler - Maintenance		per kwh saved	\$251.49	40%	\$100.60	0	0	0	-	-	-	-	-	-	1	1	1
Petroleum - G	Existing	Gas Boiler - Maintenance		per kwh saved	\$227.51	40%	\$91.01	0	0	0	-	-	-	-	-	-	16	15	15
Petroleum - G	New	Gas Boiler - Maintenance		per kwh saved	\$255.32	40%	\$102.13	0	0	0	-	-	-	-	-	-	1	1	1
Metals - G	Existing	Gas Boiler - Maintenance		per kwh saved	\$454.87	40%	\$181.95	1	1	1	-	-	-	-	-	-	858	823	818
Metals - G	New	Gas Boiler - Maintenance		per kwh saved	\$510.47	40%	\$204.19	0	0	0	-	-	-	-	-	-	43	41	41
Machinery - G	Existing	Gas Boiler - Maintenance		per kwh saved	\$1,147.75	40%	\$459.10	0	0	0	-	-	-	-	-	-	566	544	540
Machinery - G	New	Gas Boiler - Maintenance		per kwh saved	\$1,288.04	40%	\$515.22	0	0	0	-	-	-	-	-	-	28	27	27
Other Industrial - G	Existing	Gas Boiler - Maintenance		per kwh saved	\$1,422.75	40%	\$569.10	2	2	2	-	-	-	-	-	-	4,105	3,940	3,916
Other Industrial - G	New	Gas Boiler - Maintenance		per kwh saved	\$1,596.66	40%	\$638.66	0	0	0	-	-	-	-	-	-	203	194	195

Table G-30 Building Codes and Standards (RAP)

Segment	Vintage	Technology	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
							2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Office - E	New	Advanced New Construction Designs	per sq ft	\$0.00	80%	\$0.15	544,200	528,194	528,194	258,390	248,551	246,724	148.75	143.09	142.04	-	-	-
Restaurant - E	New	Advanced New Construction Designs	per sq ft	\$0.00	80%	\$0.15	118,135	114,660	114,660	102,378	98,230	97,285	44.45	42.65	42.24	-	-	-
Retail - E	New	Advanced New Construction Designs	per sq ft	\$0.00	80%	\$0.15	425,649	413,129	413,129	152,120	148,427	149,448	91.25	89.04	89.65	-	-	-
Grocery - E	New	Advanced New Construction Designs	per sq ft	\$0.00	80%	\$0.15	48,603	47,174	47,174	63,155	61,003	60,321	110.28	106.52	105.33	-	-	-
College - E	New	Advanced New Construction Designs	per sq ft	\$0.00	80%	\$0.15	313,472	304,252	304,252	261,026	251,945	250,482	160.67	155.08	154.18	-	-	-
School - E	New	Advanced New Construction Designs	per sq ft	\$0.00	80%	\$0.15	109,345	106,129	106,129	60,968	58,914	58,731	81.80	79.05	78.80	-	-	-
Health - E	New	Advanced New Construction Designs	per sq ft	\$0.00	80%	\$0.15	192,503	186,841	186,841	205,763	198,112	196,742	52.35	50.40	50.05	-	-	-
Lodging - E	New	Advanced New Construction Designs	per sq ft	\$0.00	80%	\$0.15	277,468	269,307	269,307	99,628	96,142	95,602	36.08	34.82	34.62	-	-	-
Warehouse - E	New	Advanced New Construction Designs	per sq ft	\$0.00	80%	\$0.15	106,293	103,167	103,167	28,826	29,054	30,057	53.49	53.92	55.78	-	-	-
Misc. - E	New	Advanced New Construction Designs	per sq ft	\$0.00	80%	\$0.15	711,574	690,645	690,645	316,677	304,756	302,630	232.94	224.17	222.61	-	-	-

Table G-31 Retro Commissioning (RAP)

Segment	Vintage	Technology	Cost Unit	Incremental Cost per Unit	Incentive as % of Incremental Cost	Incentive per Unit	Number of Net Incremental Installations			Total Net Incremental Energy Savings (kWh)			Total Net Incremental Demand Savings (kW)			Total Net Incremental Therm Savings (therms)		
							2014	2015	2016	2014	2015	2016	2014	2015	2016	2014	2015	2016
Office - E	Existing	Retrocommissioning - Lighting	per sq ft	\$0.00	50%	\$0.00	-	4,216,902	4,216,902	-	586,815	562,866	-	-	-	-	-	-
Restaurant - E	Existing	Retrocommissioning - HVAC	per sq ft	\$0.75	50%	\$0.38	271,368	263,387	263,387	222,378	209,766	203,680	-	-	-	-	-	-
Restaurant - E	Existing	Retrocommissioning - Lighting	per sq ft	\$0.00	50%	\$0.00	-	-	853,491	-	-	185,775	-	-	-	-	-	-
Retail - E	Existing	Retrocommissioning - Lighting	per sq ft	\$0.08	50%	\$0.04	3,637,111	3,530,137	3,530,137	752,635	696,630	667,042	-	-	-	-	-	-
Grocery - E	Existing	Retrocommissioning - HVAC	per sq ft	\$0.75	50%	\$0.38	119,957	116,429	116,429	133,796	126,234	122,592	-	-	-	-	-	-
Grocery - E	Existing	Retrocommissioning - Lighting	per sq ft	\$0.08	50%	\$0.04	430,533	417,870	417,870	181,728	169,565	163,611	-	-	-	-	-	-
College - E	Existing	Retrocommissioning - Lighting	per sq ft	\$0.08	50%	\$0.04	2,602,686	2,526,136	2,526,136	510,676	480,594	467,705	-	-	-	-	-	-
School - E	Existing	Retrocommissioning - Lighting	per sq ft	\$0.08	50%	\$0.04	2,510,042	2,436,217	2,436,217	401,762	373,889	359,497	-	-	-	-	-	-
Health - E	Existing	Retrocommissioning - HVAC	per sq ft	\$0.75	50%	\$0.38	793,027	769,702	769,702	574,024	541,373	526,235	-	-	-	-	-	-
Health - E	Existing	Retrocommissioning - Lighting	per sq ft	\$0.08	50%	\$0.04	1,170,732	1,136,298	1,136,298	201,031	186,231	178,917	-	-	-	-	-	-

About EnerNOC Utility Solutions Consulting

EnerNOC Utility Solutions Consulting is part of EnerNOC Utility Solutions group, which provides a comprehensive suite of demand-side management (DSM) services to utilities and grid operators worldwide. Hundreds of utilities have leveraged our technology, our people, and our proven processes to make their energy efficiency (EE) and demand response (DR) initiatives a success. Utilities trust EnerNOC to work with them at every stage of the DSM program lifecycle – assessing market potential, designing effective programs, implementing those programs, and measuring program results.

EnerNOC Utility Solutions delivers value to our utility clients through two separate practice areas – Program Implementation and EnerNOC Utility Solutions Consulting.

- Our Program Implementation team leverages EnerNOC's deep "behind-the-meter expertise" and world-class technology platform to help utilities create and manage DR and EE programs that deliver reliable and cost-effective energy savings. We focus exclusively on the commercial and industrial (C&I) customer segments, with a track record of successful partnerships that spans more than a decade. Through a focus on high quality, measurable savings, EnerNOC has successfully delivered hundreds of thousands of MWh of energy efficiency for our utility clients, and we have thousands of MW of demand response capacity under management.
- The EnerNOC Utility Solutions Consulting team provides expertise and analysis to support a broad range of utility DSM activities, including: potential assessments; end-use forecasts; integrated resource planning; EE, DR, and smart grid pilot and program design and administration; load research; technology assessments and demonstrations; evaluation, measurement and verification; and regulatory support.

The EnerNOC Utility Solutions Consulting team has decades of combined experience in the utility DSM industry. The staff is comprised of professional electrical, mechanical, chemical, civil, industrial, and environmental engineers as well as economists, business planners, project managers, market researchers, load research professionals, and statisticians. Utilities view our experts as trusted advisors, and we work together collaboratively to make any DSM initiative a success.