MIDAMERICAN ENERGY COMPANY
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July 15, 2022

Dear Mr. Star:

MidAmerican is submitting its final hourly load and generation data for the July 15, 2022 deadline for submission to the Illinois Commerce. Please review the data and let me know if there are any questions or concerns with this information.

The following information is being supplied with this filing.

1. Forecast Documentation_IL_07152022.pdf – This file contains a discussion of load forecast methodology.
2. IL_Base_Fcst_EST_07152022.xlsx – This file contains base scenario MidAmerican Illinois hourly load forecast from January 1, 2022 through May 31, 2028.
3. IL_Base_Retail_Sales_Forecast_07152022.xlsx – This file contains MidAmerican Illinois hourly retail sales load forecast from January 1, 2022 through December 31, 2041.
4. IL_High_Fcst_EST_07152022.xlsx – This file contains high scenario MidAmerican Illinois hourly load forecast from January 1, 2022 through May 31, 2028.
5. IL_Low_Fcst_EST_07152022.xlsx – This file contains low scenario MidAmerican Illinois hourly load forecast from January 1, 2022 through May 31, 2028.
6. IL_NCP_Forecast_07152022.xlsx – This file contains the noncoincident peak demand forecast.
7. MWh_Sales_and_NCP_MW_High_Scenario.xlsx – This file contains the MWh sales forecast and the non-coincident peak demand forecast supporting the high hourly forecast scenario.
8. MWH_Sales_and_NCP_MW_Low_Scenario.xlsx – This file contains the MWh sales forecast and the non-coincident peak demand forecast supporting the low hourly forecast scenario.
9. Forecasted Load and Capability_07152022.xlsx – This file contains MidAmerican's forecasted load and capability utilizing unforced capacity ratings.
10. Historical and Forecasted ICAP and UCAP_07152022.xlsx – this file shows historical installed capacity (ICAP) and unforced capacity (UCAP) values for the Illinois historical resources.
11. Generation and Load Data MidAmerican Energy Projection_07152022.xlsx. This file contains the hourly MWh generation and sales forecast, including a summary tab computing the on and off-peak short energy positions and a tab summarizing the resources required, the resources already under contract and the quantities to be procured.

Please let me know if you have any questions.

Thank you,

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Methodology for the 2022-2031 Illinois Electric Customers and Sales Forecasts

Note: MEC has projected retail kWh sales impacts due to COVID-19 and has incorporated those projected impacts into the retail kWh sales forecast and the peak demand forecast.

The 2022-2031 electric customer and sales forecasts were produced using econometric models on a monthly basis and are carried out in three steps using a top-down approach:

Step 1: The aggregate customer numbers were forecasted directly by revenue class:

- Residential
- Commercial
- Industrial
- Public authority.

Industrial kWh sales were forecast directly. The street lighting forecasts were forecast using trending. In this class, the current customer numbers were assumed to remain constant while the corresponding energy sales were projected to grow approximately 0.05% annually in IL. Similar to the peak demand forecast, the Quad Cities' economic and demographic drivers are assumed to be a good proxy for MidAmerican Illinois service territory electric sales and customers in these forecasts.

Step 2: For residential, commercial and public authority, econometric models were built to forecast kWh per customer. The resulting kWh per customer forecasts were multiplied by the appropriate customer forecasts to arrive at a kWh sales forecast. For industrial, the kWh per customer values for each revenue class were calculated using customer and sales forecasts, and employed to check the presence of any discontinuity between the historical and forecasted values.

Step 3: The projected customers and sales numbers were modeled using data specific to the area being forecast. Economic data for the Quad Cities' metropolitan statistical area was used in building the models.

Economic and demographic variables

Some variables, such as customer numbers, price, sales, revenue class, jurisdiction, etc., were obtained internally from the company database while other data, such as economic, demographic and weather, were received from external sources.

The economic and demographic data for the models were obtained from the IHS Markit, Inc. database. The economic and demographic data forecast was performed by IHS Markit, Inc. in January 2021. The list of variables considered for the electric sales and customer forecasts is shown in Table 1. For MEC's Illinois service territory, economic and demographic variables specific to the Quad Cities metropolitan area were used in the forecasting process. The Quad Cities area encompasses MEC's Illinois service territory.

Table 1: List of economic and demographic variables considered for the 2022-2031 forecasts

Quad Cities MSA	
1	Real Gross Metropolitan Area Product (Millions 2012$)
2	Real Gross Metropolitan Area Product, Government, State and Local (Millions 2012$)
3	Real Gross Metropolitan Area Product, Manufacturing (Millions 2012$)
4	Population (Thousands)
5	Households, Family and Non-Family (Thousands)
6	Employment (NAICS), Total Non-Farm (Thousands)
7	Employment (NAICS), State and Local Government (Thousands)

Weather variables

The weather variables (derived from conditions at the Moline International Airport) used in the present forecast are:

Current month and previous month cooling degree days (CDD)
Current month and previous month heating degree days (HDD)

The present energy forecasts are based on billed data. This means that the sales numbers reflect, in part, the weather conditions from the previous month as well as the weather conditions for the current month, depending on the meter read date. To take this into account, both current month and previous month degree days are used in the modeling process. The forecasts used actual weather values for the historical period and normal weather values for the forecast period. In the 2022-2031 forecast, normal weather was defined as the average monthly degree days from 1991-2020.

To compare the growth rates the historical sales figures were "weather normalized" using average (normal) weather values. The normalization process consists of three steps. First, the historic predicted numbers were obtained from a regression model using the actual weather values. Second, the sales were re-calculated using average weather results.[1] Third, the difference between them, which defines the weather impact, was subtracted from the corresponding actual sales to arrive the normalized sales. In mathematical terms, the weather normalization can be written as follows:

$$NormalizedSales = ActualSales - [\Pr edictedSales_{ActualWeather} - \Pr edictedSales_{NormalWeather}]$$

[1] The same equation obtained in the first step was used.

Modeling

The econometric forecasting method used in this study assumes that the relationship between the dependent and independent variables is linear (additive) and defined as follows:

$$y = r + \alpha X + \beta Y + \gamma Z$$

where X, Y and Z are the variables, α, β and γ are the coefficients and r is the constant.

The forecasts were prepared using MetrixND software, version 4.7, developed by Itron, Inc. The forecasts typically involve finding a mathematical relationship between the dependent and independent variables. The steps taken in this forecast were as follows: The historical numbers since 2000 and the forecast numbers for economic variables until 2052 were obtained. These values were then exported into MetrixND and the analysis was carried out.

The primary criterion in selecting the variables was the relevance to the dependent variable being forecasted. Other considerations were the sign (the direction of change) and impact (the magnitude of elasticity coefficients) of variables on the forecasted dependent variable. Some of the statistical parameters important to the econometric model are:

Adjusted R-Square: It indicates the fraction of total variation explained by the independent variables in the regression. Its value ranges between 0 and 1, 1 being a perfect fit.

$$R^2 = \frac{ExplainedVariation}{TotalVariation}$$

Adjusted R^2 takes into account the number of variables (k) with a constant sample size (n) as this leads to a decrease in the degree of freedom (n-k). Thus, adjusted R^2 is more conservative.

$$\text{Adjusted } R^2 = 1 - (1 - R^2)\left(\frac{n-1}{n-k}\right)$$

F-Statistics (Probability): This is an alternative measure of goodness of the fit. F-statistics number indicates the probability that the estimated regression fit is purely accidental. This number is preferred to be as low as possible as compared to a critical number of 5%.

Mean Absolute Percentage Error (MAPE): MAPE defines the magnitude of errors in the model. It is the average of absolute values of the residual error percentages measured at each data point. The lower the MAPE number the better the model is considered to be.

Durbin-Watson Statistic: It tests the hypothesis that the errors from a model do not exhibit first order autocorrelation. In the absence of autocorrelation, the statistic has a value of 2. While it

varies between 0 and 4, a value above 2 indicates negative autocorrelation, while a value below 2 indicates positive autocorrelation.

Test parameters for statistical significance

The t-statistics and P-values show the statistical significance of independent variables in 95% confidence interval (or 5% significance level).

To evaluate the reasonableness of the model, the residual patterns and model fit statistics were studied. The residuals indicate the difference between the predicted and actual values. Any pattern associated with residuals suggests a missing variable(s). The residuals were studied through the autocorrelation factor and partial autocorrelation diagrams.

Customer forecasts

Variables and model statistics

The customer forecasts in general were straight-forward and involved fewer variables. The customer variables used in the models of different revenue classes are:

- Residential: Number of households in the Quad Cities Metropolitan Statistical Area (MSA), binary variable for the Illinois rate case impact and monthly binary variables
- Commercial: Time trend variable, binary variables for the Illinois rate case impact and monthly binary variables
- Industrials: Economic variable weighted between the number of households and the real gross metro area product for the Quad Cities, binary variable for the Illinois rate case impact and monthly binary variables
- Public authority: Non-farm employment in the Quad Cities MSA, binary variable for the Illinois rate case impact and monthly binary variables

The statistics for the customer forecasts are tabulated in Table 2.

Table 2: Adjusted R^2 and MAPE values for the customer forecasts

Revenue Class	MAPE	Adjusted R-squared
Residential	0.04%	0.997
Commercial	0.12%	1.000
Industrial	1.09%	0.999
Public Authority	0.44%	0.950

Customer forecast results

The monthly customer numbers are shown below at an average annual level for each revenue class.

Table 3: Summary of the historical and forecast average annual customer numbers in different classes

	Residential	Commercial	Industrial	Public Authority	Street Lighting	Total
2013	75,765	7,709	105	1,389	44	85,012
2014	75,812	7,765	99	1,392	44	85,111
2015	74,455	8,998	56	1,302	42	84,852
2016	74,298	9,209	49	1,288	42	84,886
2017	74,159	9,401	39	1,371	43	85,014
2018	73,933	9,653	38	1,410	44	85,079
2019	73,873	9,803	40	1,422	44	85,183
2020	73,810	9,920	42	1,396	44	85,212
2021	73,996	10,074	44	1,389	44	85,547
2022	74,009	10,167	45	1,389	44	85,655
2023	74,033	10,262	45	1,389	44	85,773
2024	74,051	10,355	45	1,389	44	85,884
2025	74,067	10,450	44	1,389	44	85,995
2026	74,085	10,547	44	1,389	44	86,110
2027	74,103	10,645	45	1,389	44	86,226
2028	74,118	10,744	45	1,389	44	86,339
2029	74,132	10,844	45	1,389	44	86,454
2030	74,142	10,947	45	1,389	44	86,568
2031	74,147	11,051	45	1,389	44	86,677

Sales forecasts

Variables and model statistics

The energy forecasts are more complicated and involve more variables than do the customer forecasts. For the residential, commercial and public authority classes, sales are determined by multiplying customers by use per customer. For the industrial class, sales are modeled directly. For the street lighting class, sales are forecast using trending. The sales forecast variables used in the industrial class model are:

- Industrial: Weighted economic variable made up of the real gross metropolitan area product for the Quad Cities MSA and the non-farm employment in the Quad Cities MSA, the number of billing days in each month and monthly binaries.

The statistics for the sales forecasts are tabulated in Table 4.

Table 4: Adjusted R^2 and MAPE values for the sales forecasts

Revenue Class	MAPE	Adjusted R-squared
Industrial	6.93%	0.301

The comparison of tables (Tables 2 and 4) clearly indicates that better statistics were obtained for the customer models than sales models. The reason is that there is more uncertainty in the sales forecasts due to the presence of multiple drivers and their possible interactions. For example, a relatively small change in the historical usage pattern of a large industrial customer could have a measureable impact on the total energy usage in this class. Similarly, the changes in billing cycle could have significant effect on the billed sales.

Sales forecast results

The monthly billed sales numbers were forecasted at an aggregate level for each revenue class. The annual historical data and 10-year forecast values are summarized in Table 5.

Table 5: Summary of the historical and forecast annual billed sales of different revenue classes (MWh)

	Residential	Commercial	Industrial	Public Authority	Street Lighting	Total
2013	687,543	443,376	686,082	185,177	12,599	2,014,777
2014	676,836	435,336	681,658	177,095	12,595	1,983,520
2015	627,826	461,907	641,935	163,747	10,129	1,905,544
2016	646,439	466,908	634,925	169,402	9,949	1,927,623
2017	606,492	465,721	637,991	163,514	10,487	1,884,204
2018	663,656	478,047	626,337	169,615	10,829	1,948,484
2019	640,126	459,416	619,944	166,444	6,735	1,892,665
2020	635,986	417,648	633,797	146,405	6,940	1,840,776
2021	623,531	447,093	659,498	149,929	6,852	1,886,904
2022	609,448	466,669	696,581	155,019	6,851	1,934,569
2023	605,127	467,558	693,863	155,924	6,855	1,929,327
2024	600,852	468,416	691,154	156,828	6,858	1,924,108
2025	596,646	469,199	688,453	157,733	6,862	1,918,892
2026	592,539	469,942	685,760	158,637	6,865	1,913,744
2027	588,518	470,852	683,075	159,541	6,869	1,908,855
2028	584,556	471,795	680,399	160,446	6,872	1,904,068
2029	580,661	472,788	677,730	161,350	6,875	1,899,405
2030	576,818	473,755	675,071	162,255	6,879	1,894,776
2031	573,005	474,673	672,419	163,159	6,882	1,890,137
The figures in the table above are retail billed MWh sales.						

Usage per customer (UPC) forecasts
For the residential, commercial and public authority classes, kWh per customer values was forecast using econometric models. For the industrial and street lighting classes, the kWh per customer forecast values were calculated using the forecast sales and customer numbers data.

UPC forecast results:
Residential model – Number of members per household in the Quad Cities MSA, billing days, cooling degree days (current month), heating degree days (current month), binary variable for the Illinois rate case impact, variable to estimate impact of COVID-19 and monthly binaries
Commercial model – Time trend multiplied by members per household variable, cooling degree days (current month), heating degree days (lagged month), billing days, hours of light, binary variable for the Illinois rate case impact, variable to estimate impact of COVID-19, an autoregressive term and monthly binaries
Public Authority model – Weighted economic variable consisting of members per household, number of households, real per capita income and non-farm employment in the Quad Cities MSA, billing days, heating degree days (current month), cooling degree days (current month), hours of light, binary variable for the Illinois rate case impact, an autoregressive term, variable to estimate impact of COVID-19 and monthly binaries

Table 6: Model Statistics

Revenue Class	MAPE
Residential	1.93%
Commercial	3.56%
Public Authority	4.11%

Methodology for the 2022-2031 Monthly Illinois Non-Coincident Electric Gross Peak Demand Forecast

2020 Electric Gross Peak Demand

The gross peak numbers used in the analysis are the historical gross peaks, which take into account demand side management impacts.

The gross peak load value was calculated according to the following equation:

Gross Peak = Native Peak Load + Residential Direct Load Control + Curtailment

Native Peak Load: For MEC's Illinois service territory, the 2020 native system peak load of 429 MW occurred on July 8, 2020 in the hour ending at 3:00 p.m. Central Daylight Time. Note: this figure does include the load of MEC Illinois' distribution only customers.

SummerSaver Program: SummerSaver is MEC's residential direct load control program. Load displaced due to the energy saving program which aims to curtail energy usage of on-peak hours was also received from the energy efficiency group. At the time of gross system peak, the SummerSaver program was not in effect.

Curtailment: Load displaced due to curtailment of customers on an interruptible rate. There was no curtailment event in effect at the time of gross system peak.

Source Data and Model
The historical hourly data underlying the model is load research data by class for MEC's Illinois service territory. The data was divided into the following classes: residential, small commercial, large commercial, small industrial and large industrial. This data was at the meter level. MEC used data from January 1, 2015 through December 31, 2020 to build a monthly non-coincident electric gross peak demand model for its Illinois service territory.

The class data was added together to derive the total Illinois load. Next, the monthly peak dates and times were calculated. Weather data, taken from the weather station at the Quad City International Airport in Moline, IL, associated with the peak dates were compiled for use in the model.

The forecasting model consists of an economic driver variable, a number of weather variables and monthly indicator variables.

Economic variables
Net Energy for Load

For the 2022-2031 forecast, MEC used the area's net energy for load as the economic driver.

Weather variables
Six weather variables were used:

1. Summer peak day maximum temperature (summer = May through September)
2. Summer peak day average daily dew point
3. Winter peak day minimum temperature (winter = November through March)
4. Winter peak day three day build up (the sum of the average temperatures of the three days prior to the winter peak day)
5. Shoulder peak day HDD65 (shoulder = April and October; HDD65 = 65 less the peak day average temperature, if the average temperature is less than 65; = 0 if the average temperature is greater than 65)
6. Shoulder peak day CDD65 (shoulder = April and October; CDD65 = the peak day average temperature less 65, if the average temperature is greater than 65; = 0 if the average temperature is less than 65)

The forecast weather was calculated using the rank and average method for 2008 through 2020. First, the weather variables, as measured on the monthly peak days, were averaged for each month across the years. This revealed the monthly order for each weather variable throughout the year. For each year, the peak day weather variables were then ranked. Next, the ranked results were averaged: the highest values averaged, the second highest values averaged, and so on. The average of the highest values was then assigned to the month with the highest value, the average of the second highest values was then assigned to the month with the second highest value and so on.

The remaining explanatory variables in the model were monthly binary variables and a binary variable indicating whether or not the gross peak demand occurred on a Friday.

Table 7: MEC Illinois monthly non-coincident peak demand forecast

Year	Month	MEC Illinois MW Peak
2021	1	299.24
2021	2	302.76
2021	3	318.10
2021	4	279.73
2021	5	283.96
2021	6	378.87
2021	7	426.76
2021	8	434.43
2021	9	415.87
2021	10	263.89
2021	11	261.21
2021	12	318.31
2022	1	305.75
2022	2	308.59
2022	3	324.63
2022	4	285.61
2022	5	289.32
2022	6	385.88
2022	7	434.12
2022	8	441.92
2022	9	423.03
2022	10	269.56
2022	11	266.81
2022	12	324.77
2023	1	305.62
2023	2	309.13
2023	3	324.77
2023	4	285.84
2023	5	289.04
2023	6	385.34
2023	7	433.17
2023	8	441.09
2023	9	422.18
2023	10	269.80
2023	11	267.07
2023	12	324.98
2024	1	305.25
2024	2	308.83
2024	3	325.44
2024	4	285.76
2024	5	288.75
2024	6	384.73
2024	7	432.27
2024	8	440.26
2024	9	421.53
2024	10	269.67
2024	11	266.97
2024	12	324.84
2025	1	304.97
2025	2	308.44
2025	3	325.12
2025	4	286.25
2025	5	288.48
2025	6	384.26
2025	7	431.48
2025	8	439.44
2025	9	420.90
2025	10	269.43
2025	11	266.72
2025	12	324.51
2026	1	304.66
2026	2	308.19
2026	3	324.76
2026	4	286.04
2026	5	288.83
2026	6	383.87
2026	7	430.85
2026	8	438.62
2026	9	420.18
2026	10	269.09
2026	11	266.49
2026	12	324.15
2027	1	304.21
2027	2	307.83
2027	3	324.46
2027	4	285.70
2027	5	288.50
2027	6	384.21
2027	7	430.18
2027	8	437.85
2027	9	419.35
2027	10	268.59
2027	11	266.09
2027	12	323.71

Weather in the Hourly Model

Using average daily temperature as an example, this is how a chaotic normal weather pattern (weather pattern used to create a realistic 8760 for dispatch simulations) is created:

1. Sort the Order variable (a ranking of the days in the month by average temperature, determined over the 1991-2020 time period) and the associated dates from highest to lowest within each month.
2. Sort the average temperature variable from highest to lowest within each month.
3. Assign the highest average temperature value to the date that corresponds to the highest value in the Order variable within the month.
4. Sort the Order variable by date for each month.
5. Create the average temperature output variable for the reference year.
6. Rotate the average temperature output variable to multiple years for forecasting purposes.

Hourly Load Shape Models by Class

Hourly models by class (residential, commercial, industrial, public authority and street lighting) were developed in MetrixND. The source data was hourly load research data by class for MEC's service territory. The classes of load research data were residential, small commercial, large commercial, small industrial and large industrial. The residential class load shape was developed using the residential load research data. The commercial class load shape was developed by combining the small and large commercial load research data. The industrial class load shape was developed using the small and large industrial load research data. The street lighting load shape was a lighting load shape from MEC's load research library. The public authority class load shape was developed by using a weighted average of the residential, commercial, industrial and street lighting class load shapes, based on the rate codes that made up the public authority class. Making use of linear regression, the models were estimated on data from January 1, 2017 through December 31, 2020. The models contain weather, binary and trend explanatory variables. There were twenty four models for each class. A forecast was developed through May 31, 2027, using the weather forecast developed as described above.

Long-Term Hourly Modeling

The long-term hourly forecast was developed in MetrixLT. The hourly profiles by class were calibrated to existing calendar month sales forecasts by class and an overall monthly non-coincident peak demand forecast.

Energy Efficiency in the Load Forecast

MEC has energy efficiency programs operating in its Illinois service territory. Estimated past energy savings are implicit in the historical data used to derive the electric sales forecast models. Without adjustment, this method implies that the level of future estimated program savings will be similar to past estimated program savings. Estimated program impacts in the forecast period are not projected to deviate measurably from estimated historical levels, so no adjustment was made to the forecasting models.

Load Forecast for the Retail Choice Switching

MEC has one active alternative retail supplier in its Illinois service territory. The retail choice switching forecast was derived by reviewing recent switching activity and projecting forward recent trends. Switched load is expected to grow from 15.4 MW in 2021 to 15.6 MW in 2027.

Table 8: Retail Switching: Monthly Peak Demand and Energy Forecasts

	Residential kWh	Commercial kWh	Industrial kWh	Public Authority kWh	Street Lighting kWh	Total kWh	MW Demand
Jan-21	35,423	1,908,573	1,756,747	476,246	-	4,176,989	10.80
Feb-21	36,662	1,966,838	2,351,400	959,899	-	5,314,799	12.89
Mar-21	42,770	3,107,367	2,464,393	1,055,750	-	6,670,280	13.00
Apr-21	31,565	2,407,340	2,500,000	1,275,838	-	6,214,743	12.00
May-21	22,480	1,412,408	2,500,000	444,045	-	4,378,932	14.83
Jun-21	23,453	2,553,898	2,500,000	2,062,456	-	7,139,807	13.89
Jul-21	26,469	2,432,149	2,500,000	1,837,566	-	6,796,184	14.41
Aug-21	33,352	2,312,814	2,500,000	1,834,679	-	6,680,845	15.40
Sep-21	34,512	2,353,103	2,500,000	1,454,626	-	6,342,241	13.67
Oct-21	70,157	2,419,743	2,500,000	1,126,026	-	6,115,926	11.24
Nov-21	36,000	1,825,841	2,500,000	966,156	-	5,327,997	12.25
Dec-21	36,371	2,323,670	2,500,000	887,093	-	5,747,134	10.33
Jan-22	35,476	1,862,378	2,500,000	476,961	-	4,874,815	10.83
Feb-22	36,717	1,943,224	2,500,000	961,339	-	5,441,280	12.92
Mar-22	42,834	3,108,921	2,500,000	1,057,334	-	6,709,089	13.03
Apr-22	31,612	2,414,565	2,500,000	1,277,752	-	6,223,930	12.03
May-22	22,514	1,416,647	2,500,000	444,711	-	4,383,871	14.87
Jun-22	23,488	2,561,563	2,500,000	2,065,551	-	7,150,602	13.92
Jul-22	26,509	2,439,448	2,500,000	1,840,324	-	6,806,281	14.44
Aug-22	33,402	2,319,755	2,500,000	1,837,432	-	6,690,589	15.44
Sep-22	34,564	2,360,165	2,500,000	1,456,808	-	6,351,538	13.71
Oct-22	70,262	2,427,005	2,500,000	1,127,716	-	6,124,983	11.26
Nov-22	36,054	1,831,321	2,500,000	967,605	-	5,334,980	12.28
Dec-22	36,426	2,330,644	2,500,000	888,424	-	5,755,494	10.36
Jan-23	35,529	1,867,968	2,500,000	477,676	-	4,881,174	10.86
Feb-23	36,772	1,949,056	2,500,000	962,782	-	5,448,610	12.95
Mar-23	42,898	3,118,251	2,500,000	1,058,921	-	6,720,070	13.07
Apr-23	31,660	2,421,812	2,500,000	1,279,669	-	6,233,141	12.06
May-23	22,547	1,420,899	2,500,000	445,378	-	4,388,824	14.90
Jun-23	23,523	2,569,251	2,500,000	2,068,650	-	7,161,424	13.96
Jul-23	26,549	2,446,770	2,500,000	1,843,085	-	6,816,403	14.48
Aug-23	33,452	2,326,717	2,500,000	1,840,189	-	6,700,358	15.48
Sep-23	34,616	2,367,249	2,500,000	1,458,994	-	6,360,859	13.74
Oct-23	70,368	2,434,289	2,500,000	1,129,408	-	6,134,065	11.29
Nov-23	36,108	1,836,817	2,500,000	969,057	-	5,341,983	12.31
Dec-23	36,481	2,337,638	2,500,000	889,757	-	5,763,876	10.38
Jan-24	35,583	1,873,574	2,500,000	478,393	-	4,887,550	10.88
Feb-24	36,827	1,954,905	2,500,000	964,226	-	5,455,959	12.98
Mar-24	42,963	3,127,610	2,500,000	1,060,510	-	6,731,082	13.10
Apr-24	31,707	2,429,080	2,500,000	1,281,590	-	6,242,377	12.09
May-24	22,581	1,425,163	2,500,000	446,047	-	4,393,791	14.94
Jun-24	23,559	2,576,962	2,500,000	2,071,754	-	7,172,275	13.99
Jul-24	26,588	2,454,113	2,500,000	1,845,851	-	6,826,552	14.51
Aug-24	33,502	2,333,700	2,500,000	1,842,950	-	6,710,153	15.51
Sep-24	34,668	2,374,353	2,500,000	1,461,184	-	6,370,205	13.78
Oct-24	70,473	2,441,595	2,500,000	1,131,102	-	6,143,171	11.32
Nov-24	36,162	1,842,330	2,500,000	970,511	-	5,349,004	12.34
Dec-24	36,535	2,344,654	2,500,000	891,092	-	5,772,282	10.41
Jan-25	35,636	1,879,197	2,500,000	479,111	-	4,893,944	10.91
Feb-25	36,883	1,960,773	2,500,000	965,673	-	5,463,328	13.02
Mar-25	43,027	3,136,997	2,500,000	1,062,101	-	6,742,125	13.13
Apr-25	31,755	2,436,371	2,500,000	1,283,513	-	6,251,638	12.12
May-25	22,615	1,429,440	2,500,000	446,716	-	4,398,771	14.98
Jun-25	23,594	2,584,696	2,500,000	2,074,863	-	7,183,153	14.03
Jul-25	26,628	2,461,479	2,500,000	1,848,620	-	6,836,727	14.55
Aug-25	33,552	2,340,704	2,500,000	1,845,716	-	6,719,972	15.55
Sep-25	34,720	2,381,479	2,500,000	1,463,376	-	6,379,575	13.81
Oct-25	70,579	2,448,923	2,500,000	1,132,800	-	6,152,302	11.35
Nov-25	36,217	1,847,859	2,500,000	971,967	-	5,356,043	12.37
Dec-25	36,590	2,351,691	2,500,000	892,429	-	5,780,711	10.44
Jan-26	35,690	1,884,837	2,500,000	479,830	-	4,900,357	10.94
Feb-26	36,938	1,966,657	2,500,000	967,122	-	5,470,717	13.05
Mar-26	43,092	3,146,412	2,500,000	1,063,695	-	6,753,198	13.16
Apr-26	31,802	2,443,683	2,500,000	1,285,439	-	6,260,924	12.15
May-26	22,649	1,433,730	2,500,000	447,386	-	4,403,766	15.01
Jun-26	23,629	2,592,453	2,500,000	2,077,976	-	7,194,059	14.06
Jul-26	26,668	2,468,866	2,500,000	1,851,394	-	6,846,928	14.59
Aug-26	33,603	2,347,729	2,500,000	1,848,485	-	6,729,817	15.59
Sep-26	34,772	2,388,627	2,500,000	1,465,572	-	6,388,971	13.84
Oct-26	70,685	2,456,273	2,500,000	1,134,499	-	6,161,457	11.38
Nov-26	36,271	1,853,405	2,500,000	973,426	-	5,363,102	12.40
Dec-26	36,645	2,358,749	2,500,000	893,769	-	5,789,163	10.46
Jan-27	35,743	1,890,494	2,500,000	480,550	-	4,906,787	10.97
Feb-27	36,993	1,972,560	2,500,000	968,573	-	5,478,126	13.08
Mar-27	43,157	3,155,855	2,500,000	1,065,291	-	6,764,302	13.20
Apr-27	31,850	2,451,017	2,500,000	1,287,367	-	6,270,234	12.18
May-27	22,683	1,438,033	2,500,000	448,057	-	4,408,774	15.05
Jun-27	23,665	2,600,234	2,500,000	2,081,094	-	7,204,993	14.10
Jul-27	26,708	2,476,276	2,500,000	1,854,172	-	6,857,156	14.62
Aug-27	33,653	2,354,775	2,500,000	1,851,259	-	6,739,687	15.63
Sep-27	34,824	2,395,796	2,500,000	1,467,771	-	6,398,391	13.88
Oct-27	70,791	2,463,645	2,500,000	1,136,202	-	6,170,638	11.41
Nov-27	36,325	1,858,968	2,500,000	974,887	-	5,370,180	12.43
Dec-27	36,700	2,365,828	2,500,000	895,110	-	5,797,638	10.49

Table 9: Retail Switching: Monthly Customer Count Forecasts

	Residential	Commercial	Industrial	Public Authority	Street Lighting	Total
Jan-21	72	162	5	18	-	257
Feb-21	72	160	5	18	-	255
Mar-21	72	158	5	18	-	253
Apr-21	72	158	5	18	-	253
May-21	72	158	5	18	-	253
Jun-21	72	158	5	18	-	253
Jul-21	72	158	5	18	-	253
Aug-21	72	158	5	18	-	253
Sep-21	72	158	5	18	-	253
Oct-21	72	158	5	18	-	253
Nov-21	72	158	5	18	-	253
Dec-21	72	158	5	18	-	253
Jan-22	72	158	5	18	-	253
Feb-22	72	158	5	18	-	253
Mar-22	72	158	5	18	-	253
Apr-22	72	158	5	18	-	253
May-22	72	158	5	18	-	253
Jun-22	72	158	5	18	-	253
Jul-22	72	158	5	18	-	253
Aug-22	72	158	5	18	-	253
Sep-22	72	158	5	18	-	253
Oct-22	72	158	5	18	-	254
Nov-22	72	158	5	18	-	254
Dec-22	72	158	5	18	-	254
Jan-23	72	158	5	18	-	254
Feb-23	72	158	5	18	-	254
Mar-23	72	158	5	18	-	254
Apr-23	72	159	5	18	-	254
May-23	72	159	5	18	-	254
Jun-23	72	159	5	18	-	254
Jul-23	72	159	5	18	-	254
Aug-23	72	159	5	18	-	254
Sep-23	72	159	5	18	-	254
Oct-23	72	159	5	18	-	254
Nov-23	72	159	5	18	-	254
Dec-23	72	159	5	18	-	254
Jan-24	72	159	5	18	-	254
Feb-24	72	159	5	18	-	254
Mar-24	72	159	5	18	-	254
Apr-24	72	159	5	18	-	254
May-24	72	159	5	18	-	254
Jun-24	72	159	5	18	-	254
Jul-24	72	159	5	18	-	254
Aug-24	72	159	5	18	-	254
Sep-24	72	159	5	18	-	254
Oct-24	72	159	5	18	-	254
Nov-24	72	159	5	18	-	254
Dec-24	72	159	5	18	-	255
Jan-25	72	159	5	18	-	255
Feb-25	72	159	5	18	-	255
Mar-25	72	159	5	18	-	255
Apr-25	72	160	5	18	-	255
May-25	72	160	5	18	-	255
Jun-25	72	160	5	18	-	255
Jul-25	72	160	5	18	-	255
Aug-25	72	160	5	18	-	255
Sep-25	72	160	5	18	-	255
Oct-25	72	160	5	18	-	255
Nov-25	72	160	5	18	-	255
Dec-25	72	160	5	18	-	255
Jan-26	72	160	5	18	-	255
Feb-26	72	160	5	18	-	255
Mar-26	72	160	5	18	-	255
Apr-26	72	160	5	18	-	255
May-26	72	160	5	18	-	255
Jun-26	72	160	5	18	-	255
Jul-26	72	160	5	18	-	255
Aug-26	72	160	5	18	-	255
Sep-26	72	160	5	18	-	255
Oct-26	72	160	5	18	-	255
Nov-26	72	160	5	18	-	255
Dec-26	72	160	5	18	-	256
Jan-27	72	160	5	18	-	256
Feb-27	72	160	5	18	-	256
Mar-27	72	160	5	18	-	256
Apr-27	72	160	5	18	-	256
May-27	72	160	5	18	-	256
Jun-27	72	160	5	18	-	256
Jul-27	72	160	5	18	-	256
Aug-27	72	160	5	18	-	256
Sep-27	72	160	5	18	-	256
Oct-27	72	160	5	18	-	256
Nov-27	72	160	5	18	-	256
Dec-27	73	160	5	18	-	256

Table 10: Multi-Year Historical Load Detail

	Small Industrial		Residential		Large Commercial		Small Commercial		Large Industrial		Lighting		Total	
	kWh	kW Demand	kWh	kW Demand	kWh	kW Demand	kWh	kW Demand	kWh	kW Demand	kWh	kW Demand	kWh	kW Demand
Jan-17	17,643,075	29,769	57,977,890	117,589	20,385,857	35,826	30,420,713	66,064	41,994,393	71,152	1,734,512	3,879	170,156,440	296,942
Feb-17	15,756,617	29,462	44,021,650	106,654	17,287,706	33,990	24,262,955	61,208	37,197,836	70,011	1,457,256	3,879	139,984,021	268,951
Mar-17	17,280,745	29,180	45,605,028	91,439	18,901,840	33,169	26,010,158	57,160	44,233,569	72,242	1,443,616	3,879	153,474,956	257,166
Apr-17	16,283,695	29,096	37,404,411	81,857	17,209,645	32,876	21,844,958	51,842	37,253,573	64,808	1,237,598	3,879	131,233,880	224,477
May-17	17,770,081	33,320	40,409,445	129,352	18,635,395	42,498	22,585,265	58,269	43,296,459	73,617	1,139,598	3,879	143,836,244	303,334
Jun-17	18,905,124	35,256	59,570,771	169,806	22,132,809	48,273	26,629,776	69,779	44,361,827	75,071	1,037,139	3,879	172,637,446	373,755
Jul-17	19,975,106	36,077	74,492,245	179,789	24,423,954	50,700	29,493,396	75,994	33,469,146	70,913	1,106,048	3,879	182,959,896	371,881
Aug-17	19,298,369	33,375	53,880,710	143,099	21,736,650	45,152	26,592,946	63,066	43,539,287	72,918	1,226,027	3,879	166,273,989	338,195
Sep-17	18,157,551	34,651	50,680,626	160,565	20,241,510	46,811	24,688,069	67,089	41,884,820	69,945	1,342,061	3,879	156,994,638	354,368
Oct-17	17,728,362	31,737	41,595,585	100,631	18,195,001	38,461	27,198,973	68,520	44,249,008	71,340	1,555,061	3,879	150,521,990	253,516
Nov-17	16,558,923	29,426	47,417,055	96,504	17,623,034	31,673	30,994,744	72,586	39,123,520	67,903	1,644,205	3,879	153,361,481	267,234
Dec-17	17,098,024	29,079	59,350,639	138,883	19,482,390	34,996	30,470,912	65,697	40,418,303	69,139	1,770,647	3,879	168,590,915	302,752
Jan-18	18,524,003	31,257	62,788,813	144,730	15,485,175	26,993	38,685,763	86,788	41,152,504	70,760	1,734,512	3,879	178,370,770	310,974
Feb-18	16,517,562	30,908	53,484,994	122,320	13,543,018	26,291	33,275,863	75,351	37,460,696	71,191	1,457,256	3,879	155,739,389	293,550
Mar-18	17,377,100	28,976	47,462,847	96,877	13,558,806	23,368	31,328,752	68,552	38,094,821	70,405	1,443,616	3,879	149,265,942	250,790
Apr-18	16,768,543	30,419	42,214,934	94,681	12,778,232	23,892	29,727,850	69,943	40,837,875	69,904	1,237,598	3,879	143,565,031	267,425
May-18	19,072,982	35,055	50,233,294	171,243	14,880,115	33,139	28,855,187	78,128	42,650,914	69,807	1,139,598	3,879	156,832,091	348,731
Jun-18	19,416,471	36,279	64,600,808	178,871	16,323,550	36,258	32,078,038	82,288	39,072,173	73,591	1,037,139	3,879	172,528,179	367,227
Jul-18	20,035,969	36,770	72,249,504	193,532	17,138,715	36,227	34,395,732	88,588	43,055,039	71,861	1,106,048	3,879	187,981,006	401,105
Aug-18	20,216,858	34,917	65,855,522	179,191	16,695,156	34,247	33,047,543	81,443	40,712,492	69,745	1,226,027	3,879	177,753,597	357,930
Sep-18	18,106,776	35,616	50,344,979	156,188	14,104,690	32,946	28,295,191	81,725	37,401,667	68,184	1,342,061	3,879	149,595,364	353,268
Oct-18	17,444,664	33,012	41,124,561	103,600	12,690,746	28,770	32,834,109	74,260	42,617,339	69,688	1,555,061	3,879	148,266,479	269,414
Nov-18	16,667,259	28,764	51,663,750	114,281	13,106,795	23,599	33,876,768	73,797	42,008,059	70,859	1,644,205	3,879	158,966,837	273,559
Dec-18	16,745,952	28,904	58,489,703	119,213	13,735,500	23,561	34,848,285	74,384	42,241,265	67,928	1,770,647	3,879	167,831,352	281,505
Jan-19	19,219,926	32,148	62,638,847	146,025	11,493,073	20,808	39,434,893	81,717	43,730,226	70,018	1,535,019	3,436	178,051,984	313,738
Feb-19	17,518,773	31,715	57,334,851	125,012	10,506,453	19,864	36,426,413	79,551	34,710,531	67,196	1,286,149	3,436	157,783,170	298,185
Mar-19	18,391,692	32,070	50,686,627	128,002	10,450,191	19,712	34,176,828	78,560	42,205,162	70,443	1,283,057	3,436	157,193,557	296,048
Apr-19	17,655,912	31,918	37,750,125	80,708	9,247,737	17,237	28,506,124	67,069	43,408,049	71,723	1,099,125	3,436	137,667,072	240,921
May-19	18,522,437	34,686	40,327,593	112,209	9,930,216	22,327	28,562,401	71,885	42,165,555	72,613	1,010,309	3,436	140,518,511	272,164
Jun-19	19,005,596	35,078	54,379,555	175,229	11,308,514	24,493	30,638,887	83,052	37,680,599	73,673	916,109	3,436	153,929,261	318,318
Jul-19	21,093,154	37,330	74,253,594	192,187	13,066,516	27,922	39,112,382	94,788	40,134,377	71,174	978,184	3,436	188,638,206	397,607
Aug-19	20,462,808	36,346	59,991,764	160,916	12,060,346	24,728	35,063,377	85,026	39,505,374	66,125	1,087,844	3,436	168,171,513	349,275
Sep-19	19,526,051	37,075	51,971,577	146,560	11,147,698	23,774	31,196,324	83,172	36,756,606	64,560	1,188,514	3,436	151,786,771	324,084
Oct-19	18,552,005	34,602	41,713,664	107,323	9,614,938	21,029	32,494,937	79,503	37,597,855	69,740	1,375,138	3,436	141,348,537	275,242
Nov-19	17,675,090	31,003	48,891,551	102,835	9,958,203	18,369	39,407,298	84,445	32,773,372	67,243	1,455,422	3,436	150,160,936	267,044
Dec-19	17,913,209	31,426	55,995,260	114,385	10,442,405	18,211	37,950,628	79,857	42,647,251	73,051	1,570,980	3,436	166,519,733	281,009
Jan-20	20,142,952	34,045	57,265,331	120,390	8,430,646	14,595	40,093,691	85,409	42,261,237	76,703	1,458,945	3,265	169,652,802	296,332
Feb-20	18,883,638	34,510	50,429,858	114,919	7,711,587	14,673	36,726,118	83,291	39,920,780	72,939	1,264,408	3,265	154,936,390	288,080
Mar-20	18,942,711	32,026	45,567,620	86,930	7,224,887	12,522	32,377,654	71,739	43,897,521	72,918	1,215,760	3,265	149,226,153	249,782
Apr-20	16,700,607	29,869	41,208,848	90,627	6,385,778	11,433	26,548,266	62,658	41,733,314	70,581	1,041,412	3,265	133,618,223	238,544
May-20	17,243,046	31,260	40,930,258	111,592	6,708,785	14,139	24,911,716	63,017	40,745,948	70,824	958,427	3,265	131,498,180	265,632
Jun-20	20,005,027	36,283	64,209,266	166,774	8,584,067	17,891	32,752,212	83,491	45,193,055	75,968	870,654	3,265	171,614,282	346,363
Jul-20	21,781,063	37,277	77,584,472	179,460	9,697,732	19,355	38,628,631	92,187	46,415,347	75,995	932,090	3,265	195,039,335	388,093
Aug-20	21,317,577	39,164	66,505,004	189,255	8,992,449	19,098	35,509,448	89,849	46,844,227	75,968	1,037,113	3,265	180,205,818	381,979
Sep-20	19,239,104	35,562	43,829,756	151,398	7,320,745	16,507	29,248,331	77,847	19,145,984	61,392	1,133,592	3,265	119,917,511	305,915
Oct-20	19,138,391	33,262	43,424,700	97,235	7,166,583	14,595	32,212,352	69,346	31,031,628	65,441	1,309,682	3,265	134,283,336	245,195
Nov-20	18,305,267	32,840	45,135,060	106,427	6,934,767	12,467	29,630,727	68,529	38,026,498	69,655	1,384,994	3,265	139,417,312	244,920
Dec-20	18,880,297	31,419	59,065,874	119,675	7,688,575	12,858	34,644,158	71,249	43,670,796	71,749	1,492,955	3,265	165,442,655	278,115
Jan-21	20,731,916	35,047	58,846,021	114,659	5,539,788	9,398	38,722,283	82,051	44,126,187	74,811	1,424,034	3,191	169,390,229	282,080
Feb-21	19,808,089	36,671	59,419,226	137,215	5,396,783	10,456	39,063,219	87,648	35,622,611	72,082	1,192,226	3,191	160,502,153	315,162
Mar-21	20,510,481	33,430	43,588,610	90,005	5,043,643	8,609	33,041,578	70,715	45,386,258	75,761	1,189,301	3,191	148,759,870	251,533
Apr-21	19,689,189	36,008	39,338,919	92,855	4,783,637	9,805	29,792,589	67,868	43,482,625	74,705	1,018,861	3,191	138,105,820	251,793
May-21	20,813,370	39,211	43,326,298	129,545	5,099,659	11,088	29,399,181	77,080	35,743,286	76,977	937,072	3,191	135,318,865	282,077
Jun-21	22,905,139	42,146	69,020,944	187,107	6,278,806	13,453	37,087,515	95,221	45,354,298	80,330	851,028	3,191	181,497,729	383,888
Jul-21	23,234,503	41,233	73,266,914	186,032	6,691,978	13,928	39,512,656	98,569	46,724,797	78,225	910,323	3,191	190,341,170	388,614
Aug-21	24,092,280	42,680	73,571,199	183,904	6,775,019	13,586	40,683,561	100,845	49,335,534	79,223	1,012,108	3,191	195,469,701	389,277
Sep-21	21,798,584	40,430	52,801,415	163,761	5,733,079	11,875	34,174,882	89,626	40,337,986	77,373	1,106,075	3,191	155,952,021	327,576
Oct-21	20,866,208	37,433	41,252,631	95,491	5,151,780	10,657	35,851,012	84,112	32,977,770	71,023	1,278,908	3,191	137,378,308	275,799
Nov-21	19,625,231	34,092	44,460,099	100,175	4,884,327	8,621	36,247,721	87,079	27,262,092	62,541	1,352,455	3,191	133,831,925	248,744
Dec-21	20,213,386	34,530	53,834,465	108,283	5,271,479	9,151	35,979,093	80,098	43,831,762	77,734	1,458,813	3,191	160,588,998	273,576

Low and High Load Forecast Scenarios

The required low and high hourly load forecast scenarios were created by taking the 95% confidence interval around each class-level sales, customer and use per customer forecast and the 95% confidence interval around the non-coincident gross peak demand forecast. MetrixND, the load forecasting software used for the sales, customers use per customer and non-coincident peak demand forecasts, provided the upper and lower bounds of a 95% confidence interval around each monthly forecast value. This software feature allowed the construction of upper and lower bound forecasts for the residential, commercial, industrial and public authority sales forecasts. The street lighting sales forecast was multiplied by 0.99 and 1.01 to generate, respectively, a lower and upper bound street lighting sales forecast. As mentioned above, the monthly residential, commercial and public authority sales forecasts were calculated by multiplying together a class-level customer forecast and a class-level use per customer forecast. For each month in the forecast period, the lower bound of each class-level sales forecast was found by multiplying the lower bound of the class-level customer count forecast by the lower bound of the class-level use per customer forecast. The same procedure was followed to arrive at the upper bound of the class-level sales forecasts. The industrial sales forecast was generated by a class-level total sales model. The lower and upper bounds of the 95% confidence interval were an output of the modeling process.

The lower bound forecasts of each class' 95% confidence interval were summed to arrive at the lower bound for the total sales forecast, while the upper bound forecasts of each class' 95% confidence interval were summed to arrive at the upper bound for the total sales forecast. The lower bound class-level sales forecasts were then applied to the appropriate load profile and, along with the lower bound non-coincident gross peak demand forecast, was run through MetrixLT to generate the lower bound of the hourly forecast. The same procedure was undertaken with the upper bound sales forecasts and non-coincident peak demand forecast to generate the upper bound of the hourly forecast.

The reference case temperature assumptions in the hourly load forecast model were not changed for the scenarios. The reference case weather-related assumptions in the sales, the use per customer and the non-coincident peak demand forecast models for MEC's Illinois service territory were not changed in the scenarios. The reference case forecasts for retail switching sales, customers and demand in MEC's Illinois service territory were not changed in the scenarios.