

Carbon Free Assessment

Prepared for *Kaneland High School*

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Acct. Number ending in 0004 • 47W326 Keslinger Rd, Maple Park, IL 60151 • 7/26/2023

EXECUTIVE SUMMARY

Financial Benefit

We estimate your Facility has the potential for:

	Annual Savings	\$551,910
ComEd® Energy Efficiency Program Incentive		\$87,360

Annual Energy Benefit

Before

3,192,500 kWh/yr

Up to 2% Energy Savings

After

3,141,700 kWh/yr

Up to 50,700 kWh Reduced

Annual Environmental Benefit

Can Reduce Your Carbon Footprint by up to...

4,133 Metric Tons of CO₂ Equivalent
or 930 Cars off the Road Annually

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Public School Assessment

Financial Benefit by Simple Payback

Estimated <2 Year Payback Opportunities

Measure	Annual Cost Savings	Project Cost	Incentive	Simple Payback (Years)
Install Automatic Door Closers	\$340	\$320	\$240	0.2
Install A Vending Machine Occupancy Sensor	\$170	\$180	\$100	0.5
Subtotal	\$510	\$500	\$340	0.3

Estimated 2-5 Year Payback Opportunities

Measure	Annual Cost Savings	Project Cost	Incentive	Simple Payback (Years)
Install Lighting Controls	\$1,200	\$5,000	\$2,300	2.3
Replace Evaporator Fan Motors and Install Controls	\$720	\$2,340	\$450	2.6
Install Demand Controlled Ventilation	\$12,400	\$50,000	\$6,000	3.5
Retrofit HVAC Pump	\$2,330	\$19,000	\$8,350	4.6
Install Demand Defrost Controls in Walk-in Freezers and Coolers	\$110	\$630	\$100	4.8
Subtotal	\$16,760	\$76,970	\$17,200	3.6

Estimated >5 Year Payback Opportunities

Measure	Annual Cost Savings	Project Cost	Incentive	Simple Payback (Years)
Replace T8 Lighting	\$24,000	\$200,000	\$48,300	6.3
Install Energy Recovery Ventilator	\$2,000	\$28,500	\$480	
Subtotal	\$26,000	\$228,500	\$48,780	6.9

For the Standard Incentives program, the total incentive paid cannot exceed 100 percent of the incremental measure cost and 100 percent of the total project cost.

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Instant Discount Incentives

Measure	Annual Cost Savings	Project Cost	Incentive	Simple Payback (Years)
Replace T5 Lighting	\$2,900	\$7,500	\$1,500	2.1
Subtotal	\$2,900	\$7,500	\$1,500	2.1

Illinois Commercial Food Services Program

Measure	Annual Cost Savings	Project Cost	Incentive	Simple Payback (Years)
Install Hot Food Holding Cabinets	\$3,900	\$4,800	\$1,300	0.9
Install Kitchen Fume Hood Exhaust Controls	\$10,200	\$54,700	\$5,000	4.9
Replace Freezer	\$60	\$1,100	\$100	
Replace Refrigerators	\$70	\$2,200	\$140	
Subtotal	\$14,230	\$62,800	\$6,540	4.0

Please see section titled "Energy Efficiency Measure Details" later on in this report for further information on listed Opportunities

Energy Efficiency Electrification

Measure	Annual Cost Savings	Project Cost	Incentive	Simple Payback (Years)
Install Heat Pump Water Heater	- \$3,760	\$18,600	\$0	
Replace Fork Trucks	\$390	\$33,900	\$13,000	
Install Ground Source Heat Pump	\$104,800	\$6,120,000	\$0	
Subtotal	\$101,430	\$6,172,500	\$13,000	60.7

Please see section titled "Energy Efficiency Electrification" later on in this report for further information on listed Opportunities

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Electric Vehicle

Measure	Annual Cost Savings	Project Cost	Incentive	Simple Payback (Years)
Replace School Buses	\$374,000	\$22,960,000	\$0	
Replace Light Duty Vehicles	\$2,900	\$255,000	\$0	
Replace Passenger Vehicle	\$1,100	\$120,000	\$0	
Replace Transit and Shuttle Buses	\$9,500	\$2,080,000	\$0	
Subtotal	\$387,500	\$25,415,000	\$0	65.6
ASSESSMENT TOTAL	\$549,330	\$31,963,770	\$87,360	58.0

Please see section titled "Electric Vehicle" later on in this report for further information on listed Opportunities

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OPERATIONAL OPPORTUNITIES

Operational Opportunities offer simple, effective ways to reduce energy costs at your facility. The following recommendations are based on meter data and engineer observations during the site visit. While the following opportunities identified do not offer ComEd incentives, they have no cost and can provide immediate energy savings when implemented.

Turn Off Equipment

Shut-Off Compressed Air Nozzles

During the site visit, it was observed that the compressed air nozzles in the auto shop class were running even when the class was not in session. We expect these nozzles, along with the 10-HP reciprocating compressor are operated for about 2000 hours annually and we expect that the compressed air equipment can be turned down by about 15%(300 hours) without any hinderance to operation.

Estimated Electric Savings (kWh/yr): 19,400

Estimated Cost Savings (\$/yr): \$2,000

Turn Off Lighting

During the site visit, it was observed that the lighting in a few interior spaces (like machine shop) was being operated even when the spaces were unoccupied and a few exterior lighting were operating during the day. Shutting off these lighting would result in energy savings with no hinderance to operation. For our analysis, we assumed about (35) interior 2-lamp fluorescent T8 fixtures can be turned off for 300 hours annually and about (6) exterior 70W LED fixtures can be turned off for 4300 hours annually.

Estimated Electric Savings (kWh/yr): 5,600

Estimated Cost Savings (\$/yr): \$580

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ADDITIONAL PROGRAM OFFERINGS

Available Offerings

In addition to Standard Incentives, your facility may also be eligible for the following:

- | | |
|--|--|
| ☒ Strategic Energy Management | ☒ Retro-Commissioning |
| ☒ Building Operator Certification | ☐ Industrial Systems |
| ☐ New Construction | ☐ Multi-Family Assessment |

Strategic Energy Management

Offering Description:

Strategic Energy Management (SEM) is a holistic program identifying opportunities to save energy through operational and behavioral projects. SEM provides coaching and other resources so customers can develop their own energy management capabilities in a peer learning environment.

Opportunity at Your Facility:

By efficiently managing your facility's energy use and implementing simple, low-cost changes, Strategic Energy Management can lower your energy consumption and operating costs while boosting your bottom line.

At no cost to you, ComEd will assign an energy coach and a support team, who will perform an energy assessment of your site, model and monitor your energy consumption over the course of a year, identify operational changes and behaviors that can help reduce your energy bill, provide materials and training to help your employees save energy while on the job.

This year-long engagement includes a series of workshops and monthly coaching sessions focused on identifying and implementing changes. For participating, in addition to the direct cost savings from reduced energy use, ComEd offers \$0.02/kWh saved from implementing behavioral and/or operational changes, along with an opportunity to earn up to \$2000 in additional savings.

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ADDITIONAL PROGRAM OFFERINGS

Retro-Commissioning

Offering Description:

Retro-Commissioning is a building efficiency tune-up process that is designed to help your commercial or industrial building perform optimally. Through a systematic evaluation of mechanical and electrical systems, retro-commissioning helps you identify low-cost and no-cost energy saving operational improvements that will pay for themselves in 18 months or less.

Opportunity at Your Facility: Virtual Commissioning

Participants receive a fully funded VCx study that uses their ComEd smart meter to identify energy conservation measures. Showing onsite personnel these changes would help the newer personnel get familiar with HVAC controls. Typically energy savings of 5-15% of annual usage can be achieved from this program, and on average, this program lasts for 3 months.

Building Operator Certification

Offering Description:

Building Operator Certification® (BOC) is a nationally recognized training and certification program focusing on energy-efficient building O&M procedures. Facilities with BOC graduates are proven to save energy, have lower energy bills, and offer improved comfort for occupants. Facility staff with at least one year work experience plus an additional year of work and/or training are eligible. Go to BOCCentral.org/ComEd for information on Illinois tuition and training schedules. ComEd customers are eligible for a full tuition rebate upon completion of training.

Opportunity at Your Facility:

Building Operator Certification(BOC) is a training and certification for commercial building operators. The curriculum teaches participants how to improve building comfort and efficiency by optimizing their building's systems.

ComEd's BOC Pilot offers full participant tuition-reimbursement for ComEd customers who complete the curriculum. The goal is to implement energy-saving practices at this location. BOC training has two curricula: BOC level-I and BOC level-II. Both curricula require a time commitment for class training and assigned projects spread over several months.

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SOLAR OPPORTUNITIES

The facilities' solar potential has been evaluated and determined there is enough area with adequate sunlight to be a good candidate for solar deployment. Below is an aerial view of the facility and surrounding property, highlighting where solar panels would be most productive along with the project economics.



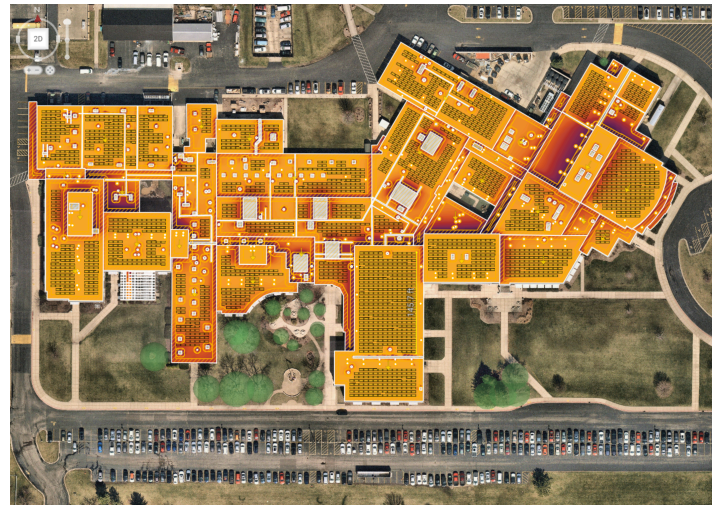
Project Details

Estimated Solar Capacity: **1,200 kW**

Estimated Annual Generation: **1,453,100 kWh**

Estimated # of Solar Panels: **2,300**

Annual Energy Use Offset: **60%**



Financial Details

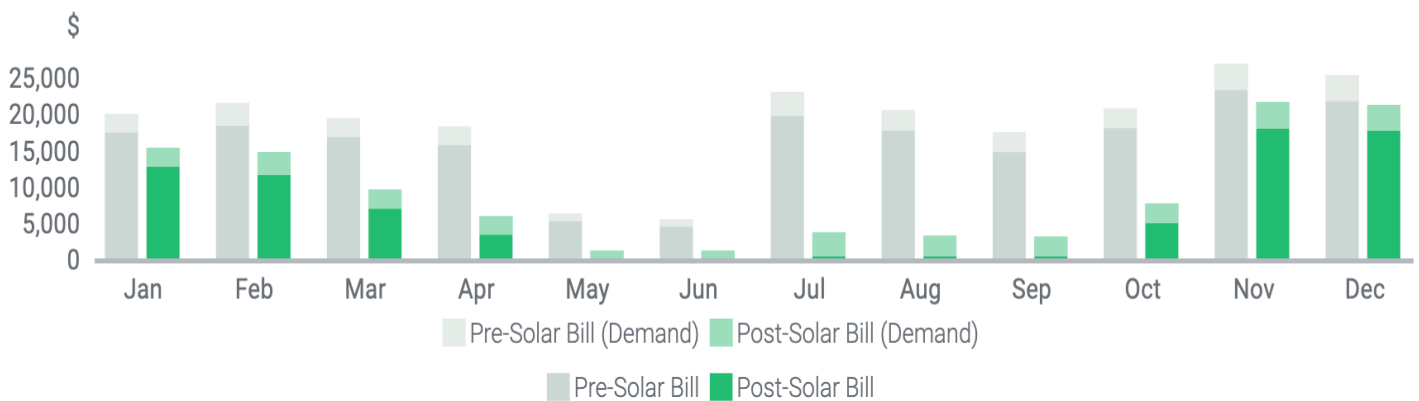
Estimated Project Cost: **\$2,708,000**

Estimated Incentive: **\$2,586,900**

Estimated Simple Payback: **8.4 Years**

Lifetime Savings: **\$3,777,500**

MONTHLY UTILITY BILL SAVINGS



The calculation above is based on a satellite overview of the facilities' property, as well as on-site observations made by the assessment Engineer. Total incentives are based on available local, state, federal and tax incentives, further broken out in the "Additional Funding Sources" section of this report.

Learn more about the benefits of solar energy and adjust your own design at ComEd.com/Solar.

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WELL CERTIFICATION

The WELL Health-Safety Rating for Facility Operations and Management is an evidence-based, third-party verified pathway for addressing the health, safety and well-being of building occupants. A visible indication of confidence and trust, the WELL Health-Safety seal communicates to everyone entering a space that evidence-based measures have been adopted and third-party verified. This report identifies any existing practices that meet the WELL Health-Safety standard, suggests additional practices to achieve minimum rating required for certification and identifies costs to do so."

Total Estimated Cost to Achieve Pre-Requisites \$3,250

Total Estimated Cost to Achieve Certification \$4,000

Cleaning And Sanitization Procedures				2
	☐	SC1	Support Handwashing	
	☐	SC2	Reduce Surface Contact	
X	☐	SC3	Improve Cleaning Practices	
X	☐	SC4	Select Preferred Cleaning Products	
	☐	SC5	Reduce Respiratory Particle Exposure	

WELL CERTIFICATION

Feature Description

COVID-19 and many other infectious diseases are spread primarily through close contact with an infected person via respiratory droplets. However, it is known that coronaviruses and noroviruses, among other pathogens, can survive on surfaces infected by droplets. Maintaining good cleaning protocols can support organizational resilience by helping reduce the risk of infection. Similarly, hand washing promotion is an effective way to reduce the spread of infectious diseases and to confer individual resilience. While sanitization is critical, especially during an infectious disease crisis, commercial cleaning products may contain ingredients suspected to be hazardous to human health and the environment. Low-hazard cleaning products and cleaning practices reduce impacts in indoor air quality and in the health of those performing these duties, while protecting occupants, as well.

The WELL Health and Safety Rating assesses 27 opportunities. Of those 27 opportunities, 15 opportunities are required to be met for certification. This facility meets 11 opportunities, including 2 opportunities in the Cleaning and Sanitization Procedures section.

The following opportunities were not met:

SC1. This feature aims to support of hygienic hand washing practices for all occupants. To achieve this feature, a building may need to supply the following at all handwashing stations: (1) fragrance-free liquid soap in sealed dispensers at all handwashing stations; (2) hand drying methods such as paper towels or HEPA-equipped hand dryers; (3) signage displaying steps for proper hand washing.

SC2. This feature aims to reduce the amount of hand contact on high-touch surfaces. To achieve this feature, a building may need to implement the following strategies: (1) installing touchless entry systems, touchless faucets, touchless soap dispensers, or other similar technologies; (2) using materials with antimicrobial properties or coatings to reduce the growth of bacteria and other microorganisms on surfaces; (3) developing enhanced cleaning and disinfection protocols for high-touch surfaces; (4) reconfiguring shared spaces to minimize surface contact, such as removing communal items and furniture or adding barriers between workstations.

SC5. This feature aims to reduce human contact with respiratory particles. To achieve this feature, a building may need to implement the following strategies: (1) ensuring adequate ventilation in the building to increase the flow of outdoor air and reduce the concentration of respiratory particles in the indoor environment; (2) installing air filters, such as HEPA filters, that capture respiratory particles; (3) implementing measures to reduce the release of respiratory particles, such as requiring occupants to wear masks or adding barriers between workstations; (4) implementing enhanced cleaning and disinfection protocols for high-touch surfaces.

Recommendations:

The cost is difficult to determine and can vary greatly from school to school, so a cost of \$1,000 per recommendation is used as a general estimate.

Estimated Cost to Achieve Pre-Requisite \$0

Estimated Cost to Achieve Certification \$3,000

WELL CERTIFICATION

Emergency Preparedness Programs				4
X	O	SE1	Develop Emergency Preparedness Plan	
X	O	SE2	Create Business Continuity Plan	
	O	SE3	Plan for Healthy Re-Entry	
X	O	SE4	Provide Emergency Resources	
X	O	SE5	Bolster Emergency Resilience	
	O	SE6	Establish Health Entry Requirements	

Feature Description

Emergency preparedness and resilience plans are critical to ensuring that organizations are equipped to immediately confront a crisis, as well as to recover successfully from it. Natural disaster emergencies kill around 90,000 people and affect close to 160 million people worldwide every year, with both an immediate and long-term impact on human lives and built spaces. Emergency management plans can help organizations be better prepared to handle unforeseen events, minimize occupant confusion and improve coordination and safety during emergency situations. Creating plans to support business continuity, remote work readiness and project re-entry after extended remote periods helps maintain business resilience and individual well-being during and after longer-lasting emergencies. Finally, providing access to mental health services, such as psychological first aid, crisis counseling and bereavement counseling, is critical to supporting employee short-term recovery and long-term productivity, functioning and well-being.

This facility meets 4 opportunities in the Emergency Preparedness Programs section.

The following opportunities were not met:

SE3. This feature aims to create a plan for safely re-entering the building after a prolonged absence. To achieve this feature, a building may need to develop a healthy re-entry plan that includes the following: (1) enhanced cleaning and disinfection protocols to ensure that the building is thoroughly cleaned before occupants return; (2) ensuring that the building's ventilation and filtration systems are working properly to provide clean indoor air; (3) health screening measures, such as temperature checks and symptom assessments, to ensure that occupants are healthy before entering the building; (4) physical distancing measures, such as reconfiguring workstations and common areas; (5) a communication plan to ensure that occupants are informed and updated on the re-entry process and any new procedures or protocols.

SE6. This feature aims to establish entry requirements that promote the health and safety of occupants. To achieve this feature, a building may need to implement the following: (1) health screening measures, such as temperature checks and symptom assessments, to ensure that occupants are healthy before entering the building; (2) the use of PPE, such as face masks or gloves, to reduce the transmission of infectious diseases; (3) clear and visible signage to inform occupants of entry requirements and procedures.

Recommendation:

The cost is difficult to determine and can vary greatly from school to school, so a cost of \$1,000 per recommendation is used as a general estimate.

Estimated Cost to Achieve Pre-Requisite \$0

Estimated Cost to Achieve Certification \$1,000

WELL CERTIFICATION

Health Service Resources

4

X	O	SH1	Provide Sick Leave
X	O	SH2	Provide Health Benefits
	O	SH3	Support Mental Health Recovery
X	O	SH4	Promote Vaccines
X	O	SH5	Promote a Smoke-Free Environment

Feature Description

The strategies encompassed within this section focus on ways to foster individual actions that support health and safety for all in a space. Unvaccinated individuals pose a risk to public health, and seasonal flu causes severe illness and death in high-risk populations. Providing free on-site flu vaccines with education on good health habits can increase vaccination rates and reduces flu cases. Studies estimate 20 million Americans go to work sick because they lack sick leave or have only one-day sick leave, respectively, infecting colleagues as a result. Additionally, studies show implementing paid sick leave reduces contagion in the workplace, improves employee productivity and reduces employee turnover. Overall, enhancing access to essential healthcare and paid sick leave can help improve the physical, social and mental health of individuals and communities. Finally, exposure to tobacco smoke persists to detrimentally affect the health of both smokers and those exposed to secondhand smoke.

This facility meets 4 opportunities in the Health Service Resources section.

The following opportunity was not met:

SH3. This feature aims to support mental health recovery for individuals who may be experiencing mental health challenges. To achieve this feature, a building may need to implement the following: (1) providing access to mental health services, such as counseling or therapy; (2) offering flexible work arrangements, such as telecommuting or flexible scheduling; (3) offering mental health support programs, such as stress reduction or resilience training; (4) fostering a sense of community through activities such as team building, social events, and volunteer opportunities; (5) addressing mental health stigma through education and awareness-raising activities.

Estimated Cost to Achieve Pre-Requisite \$0

Estimated Cost to Achieve Certification \$0

WELL CERTIFICATION

Air And Water Quality Management

1

	☐	SA1	Assess Ventilation
	☐	SA2	Assess and Maintain Air Treatment Systems
	☐	SA3	Develop Legionella Management Plan
	☐	SA4	Monitor Air and Water Quality
X	☐	SA5	Manage Mold and Moisture

Feature Description

Research has shown that increased ventilation in a building can reduce the chance of influenza. Some pathogens can also attach themselves onto smaller particles in the air such as dust, which stay in the air longer and travel farther distances than droplets, potentially affecting people within a wider spatial range. Without proper maintenance and filtration, heating, ventilation and air conditioning systems can build up mold and particulates that can propagate respiratory diseases, especially after periods of inactivity. Inhalation exposure to indoor air pollutants can lead to a variety of negative short- and long-term health and well-being outcomes that can range in severity. Less severe symptoms of exposure can include headaches, dry throat, eye irritation or runny nose, while more severe health effects can include asthma attacks and carbon monoxide poisoning. Mold developed on cooling coils may shed particles into the building's indoor air and trigger asthma, headaches, allergies and other respiratory system disorders. In the U.S. alone, indoor pollution contributes to thousands of cancer deaths and hundreds of thousands of respiratory health issues annually. Water is typically treated with chlorine to keep it free of pathogens. However, if left stagnant after a period of vacancy, chlorine is likely to lose its disinfection power, creating opportunity for pathogens to contaminate the water. Additionally, Legionella bacteria is naturally present in waters at low concentrations, but it may colonize recirculated water systems such as hot water loops and cooling towers.

This facility meets 1 opportunity in the Air and Water Quality Management section.

Note that SA1, SA2, and SA3 were not assessed as part of this report.

The following opportunity was not met:

SA4. This feature aims to assess indoor air quality and water quality, which contribute to the health and well-being of occupants. To achieve this feature, a building may need to develop an air and water quality monitoring plan that includes the following: (1) measuring indoor air quality; (2) testing water quality; (3) identifying areas for improvement and implementing improvements.

Estimated Cost to Achieve Pre-Requisite \$0

Estimated Cost to Achieve Certification \$0

WELL CERTIFICATION

Stakeholder Engagement And Communication			0
	☐	SS1	Promote Health and Well-Being
	☐	SS2	Share Food Inspection Information

Feature Description
<i>During emergencies, stakeholder engagement and communication is critical to instilling confidence, improving coordination and supporting actions that can help protect safety. Regular, clear communication about the emergency preparedness and response strategies being utilized by an owner or operator of a space to support people's health and safety, as well as how stakeholders can build awareness of what to do during an emergency event, provides critical information that supports the health and well-being of all occupants. Through providing such communication, organizations can support occupant health literacy, which refers to a person's cognitive and social ability to access, interpret and understand basic health information, as well as the ability to act on that understanding to maintain health. Low health literacy is linked to lower use of preventive care (e.g., flu shots), poor management of chronic conditions (e.g., high blood pressure) and lower self-reported mental and physical health. By supporting awareness of health and wellness programs and policies, projects can promote health literacy and encourage engagement with health resources, leading to both individual benefits - like increased participation in healthy behaviors and use of health services - and also employer benefits, providing an estimated 4:1 return on investment</i> <i>We expect the facility doesn't qualify for any opportunities in this section. Please refer to the following descriptions for more details.</i> <i>SS1. This feature aims to promote adherence to collective well-being and sustainability goals and a deeper occupant understanding of the features pursued by the project and of how building operations and policies impact health and well-being. To achieve this feature, an organization may need to develop the following: (1) a health-oriented mission; (2) regular communication plans regarding health resources, programs, amenities, and policies available to occupants.</i> <i>SS2. This feature aims to mitigate foodborne illness and increase consumer knowledge of food inspection results. To achieve this feature, all food service establishments within the building must have at least one of the following prominently displayed: (1) publicly available food hygiene or sanitary inspection report by the local health department or other third-party inspection agency; (2) scoring or letter grading system issued by the local health department or other third-party inspection agency.</i>

Estimated Cost to Achieve Pre-Requisite \$0

Estimated Cost to Achieve Certification \$0

WELL CERTIFICATION

Innovation				0
	☐	S11	Innovation I	
	☐	S12	Innovation II	
	☐	S13	Innovation III	
	☐	S14	Gateways to Health-Safety	

Feature Description
<i>Innovation features address a novel concept or strategy aimed at addressing acute health and safety issues that are not already included within the WELL Health-Safety features. Many of these will not be include in this Audit as it would take more investigation into these types of measures to verify they would qualify.</i>
<i>Because Innovation opportunities require comparatively more time and effort to achieve, at this stage we recommend focusing on the other opportunities above to get the minimum pre-requisites and achieve the WELL Health and Safety Rating.</i>

Estimated Cost to Achieve Pre-Requisite \$0

Estimated Cost to Achieve Certification \$0

Energy Efficiency Measure Details

Lighting Solutions

Install Lighting Controls

Install sensors which turn lights on/off based on space occupancy and/or ambient light levels

Location	Qty	Existing	Proposed	Estimated Energy Savings (kWh/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$)	Estimated Incentive (\$)	Payback (Years)
Classrooms	300	26W LED Troffer Fixtures (26W)	Install Occupancy Sensors and Daylighting Controls	11,300	\$1,200	\$5,000	\$2,300	2.3
Install Lighting Controls			Subtotal	11,300	\$1,200	\$5,000	\$2,300	2.3

Replace T8 Lighting

Replace T8 Fluorescent Fixtures with LED Fixtures, which are more efficient and provide comparable lighting levels

Location	Qty	Existing	Proposed ^A	Estimated Energy Savings (kWh/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$)	Estimated Incentive (\$)	Payback (Years)
Throughout Facility	1,500	2-Lamp 4-ft F32 T8 with Standard BF Electronic Ballast (59W)	30W LED Troffer Fixtures with Integrated Occupancy Sensors and Daylighting Controls (30W)	230,300	\$24,000	\$200,000	\$48,300	6.3
Replace T8 Lighting			Subtotal	230,300	\$24,000	\$200,000	\$48,300	6.3

Energy Efficiency Measure Details

Lighting Solutions

Replace T5 Lighting

Replace T5 Fluorescent Fixtures with LED Fixtures, which are more efficient and provide comparable lighting levels

Location	Qty	Existing	Proposed ^B	Estimated Energy Savings (kWh/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$)	Estimated Incentive (\$) ^C	Payback (Years)
2009 Section	50	3-Lamp 4-ft F54 T5 High-Output Fluorescent Fixtures (179W)	3-Lamp 4-ft Tubular LED (TLED) T5 Lamps with Integrated Occupancy Sensors (45W)	28,100	\$2,900	\$7,500	\$1,500	2.1
Replace T5 Lighting			Subtotal	28,100	\$2,900	\$7,500	\$1,500	2.1
Lighting Solutions Total			Subtotal	269,700	\$28,100	\$212,500	\$52,100	5.7

Energy Efficiency Measure Details

HVAC Solutions

Install Energy Recovery Ventilator

Install energy recovery equipment on existing or new unitary equipment

Location	Qty	Existing	Proposed	Estimated Energy Savings (kWh/Yr)	Estimated Energy Savings (Therm/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$)	Estimated Incentive (\$)	Payback (Years)
Gymnasium	1	Constant Air Volume System with No Energy Recovery	Install Enthalpy Plate	4,300	2,000	\$2,000	\$28,500	\$480	
Install Energy Recovery Ventilator			Subtotal	4,300	2,000	\$2,000	\$28,500	\$480	

Install Demand Controlled Ventilation

Retrofit the existing building ventilation system with controls that modulate outside air ventilation based on real-time occupancy

Location	Size (sqft)	Existing	Proposed	Estimated Energy Savings (kWh/Yr)	Estimated Energy Savings (Therm/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$)	Estimated Incentive (\$)	Payback (Years)
Classrooms and Offices	150,000	Conditioned Space without Demand Controlled Ventilation and Gas Heat	Install Demand Ventilation Controls	53,800	8,600	\$12,400	\$50,000	\$6,000	3.5
Install Demand Controlled Ventilation			Subtotal	53,800	8,600	\$12,400	\$50,000	\$6,000	3.5
HVAC Solutions Total			Subtotal	58,100	10,600	\$14,400	\$78,500	\$6,480	5.0

Energy Efficiency Measure Details

Refrigeration Solutions

Install Automatic Door Closers

Install automatic closers to the main insulated opaque door(s) of a walk-in cooler or freezer

Location	Qty	Existing	Proposed	Estimated Energy Savings (kWh/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$)	Estimated Incentive (\$)	Payback (Years)
Kitchen	1	Walk-In Freezers without Automatic Door Closers	Install Automatic Door Closers	2,300	\$240	\$160	\$120	0.2
Kitchen	1	Walk-In Coolers without Automatic Door Closers	Install Automatic Door Closers	940	\$100	\$160	\$120	0.4
Install Automatic Door Closers			Subtotal	3,240	\$340	\$320	\$240	0.2

Replace Refrigerators

Replace existing Refrigerators with ENERGY STAR rated models. It is recommended that this change be made near the end of an existing refrigerator's life.

Location	Qty	Existing	Proposed	Estimated Energy Savings (kWh/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$) ^D	Estimated Incentive (\$) ^E	Payback (Years)
Cafeteria	3	Conventional Solid Door Refrigerators	ENERGY STAR Solid Door Refrigerators	630	\$70	\$2,200	\$140	
Replace Refrigerators			Subtotal	630	\$70	\$2,200	\$140	

Replace Freezer

Replace the existing Freezer with an ENERGY STAR rated model. It is recommended that this change be made near the end of an existing freezer's life.

Location	Qty	Existing	Proposed	Estimated Energy Savings (kWh/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$) ^D	Estimated Incentive (\$) ^E	Payback (Years)
Cafeteria	1	Conventional Solid Door Freezer	ENERGY STAR Solid Door Freezer	610	\$60	\$1,100	\$100	
Replace Freezer			Subtotal	610	\$60	\$1,100	\$100	

Energy Efficiency Measure Details

Refrigeration Solutions

Replace Evaporator Fan Motors and Install Controls

Install more efficient motors and controls that reduce fan air-flow when there is no refrigerant flow

Location	Qty	Existing ^F	Proposed	Estimated Energy Savings (kWh/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$)	Estimated Incentive (\$)	Payback (Years)	
Kitchen	3	1/15 Horsepower Shaded Pole Motors with No Controls	1/15 Horsepower Electronically Commutated Motors with Evaporator Fan Controls	4,100	\$430	\$1,400	\$270	2.6	
Kitchen	2	1/15 Horsepower Shaded Pole Motors with No Controls	1/15 Horsepower Electronically Commutated Motors with Evaporator Fan Controls	2,800	\$290	\$940	\$180	2.6	
Replace Evaporator Fan Motors and Install Controls				Subtotal	6,900	\$720	\$2,340	\$450	2.6

Install Demand Defrost Controls in Walk-in Freezers and Coolers

Install Demand Defrost Controls to monitor the refrigeration system and delay the defrost cycle as necessary

Location	Qty	Existing	Proposed	Estimated Energy Savings (kWh/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$)	Estimated Incentive (\$)	Payback (Years)	
Kitchen	3	Evaporator Fans without Demand Defrost Controls	Install Demand Defrost Controls	660	\$70	\$380	\$60	4.6	
Kitchen	2	Evaporator Fans without Demand Defrost Controls	Install Demand Defrost Controls	340	\$40	\$250	\$40	5.3	
Install Demand Defrost Controls in Walk-in Freezers and Coolers				Subtotal	1,000	\$110	\$630	\$100	4.8

Refrigeration Solutions Total	Subtotal	12,380	\$1,300	\$6,590	\$1,030	4.3
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Energy Efficiency Measure Details

VSD Solutions

Retrofit HVAC Pump

Install a Variable Speed Drive on the pump motor, which controls the motor speed to meet demand, reducing the energy consumed by the motor

Location	Qty	Existing	Proposed	Estimated Energy Savings (kWh/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$) ^G	Estimated Incentive (\$)	Payback (Years)
Boiler Room	1	20 HP Hot Water Circulation Pump without Variable Speed Controls	Add Variable Speed Drive Controls to the Pump	10,900	\$1,100	\$5,700	\$3,000	2.5
Mechanical Room	1	25 HP Chilled Water Pump without Variable Speed Controls	Add Variable Speed Drive Controls to the Pump	7,700	\$800	\$7,100	\$3,800	4.1
Boiler room	1	7.5 HP Chilled Water Pump without Variable Speed Controls	Add Variable Speed Drive Controls to the Pump	2,400	\$250	\$3,500	\$1,100	9.6
Boiler Room	1	3 HP Boiler Feed Water Pump without Variable Speed Controls	Add Variable Speed Drive Controls to the Pump	1,700	\$180	\$2,700	\$450	
Retrofit HVAC Pump			Subtotal	22,700	\$2,330	\$19,000	\$8,350	4.6
VSD Solutions Total			Subtotal	22,700	\$2,330	\$19,000	\$8,350	4.6

Energy Efficiency Measure Details

Commercial Kitchen Solutions

Install Hot Food Holding Cabinets

Install new ENERGY STAR rated hot food holding cabinets

Location	Qty	Existing	Proposed	Estimated Energy Savings (kWh/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$)	Estimated Incentive (\$) ^E	Payback (Years)
Cafeteria	4	Conventional Hot Food Holding Cabinets	ENERGY STAR Hot Food Holding Cabinets	37,200	\$3,900	\$4,800	\$1,300	0.9
Install Hot Food Holding Cabinets			Subtotal	37,200	\$3,900	\$4,800	\$1,300	0.9
Commercial Kitchen Solutions Total			Subtotal	37,200	\$3,900	\$4,800	\$1,300	0.9

Energy Efficiency Measure Details

Special Purpose Equipment Solutions

Install Kitchen Fume Hood Exhaust Controls

Add control to Kitchen Fans to vary exhaust rate based on cooking load and/or occupancy

Location	Qty	Existing	Proposed	Estimated Energy Savings (kWh/Yr)	Estimated Energy Savings (Therm/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$)	Estimated Incentive (\$) ^E	Payback (Years)
Kitchen	1	7.5 Horsepower Kitchen Fume Hood Exhaust Fans	Install Kitchen Demand Ventilation Controls	37,200	5,800	\$8,500	\$29,100	\$2,500	3.1
Kitchen	1	1.5 Horsepower Kitchen Fume Hood Exhaust Fan	Install Kitchen Demand Ventilation Controls	7,400	1,200	\$1,700	\$25,600	\$2,500	13.6
Install Kitchen Fume Hood Exhaust Controls			Subtotal	44,600	7,000	\$10,200	\$54,700	\$5,000	4.9

Install A Vending Machine Occupancy Sensor

Install a Sensor to cycle Vending Machine lights and/or compressor based on occupancy

Location	Qty	Existing	Proposed	Estimated Energy Savings (kWh/Yr)	Estimated Energy Savings (Therm/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$)	Estimated Incentive (\$)	Payback (Years)
Kitchen	1	Beverage Vending Machine	Install Occupancy Sensor	1,600	0	\$170	\$180	\$100	0.5
Install A Vending Machine Occupancy Sensor			Subtotal	1,600	0	\$170	\$180	\$100	0.5

Special Purpose Equipment Solutions Total	Subtotal	46,200	7,000	\$10,370	\$54,880	\$5,100	4.8
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Energy Efficiency Electrification

Energy Efficiency Electrification (EEE) refers to the process of replacing equipment powered directly by fossil fuel with all-electric equipment. EEE is an important step towards decarbonization and it includes a broad range of environmentally-friendly solutions that enable facilities to achieve their sustainability goals.

Install Ground Source Heat Pump

Install a Ground Source Heat Pump to improve HVAC system efficiency and reduce your building's overall carbon emissions

Location	Qty	Existing	Proposed	Estimated Electric Energy Usage (kWh/Yr)	Estimated Energy Savings (Therm/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$)	Estimated Incentive (\$)	Payback (Years)
Entire Facility	1	Air Handling Units with hot-water heating & chilled-water cooling, and Roof Top Units with gas heating & DX cooling	Brine to Water Ground Loop Heat Pump	264,700	166,500	\$104,800	\$6,120,000 ^H	\$0	
Install Ground Source Heat Pump			Subtotal	264,700	166,500	\$104,800	\$6,120,000	\$0	

Install Variable Refrigerant Flow (VRF) System

Install Variable Refrigerant Flow system to improve system efficiency and reduce your building's overall carbon emissions

Location	Qty	Existing	Proposed	Estimated Electric Energy Usage (kWh/Yr)	Estimated Energy Savings (Gal/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$)	Estimated Incentive (\$)	Payback (Years)
Rooftop ^I	1	Air Handling Units with hot-water heating & chilled-water cooling, and Roof Top Units with gas heating & DX cooling	Most Efficient Air Cooled Variable Refrigerant Flow	326,600	166,500	\$98,400	\$4,442,900	\$0	
Install Variable Refrigerant Flow (VRF) System			Subtotal	0	0	\$0	\$0	\$0	

Energy Efficiency Electrification

Install Heat Pump Water Heater

Install a Heat Pump Water heater to improve system efficiency and reduce your building's overall carbon emissions

Location	Qty	Existing	Proposed	Estimated Electric Energy Usage (kWh/Yr)	Estimated Energy Savings (Gal/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$)	Estimated Incentive (\$)	Payback (Years)
Boiler room	2	Natural Gas-Fired Water Heaters	Heat Pump Water Heaters	5,900	650	- \$100	\$6,200	\$0	
Mechanical Room	2	Natural Gas-Fired Water Heaters	Heat Pump Water Heaters	17,800	2,000	- \$260	\$6,200	\$0	
Boiler room	2	Natural Gas-Fired Water Heaters	Heat Pump Water Heaters	214,000	23,700	- \$3,400	\$6,200	\$0	
Install Heat Pump Water Heater			Subtotal	237,700	26,350	- \$3,760	\$18,600	\$0	

Install Electric Storage Water Heater

Install an Electric Storage Water heater to improve system efficiency and reduce your building's overall carbon emissions

Location	Qty	Existing	Proposed	Estimated Electric Energy Usage (kWh/Yr)	Estimated Energy Savings (Gal/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$)	Estimated Incentive (\$)	Payback (Years)
Boiler room ^J	2	Natural Gas-Fired Storage Tank Water Heaters	Electric Storage Tank Water Heaters	16,300	650	- \$1,200	\$4,900	\$0	
Boiler room ^J	2	Natural Gas-Fired Storage Tank Water Heaters	Electric Storage Tank Water Heaters	49,200	2,000	- \$3,500	\$4,900	\$0	
Boiler room ^J	2	Natural Gas-Fired Storage Tank Water Heaters	Electric Storage Tank Water Heaters	587,900	23,700	- \$42,300	\$4,900	\$0	
Install Electric Storage Water Heater			Subtotal	0	0	\$0	\$0	\$0	

Energy Efficiency Electrification

Replace Fork Trucks

Replace existing Fossil Fuel Fork Trucks with Lithium Ion Fork Trucks

Location	Qty	Existing	Proposed	Estimated Electric Energy Usage (kWh/Yr)	Estimated Propane Savings (Gal/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$)	Estimated Incentive (\$)	Payback (Years)
Garage	1	Propane Powered Fork Trucks	Rapid Charging Lithium Ion Electric Fork Trucks	1,500	200	\$390	\$33,900	\$13,000	
Replace Fork Trucks			Subtotal	1,500	200	\$390	\$33,900	\$13,000	
Energy Efficiency Electrification Total			Subtotal	503,900	192,850	\$101,430	\$6,172,500	\$13,000	

Transportation Vehicle Electrification

Transportation Vehicle Electrification (TVE) refers to the process of replacing transportation vehicles powered directly by fossil fuel with all-electric vehicles and corresponding charging infrastructure. TVE is an important step towards decarbonization and it includes a broad range of environmentally-friendly solutions that enable facilities to achieve their sustainability goals. You can Adjust your own EV design and charging plan at ComEd.com/EV.

Replace Transit and Shuttle Buses

Replace existing gas powered transit & shuttle buses with electric transit & shuttle buses and dedicated chargers

Location	Qty	Existing	Proposed	Estimated Electric Energy Usage (kWh/Yr)	Estimated Gasoline Savings (Gal/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$)	Payback (Years)
Shuttle Bus	2	Activity Bus - Class 2 - Gas - 3.5L - (14.90 mpg)	2020 Equivalent Electric Shuttle Bus - EV - 140 kWh (1.07 mi/kWh)	14,800	970	\$2,400	\$520,000	
Shuttle Bus	6	Small Bus - Class 2 - Gas - 3.5L - (14.90 mpg)	2020 Equivalent Electric Shuttle Bus - EV - 140 kWh (1.07 mi/kWh)	44,400	2,900	\$7,100	\$1,560,000	
Replace Transit and Shuttle Buses			Subtotal	59,200	3,870	\$9,500	\$2,080,000	

Replace Light Duty Vehicles

Replace existing gas powered light duty vehicles with electric light duty vehicles and dedicated chargers

Location	Qty	Existing	Proposed	Estimated Electric Energy Usage (kWh/Yr)	Estimated Gasoline Savings (Gal/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$)	Payback (Years)
Class 2	3	Class 1 - Gas - Pickup Truck 3.5L - (22.00 mpg)	2021 Equivalent Electric Class 2 - EV - Pickup Truck - 135 kWh (2.22 mi/kWh)	10,700	980	\$2,900	\$255,000	
Replace Light Duty Vehicles			Subtotal	10,700	980	\$2,900	\$255,000	

Transportation Vehicle Electrification

Replace Passenger Vehicle

Replace gas powered passenger vehicle with equivalent electric passenger vehicle and dedicated charger

Location	Qty	Existing	Proposed	Estimated Electric Energy Usage (kWh/Yr)	Estimated Gasoline Savings (Gal/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$)	Payback (Years)
Passenger Vehicle (EV)	3	Average Gas Model Passenger Vehicle - (30.00 mpg)	2023 Equivalent Electric Passenger Vehicle (3.03 mi/kWh)	3,900	360	\$1,100	\$120,000	
Replace Passenger Vehicle Subtotal				3,900	360	\$1,100	\$120,000	

Replace School Buses

Replace existing gas powered school buses with electric school buses and dedicated chargers

Location	Qty	Existing	Proposed	Estimated Electric Energy Usage (kWh/Yr)	Estimated Diesel Savings (Gal/Yr)	Estimated Savings (\$/Yr)	Estimated Cost (\$)	Payback (Years)
Type C	28	School Bus - Type C - Diesel - 8.3L - 81 Passenger - (7.40 mpg)	2020 Sample Electric School Bus - Type C - EV - 155 kWh - 72 Passenger (0.77 mi/kWh)	864,000	81,700	\$249,200	\$11,480,000	
Type C	28	School Bus - Type C - Diesel - 8.3L - 81 Passenger - (7.40 mpg)	2020 Sample Electric School Bus - Type C - EV - 155 kWh - 72 Passenger (0.77 mi/kWh)	432,000	40,900	\$124,800	\$11,480,000	
Replace School Buses Subtotal				1,296,000	122,600	\$374,000	\$22,960,000	
Electric Vehicle Total Subtotal				1,369,800	127,810	\$387,500	\$25,415,000	

Electrification Baseline Conditions

Baseline System Conditions

Facility System: Building Description

Kaneland High School was originally constructed before the 1950's, with additions in 1960's, 1980's and 2000's. The facility houses the high school, the district administrative offices and the Fox Valley career center.

HVAC: The classrooms in the facility are conditioned by air handling units with hot-water heating and chilled-water cooling. The hot-water for the unit ventilators is provided by (4) boilers and the chilled-water is provided (2) large chillers. There are roof top units with gas heating and DX cooling that condition the offices and other miscellaneous spaces. All HVAC equipment is controlled through the Building Automation System(BAS).

DHW: Domestic hot water for the facility is provided by (2) 75,100 Btu/hr natural gas storage water heaters with 74-gallon capacity each, (2) 199,900 Btu/hr natural gas storage water heaters with 100-gallon capacity each, and (2) 800,000 Btu/hr natural gas storage water heaters with 300-gallon capacity each.

Lighting: Most of the facility is illuminated by fluorescent T8 lamps with about 15% of the spaces upgraded to LEDs. All the interior lighting is operated on manual switches. The exterior wallpack lights have been converted to LEDs and they are operated on photocells.

Facility System: Proposed Electrification

For electrification, we recommend that you replace the existing HVAC equipment with Ground Source Heat Pumps(GSHPs). We also included Variable Refrigerant Flow system as an alternative for your reference.

Facility System: Building Envelope and Mechanical Insulation

The school's envelope and insulation seems to be in good condition. Hence, no measures were recommended.

Facility System: Annual Natural Gas Usage

From the natural gas bills provided, we estimate that the facility uses about 185,350 therms of natural gas annually. We considered a buffer factor in our analysis to accommodate colder weather.

Facility System: Electric Vehicles

The school owns a fleet of 56 school buses, (6) small buses (2) activity buses, (3) pickup trucks, (6) cargo vans, (1) dump truck, (4) tractors, (1) forklift, and (3) passenger vehicles for driver's ed. classes. We performed an EV analysis for these vehicles.

Facility System: Solar

Kaneland High School currently has solar on the adjoining land. We included the solar feasibility analysis for the roof to provide a future reference to the customer.

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Electrification Infrastructure

Electrification Infrastructure Upgrades

The following opportunities were identified for electrical infrastructure upgrades to your facility needed to support added load of suggested building and transportation electrification measures. While ComEd suggests these upgrades to the following system, it is strongly recommended you work with an electrical designer to investigate the required changes further.

Opportunity at Your Facility: Upgrade Electric Infrastructure

Upgrading your electrical infrastructure may be necessary if increasing the load on the system significantly. With electrification, the electric load is expected to increase and it would likely be necessary to upgrade your current electric infrastructure to accommodate this. The cost shown is a rough idea of how much this would cost. This cost is separate from the cost of any electrification measures.

Estimated Cost: **\$1,350,000**

Opportunity at Your Facility: Electric Vehicles Charging Infrastructure

We expect there to be an additional cost to add the infrastructure for the electric vehicles chargers. This cost is not included in the EV measure cost and the "Charging Incentive Program" can be used to alleviate this cost. This cost is our expected cost to install breaker panels and run raceway and wiring to panels. This doesn't include estimates for structural enclosures.

Estimated Cost: **\$1,110,000**

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ADDITIONAL FUNDING OFFERINGS

Available Funding Offerings

In addition to Energy Efficiency Incentives Incentives, your facility may also be eligible for the following third party funding offerings:

- | | |
|--|--|
| ☒ The Investment Tax Credit | ☐ Cook County Solar Schools Grant |
| ☒ The Investment Tax Credit - GSHP | ☒ School Construction Grant |
| ☒ School Maintenance Grant | ☒ Charging Incentive Program |
| ☒ Distributed Generation Rebate | ☒ Illinois Shines Renewable Energy Credits |
| ☐ K-12 Solar Schools Grant | ☒ Clean School Bus Program |

Distributed Generation Rebate

Offering Description:

The Distributed Generation Rebate is an optional ComEd incentive. It is included in the rebate total shown on the "Solar Opportunities" page. You can qualify for this by installing a smart inverter and allowing ComEd to control it for purposes of grid reliability. For more information visit the [Distributed Generation Rebates](#) page

Funding Opportunity: \$288,875

Illinois Shines Renewable Energy Credits

Offering Description:

Illinois Shines (<https://illinoisshines.com/illinois-shines-accepting-new-applications/>) is the brand name of the Adjustable Block Program, a state-administered program for new solar photovoltaic systems. The program provides payments in exchange for 20 years of Renewable Energy Credits (RECs) generated by new PV systems on site. Payments vary depending on the system's size and where it is located.

Funding Opportunity: \$1,485,586

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ADDITIONAL FUNDING OFFERINGS

The Investment Tax Credit

Offering Description:

The Investment Tax Credit (ITC) is a federal incentive equal to 30% of eligible expenses for qualifying installations and entities. It is included in the rebate total shown on the “Solar Opportunities” page. Through provisions established in the Inflation Reduction Act, tax exempt organizations can take advantage of the tax credits through either direct pay or a transfer of credit. For more information, please visit the [Office of Energy Efficiency & Renewable Energy](#) page.

Funding Opportunity: \$812,399

The Investment Tax Credit - GSHP

Offering Description:

The Investment Tax Credit (ITC) is a federal tax credit available up to 49% of eligible expenses for qualifying installations and entities. To be conservative, we considered a 30% credit in our analysis, and it is shown as the incentive on the “EEE” page under Ground Source Heat Pump measure. Through provisions established in the Inflation Reduction Act, tax exempt organizations can take advantage of the tax credits through either direct pay or a transfer of credit. For more information, please visit the White House website([Inflation-Reduction-Act-Guidebook.pdf \(whitehouse.gov\)](#))-Page 14.

Funding Opportunity: \$2,622,000

School Maintenance Grant

Offering Description:

The School Maintenance Grant Program (<https://www.isbe.net/Pages/School-Maintenance-Project-Grant.aspx>) is a dollar-for-dollar state matching grant open to school districts, cooperative high schools, vocational centers, and special education cooperatives. Eligible applicants can receive up to \$50,000 to put toward completing proposed maintenance projects. This grant is awarded by school district not individual school and the district must provide matching funds for the project, equal to the awarded grant.

Funding Opportunity: \$50,000

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ADDITIONAL FUNDING OFFERINGS

School Construction Grant

Offering Description:

The School Construction Grant Program (<https://www.isbe.net/Pages/School-Construction.aspx>) contributes to the cost of building or renovating public school buildings, based on enrollment and needs of the district. The program historically has covered between 35% and 75% of the cost to build or renovate buildings. School districts that apply for a grant on or after 6/1/23 must submit a copy of their PSCFA Report.

Funding Opportunity: \$150,000

Charging Incentive Program

Offering Description:

The Illinois Charging Incentive Program (<https://www2.illinois.gov/epa/topics/ceja/Pages/default.aspx>) makes awards to public organizations that install and maintain Level 2 or Level 3 electric vehicle charging stations. Grants up to 80% of the installation costs may be awarded. Additional awards may incentivize charging infrastructure in eligible communities.

Funding Opportunity: \$900,000

Clean School Bus Program

Offering Description:

The EPA Clean School Bus Program provides rebates to public school districts that replace 2010 or older diesel-powered/internal combustion school buses with zero- or low-emission buses. Private school bus fleets cannot apply directly for funding; however, eligible applicants can enter into a contractual arrangement with a private fleet that owns and operates buses to replace buses that serve a public school district.

Funding Opportunity: \$2,000,000

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Footnotes

Values rounded for simplicity.

For the Standard Incentives program, the total incentives paid cannot exceed 100% of the incremental measure cost or 100% of the total project cost.

Programmed Start ballasts are recommended for all lighting sensor applications. (i.e. Occupancy Sensors, Daylighting Controls, etc.)

- A** Product must be listed on DesignLights™ Consortium (DLC) Qualified Products list, available at www.designlights.org.
- B** Both A-Type and B-Type TLEDs are eligible for incentives through the Instant Discounts program. A-Type TLEDs operate using the existing electronic fluorescent ballast, while B-Type TLEDs bypass the existing ballast and the lamp operates using an internal integrated driver. Lamp life may vary depending on TLED lamp type and existing installed ballasts. If installing A-Type TLEDs, check compatibility with existing ballasts before implementing.
- C** Discounts are available through participating distributors in the Instant Discounts Program. Incentive is in the form of a discounted product cost provided at the time of purchase. Learn more and find a list of participating distributors at www.ComEd.com/InstantDiscounts
- D** Indicates that the estimated cost of this solution is equal to the incremental cost difference between the energy-efficient equipment and the standard efficiency option.
- E** Discounts are available through participating distributors in the Illinois Commercial Food Services Program. Incentive is in the form of a discounted product cost provided at the time of purchase. Learn more and find a list of participating distributors at www.il-foodservicerebates.com
- F** Evaporator Fan Motors are concealed and assumed to be Shaded-Pole type. If motors are Electronically Commutated, there is still an incentive to retrofit with fan controls.
- G** To realize savings with VSDs, any three-way valve systems must be replaced with two-way valves to allow the flow to modulate at part load. The estimated project cost is for the Variable Speed Drives only and does not account for valve replacements or piping modifications. It is recommended to work with an Energy Efficiency Service Provider or other design consultant to further develop this measure before implementation.
- H** Please note that we removed our conservative estimate of the IRA GSHP tax credit from the project cost. The total project cost is about \$8,740,000
- I** Presented as an alternative to the GSHP measure above and shown for comparison purposes. Please note this recommendation is not included in the totals.
- J** Presented as an alternative to the HPWH measure above and shown for comparison purposes. Please note this recommendation is not included in the totals.



= Does Not Payback

Electricity Cost = \$0.1040/kWh (provided by the customer)

Natural Gas Cost = \$0.795/therm (provided by the customer)

Diesel Cost = \$4.150/gallon (provided by the customer)

Propane Cost = \$2.750/gallon (provided by the customer)

Gasoline Cost = \$4.050/gallon (provided by the customer)

APPLICATION PROCESS

1**CHECK PROJECT AND EQUIPMENT ELIGIBILITY**

- Project must be a new improvement at an existing facility that results in a permanent reduction in electrical usage (kWh).
- All installed equipment must meet or exceed the ComEd Energy Efficiency Program incentive specifications and be installed in facilities served by ComEd. Customers must have a valid ComEd account number on a ComEd non-residential rate.

2**SUBMIT A PRE-APPLICATION (IF REQUIRED)**

- A pre-application is required for certain projects, including all Custom projects. A pre-application is not required for a Standard project when requesting incentives of less than \$1,000 or DX tune-up incentives.
- If your Standard project requires a pre-application, complete and submit the ComEd Energy Efficiency Program Standard Application and applicable Incentive Worksheets. If your project requires pre-application, you'll need to wait to start your project until you receive a reservation letter.
- If you are applying for custom incentives, complete and submit a Custom Application. Wait to start your project until you receive a reservation letter.
- Once you receive your reservation letter, incentive funds for your project will be set aside for 90 days or until the end of the program year, whichever comes first.
- A pre-installation inspection may be required. If so, we will contact you to schedule the inspection.

3**INSTALL EQUIPMENT OR PERFORM PROJECT WORK**

- The incentive reservation allows you 90 days to complete your project. Contact the ComEd Energy Efficiency Program team if you think your project will require more than 90 days.
- Verify that the equipment to be installed meets or exceeds the specifications found on the ComEd Energy Efficiency Program Incentive Worksheet.

4**SUBMIT A FINAL APPLICATION**

- Submit a Final Application as soon as your project is completed, but no more than 60 days after completion. Final Applications received more than 60 days after completion will be rejected.
- The ComEd Energy Efficiency Program team will review your Final Application. You may be contacted during the final review to schedule a post-installation inspection.

5**RECEIVE INCENTIVE PAYMENT**

- The incentive check will be sent four to six weeks after your complete Final Application is submitted.

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ENERGY MANAGEMENT RESOURCES

Business Energy Analyzer

The ComEd Business Energy Analyzer is a free tool that allows non-residential customers to analyze their facility's energy usage, learn how the facility's energy-use patterns compare with similar facilities, and track energy usage savings before and after implementing energy efficiency project. To sign up, please visit www.ComEd.com/BEA and register using the facility's ComEd account number and zip code.

Voluntary Load Reduction

The ComEd Voluntary Load Reduction (VLR) program offers all non-residential customers financial rewards for reducing electricity use during peak periods on the grid. This program is strictly voluntary and there are never any penalties. Incentive levels and the frequency of VLR events will vary depending upon market and/or system conditions. To sign up, please email VLR@ComEd.com or call ComEd at 1-877-426-6331. For more information, please visit www.ComEd.com/VLR.

Energy Usage Data System

Building owners, property managers, and benchmarking representatives can use the Energy Usage Data System (EUDS) tool to help retrieve the aggregate energy usage data of their single-tenant and multi-tenant (4 tenants or more) commercial, residential and industrial buildings. EUDS enables users to view whole building energy usage data per month, send usage data to ENERGY STAR® Portfolio Manager® and retrieve building performance metrics from ENERGY STAR Portfolio Manager. Please note that this tool can be used to meet local benchmarking ordinances. Learn more at www.ComEd.com/EnergyUsageData.

Electric Vehicles

Driving an electric vehicle can be three to five times cheaper than gasoline and diesel-powered cars, depending on your local gasoline and electric rates. If your facility is considering adding an electric vehicle infrastructure, ComEd has tools to help you determine the savings, benefits & incentives associated with electric vehicles. To learn more, please visit www.ComEd.com/EV.

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DISCLAIMER

All values shown in this report are estimates, including potential incentive amounts. Further development and cost analysis of the opportunities are recommended prior to investment. The incentive amounts and application approvals are subject to the terms and conditions of the ComEd Energy Efficiency Program. This letter in no way implies approval of incentive amounts or applications or serves as a pre-approval.

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