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January 31, 2025

Board of Commissioners of Public Utilities
Prince Charles Building
120 Torbay Road, P.O. Box 21040
St. John's, NL A1A 5B2

Attention: Jo-Anne Galarneau
Executive Director and Board Secretary

Re: Short-Term Load Forecasting Accuracy Report for 2024

Please find enclosed Newfoundland and Labrador Hydro's annual report on the accuracy of its load forecasting software. The analysis contained within the report encompasses data from January 1 to December 31, 2024.

Should you have any questions, please contact the undersigned.

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO

Shirley A. Walsh
Senior Legal Counsel, Regulatory
SAW/kd

Encl.

ecc:

Board of Commissioners of Public Utilities
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Short-Term Load Forecasting Accuracy Island Interconnected System

2024

January 31, 2025

A report to the Board of Commissioners of Public Utilities

newfoundland labrador hydro

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1.0 Load Forecasting

1.1 Load Forecasting Software

On February 23, 2023, Newfoundland and Labrador Hydro ("Hydro") adopted a new load forecasting software for its short-term load forecasting with a period of 14 days. This replaced the previous forecasting software, Nostradamus. This software uses a combination of regression and neural network models that are trained using a sequence of continuous historic periods of hourly weather and half-hourly demand data. The models then forecast system demand for a 14-day horizon using predictions of weather parameters.

This report will cover the calendar year 2024, representing the first full year using the new load forecasting software.

1.2 Short-Term Load Forecasting

Hydro uses its short-term load forecast to manage the power system and ensure adequate generating resources are available to meet customer demand.

1.2.1 Utility Load[1]

Hydro has a contract with WSP Global Inc. ("WSP")[2] to provide the weather parameters in the form of half-hourly weather forecasts delivered twice a day for the preceding 14 days. At the same time weather forecast data is provided, WSP also provides recent observed data at the locations used in the forecasts.[3] The actual and forecast data are automatically retrieved from WSP and input to the load forecast database.

The load forecasting software uses a variety of weather parameters for forecasting, provided a sufficient historical record is available for training. Hydro currently uses air temperature, wind speed, and cloud cover. The load forecasting software can use each variable more than once; for example, both the current and forecasted air temperatures are used in forecasting load. Wind chill is calculated within the load forecasting software program using a set formula that requires wind speed and dry bulb input.

[1] Utility load is the summation of Newfoundland Power Inc. ("Newfoundland Power") and Hydro Island Rural requirements.
[2] WSP acquired Wood PLC in 2022.
[3] The locations used for the weather forecast data are St. John's, Gander, and Deer Lake.

The load forecasting software uses weather data for St. John's, Gander, and Deer Lake as well as a parameter that indicates daily daylight hours. Training and verification[4] periods are selected to provide sufficient time to ensure a range of weather parameters are included (e.g., high and low temperatures), but is still short enough that the historic load is representative of loads that can be expected in the near future. The load forecasting software is trained monthly[5] to further improve forecasting accuracy. The goal is to improve the forecasting accuracy by providing the software updated data and trends of recent loads and weather patterns. This helps ensure variables such as load growth and extreme weather are properly accounted for when predicting future load requirements.

Demand data for the Island Interconnected System utility load is automatically imported to the load forecasting software each half hour. Newfoundland Power and Hydro's total utility load (conforming)[6] is input in the model. Industrial load (non-conforming),[7] which is not a function of weather, is added to the forecasts within the software to derive the total load forecast.

The load forecasting software model creates separate sub-models for weekdays, weekends, and holidays during the training process to account for the variation in customer use of electricity. The load forecasting software has separate holiday groups for statutory holidays and for days that are known to have unusual loads, such as the days between Christmas Day and New Year's Day as well as the closure of schools during the Easter break.

1.2.2 Industrial Load

Industrial loads tend to be almost constant, as industrial processes are independent of weather. Under the current procedure, the Power on Order[8] for each Industrial customer plus the expected owned generation from Corner Brook Pulp and Paper Limited are used as the industrial load forecasts. Industrial customer loads can be modified based on knowledge of customer loads; for instance, a

[4] The load forecasting software will automatically perform verification over a designated historical period upon completion of training. The verification period is used to evaluate the accuracy of the forecast using data on which the model has not trained. This ensures that the model is not memorizing the correct answer.
[5] In the Short-Term Accuracy Load Report for 2023, Hydro reported it would conduct this training quarterly. With the increase of household electrification and efficiency measures, including the installation of mini-split systems, conversion from oil heating to electric, and higher prevalence of electric vehicles, Hydro has adjusted this process to occur monthly for a more accurate projected load measurement.
[6] Conforming load refers to load that changes consistently with the load pattern of an area.
[7] Non-conforming load refers to load that changes abnormally with respect to the load pattern of an area.
[8] Power on Order refers to the firm power Hydro agrees to deliver to a customer and the customer agrees to purchase from Hydro, as set out in a service agreement.

temporary decrease in requirements at Vale Newfoundland and Labrador Limited is associated with planned maintenance. The expected load can be modified in any given hour of the 14-day forecast, or the default value can be modified to be used indefinitely.[9]

1.2.3 Supply and Demand Status Reporting

Since December 2014, Hydro has submitted periodic reports on the accuracy of load forecasting.[10,11,12,13,14] The forecast peak as of 7:20 a.m. is reported daily to the Board in Hydro's Supply and Demand Status reports.[15] The weather forecast for the following 14 days and the observed weather data for the previous day are input into the model at approximately 5:00 a.m. and 2:00 p.m.; the load forecasting software is then run every half hour of the day. Following completion of the software run, the generated forecast is made available for reference to assist in monitoring and managing both available and spinning reserves. The within-day forecast updates are primarily used to manage operating reserves, particularly in advance of the forecast system peaks.

1.3 Potential Sources of Variance

As with any forecasting analysis, there will be discrepancies between forecast and actual values. Typical sources of variance in the load forecasting are as follows:

- Differences in the export values in the forecast compared to actual exports throughout the day, which can be scheduled one hour in advance. These sources of variances are noted in the Supply and Demand Status reports to the Board;

[9] In Hydro's Energy Management System, there is functionality to modify the industrial load value when the Newfoundland and Labrador System Operator is aware of circumstances where an Industrial customer will be reducing load; for example, if an Industrial customer is completing maintenance, the forecast load can be modified to provide a more accurate load forecast.
[10] Load forecasting accuracy reports were originally filed in relation to the Board of Commissioners of Public Utilities ("Board") *Investigation and Hearing into Supply Issues and Power Outages on the Island Interconnected System* proceeding.
[11] Until 2023, the reporting was based on Hydro's former load forecasting software program, Nostradamus.
[12] As per "Newfoundland and Labrador Hydro – Accuracy of Nostradamus Load Forecasting Reports – Filing Schedule," Board of Commissioners of Public Utilities, January 18, 2018, the Board indicated that the reporting frequency should change to annually commencing November 15, 2018.
[13] In correspondence "Newfoundland and Labrador Hydro – the Board's Investigation and Hearing into Supply Issues and Power Outages on the Island Interconnected System – Accuracy of Nostradamus Load Forecasting – Request for Change to Filing Schedule," Newfoundland and Labrador Hydro, October 23, 2018, Hydro requested to change the annual filing date of this report to January 31, which allows the report to cover the previous calendar year.
[14] In "Newfoundland and Labrador Hydro – Accuracy of Nostradamus Load Forecasting Annual Reports – Board's Response to Hydro's Request to Change Filing Date," Board of Commissioners of Public Utilities, November 6, 2018, the Board accepted Hydro's request to change the annual filing date of this report.
[15] Hydro's daily Supply and Demand Status reports can be accessed at http://www.pub.nf.ca/applications/IslandInterconnectedSystem/DemandStatusReports.php.

- Differences in the industrial load forecast due to unexpected changes in Industrial customer loads. For example, if an Industrial customer were to undertake maintenance that Hydro was unaware of, or increase production to meet customer demand, the actual load would deviate from the scheduled load;
- Inaccuracies in the weather forecast—particularly temperature, wind speed, or cloud cover; and
- Non-uniform customer behaviour, resulting in unpredictability.

Delivery of the Nova Scotia Block and Supplemental Block continued in 2024.[16,17,] These scheduled deliveries are included in the forecast peak, as reported by 7:20 a.m. daily. Decisions regarding additional exports over the Maritime Link during peak periods are carefully coordinated and include conservative consideration of Hydro's native load forecast and available supply. The forecast peak does not always account for exports, as exports can be contracted at any time throughout the day. As noted previously, this can result in an error when comparing a peak forecast prepared in the early morning against an actual peak that includes real-time exports. As of January 25, 2024, Hydro began reporting the exports at peak on the daily Supply and Demand Status reports.

2.0 Forecast Accuracy Summary

2.1 Analysis

This report examines the accuracy of the Hydro forecasting process from January 1, 2024, through December 31, 2024.

In Appendix A, Table A-1 to Table A-12 present the daily Island Interconnected System forecast total peak, actual total peak, available Island supply forecast reserve, as well as the error and percent error. The data is also presented in Appendix B, Chart B-1 to Chart B-4.

In Appendix B, Chart B-3 and Chart B-4 plot the total forecast and actual total peaks, as shown in Chart B-1 and Chart B-2, with the addition of a bar chart showing the difference between the two data series in megawatts. In both the tables and charts, a positive error is an overestimate and a negative error is an

[16] The first delivery of the Nova Scotia Block occurred in August 2021 and the first delivery of the Supplemental Block occurred in November 2021.
[17] Pursuant to the Energy and Capacity Agreement between Nalcor Energy and Emera Inc., the Nova Scotia Block is a firm annual commitment of 980 GWh, supplied from the Muskrat Falls Hydroelectric Generating Facility on peak. https://www.emeranl.com/docs/librariesprovider13/maritime-link-documents/commercial-agreements/amended-and-restated-energy-and-capacity-agreement.pdf?sfvrsn=dec21945_2.

underestimate. Appendix B, Chart B-3 and Chart B-4 reveal the forecasting process consistently overestimates the peak of the total load. This is typically a result of an overestimate in industrial load forecast and/or export activity over the Maritime Link that was contracted after the forecast was published.

The total Island Interconnected System peak load, including exports during the period, varied between 667 MW (August 30, 2024) and 1,968 MW (January 24, 2024). The available Island supply varied from 1,085 MW to 2,277 MW. Island Interconnected System reserves were sufficient throughout the period.

In Appendix A, Table A-13 to Table A-24 present error statistics for the utility peak forecast (i.e., the portion of the forecast actually determined by the model). Neither the Industrial forecast nor the Maritime Link export activity is included in the values presented in these tables. In Appendix B, Chart B-5 and Chart B-6 plot the data and error for the utility peak. Examination of the utility forecast provides more insight into the accuracy of the load forecasting software, as changes or errors in the industrial forecast and the presence of export activity may increase the perceived error as compared to the total forecast as of 7:20 a.m., making the total forecast appear worse or, at times, better than it is.

2.2 Data Adjustments and Forecast Issues

In analysing the data, there are instances that require adjustments for a variety of reasons. In these instances, the data for affected hours is either replaced using interpolation or is adjusted by a set value so that in the future, when the data for this period is used in training, the load forecasting software will use a value not affected by the event.

During 2024, there were various occasions where weather data did not import into the load forecasting software correctly, or weather data was missing from the service provider, WSP. In these instances, the weather data was manually input into the software program based on hourly data from Environment Canada.

On January 24, 2024, there was a short-term voltage reduction for Newfoundland Power and the actual Island utility load values in the load forecast software were adjusted upward by 6 MW for the reduction period.

On July 28, 2024, a system imbalance caused a significant load shedding event on the Island. The utility load values were interpolated to smooth out the load shed period.

2.3 Days of High Error[18]

The bolded dates in Appendix A, Table A-13 to Table A-24 indicate the days of high error[19] in the load forecast. Based on discussions with Board staff on December 19, 2022, Hydro will continue to select days of highest error based on the Utility load (Appendix A, Table A-13 to Table A-24 data) in 2024. The days with the highest error (up to three days per month) are selected for a more detailed analysis. The following are the days with the highest error. Additional information on each is provided in Sections 2.3.1 to 2.3.10.3.

- January 18;
- March 1, 4, and 31;
- April 18;
- May 12, 20, and 25;
- June 1, 2, and 25;
- July 2 and 16;
- August 1;
- October 1, 2, and 25;
- November 16 and 18; and,
- December 12, 28, and 31, 2024.

There were no instances of high error days in February or September 2024.

Each high error day includes a table with a peak data summary. The data reported to the Board ("Board Forecast" and "Board Actual") includes utility load, industrial load, and exports. The Island forecast data includes utility load as well as Industrial customer load.

[18] All plots showing the hourly distribution of the load forecast in comparison to the actual total load do not include Maritime Link export activity to aid in determining other sources of differences between actual and forecast loads.
[19] Hydro considers an error below 4.95% to be within acceptable forecasting limits.

2.3.1 January 2024

In January 2024, the forecast utility peak was 1,656 MW on January 24, 2024, which is consistent with the actual utility peak of 1,647 MW on that day. Absolute error was 26 MW on average, with an average percent error[20] of -0.5%, an average absolute error[21] of 2.0%, and an average actual/forecast of -0.5%.

2.3.1.1 January 18, 2024

Table 1 provides a summary of forecast peak data for January 18, 2024.

Table 1: Peak Data Summary for January 18, 2024

	Load (MW)	Time	Error (%)[22]	Temperature Delta (°C)[23]	Wind Speed Delta (km/h)[24]
Utility Forecast	1,320	5:00 p.m.	-5.7	1.00	6.00
Utility Actual	1,399	5:00 p.m.		1.00	6.00
Island Forecast	1,490	5:00 p.m.	-1.6	1.00	6.00
Island Actual	1,514	6:00 p.m.		1.00	1.00
Board Forecast	1,665	N/A	N/A	N/A	N/A
Board Actual	1,681				

The forecast peak at 7:20 a.m., as reported to the Board, was 1,665 MW; the actual reported peak was 1,681 MW. Chart 1 to Chart 5 include hourly plots of forecast and actual values to assist in determining the sources of the differences between actual and forecast loads.

Chart 1 shows the hourly distribution of the total load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted a 5:00 p.m. peak of 1,490 MW; the actual peak was 1,514 MW[25] and occurred at 6:00 p.m., resulting in an underestimate of 1.6%. The load forecast at the time of peak was 1,485 MW.

[20] Average of all daily errors.
[21] Average of all absolute value daily errors.
[22] Negative percentages indicate an under-forecasted peak. Positive percentages indicate an over-forecasted peak.
[23] Temperature difference at forecast peak and actual peak. Negative values indicate that the temperature was warmer than forecast. Positive values indicate the temperature was colder than forecast.
[24] Wind speed difference at the forecast peak and the actual peak. Negative values indicate wind speed was more than forecast. Positive values indicate the wind speed was less than forecast.
[25] The actual total peak reported in the daily Supply and Demand Status reports is based on a five-minute time step; however, the load forecasting software reports on an hourly time step, sometimes resulting in a different peak value.

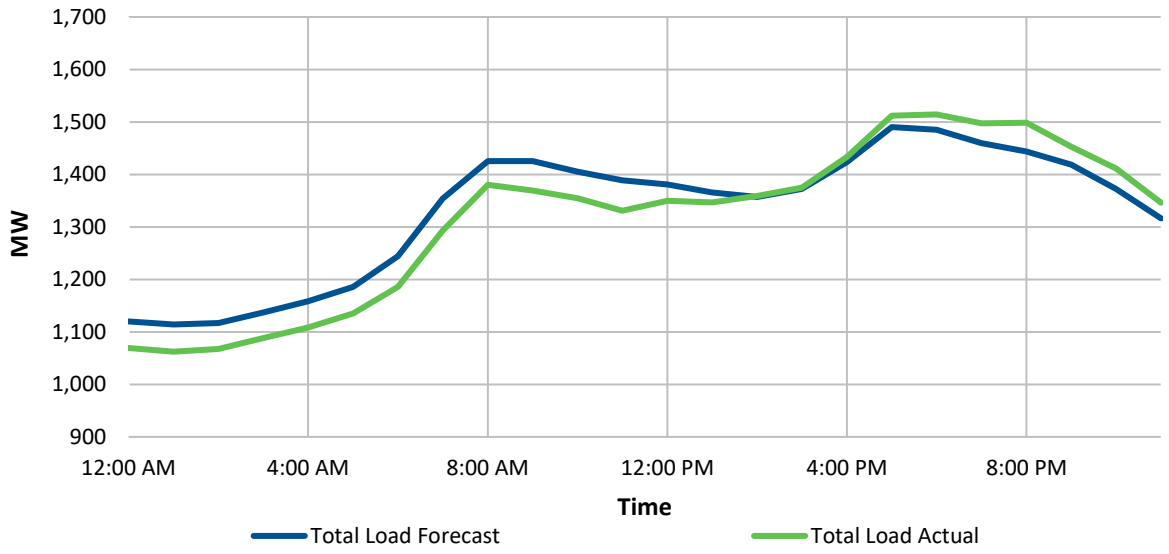

Chart 1: Forecast vs Actual Total Load for January 18, 2024

Chart 2 shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 5:00 p.m. of 1,320 MW; the actual peak was 1,399 MW, resulting in an underestimate of 5.7%.

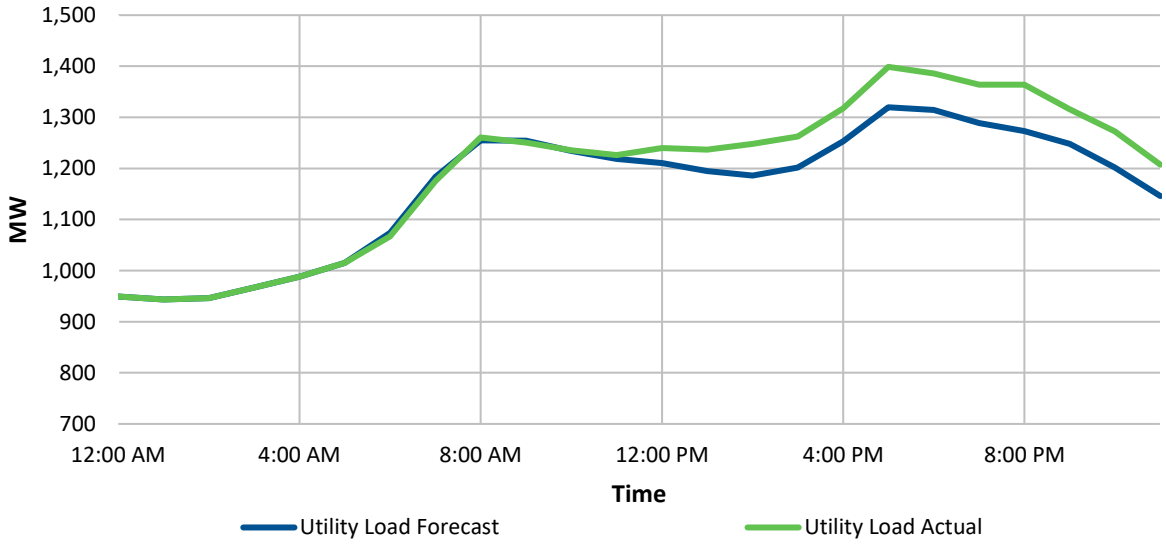

Chart 2: Forecast vs Actual Utility Load for January 18, 2024

Chart 3 shows the actual temperature in St. John's compared to the forecast. From 8:00 a.m. until 7:00 p.m., the temperature was colder than forecast by 1°C to 2°C. This likely contributed to under-forecasted peak.

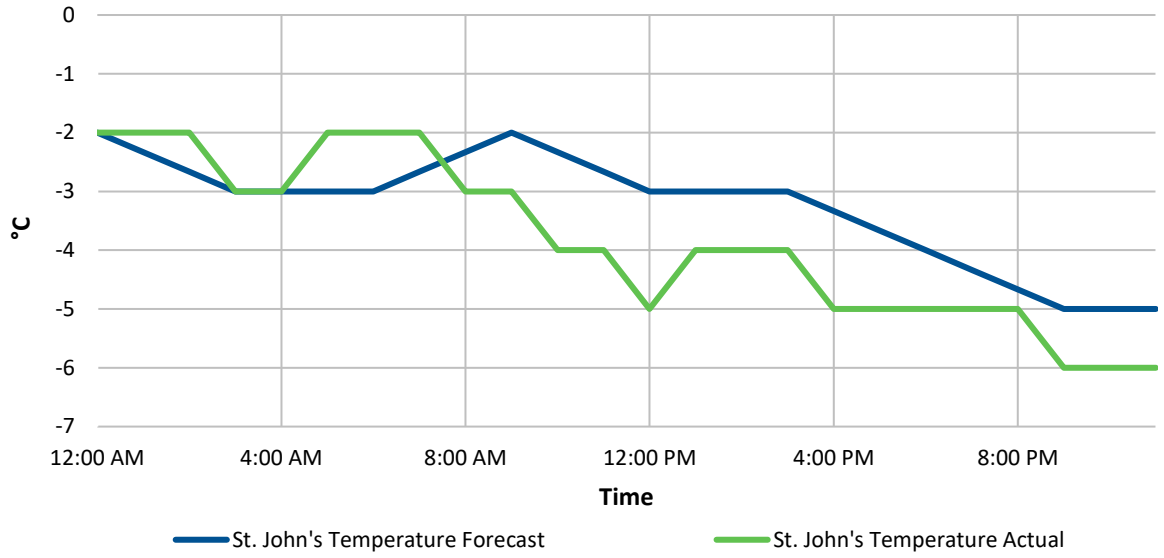

Chart 3: Forecast vs Actual Temperature for January 18, 2024

Chart 4 shows the actual wind speed in St. John's compared to the forecast. The actual wind speed varied both higher and lower than forecast throughout the day.

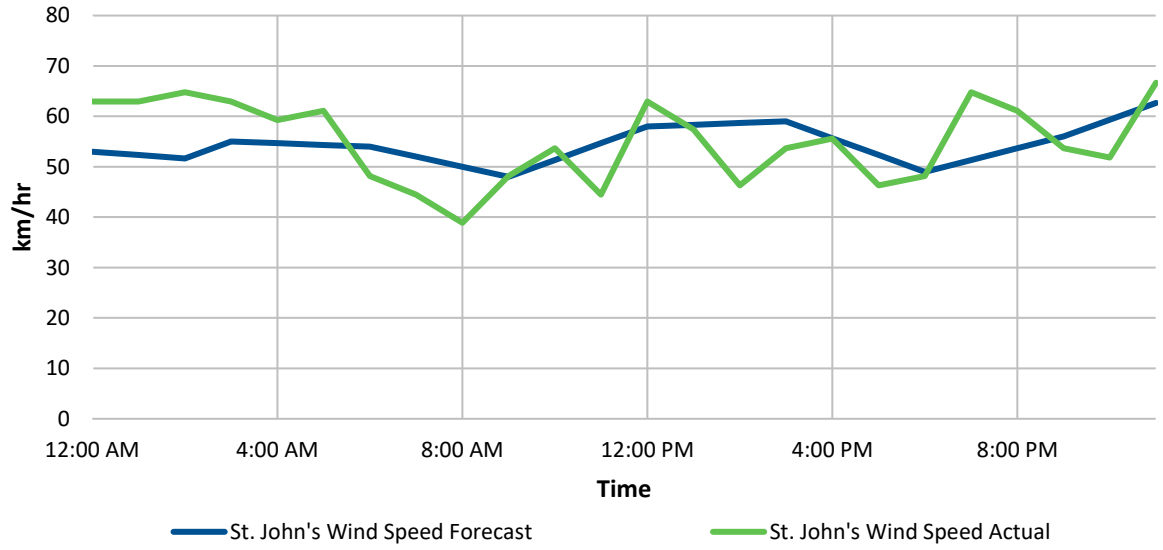

Chart 4: Forecast vs Actual Wind Speed for January 18, 2024

Chart 5 shows the actual cloud cover in St. John's compared to the forecast. It was more cloudy than forecast for the majority of the day.

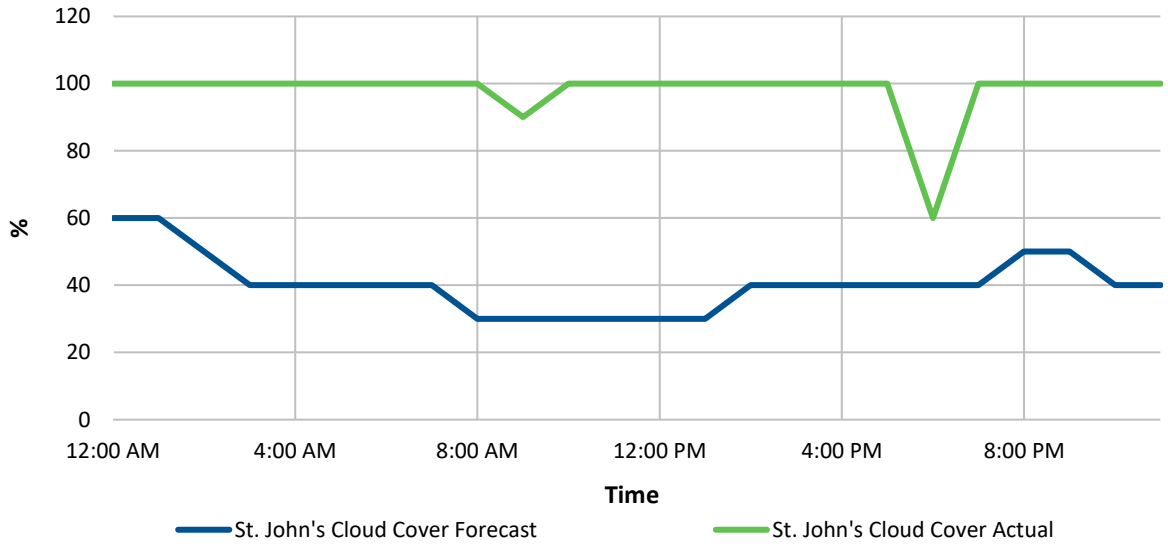

Chart 5: Forecast vs Actual Cloud Cover for January 18, 2024

The discrepancy between Utility Actual and Utility Forecast load was primarily attributed to the weather forecast.

2.3.2 March 2024

In March 2024, the forecast utility peak was 1,333 MW on March 5, 2024, which is consistent with the actual utility peak for that day of 1,297 MW. The actual utility peak of 1,367 MW occurred on March 1, 2024, and was 6.1%[26] higher compared with the forecast utility peak for that day of 1,288 MW. More information on March 1, 2024, is provided in Section 2.3.2.1. Absolute error was 24 MW on average, with an average percent error[27] of -0.9%, an average absolute error[28] of 2.1%, and an average actual/forecast of -1.0%.

[26] Calculated as actual load minus forecasted load divided by forecasted load (1,367 MW – 1,288 MW) / 1,288 MW = 6.1%.
[27] Average of all daily errors.
[28] Average of all absolute value daily errors.

2.3.2.1 March 1, 2024

Table 2 provides a summary of forecast peak data for March 1, 2024.

Table 2: Peak Data Summary for March 1, 2024

	Load (MW)	Time	Error (%)[29]	Temperature Delta (°C)[30]	Wind Speed Delta (km/h)[31]
Utility Forecast	1,288	6:00 p.m.	-5.7	2.00	0.00
Utility Actual	1,367	7:00 p.m.		2.00	4.00
Island Forecast	1,445	6:00 p.m.	-1.8	2.00	0.00
Island Actual	1,471	7:00 p.m.		2.00	4.00
Board Forecast	1,450	N/A	N/A	N/A	N/A
Board Actual	1,479				

The forecast peak at 7:20 a.m., as reported to the Board, was 1,450 MW; the actual reported peak was 1,479 MW. Chart 6 to Chart 10 include hourly plots of forecast and actual values to assist in determining the sources of the differences between actual and forecast loads.

Chart 6 shows the hourly distribution of the total load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted a 6:00 p.m. peak of 1,445 MW; the actual peak was 1,471 MW[32] and occurred at 7:00 p.m., resulting in an underestimate of 1.8%. The load forecast at the time of peak was 1,444 MW.

[29] Negative percentages indicate an under-forecasted peak. Positive percentages indicate an over-forecasted peak.
[30] Temperature difference at forecast peak and actual peak. Negative values indicate that the temperature was warmer than forecast. Positive values indicate the temperature was colder than forecast.
[31] Wind speed difference at the forecast peak and the actual peak. Negative values indicate wind speed was more than forecast. Positive values indicate the wind speed was less than forecast.
[32] The actual total peak reported in the daily Supply and Demand Status reports is based on a five-minute time step; however, the load forecasting software reports on an hourly time step, sometimes resulting in a different peak value.

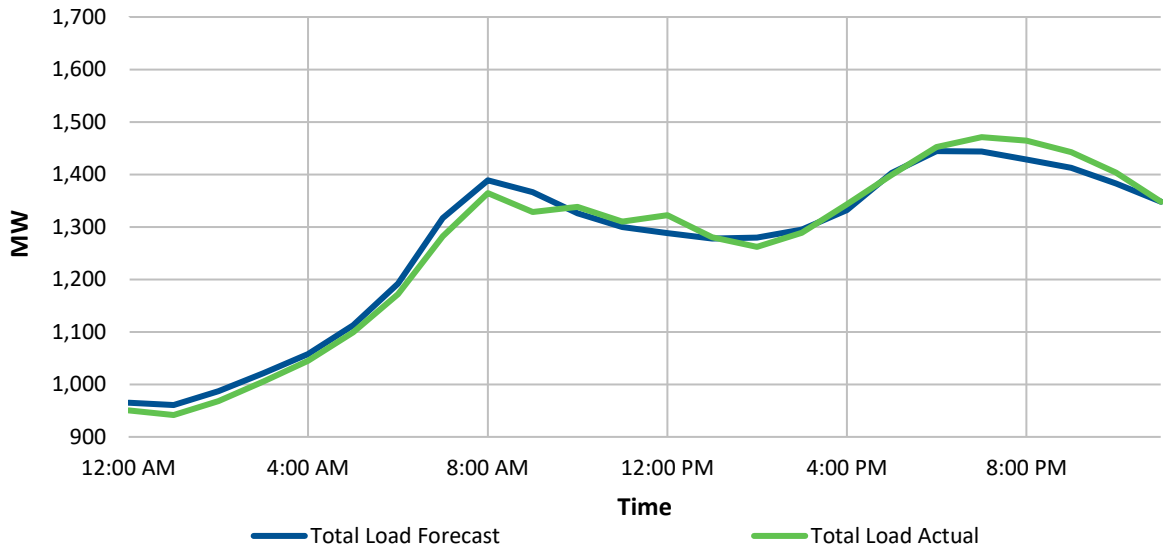

Chart 6: Forecast vs Actual Total Load for March 1, 2024

Chart 7 shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 6:00 p.m. of 1,288 MW; the actual peak was 1,367 MW and occurred at 7:00 p.m., resulting in an underestimate of 5.7%. The load forecast at the time of peak was also 1,288 MW.

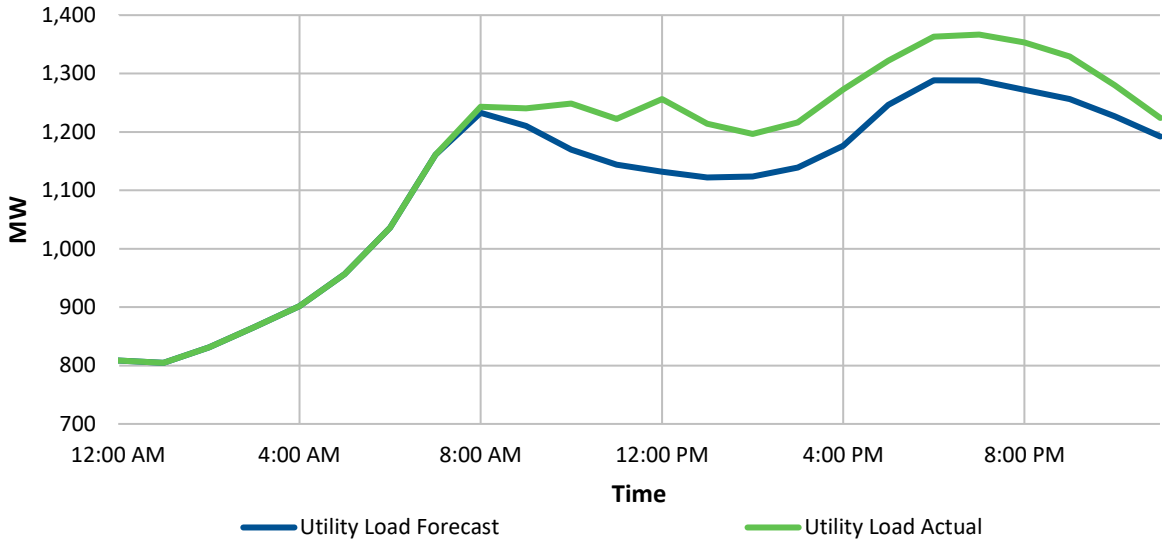

Chart 7: Forecast vs Actual Utility Load for March 1, 2024

Chart 8 shows the actual temperature in St. John's compared to the forecast. From 4:00 a.m. until midnight, the temperature was colder than forecast by an average of 2°C. This likely contributed to under-forecasted peak.

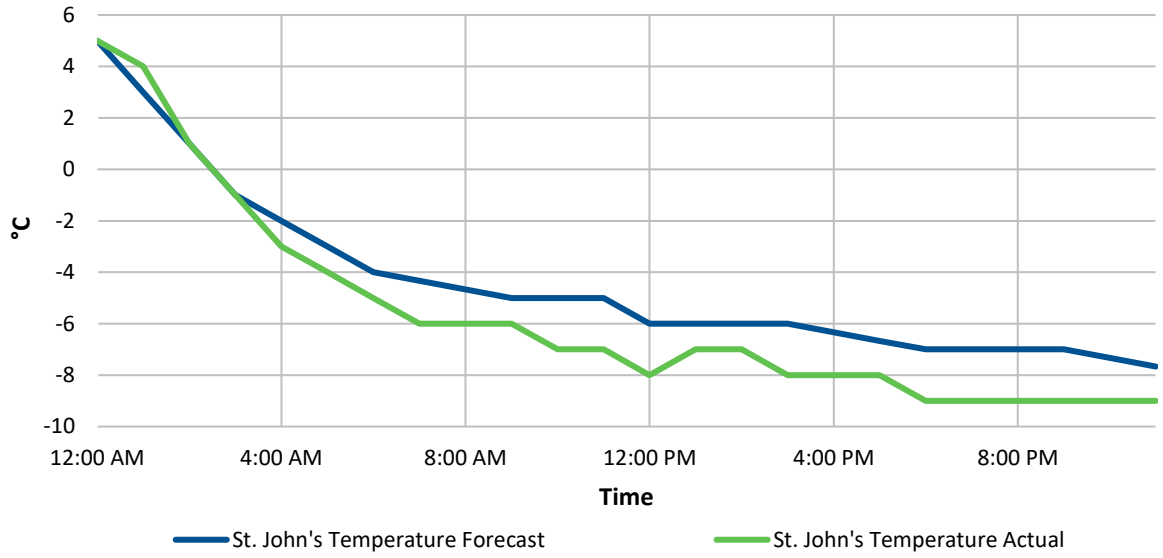

Chart 8: Forecast vs Actual Temperature for March 1, 2024

Chart 9 shows the actual wind speed in St. John's compared to the forecast. The actual wind speed was higher than forecast prior to noon, and lower than forecast for the remainder of the day.

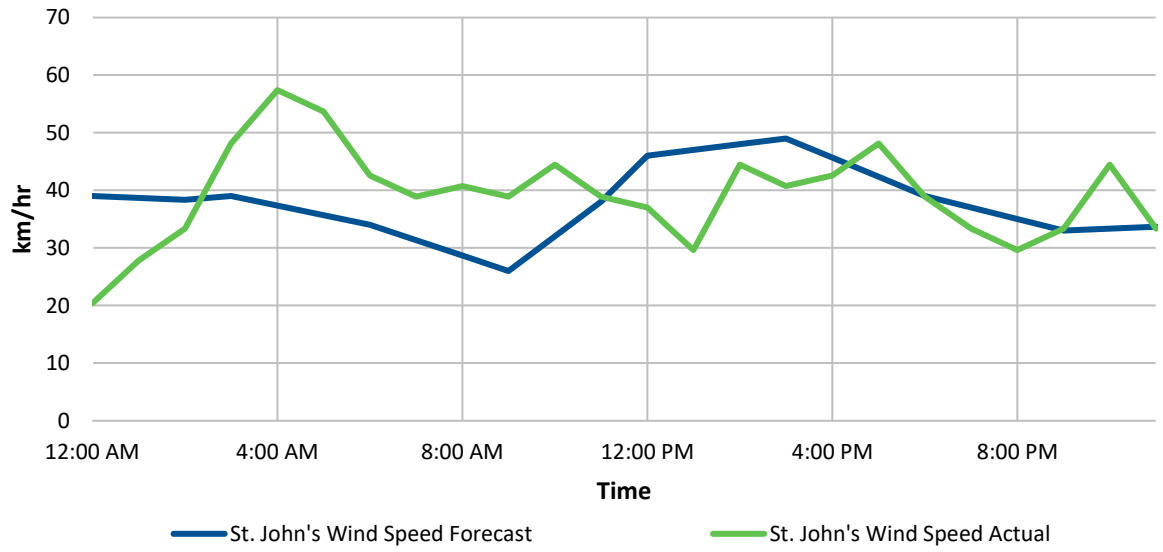

Chart 9: Forecast vs Actual Wind Speed for March 1, 2024

Chart 10 shows the actual cloud cover in St. John's compared to the forecast. It was more cloudy than forecast for the majority of the day.

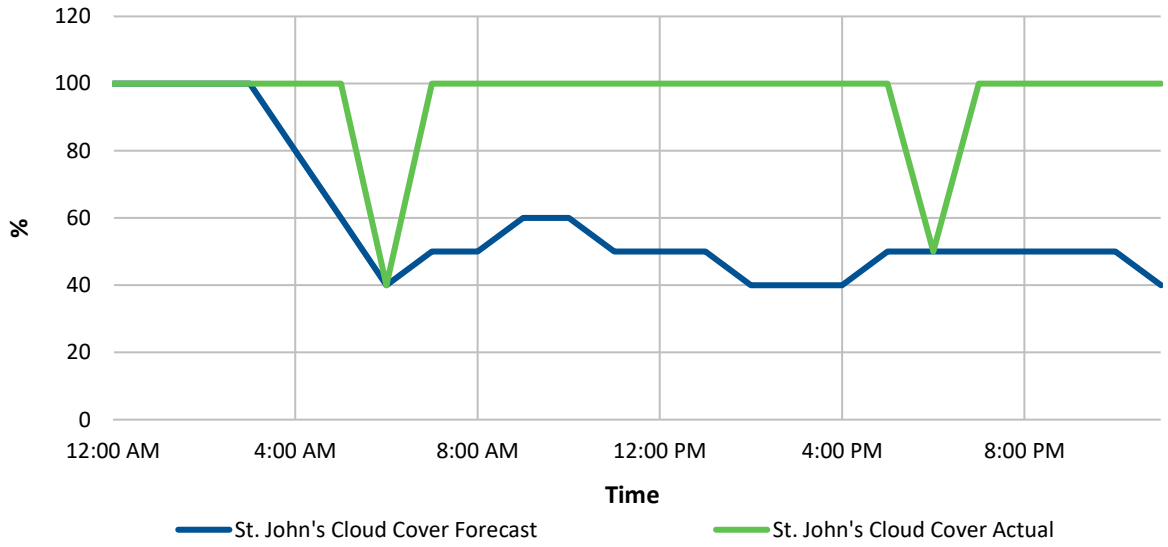

Chart 10: Forecast vs Actual Cloud Cover for March 1, 2024

The discrepancy between Utility Actual and Utility Forecast load was primarily attributed to the weather forecast.

2.3.2.2 March 4, 2024

Table 3 provides a summary of forecast peak data for March 4, 2024.

Table 3: Peak Data Summary for March 4, 2024

	Load (MW)	Time	Error (%)[33]	Temperature Delta (°C)[34]	Wind Speed Delta (km/h)[35]
Utility Forecast	1,262	7:00 p.m.	7.1	(1.00)	12.00
Utility Actual	1,178	8:00 p.m.		(2.00)	6.00
Island Forecast	1,418	7:00 p.m.	7.3	(1.00)	12.00
Island Actual	1,321	8:00 p.m.		(2.00)	6.00
Board Forecast	1,420	N/A	N/A	N/A	N/A
Board Actual	1,325				

[33] Negative percentages indicate an under-forecasted peak. Positive percentages indicate an over-forecasted peak.
[34] Temperature difference at forecast peak and actual peak. Negative values indicate that the temperature was warmer than forecast. Positive values indicate the temperature was colder than forecast.
[35] Wind speed difference at the forecast peak and the actual peak. Negative values indicate wind speed was more than forecast. Positive values indicate the wind speed was less than forecast.

The forecast peak at 7:20 a.m., as reported to the Board, was 1,420 MW; the actual reported peak was 1,325 MW. Chart 11 to Chart 15 include hourly plots of forecast and actual values to assist in determining the sources of the differences between actual and forecast loads.

Chart 11 shows the hourly distribution of the total load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted a 7:00 p.m. peak of 1,418 MW; the actual peak was 1,321 MW[36] and occurred at 8:00 p.m., resulting in an overestimate of 7.3%. The load forecast at the time of peak was 1,412 MW.

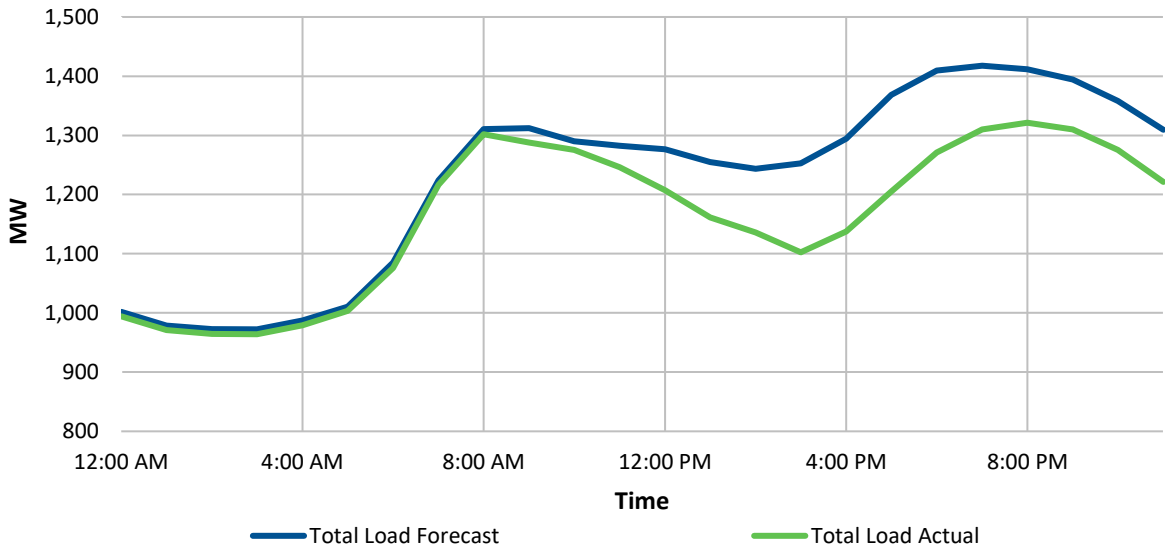

Chart 11: Forecast vs Actual Total Load for March 4, 2024

Chart 12 shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 7:00 p.m. of 1,262 MW; the actual peak was 1,178 MW and occurred at 8:00 p.m., resulting in an overestimate of 7.1%. The load forecast at the time of peak was 1,256 MW, resulting in an overestimate of 6.6% at the time of peak.

[36] The actual total peak reported in the daily Supply and Demand Status reports is based on a five-minute time step; however, the load forecasting software reports on an hourly time step, sometimes resulting in a different peak value.

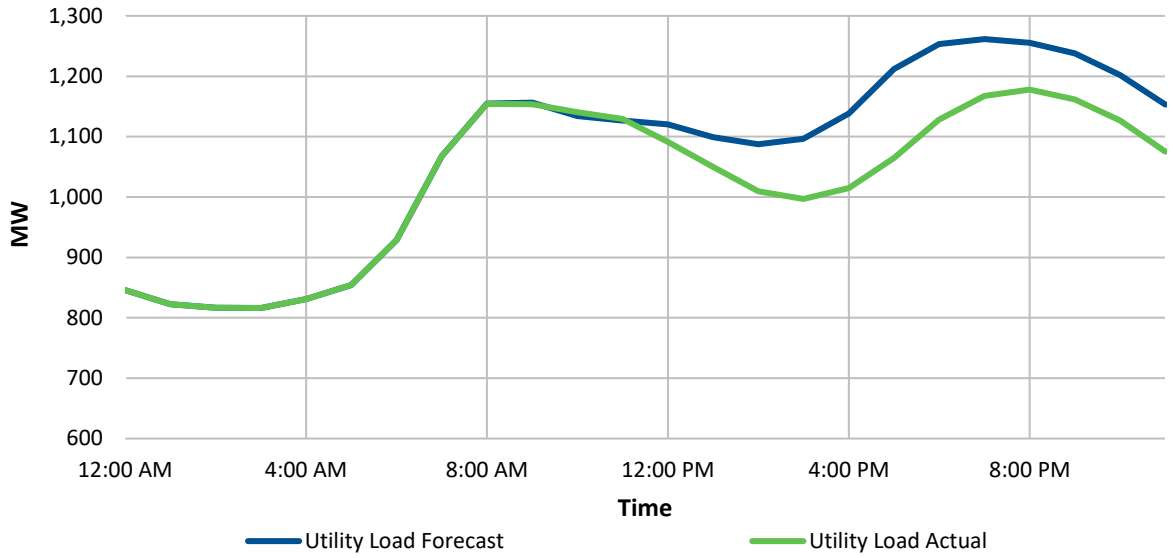

Chart 12: Forecast vs Actual Utility Load for March 4, 2024

Chart 13 shows the actual temperature in St. John's compared to the forecast. From 9:00 a.m. until midnight, the temperature was warmer than forecast by an average of 2°C. This likely contributed to the forecast error and the peak shifting from the predicted 7:00 p.m. to the actual 8:00 p.m. peak.

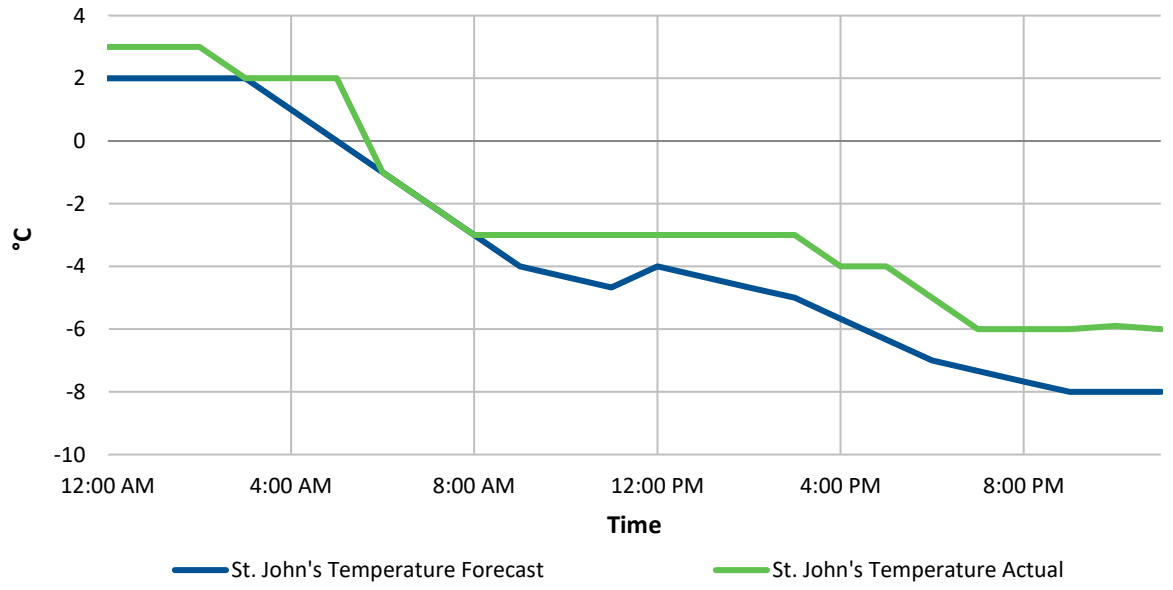

Chart 13: Forecast vs Actual Temperature for March 4, 2024

Chart 14 shows the actual wind speed in St. John's compared to the forecast. The actual wind speed was less than forecast for the majority of the day.

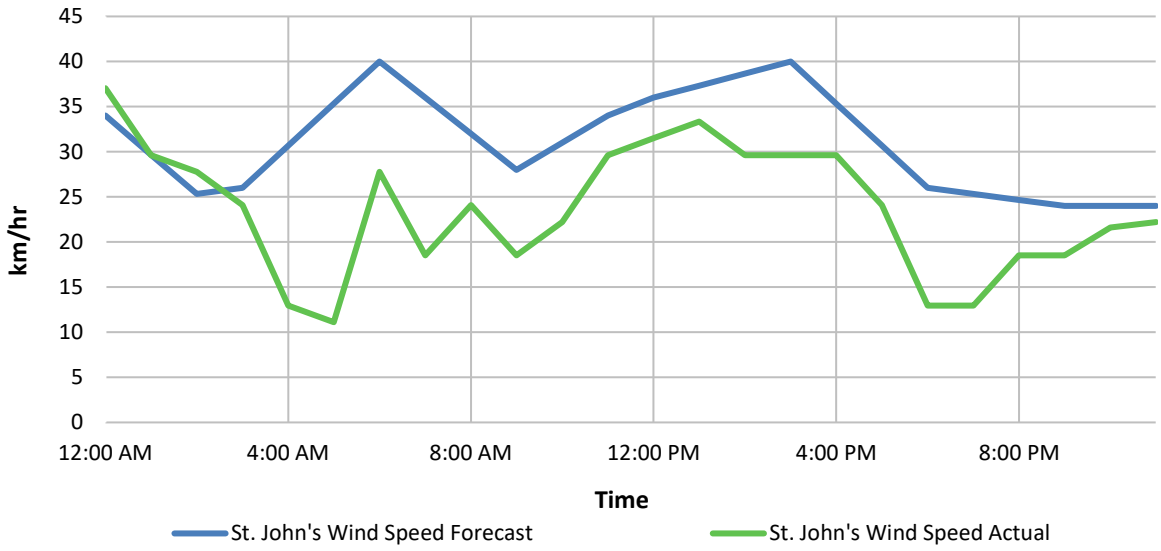

Chart 14: Forecast vs Actual Wind Speed for March 4, 2024

Chart 15 shows the actual cloud cover in St. John's compared to the forecast. It was more cloudy than forecast for the majority of the day.

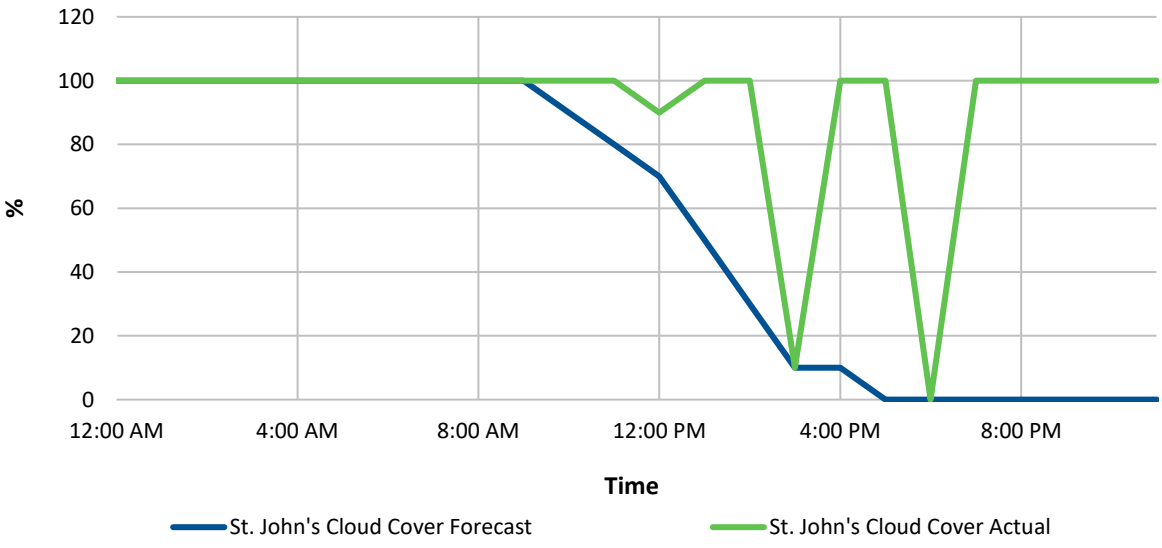

Chart 15: Forecast vs Actual Cloud Cover for March 4, 2024

The discrepancy between Utility Actual and Utility Forecast load was primarily attributed to the weather forecast. An overestimation of the load resulted in more than enough reserve being available.

2.3.2.3 March 31, 2024

Table 4 provides a summary of forecast peak data for March 31, 2024.

Table 4: Peak Data Summary for March 31, 2024

	Load (MW)	Time	Error (%)[37]	Temperature Delta (°C)[38]	Wind Speed Delta (km/h)[39]
Utility Forecast	933	8:00 p.m.	-5.3	0.00	(4.00)
Utility Actual	986	10:00 a.m.		(2.00)	2.00
Total Forecast	1,092	8:00 p.m.	-1.9	0.00	(4.00)
Total Actual	1,113	10:00 a.m.		(2.00)	2.00
Board Forecast	1,095	N/A	N/A	N/A	N/A
Board Actual	1,116				

The forecast peak at 7:20 a.m., as reported to the Board, was 1,095 MW; the actual reported peak was 1,116 MW. Chart 16 to Chart 20 include hourly plots of forecast and actual values to assist in determining the sources of the differences between actual and forecast loads.

Chart 16 shows the hourly distribution of the total load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted an 8:00 p.m. peak of 1,092 MW; the actual peak was 1,113 MW and occurred at 10:00 a.m., resulting in an underestimate of 1.9%. The load forecast at the time of peak was 1,086 MW.

[37] Negative percentages indicate an under-forecasted peak. Positive percentages indicate an over-forecasted peak.
[38] Temperature difference at forecast peak and actual peak. Negative values indicate that the temperature was warmer than forecast. Positive values indicate the temperature was colder than forecast.
[39] Wind speed difference at the forecast peak and the actual peak. Negative values indicate wind speed was more than forecast. Positive values indicate the wind speed was less than forecast.

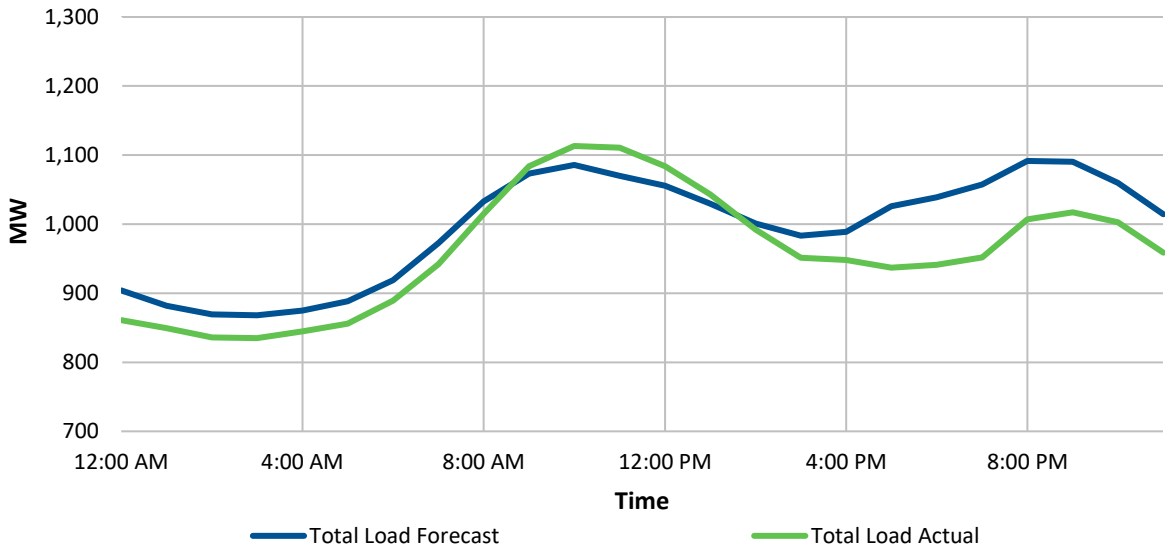

Chart 16: Forecast vs Actual Total Load for March 31, 2024

Chart 17 shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 8:00 p.m. of 933 MW; the actual peak was 986 MW and occurred at 10:00 a.m., resulting in an underestimate of 5.3%. The load forecast at the time of peak was 928 MW.

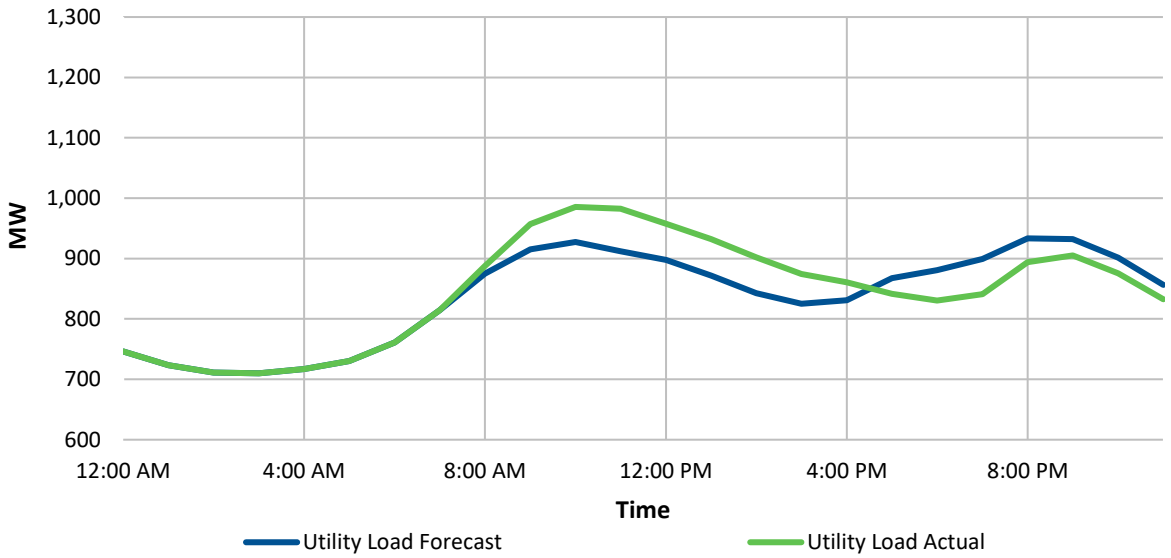

Chart 17: Forecast vs Actual Utility Load for March 31, 2024

Chart 18 shows the actual temperature in St. John's compared to the forecast. From midnight to 8:00 a.m. the forecast was an average 1°C colder than forecast which may have contributed to moving the peak from the evening to the morning. From 3:00 p.m. until the end of the day, the temperature was an average 1°C warmer than forecast.

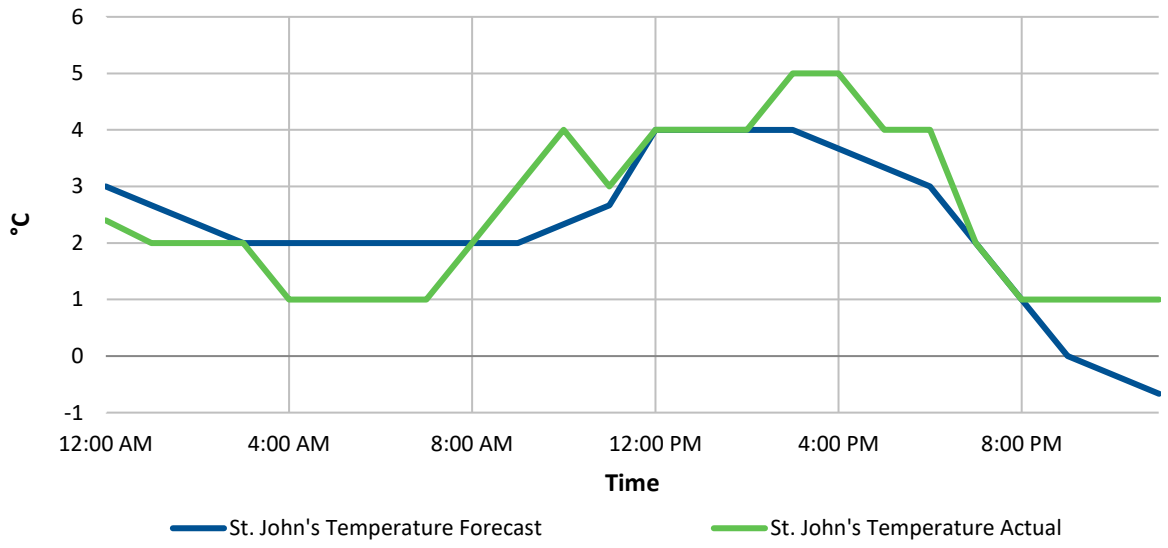

Chart 18: Forecast vs Actual Temperature for March 24, 2024

Chart 19 shows the actual wind speed in St. John's compared to the forecast. The wind speed on average was close to forecast for the majority of the day.

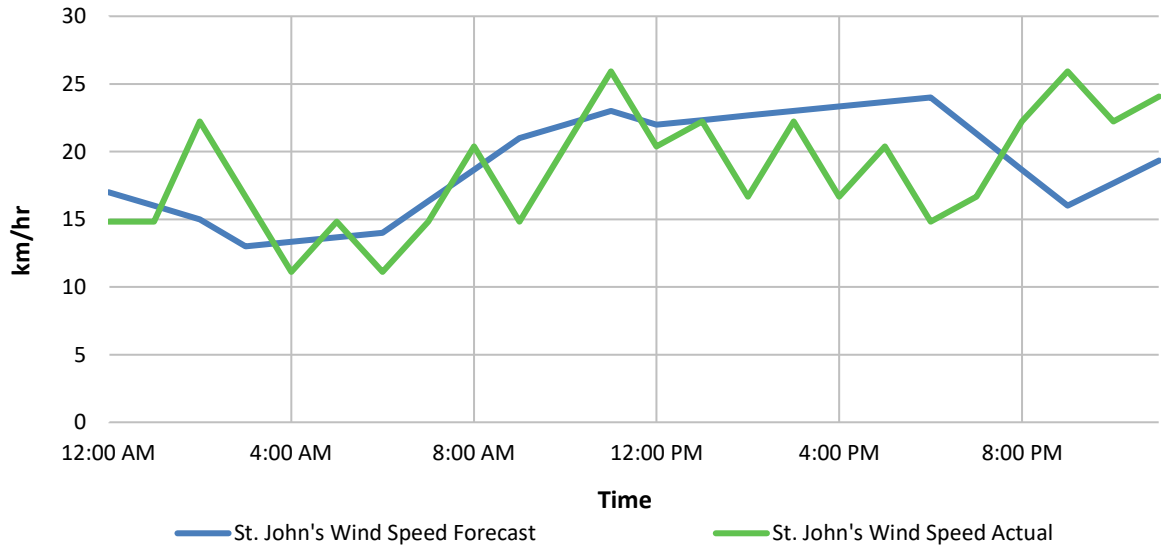

Chart 19: Forecast vs Actual Wind Speed for March 31, 2024

Chart 20 shows the actual cloud cover in St. John's compared to the forecast. It was more cloudy than forecast for the majority of the day.

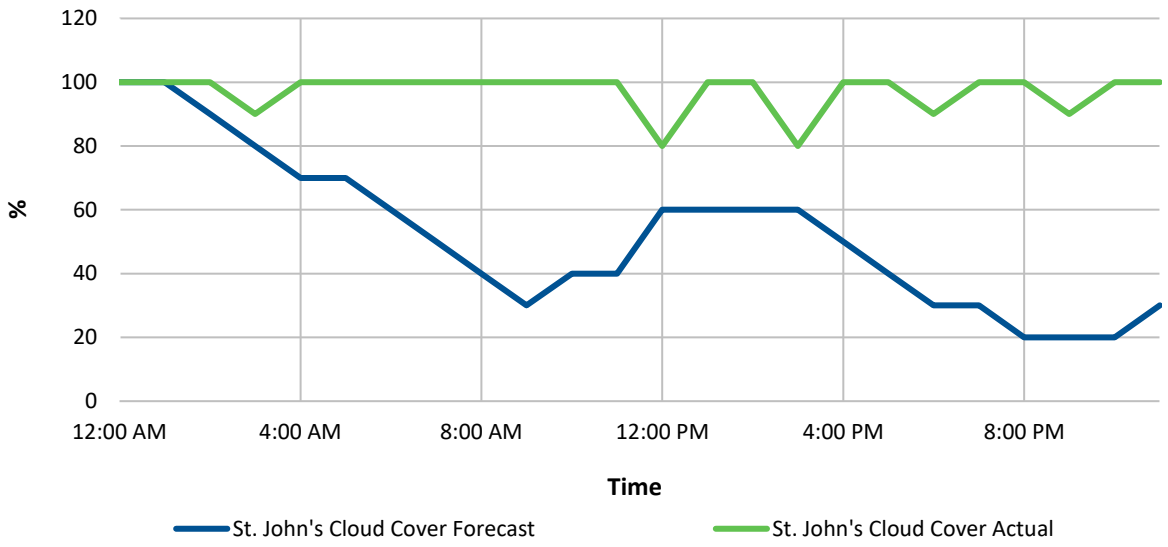

Chart 20: Forecast vs Actual Cloud Cover for March 31, 2024

The discrepancy between Utility Actual and Utility Forecast load was primarily attributed to discrepancies in the temperature compared to actual weather conditions at the time of peak. Discrepancies may also be attributed to non-uniform customer behaviour as this day was Easter Sunday.

2.3.3 April 2024

In April 2024, the forecast utility peak was 1,175 MW on April 10, 2024, which is consistent with the actual utility peak of 1,200 MW on that day. Absolute error was 24 MW on average, with an average percent error of -1.0%, an average absolute error of 2.3%, and an average actual/forecast of -1.1%.

2.3.3.1 April 18, 2024

Table 5 provides a summary of forecast peak data for April 18, 2024.

Table 5: Peak Data Summary for April 18, 2024

	Load (MW)	Time	Error (%)[40]	Temperature Delta (°C)[41]	Wind Speed Delta (km/h)[42]
Utility Forecast	1,020	8:00 a.m.	-11.9	1.00	9.00
Utility Actual	1,158	5:00 p.m.		0.00	3.00
Total Forecast	1,108	8:00 a.m.	-9.0	1.00	9.00
Total Actual	1,218	5:00 p.m.		0.00	3.00
Board Forecast	1,110	N/A	N/A	N/A	N/A
Board Actual	1,221				

The forecast peak at 7:20 a.m., as reported to the Board, was 1,110 MW; the actual reported peak was 1,221 MW. Chart 21 to Chart 25 include hourly plots of forecast and actual values to assist in determining the sources of the differences between actual and forecast loads.

Chart 21 shows the hourly distribution of the total load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted an 8:00 a.m. peak of 1,108 MW; the actual peak was 1,218 MW and occurred at 5:00 p.m.; resulting in an underestimate of 9.0%. The forecast load at the time of peak was 1,099 MW.

[40] Negative percentages indicate an under-forecasted peak. Positive percentages indicate an over-forecasted peak.
[41] Temperature difference at forecast peak and actual peak. Negative values indicate that the temperature was warmer than forecast. Positive values indicate the temperature was colder than forecast.
[42] Wind speed difference at the forecast peak and the actual peak. Negative values indicate wind speed was more than forecast. Positive values indicate the wind speed was less than forecast.

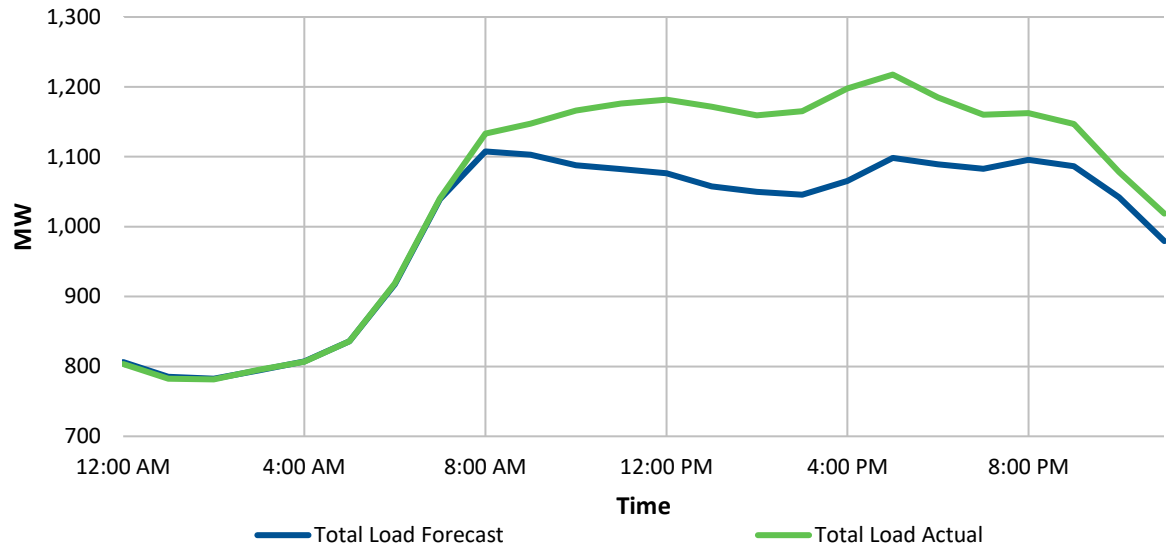

Chart 21: Forecast vs Actual Total Load for April 18, 2024

Chart 22 shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 8:00 a.m. of 1,020 MW; the actual peak was 1,158 MW and occurred at 5:00 p.m.; resulting in an underestimate of 11.9%. The total load forecast at the time of peak was 1,011 MW.

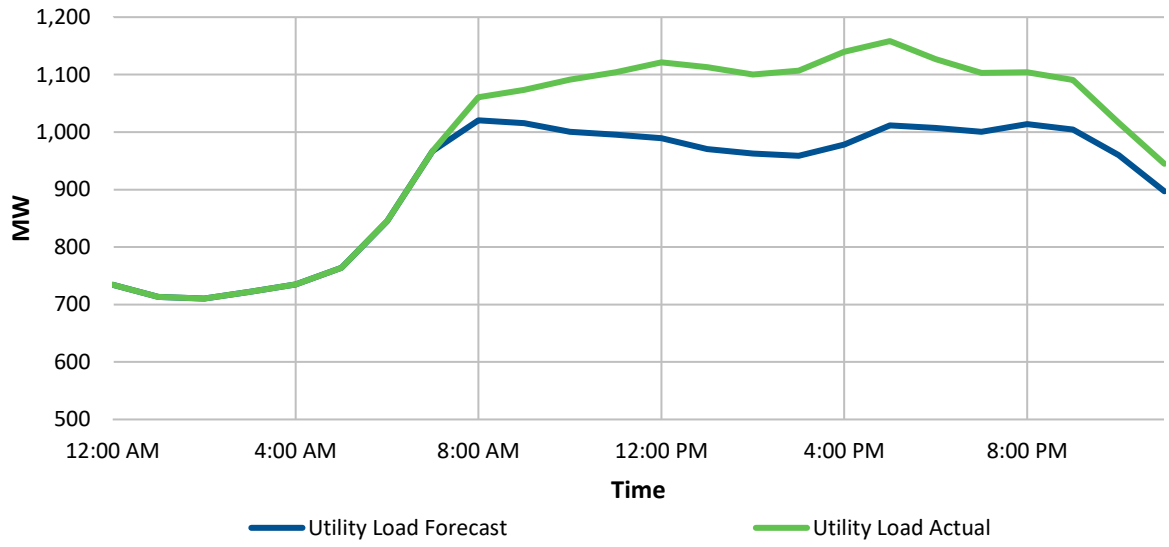

Chart 22: Forecast vs Actual Utility Load for April 18, 2024

Chart 23 shows the actual temperature in St. John's compared to the forecast. The temperature was cooler than forecast by 1°C for the majority of the day.

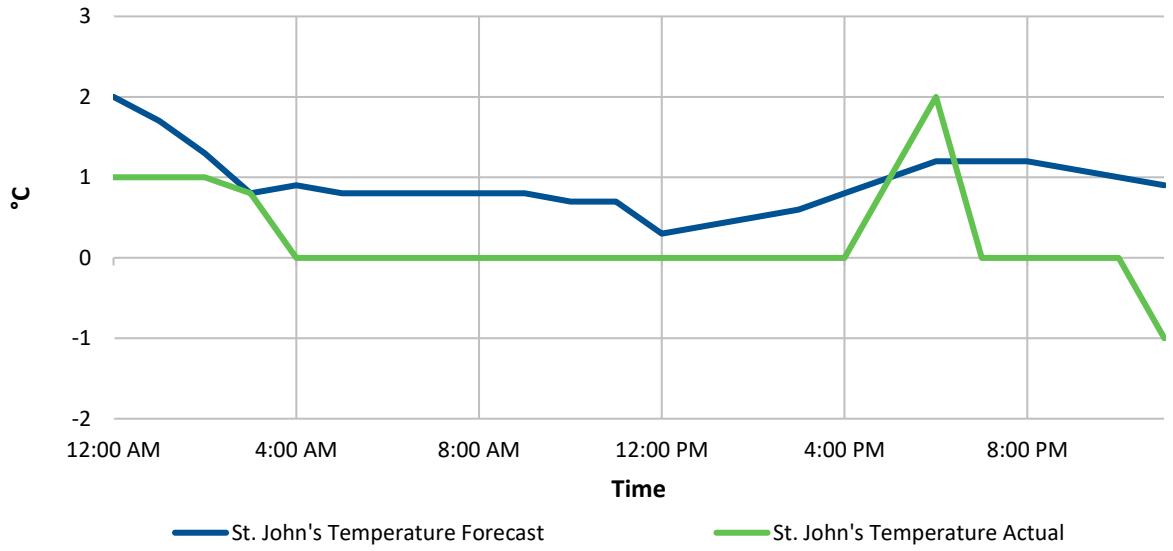

Chart 23: Forecast vs Actual Temperature for April 18, 2024

Chart 24 shows the actual wind speed in St. John's compared to the forecast. The actual wind speed was slightly less than forecast for the majority of the day.

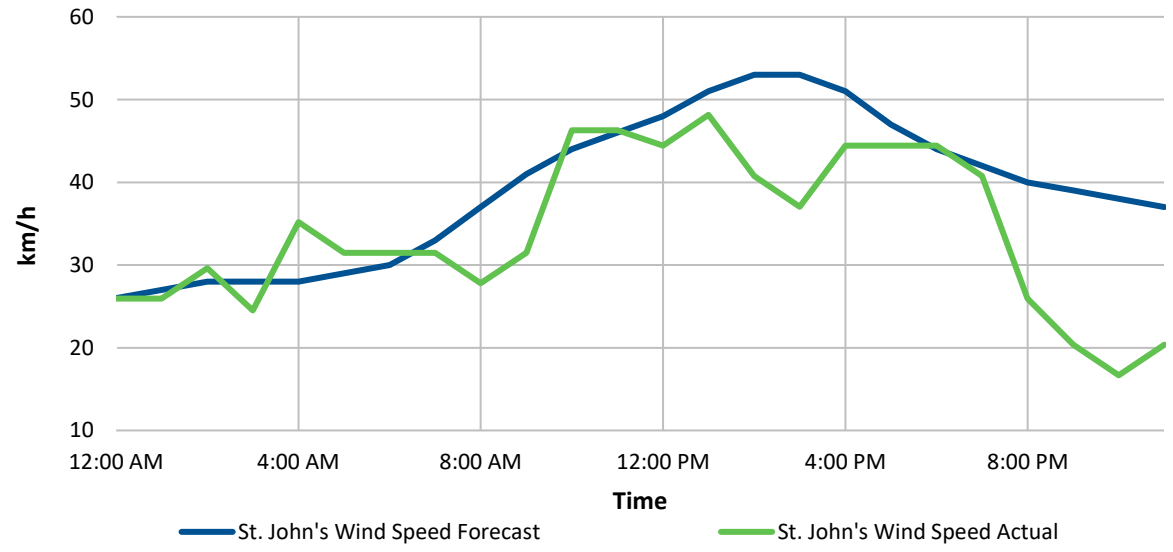

Chart 24: Forecast vs Actual Wind Speed for April 18, 2024

Chart 25 shows the actual cloud cover in St. John's compared to the forecast. It was the same cloud cover as forecast for the day.

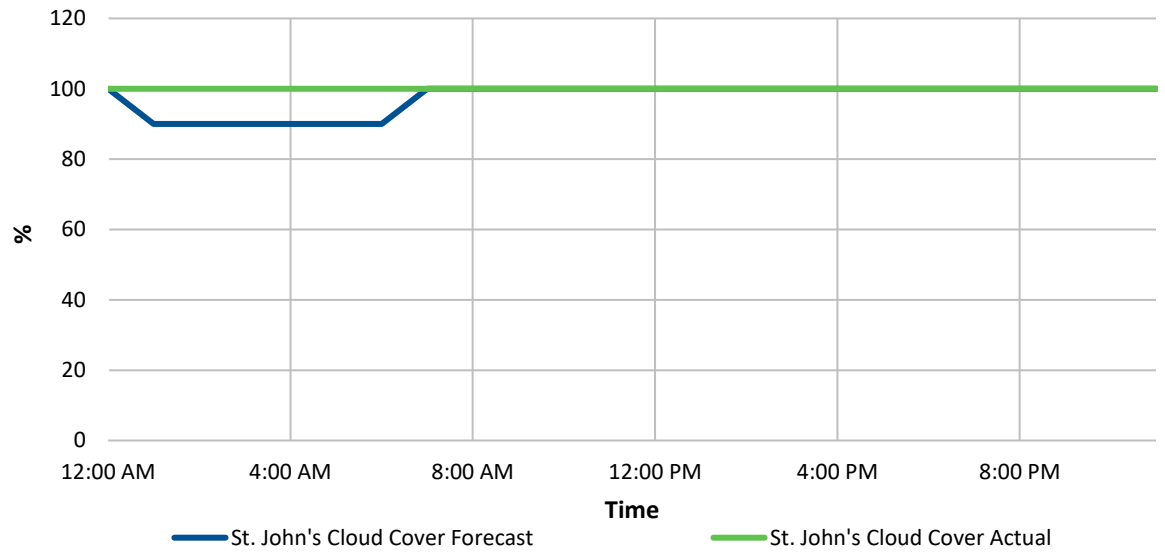

Chart 25: Forecast vs Actual Cloud Cover for April 18, 2024

The discrepancy between Utility Actual and Utility Forecast load was partially attributed to weather, it was colder than forecast for the majority of the day. The load forecasting software was under-forecasting for the entire day. The previous days, from April 13 to April 17, were very mild, and on April 18, the temperature dropped significantly which may have had an impact on the software to accurately predict load given the abnormal temperature fluctuation within a short period of time.

2.3.4 May 2024

In May 2024, the forecast utility peak was 923 MW on May 1, 2024, which is consistent with the actual utility peak for that day of 930 MW. The actual utility peak of 995 MW occurred on May 12, 2024, and was 8.1% higher compared with the forecast utility peak for that day of 920 MW. More information on May 12, 2024, is provided in Section 2.3.4.1. Absolute error was 21 MW on average, with an average percent error of -1.0%, an average absolute error of 2.5%, and an average actual/forecast of -1.2%.

2.3.4.1 May 12, 2024

Table 6 provides a summary of forecast peak data for May 12, 2024.

Table 6: Peak Data Summary for May 12, 2024

	Load (MW)	Time	Error (%)[43]	Temperature Delta (°C)[44]	Wind Speed Delta (km/h)[45]
Utility Forecast	920	10:00 a.m.	-7.5	0.00	13.00
Utility Actual	995	10:00 a.m.		0.00	13.00
Total Forecast	1,054	10:00 a.m.	-7.3	0.00	13.00
Total Actual	1,138	10:00 a.m.		0.00	13.00
Board Forecast	1,055	N/A	N/A	N/A	N/A
Board Actual	1,142				

The forecast peak at 7:20 a.m., as reported to the Board, was 1,055 MW; the actual reported peak was 1,142 MW. Chart 26 to Chart 30 include hourly plots of forecast and actual values to assist in determining the sources of the differences between actual and forecast loads.

Chart 26 shows the hourly distribution of the total load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted a 10:00 a.m. peak of 1,054 MW; the actual peak was 1,138 MW, resulting in an underestimate of 7.3%.

[43] Negative percentages indicate an under-forecasted peak. Positive percentages indicate an over-forecasted peak.
[44] Temperature difference at forecast peak and actual peak. Negative values indicate that the temperature was warmer than forecast. Positive values indicate the temperature was colder than forecast.
[45] Wind speed difference at the forecast peak and the actual peak. Negative values indicate wind speed was more than forecast. Positive values indicate the wind speed was less than forecast.

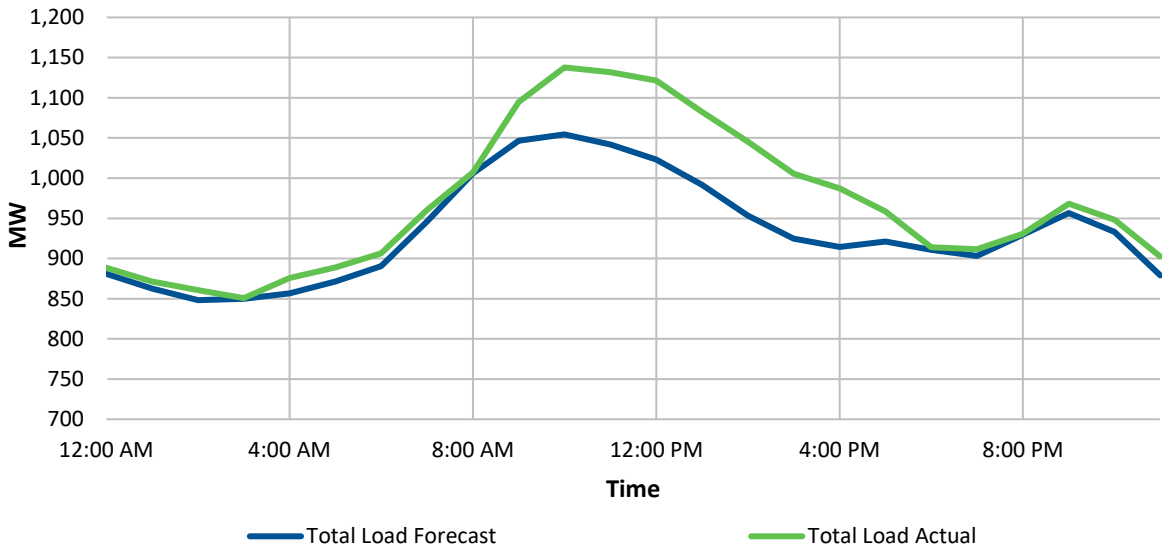

Chart 26: Forecast vs Actual Total Load for May 12, 2024

Chart 27 shows the hourly distribution of the utility load forecast. The hourly forecast predicted a utility peak at 10:00 a.m. of 920 MW; the actual peak was 995 MW; resulting in an underestimate of 7.5%.

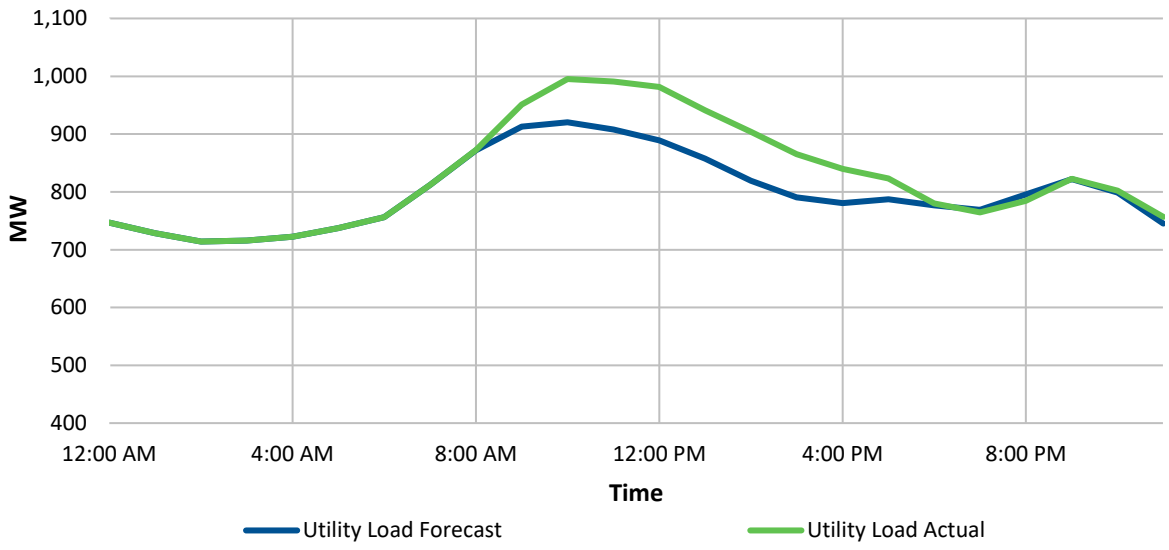

Chart 27: Forecast vs Actual Utility Load for May 12, 2024

Chart 28 shows the actual temperature in St. John's compared to forecast. The temperature was an average 1°C colder than forecast leading up to the peak.

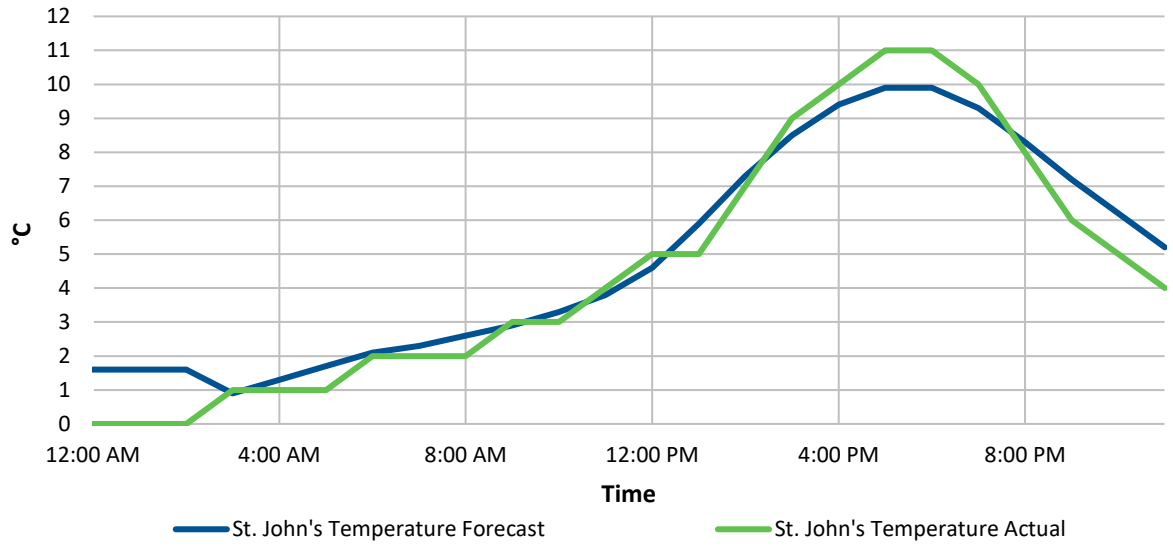

Chart 28: Forecast vs Actual Temperature for May 12, 2024

Chart 29 shows the actual wind speed in St. John's compared to forecast. The actual wind speed was less than forecast for the majority of the day.

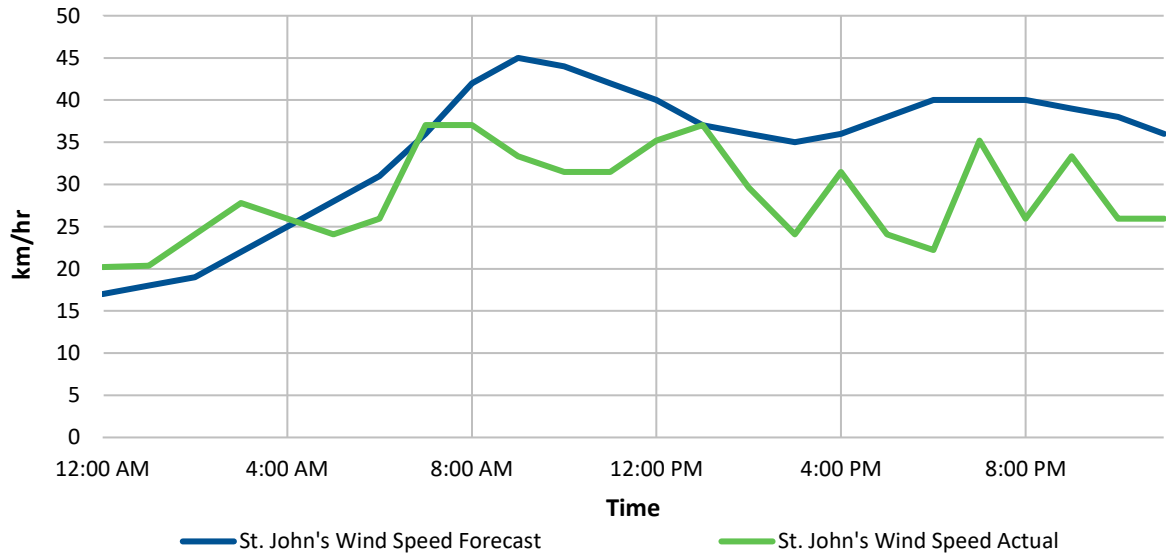

Chart 29: Forecast vs Actual Wind Speed for May 12, 2024

Chart 30 shows the actual cloud cover in St. John's compared to the forecast. Cloud cover was similar to forecast for the majority of the day.

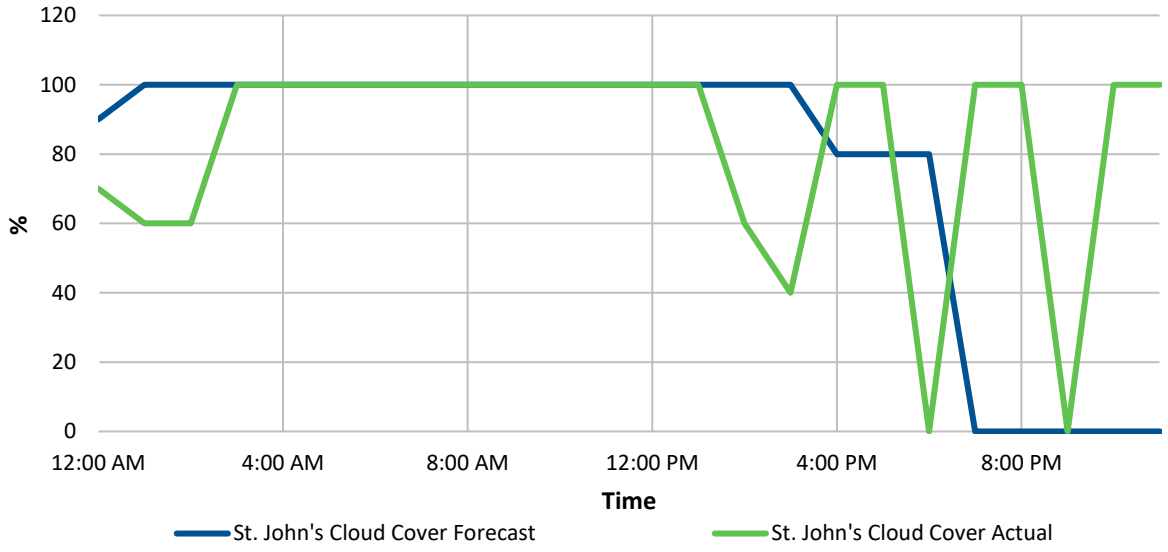

Chart 30: Forecast vs Actual Cloud Cover for May 12, 2024

The discrepancy between Utility Actual and Utility Forecast load was likely due to colder than forecast temperatures leading up to the peak at 10:00 a.m. Additionally, this was a Sunday and Mother's Day therefore non-uniform customer behaviour may have also been a factor.

2.3.4.2 May 20, 2024

Table 7 provides a summary of forecast peak data for May 20, 2024.

Table 7: Peak Data Summary for May 20, 2024

	Load (MW)	Time	Error (%)[46]	Temperature Delta (°C)[47]	Wind Speed Delta (km/h)[48]
Utility Forecast	784	11:00 a.m.	10.2	(3.00)	(2.00)
Utility Actual	711	10:00 a.m.		(2.00)	(2.00)
Total Forecast	918	11:00 a.m.	11.9	(3.00)	(2.00)
Total Actual	820	9:00 a.m.		(2.00)	9.00
Board Forecast	925	N/A	N/A	N/A	N/A
Board Actual	825				

[46] Negative percentages indicate an under-forecasted peak. Positive percentages indicate an over-forecasted peak.
[47] Temperature difference at forecast peak and actual peak. Negative values indicate that the temperature was warmer than forecast. Positive values indicate the temperature was colder than forecast.
[48] Wind speed difference at the forecast peak and the actual peak. Negative values indicate wind speed was more than forecast. Positive values indicate the wind speed was less than forecast.

The forecast peak at 7:20 a.m., as reported to the Board, was 925 MW; the actual reported peak was 825 MW. Chart 31 to Chart 35 include hourly plots of forecast and actual values to assist in determining the sources of the differences between actual and forecast loads.

Chart 31 shows the hourly distribution of the total load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted an 11:00 a.m. peak of 918 MW; the actual peak of 820 MW occurred at 9:00 a.m., resulting in an overestimate of 11.9%. The forecast load at this time was 887 MW.

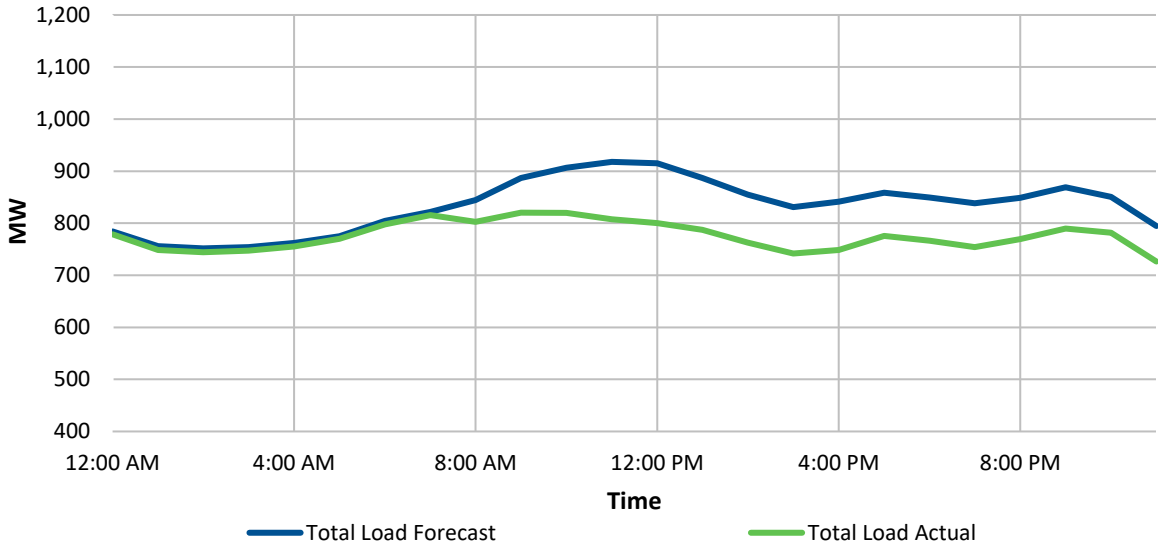

Chart 31: Forecast vs Actual Total Load for May 20, 2024

Chart 32 shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 11:00 a.m. of 784 MW; the actual peak was 711 MW and occurred at 10:00 a.m., resulting in an overestimate of 10.2%. The utility load forecast at this time was 772 MW.

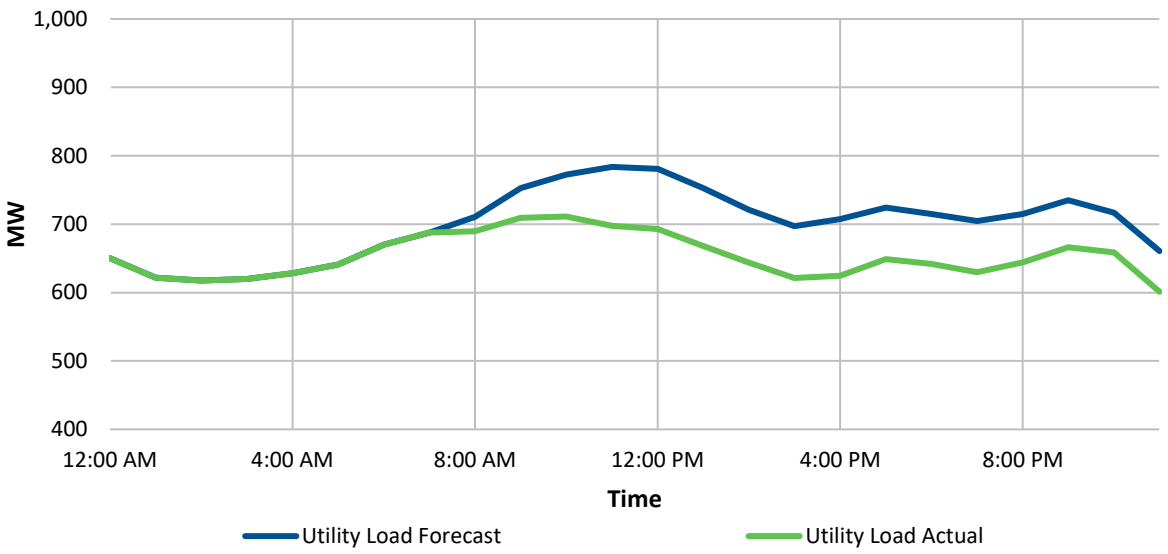

Chart 32: Forecast vs Actual Utility Load for May 20, 2024

Chart 33 shows the actual temperature in St. John's compared to the forecast. The temperature was on average 2°C warmer than forecast in the preceding three hours leading up to peak, which may have contributed to the forecast error.

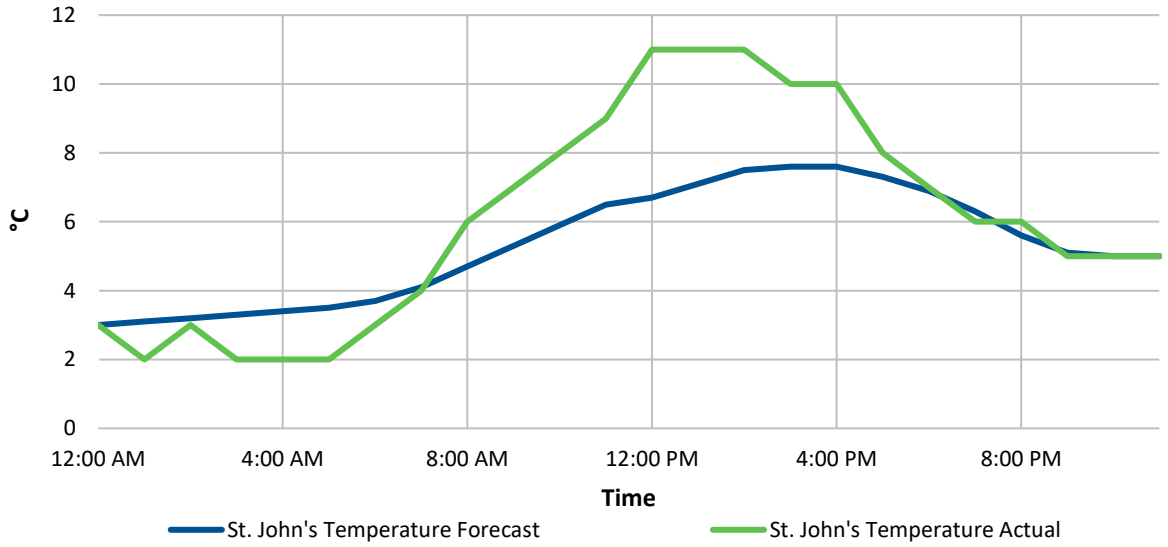

Chart 33: Forecast vs Actual Temperature for May 20, 2024

Chart 34 shows the actual wind speed in St. John's compared to the forecast. The actual wind speed was lower in the morning period and slightly higher in the afternoon and evening compared to forecast.

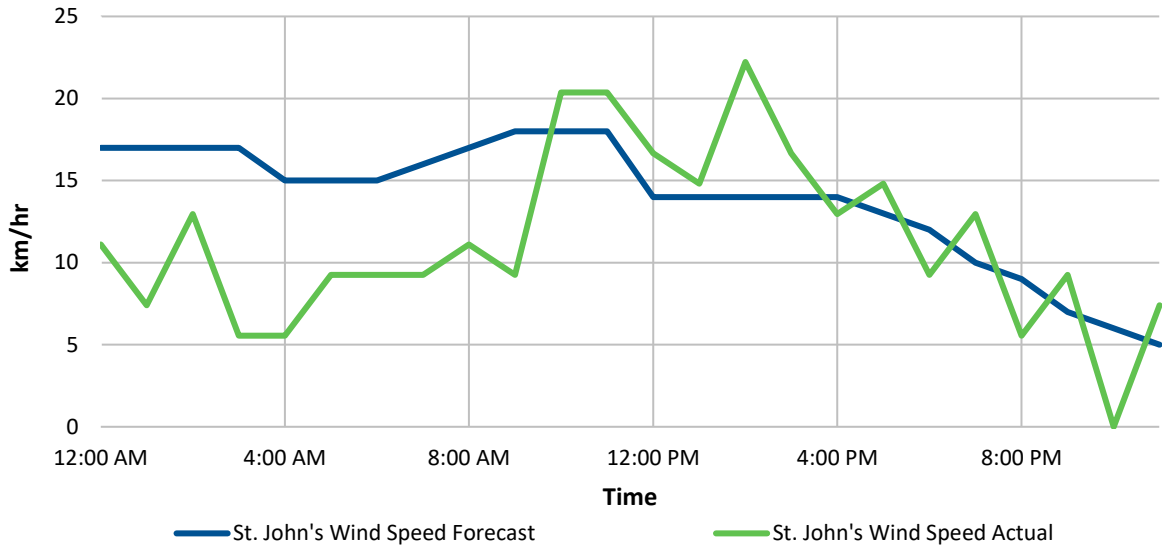

Chart 34: Forecast vs Actual Wind Speed for May 20, 2024

Chart 35 shows the actual cloud cover in St. John's compared to the forecast. It was cloudier than forecast for the majority of the day.

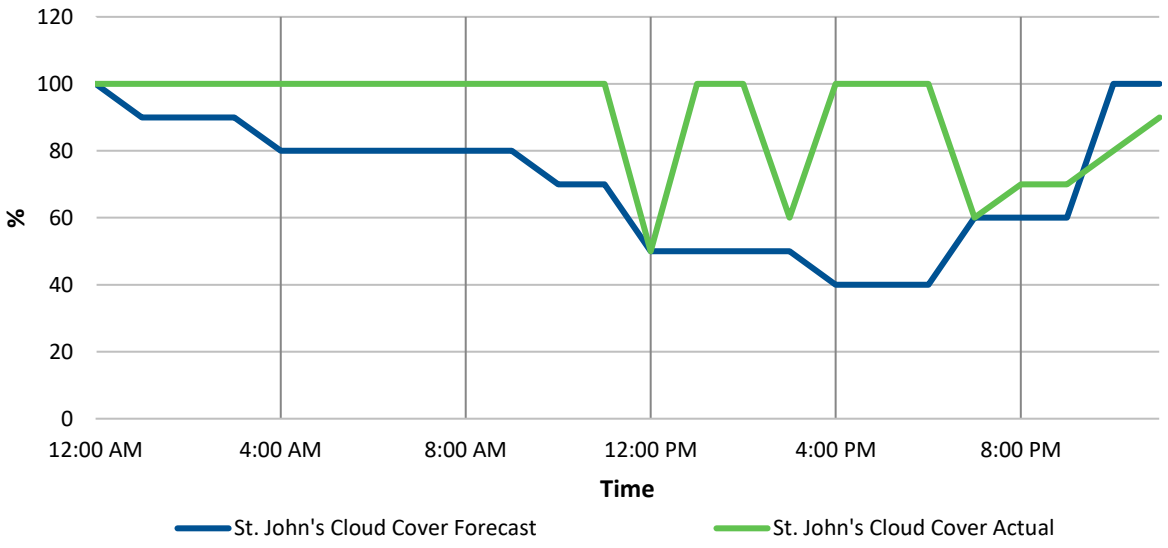

Chart 35: Forecast vs Actual Cloud Cover for May 20, 2024

The discrepancy between Utility Actual and Utility Forecast load was primarily attributed to the temperature variations from the forecast and non-uniform customer behaviour as this day occurred on a statutory holiday (Victoria Day). In 2022 and 2023, Hydro's load forecasting software also had a high degree of error for this day.

2.3.4.3 May 25, 2024

Table 8 provides a summary of forecast peak data for May 25, 2024.

Table 8: Peak Data Summary for May 25, 2024

	Load (MW)	Time	Error (%)[49]	Temperature Delta (°C)[50]	Wind Speed Delta (km/h)[51]
Utility Forecast	709	10:00 a.m.	-10.0	3.00	(1.00)
Utility Actual	787	12:00 p.m.		3.00	5.00
Total Forecast	853	10:00 a.m.	-8.8	3.00	(1.00)
Total Actual	935	12:00 p.m.		3.00	5.00
Board Forecast	855	N/A	N/A	N/A	N/A
Board Actual	940				

The forecast peak at 7:20 a.m., as reported to the Board, was 855 MW; the actual reported peak was 940 MW. Chart 36 to Chart 40 include hourly plots of forecast and actual values to assist in determining the sources of the differences between actual and forecast loads.

Chart 36 shows the hourly distribution of the total load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted a 10:00 a.m. peak of 853 MW; the actual peak was 935 MW and occurred at 12:00 p.m., resulting in an underestimate of 8.8%. The forecast load at this time was 839 MW.

[49] Negative percentages indicate an under-forecasted peak. Positive percentages indicate an over-forecasted peak.
[50] Temperature difference at forecast peak and actual peak. Negative values indicate that the temperature was warmer than forecast. Positive values indicate the temperature was colder than forecast.
[51] Wind speed difference at the forecast peak and the actual peak. Negative values indicate wind speed was more than forecast. Positive values indicate the wind speed was less than forecast.

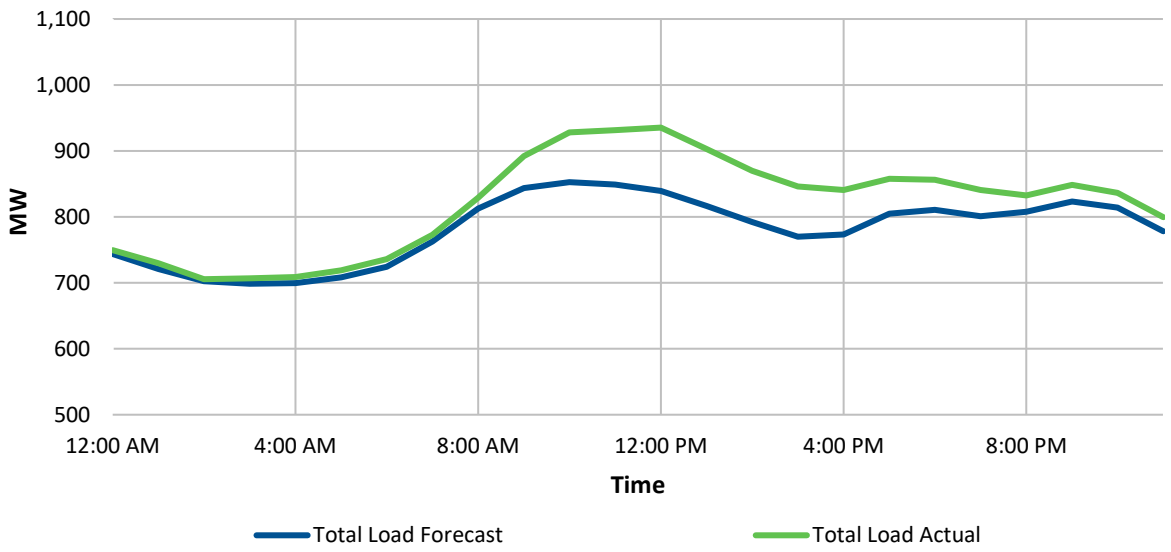

Chart 36: Forecast vs Actual Total Load May 25, 2024

Chart 37 shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 10:00 a.m. of 709 MW; the actual peak was 787 MW and occurred at 12:00 p.m., resulting in an underestimate of 10.0%. The utility load forecast at this time was 695 MW.

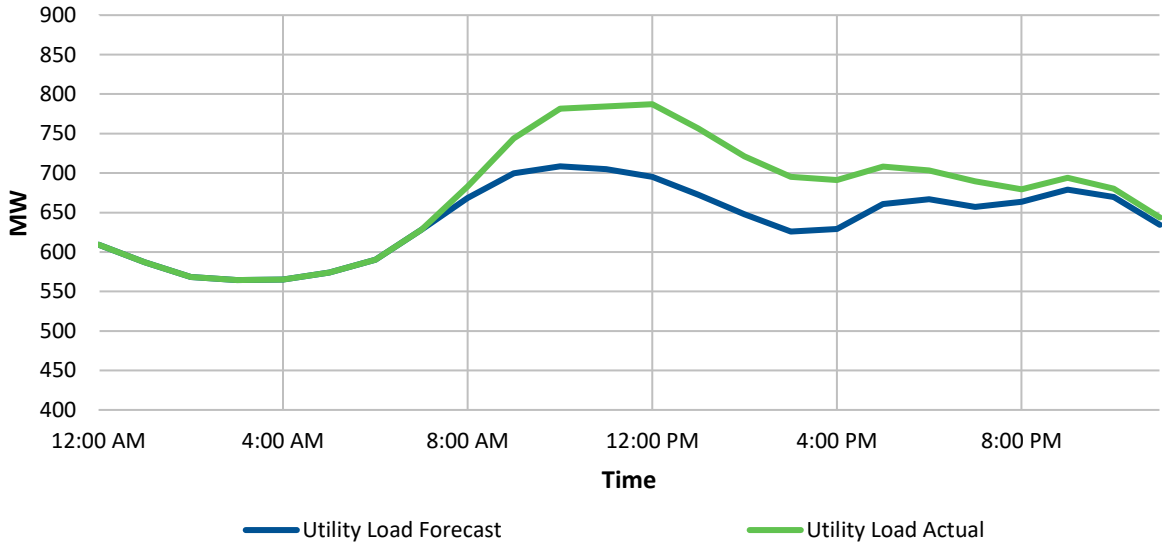

Chart 37: Forecast vs Actual Utility Load May 25, 2024

Chart 38 shows the actual temperature in St. John's compared to the forecast. The temperature was on average 2°C colder than forecast in the preceding six hours leading up to peak, which may have contributed to the forecast error.

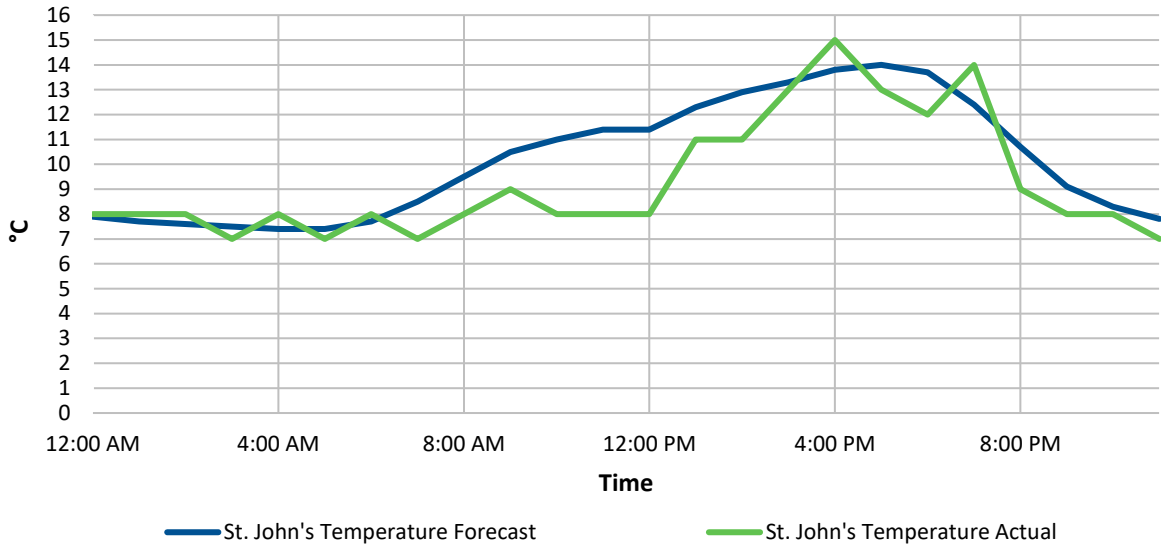

Chart 38: Forecast vs Actual Temperature May 25, 2024

Chart 39 shows the actual wind speed in St. John's compared to the forecast. The actual wind speed was close to forecast around the peak.

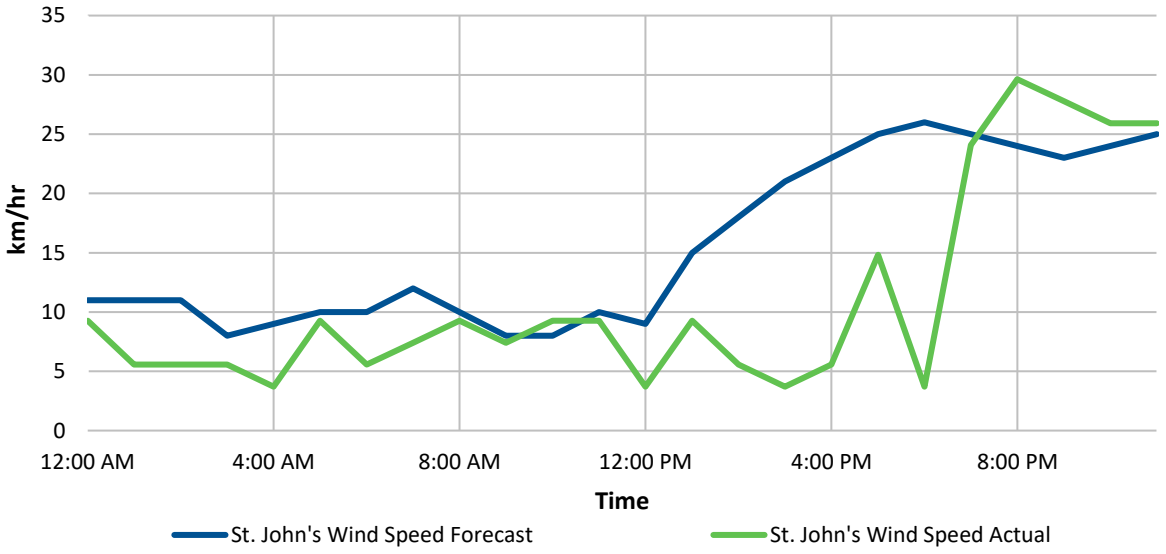

Chart 39: Forecast vs Actual Wind Speed May 25, 2024

Chart 40 shows the actual cloud cover in St. John's compared to the forecast. It was less cloudy than forecast for the first half of the day and cloudier than forecast for the second half of the day.

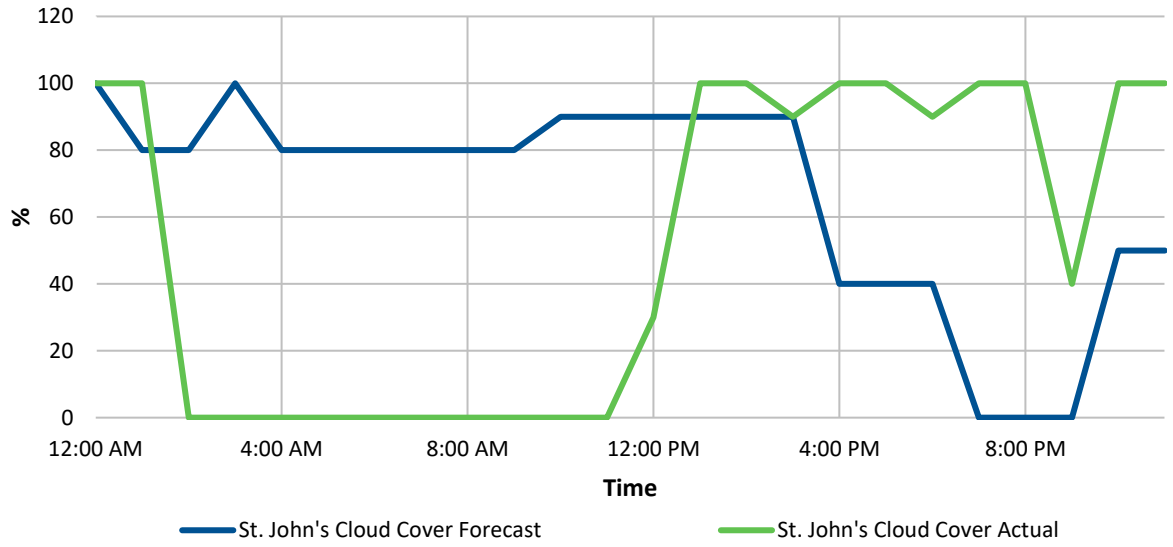

Chart 40: Forecast vs Actual Cloud Cover for May 25, 2024

The discrepancy between Utility Actual and Utility Forecast load was primarily attributed to the temperature variations from the forecast and non-uniform customer behaviour as this day occurred on a Saturday.

2.3.5 June 2024

In June 2024, the forecast utility peak was 752 MW on June 5, 2024, which is consistent with the forecast utility peak for that day of 742 MW. The actual utility peak of 789 MW occurred on June 1, 2024, and was 7.9% higher than the forecast utility peak for that day of 731 MW. More information on June 1, 2024, is provided in Section 2.3.5.1. Absolute error for the month was 17 MW on average, with an average percent error of -0.2%, an average absolute error of 2.6%, and an average actual/forecast of -0.3%.

2.3.5.1 June 1, 2024

Table 9 provides a summary of forecast peak data for June 1, 2024.

Table 9: Peak Data Summary for June 1, 2024

	Load (MW)	Time	Error (%)[52]	Temperature Delta (°C)[53]	Wind Speed Delta (km/h)[54]
Utility Forecast	731	12:00 p.m.	-7.4	0.00	1.00
Utility Actual	789	5:00 p.m.		2.00	(3.00)
Total Forecast	890	12:00 p.m.	-5.4	0.00	1.00
Total Actual	940	5:00 p.m.		2.00	(3.00)
Board Forecast	895	N/A	N/A	N/A	N/A
Board Actual	942				

The forecast peak at 7:20 a.m., as reported to the Board, was 895 MW; the actual reported peak was 942 MW. Chart 41 to Chart 45 include hourly plots of forecast and actual values to assist in determining the sources of the differences between actual and forecast loads.

Chart 41 shows the hourly distribution of the total load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted a 12:00 p.m. peak of 890 MW; the actual peak was 940 MW and occurred at 5:00 p.m., resulting in an underestimate of 5.4%. The forecast load at the time of peak was 884 MW.

[52] Negative percentages indicate an under-forecasted peak. Positive percentages indicate an over-forecasted peak.
[53] Temperature difference at forecast peak and actual peak. Negative values indicate that the temperature was warmer than forecast. Positive values indicate the temperature was colder than forecast.
[54] Wind speed difference at the forecast peak and the actual peak. Negative values indicate wind speed was more than forecast. Positive values indicate the wind speed was less than forecast.

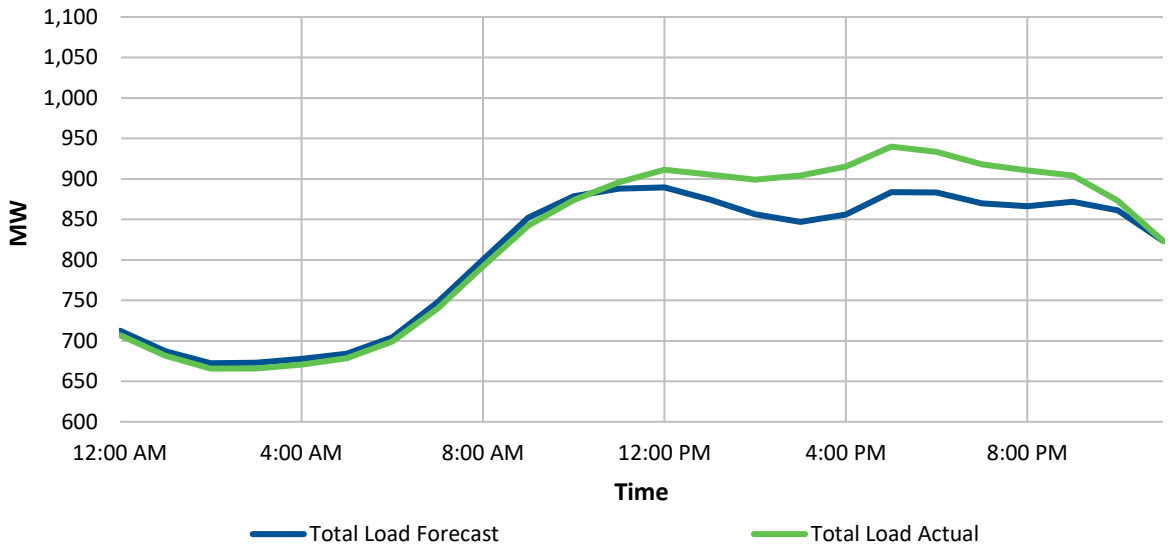

Chart 41: Forecast vs Actual Total Load for June 1, 2024

Chart 42 shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 12:00 p.m. of 731 MW; the actual peak was 789 MW and occurred at 5:00 p.m.; resulting in an underestimate of 7.4%. The forecast load at the time of peak was 726 MW.

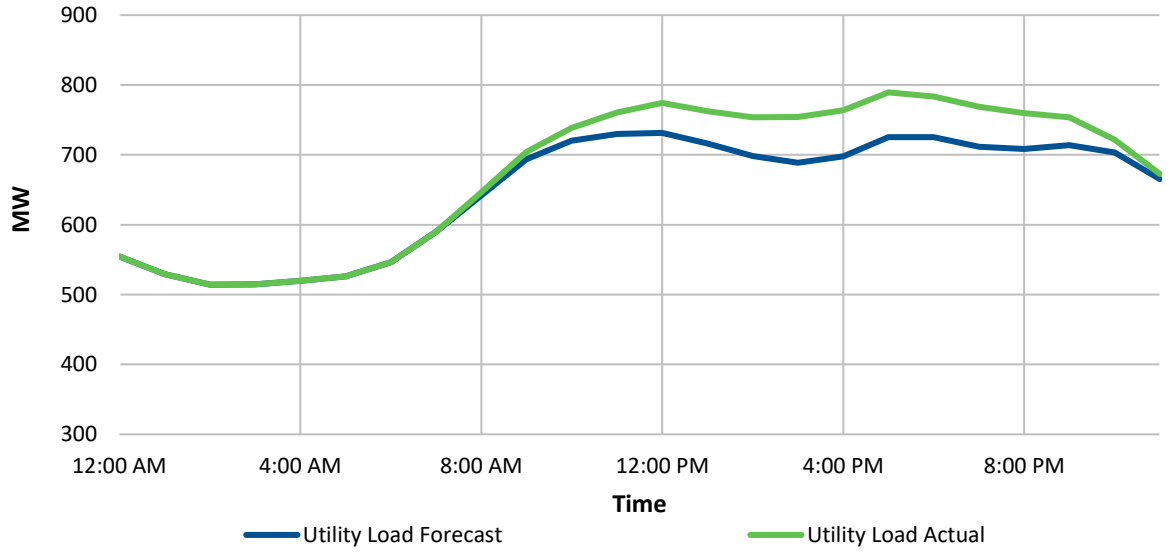

Chart 42: Forecast vs Actual Utility Load for June 1, 2024

Chart 43 shows the actual temperature in St. John's compared to the forecast. The temperature was close to forecast at noon when the peak was forecast; however, the temperature was on average 2°C colder than forecast in the five hours preceding the actual peak. This may have played a role in shifting the peak from noon to 5:00 p.m. as well as underestimating the peak as the temperatures were colder than forecast.

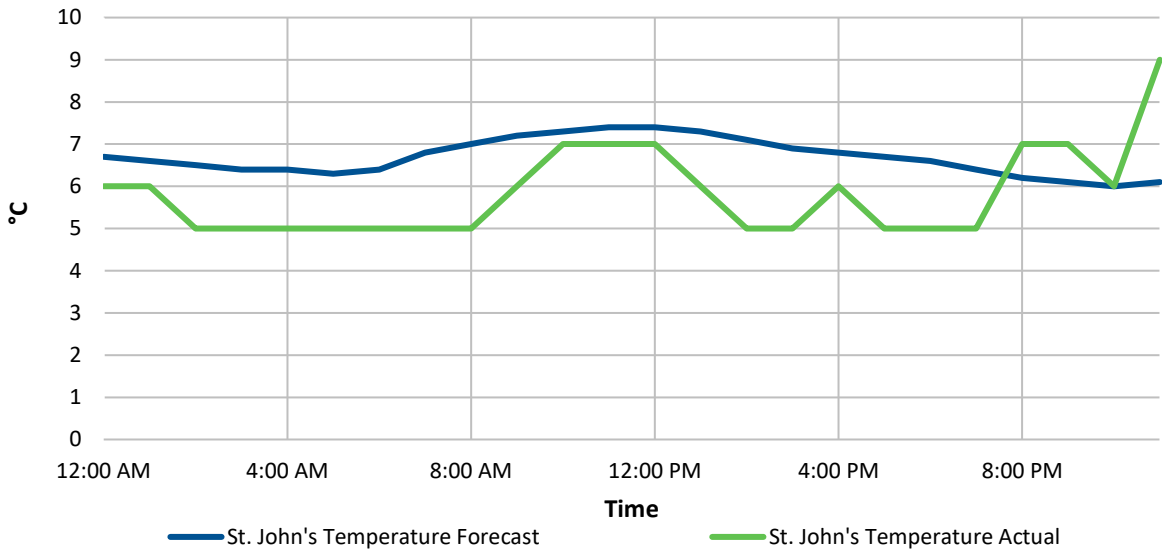

Chart 43: Forecast vs Actual Temperature for June 1, 2024

Chart 44 and Chart 45 are provided for context; however, the discrepancy between Utility Actual and Utility Forecast load was primarily attributed to differences in forecast temperatures at peak and non-uniform customer behaviour, as this day occurred on a Saturday. Additionally, the weather data for the previous day did not get uploaded into the load forecasting software at the scheduled times, and as a result the load forecasting software underestimated the load for the majority of the day.

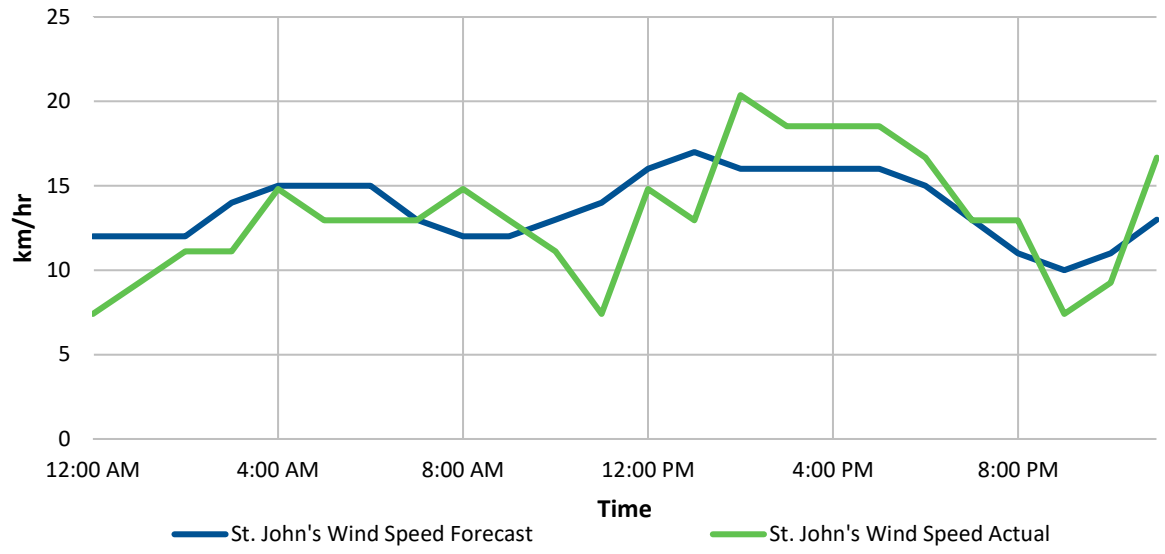

Chart 44: Forecast vs Actual Wind Speed for June 1, 2024

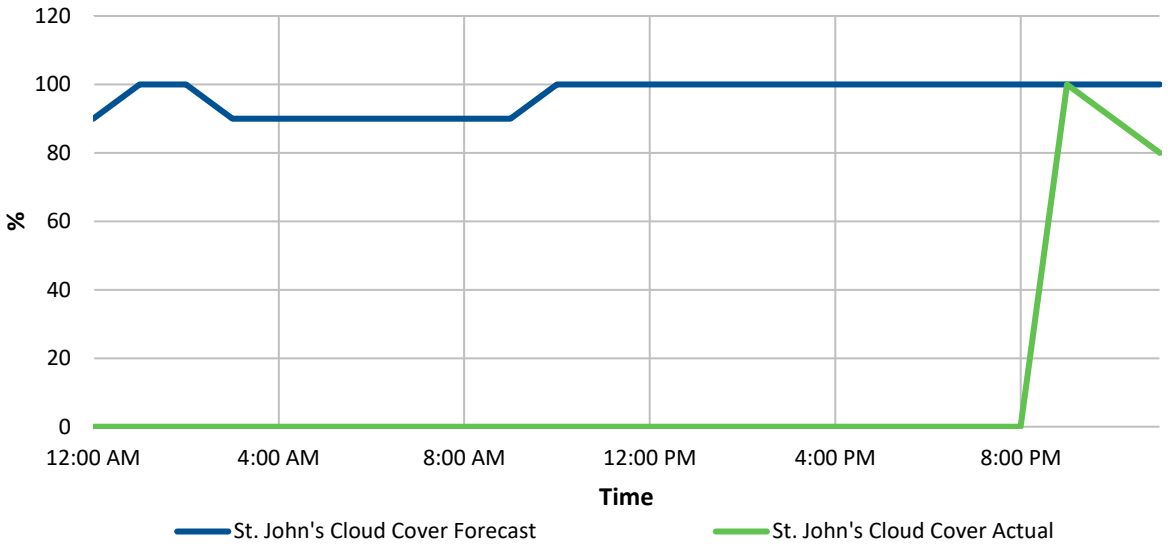

Chart 45: Forecast vs Actual Cloud Cover for June 1, 2024

2.3.5.2 June 2, 2024

Table 10 provides a summary of forecast peak data for June 2, 2024.

Table 10: Peak Data Summary for June 2, 2024

	Load (MW)	Time	Error (%)[55]	Temperature Delta (°C)[56]	Wind Speed Delta (km/h)[57]
Utility Forecast	728	11:00 a.m.	-5.7	0.00	1.00
Utility Actual	772	12:00 p.m.		0.00	(6.00)
Total Forecast	886	11:00 a.m.	-3.1	0.00	1.00
Total Actual	914	12:00 p.m.		0.00	(6.00)
Board Forecast	890	N/A	N/A	N/A	N/A
Board Actual	916				

The forecast peak at 7:20 a.m., as reported to the Board, was 890 MW; the actual reported peak was 916 MW. Chart 46 to Chart 50 include hourly plots of forecast and actual values to assist in determining the sources of the differences between actual and forecast loads.

Chart 46 shows the hourly distribution of the total load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted an 11:00 a.m. peak of 886 MW; the actual peak was 914 MW and occurred at 12:00 p.m., resulting in an underestimate of 3.1%. The forecast load at the time of peak was 885 MW.

[55] Negative percentages indicate an under-forecasted peak. Positive percentages indicate an over-forecasted peak.
[56] Temperature difference at forecast peak and actual peak. Negative values indicate that the temperature was warmer than forecast. Positive values indicate the temperature was colder than forecast.
[57] Wind speed difference at the forecast peak and the actual peak. Negative values indicate wind speed was more than forecast. Positive values indicate the wind speed was less than forecast.

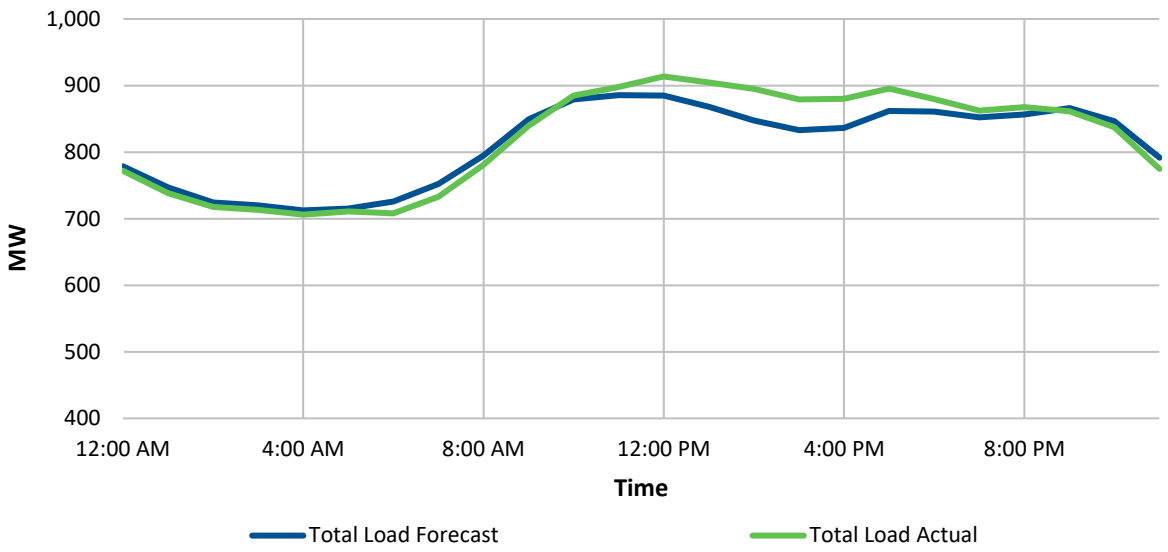

Chart 46: Forecast vs Actual Total Load June 2, 2024

Chart 47 shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 11:00 a.m. of 728 MW; the actual peak was 772 MW and occurred at 12:00 p.m.; resulting in an underestimate of 5.7%. The forecast load at the time of peak was 727 MW.

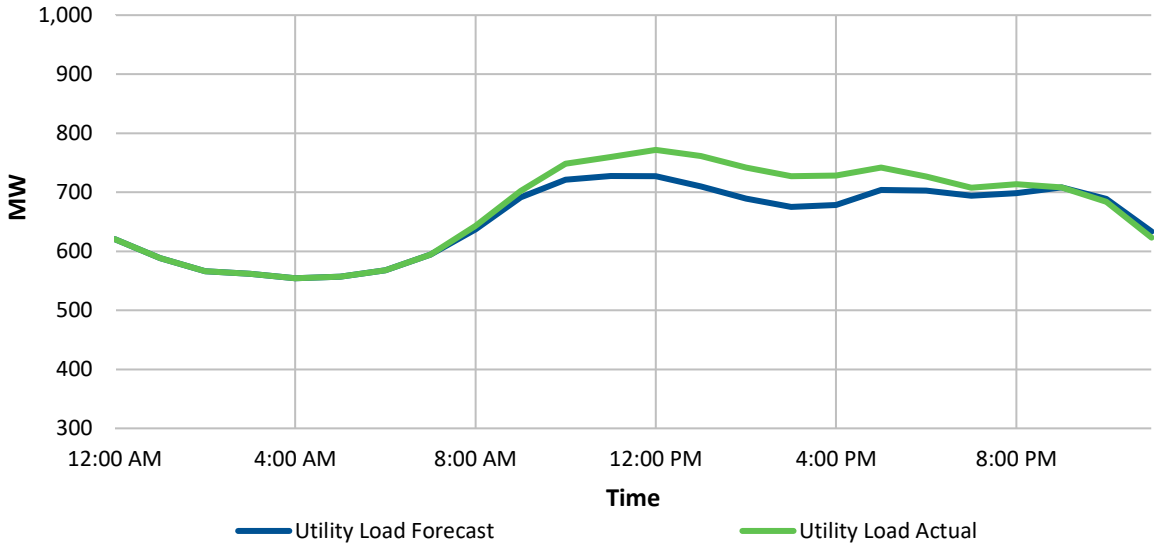

Chart 47: Forecast vs Actual Utility Load June 2, 2024

Chart 48 shows the actual temperature in St. John's compared to the forecast. The temperature was close to forecast for the day.

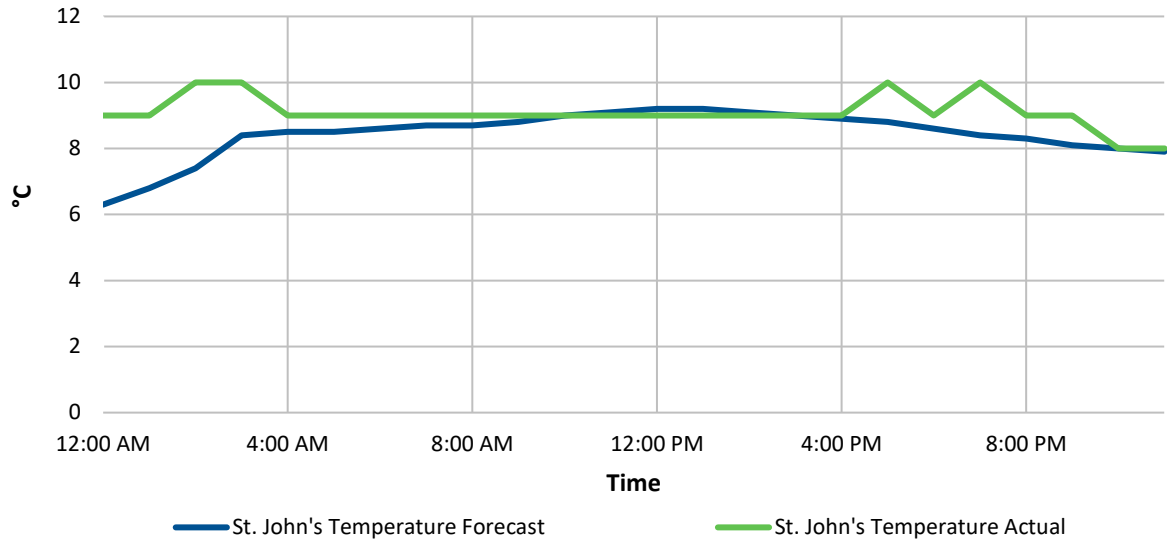

Chart 48: Forecast vs Actual Temperature for June 2, 2024

Chart 49 shows the actual wind speed in St. John's compared to the forecast. The wind speed was higher than forecast at the time of peak.

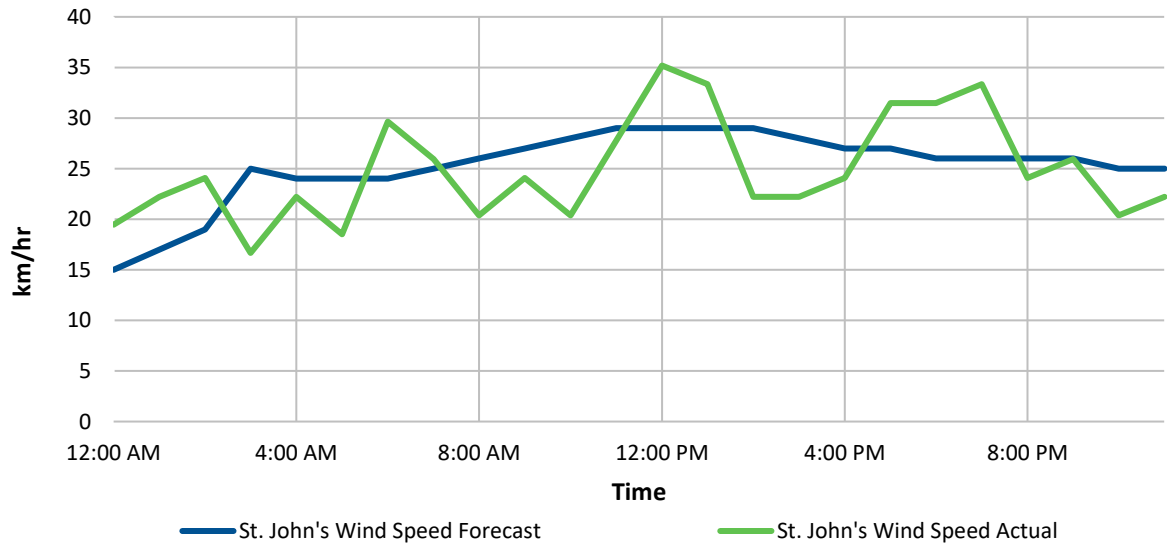

Chart 49: Forecast vs Actual Wind Speed for June 2, 2024

Chart 50 shows the actual cloud cover in St. John's compared to the forecast. The cloud cover was close to forecast for the majority of the day.

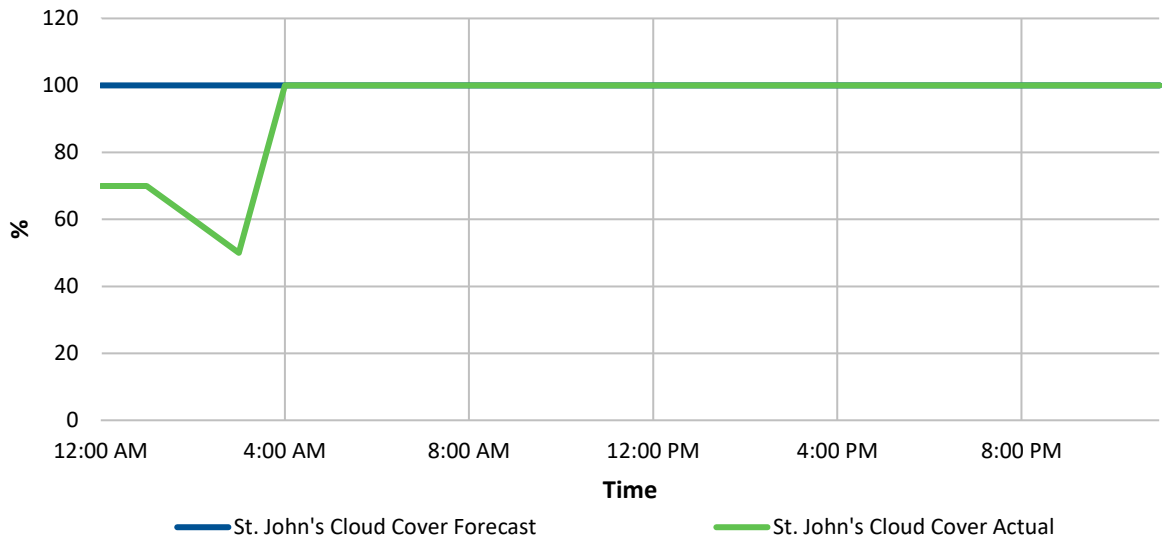

Chart 50: Forecast vs Actual Cloud Cover June 2, 2024

The discrepancy between Utility Actual and Utility Forecast load was primarily attributed to non-uniform behaviour as this date occurred on a Sunday and the peak occurred an hour later than forecast. Additionally, the weather data issue that occurred on June 1, 2024, may have negatively affected the forecasting on this day as well.

2.3.5.3 June 25, 2024

Table 11 provides a summary of forecast peak data for June 25, 2024.

Table 11: Peak Data Summary for June 25, 2024

	Load (MW)	Time	Error (%)[58]	Temperature Delta (°C)[59]	Wind Speed Delta (km/h)[60]
Utility Forecast	606	5:00 p.m.	-6.7	1.00	10.00
Utility Actual	650	5:00 p.m.		1.00	10.00
Total Forecast	780	5:00 p.m.	0.0	1.00	10.00
Total Actual	780	6:00 p.m.		1.00	9.00
Board Forecast	785	N/A	N/A	N/A	N/A
Board Actual	792				

The forecast peak at 7:20 a.m., as reported to the Board, was 785 MW; the actual reported peak was 792 MW. Chart 51 to Chart 55 include hourly plots of forecast and actual values to assist in determining the sources of the differences between actual and forecast loads.

Chart 51 shows the hourly distribution of the total load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted a 5:00 p.m. peak of 780 MW; the actual peak was 780 MW and occurred at 6:00 p.m. The forecast load at the time of peak was 770 MW.

[58] Negative percentages indicate an under-forecasted peak. Positive percentages indicate an over-forecasted peak.
[59] Temperature difference at forecast peak and actual peak. Negative values indicate that the temperature was warmer than forecast. Positive values indicate the temperature was colder than forecast.
[60] Wind speed difference at the forecast peak and the actual peak. Negative values indicate wind speed was more than forecast. Positive values indicate the wind speed was less than forecast.

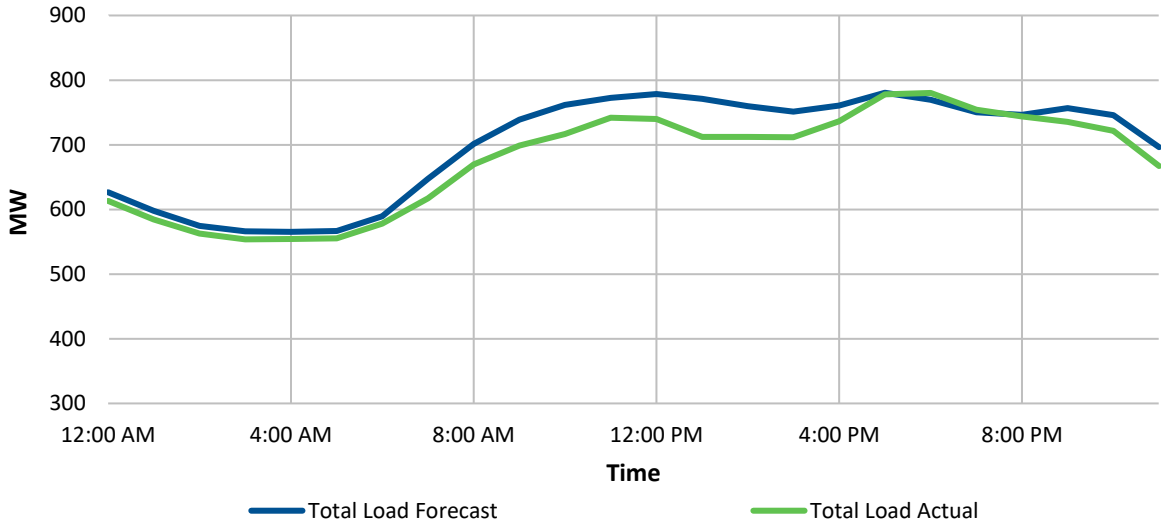

Chart 51: Forecast vs Actual Total Load for June 25, 2024

Chart 52 shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 5:00 p.m. of 606 MW; the actual peak was 650 MW; resulting in an underestimate of 6.7%.

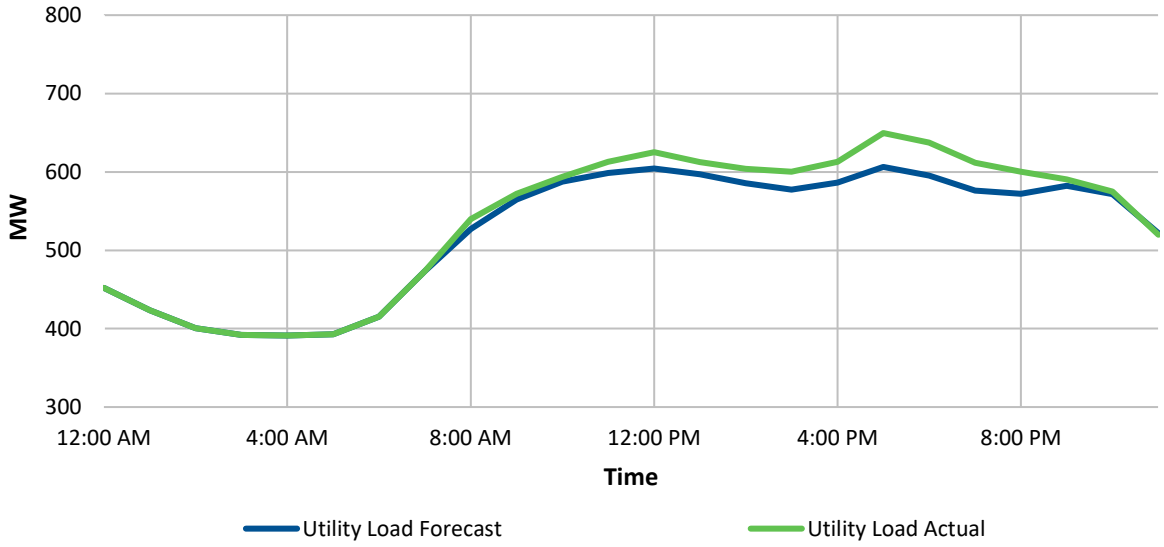

Chart 52: Forecast vs Actual Utility Load for June 25, 2024

Chart 53 shows the actual temperature in St. John's compared to the forecast. The temperature was an average of 2°C colder than forecast for the majority of the day. The difference in forecast and actual temperatures would have likely contributed to the forecast error.

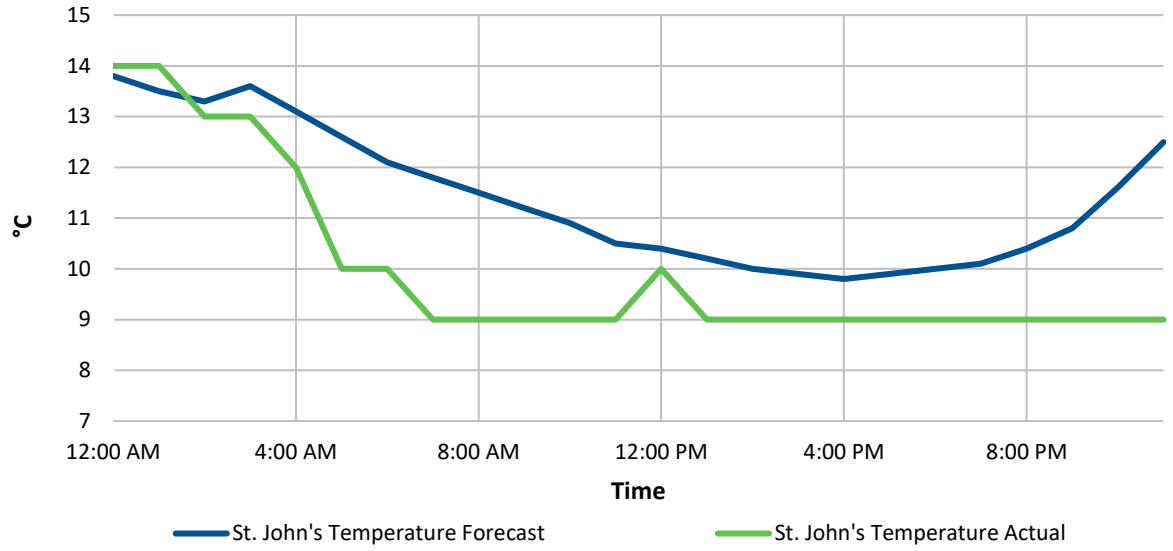

Chart 53: Forecast vs Actual Temperature for June 25, 2024

Chart 54 shows the actual wind speed in St. John's compared to the forecast. The actual wind speed was lower than forecast for the day.

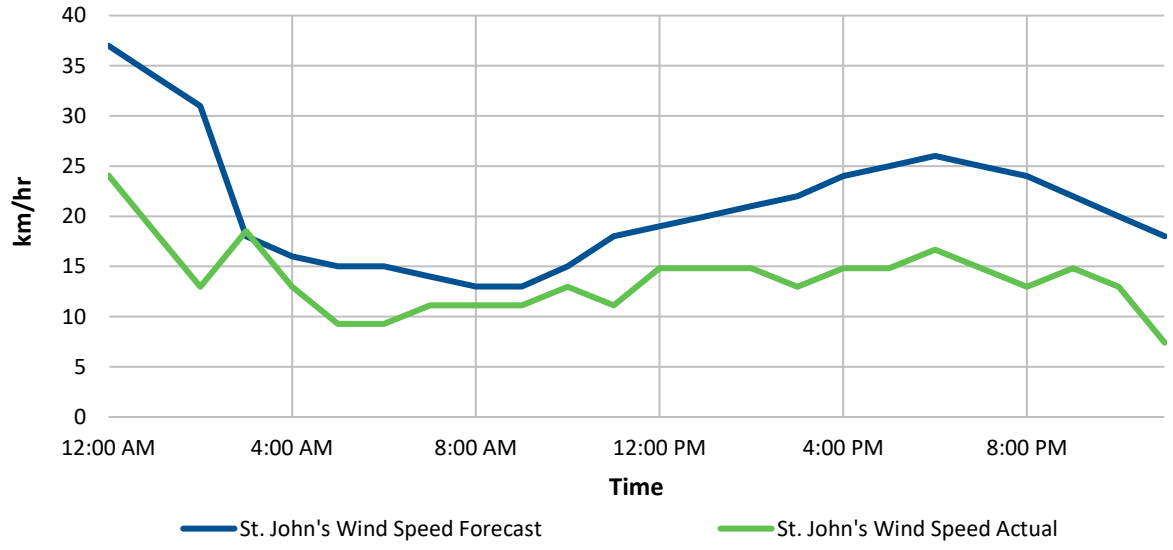

Chart 54: Forecast vs Actual Wind Speed for June 25, 2024

Chart 55 shows the actual cloud cover in St. John's compared to the forecast. It was close to forecast for the majority of the day.

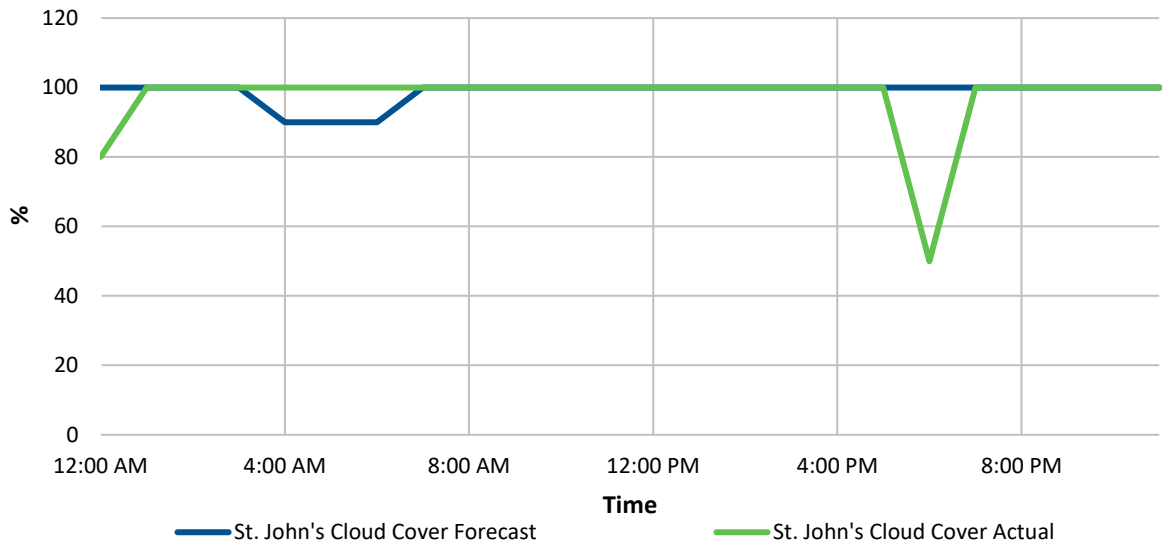

Chart 55: Forecast vs Actual Cloud Cover for June 25, 2024

The discrepancy between Utility Actual and Utility Forecast load was primarily attributed to the temperature variations from the forecast.

2.3.6 July 2024

In July 2024 the forecast utility peak was 642 MW on July 30, 2024, which is consistent with the actual utility peak of 665 MW on that day. Absolute error was 15 MW on average, with an average percent error of -1.9%, an average absolute error of 2.4%, and an average actual/forecast of -2.0%.

2.3.6.1 July 2, 2024

Table 12 provides a summary of forecast peak data for July 2, 2024.

Table 12: Peak Data Summary for July 2, 2024

	Load (MW)	Time	Error (%)[61]	Temperature Delta (°C)[62]	Wind Speed Delta (km/h)[63]
Utility Forecast	592	12:00 p.m.	-7.3	0.00	8.00
Utility Actual	638	5:00 p.m.		1.00	(6.00)
Total Forecast	768	12:00 p.m.	-2.1	0.00	8.00
Total Actual	784	5:00 p.m.		1.00	(6.00)
Board Forecast	770	N/A	N/A	N/A	N/A
Board Actual	785				

The forecast peak at 7:20 a.m., as reported to the Board, was 770 MW; the actual reported peak was 785 MW. Chart 56 to Chart 60 include hourly plots of forecast and actual values to assist in determining the sources of the differences between actual and forecast loads.

Chart 56 shows the hourly distribution of the total load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted a 12:00 p.m. peak of 768 MW; the actual peak was 784 MW and occurred at 5:00 p.m., resulting in an underestimate of 2.1%. The forecast load at the time of peak was 761 MW.

[61] Negative percentages indicate an under-forecasted peak. Positive percentages indicate an over-forecasted peak.
[62] Temperature difference at forecast peak and actual peak. Negative values indicate that the temperature was warmer than forecast. Positive values indicate the temperature was colder than forecast.
[63] Wind speed difference at the forecast peak and the actual peak. Negative values indicate wind speed was more than forecast. Positive values indicate the wind speed was less than forecast.

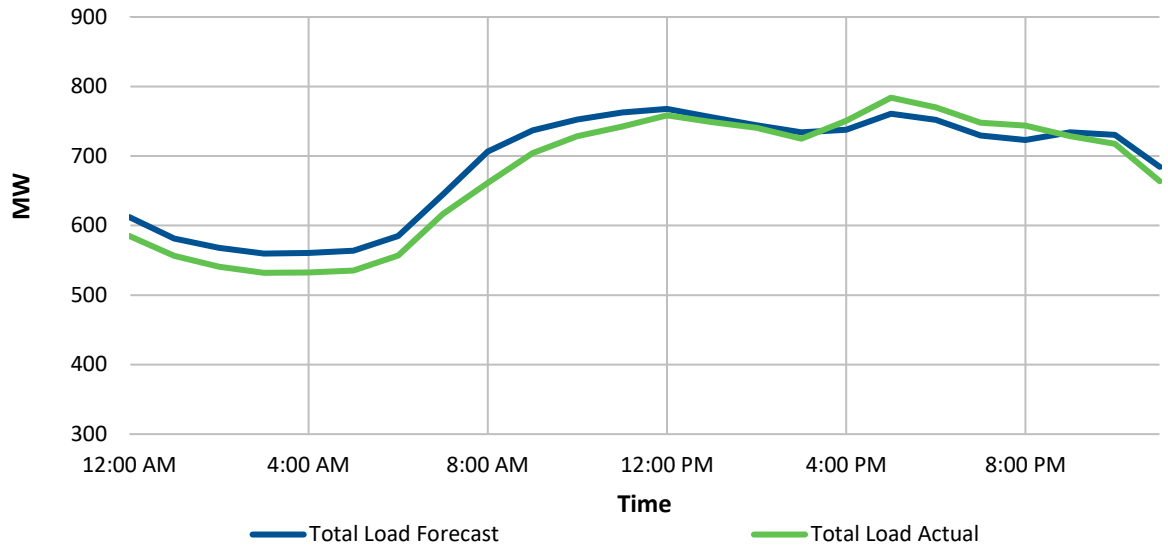

Chart 56: Forecast vs Actual Total Load for July 2, 2024

Chart 57 shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 12:00 p.m. of 592 MW; the actual peak was 638 MW and occurred at 5:00 p.m., resulting in an underestimate of 7.3%. The forecast load at the time of peak was 585 MW.

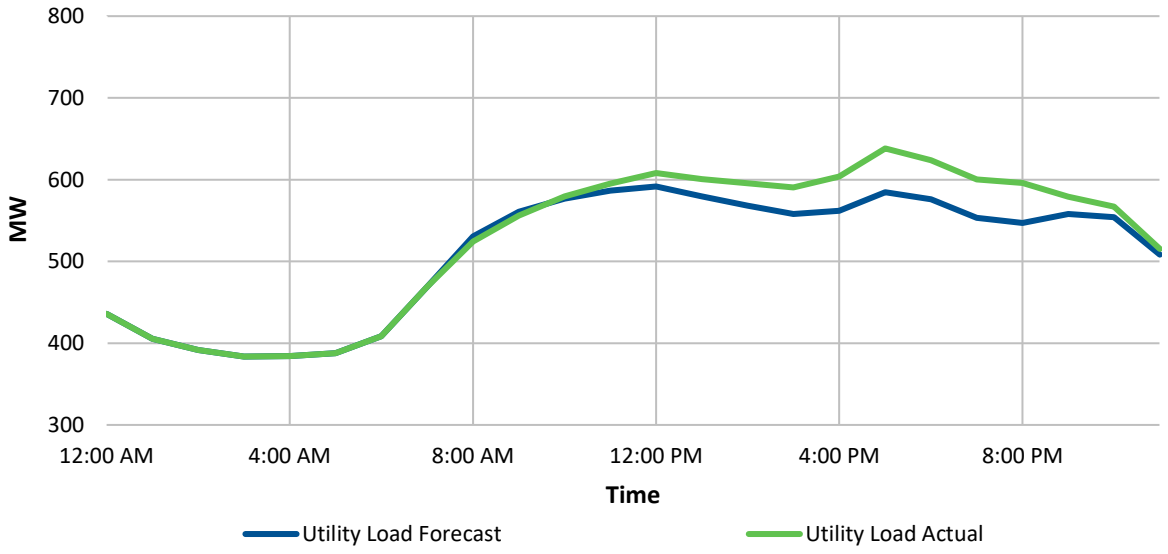

Chart 57: Forecast vs Actual Utility Load for July 2, 2024

Chart 58 shows the actual temperature in St. John's compared to the forecast. The temperature was similar to forecast at noon when the peak was forecast, but on average 1°C cooler in the four hours leading up to the actual peak which may have contributed to the peak shifting to 5:00 p.m. The difference in forecast and actual temperatures may have contributed to the forecast error.

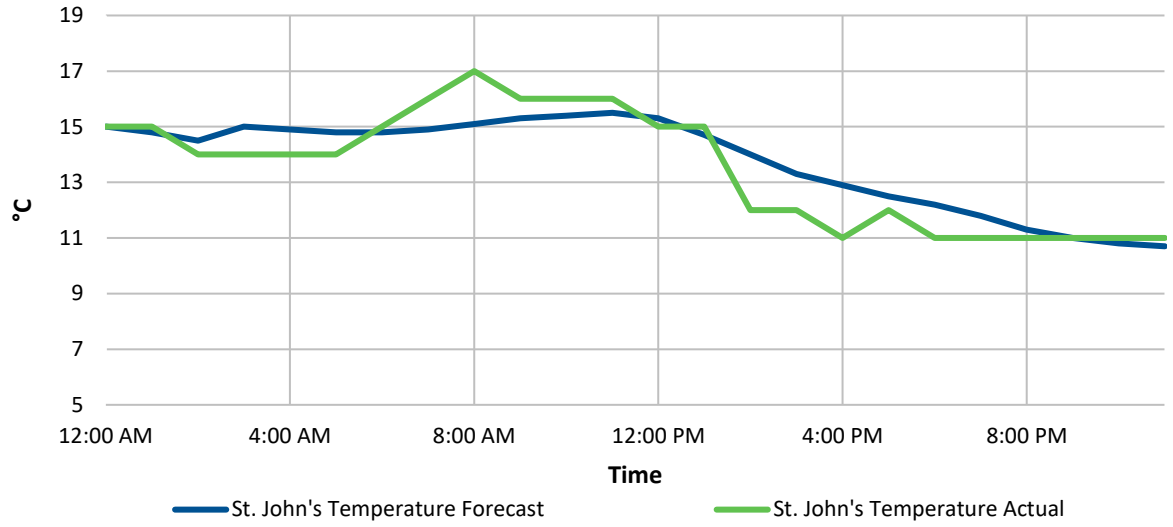

Chart 58: Forecast vs Actual Temperature for July 2, 2024

Chart 59 shows the actual wind speed compared to the forecast. From 3:00 a.m. noon, the wind speed averaged 8 km/hr less than forecast. From noon until 5:00 p.m. when the peak occurred, the wind speed averaged 6 km/hr more than forecast.

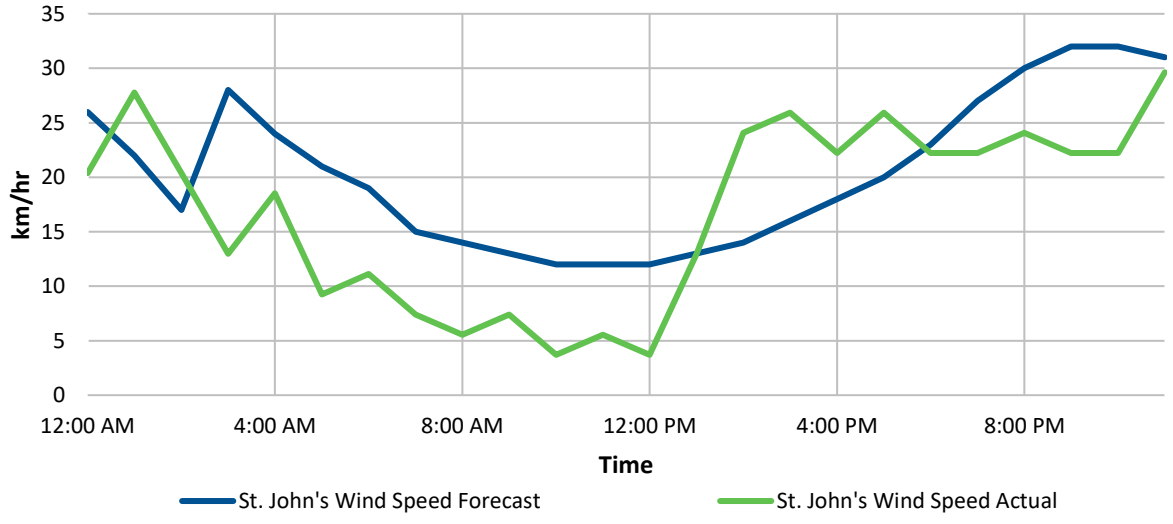

Chart 59: Forecast vs Actual Wind Speed for July 2, 2024

Chart 60 shows the actual cloud cover in St. John's compared to the forecast. Cloud cover was less than forecast during the afternoon.

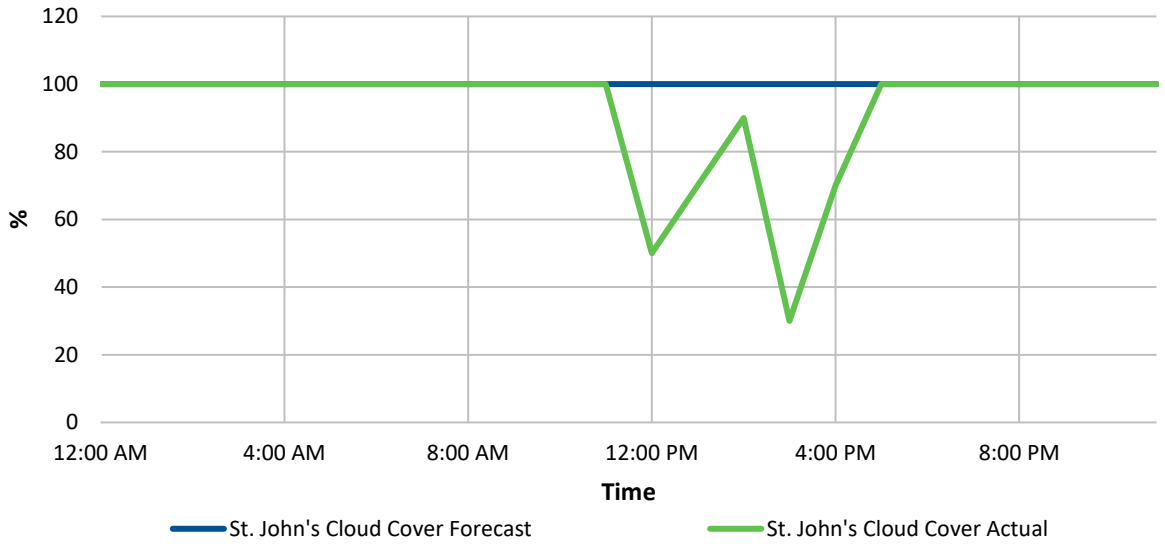

Chart 60: Forecast vs Actual Cloud Cover for July 2, 2024

The discrepancy between Utility Actual and Utility Forecast load was primarily attributed to the temperature variations from the forecast.

2.3.6.2 July 16, 2024

Table 13 provides a summary of forecast peak data for July 16, 2024.

Table 13: Peak Data Summary for July 16, 2024

	Load (MW)	Time	Error (%)[64]	Temperature Delta (°C)[65]	Wind Speed Delta (km/h)[66]
Utility Forecast	596	5:00 p.m.	-5.7	(2.00)	0.00
Utility Actual	632	5:00 p.m.		(2.00)	0.00
Total Forecast	773	5:00 p.m.	0.2	(2.00)	0.00
Total Actual	771	5:00 p.m.		(2.00)	0.00
Board Forecast	775	N/A	N/A	N/A	N/A
Board Actual	772				

[64] Negative percentages indicate an under-forecasted peak. Positive percentages indicate an over-forecasted peak.
[65] Temperature difference at forecast peak and actual peak. Negative values indicate that the temperature was warmer than forecast. Positive values indicate the temperature was colder than forecast.
[66] Wind speed difference at the forecast peak and the actual peak. Negative values indicate wind speed was more than forecast. Positive values indicate the wind speed was less than forecast.

The forecast peak at 7:20 a.m., as reported to the Board, was 775 MW; the actual reported peak was 772 MW. Chart 61 to Chart 65 include hourly plots of forecast and actual values to assist in determining the sources of the differences between actual and forecast loads.

Chart 61 shows the hourly distribution of the total load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted a 5:00 p.m. peak of 773 MW; the actual peak was 771 MW, resulting in an overestimate of 0.2%.

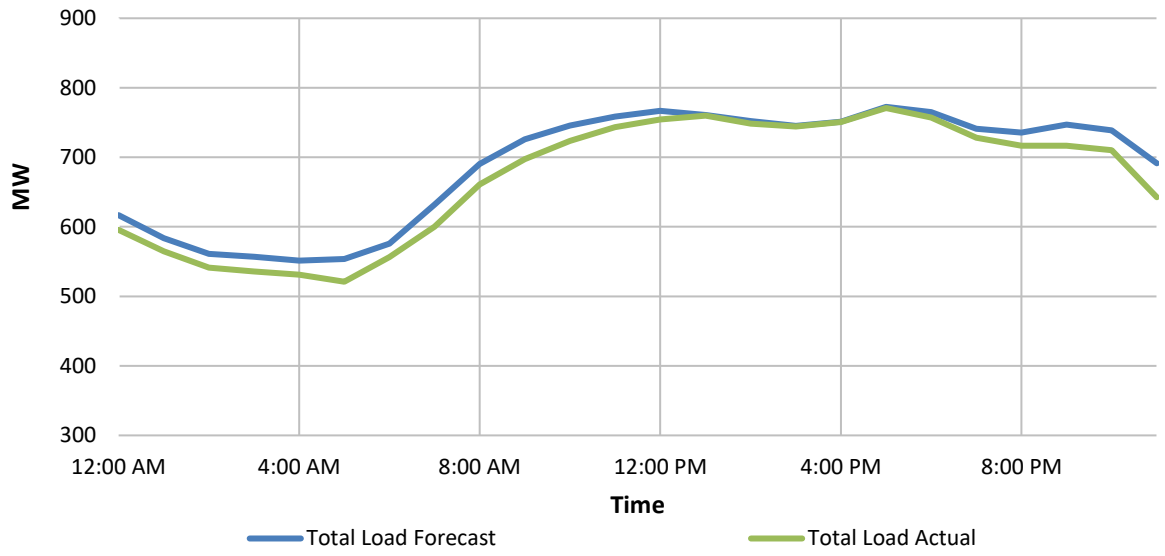

Chart 61: Forecast vs Actual Total Load for July 16, 2024

Chart 62 shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 5:00 p.m. of 596 MW; the actual peak was 632 MW, resulting in an underestimate of 5.7%.

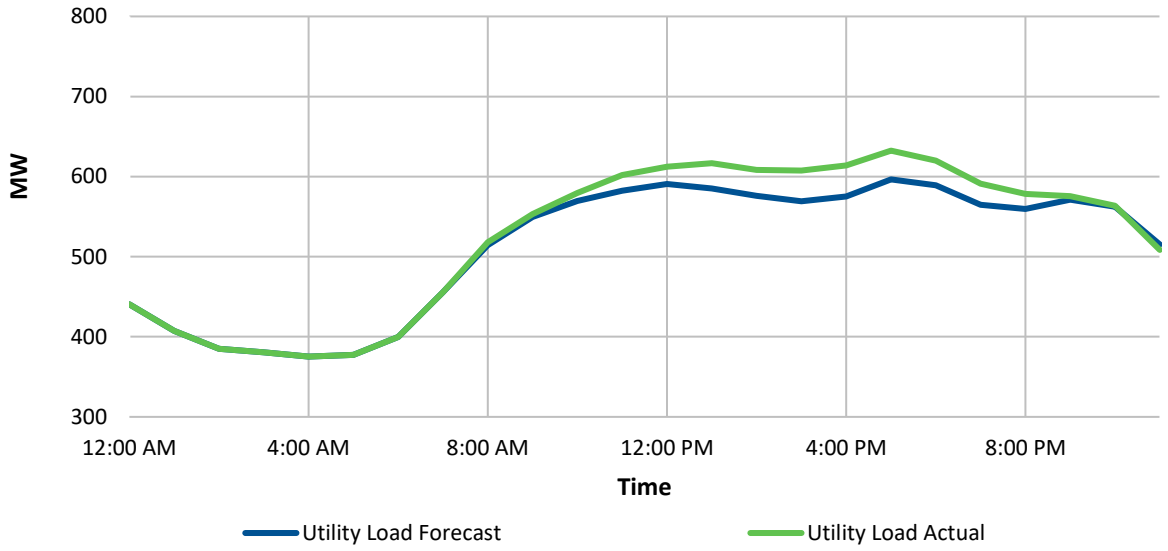

Chart 62: Forecast vs Actual Utility Load for July 16, 2024

Chart 63 shows the actual temperature in St. John's compared to the forecast. The temperature was, on average, 2°C warmer throughout the day than forecast. There may have been some cooling load impacts and the difference in forecast and actual temperatures may have contributed to the forecast error.

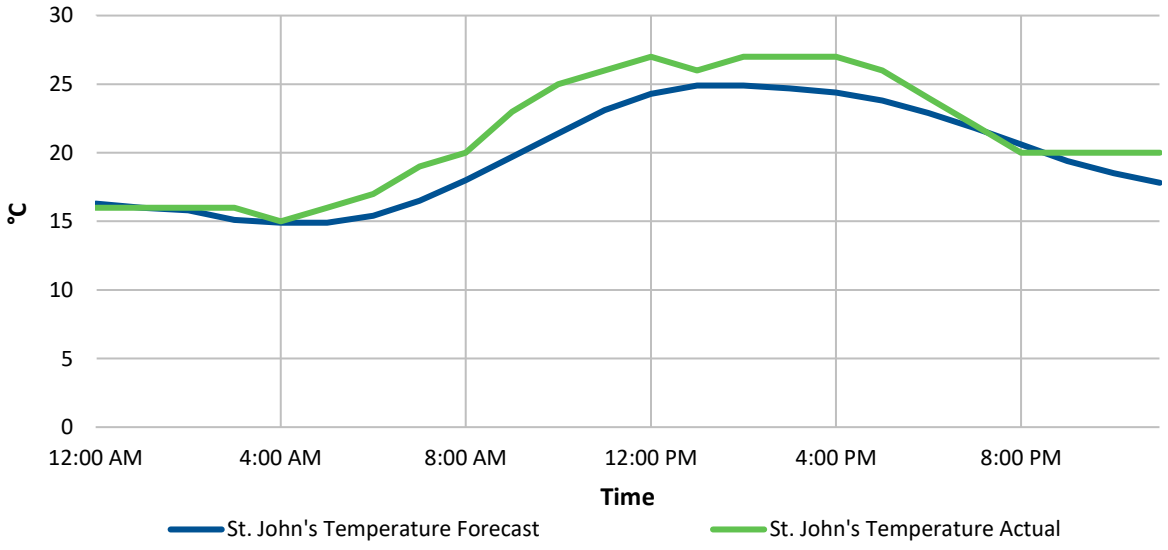

Chart 63: Forecast vs Actual Temperature for July 16, 2024

Chart 64 shows the actual wind speed in St. John's compared to the forecast. The wind speed was on average close to forecast for the majority of the day.

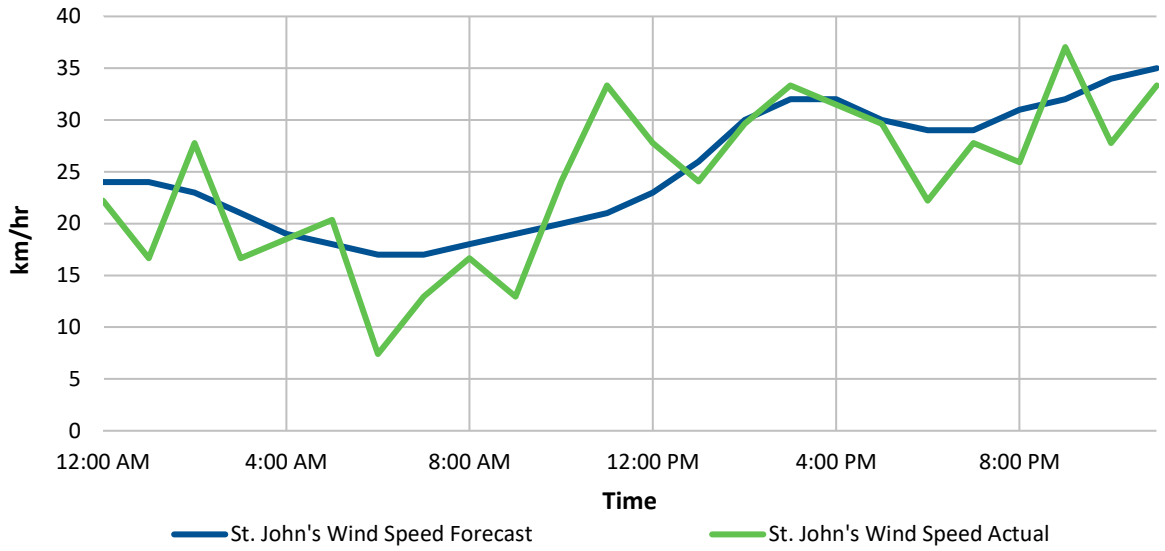

Chart 64: Forecast vs Actual Wind Speed for July 16, 2024

Chart 65 shows the actual cloud cover in St. John's compared to the forecast. It was cloudier than forecast for the majority of the day.

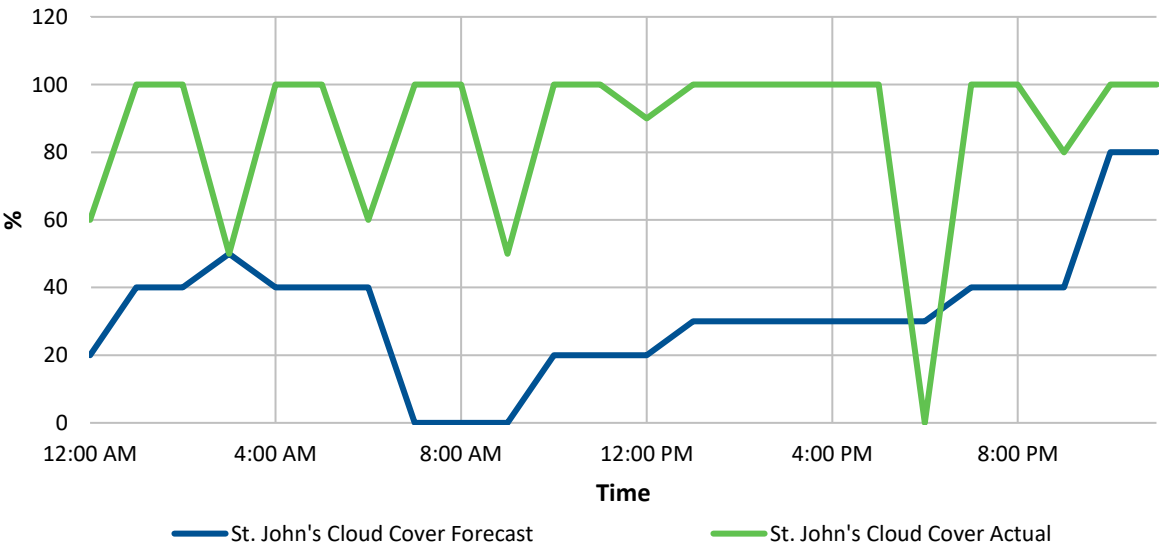

Chart 65: Forecast vs Actual Cloud Cover for July 16, 2024

The discrepancy between Utility Actual and Utility Forecast load was primarily attributed to the temperature variations from the forecast and the potential impact of cooling load on the system as the peak temperature on this day was 27°C.

2.3.7 August 2024

In August 2024, the forecast utility peak was 627 MW on August 5, 2024, which is consistent with the forecast utility peak for that day of 648 MW. The actual utility peak of 655 MW occurred on August 1, 2024, and was 7.0% higher than the forecast utility peak for that day of 612 MW. More information on August 1, 2024, is provided in Section 2.3.7.1. Absolute error was 14 MW on average, with an average percent error of -1.4%, an average absolute error of 2.3%, and an average actual/forecast of -1.5%.

2.3.7.1 August 1, 2024

Table 14 provides a summary of forecast peak data for August 1, 2024.

Table 14: Peak Data Summary for August 1, 2024

	Load (MW)	Time	Error (%)[67]	Temperature Delta (°C)[68]	Wind Speed Delta (km/h)[69]
Utility Forecast	612	5:00 p.m.	-6.5	(2.00)	1.00
Utility Actual	655	5:00 p.m.		(2.00)	1.00
Total Forecast	788	5:00 p.m.	-1.4	(2.00)	1.00
Total Actual	800	5:00 p.m.		(2.00)	1.00
Board Forecast	790	N/A	N/A	N/A	N/A
Board Actual	803				

The forecast peak at 7:20 a.m., as reported to the Board, was 790 MW; the actual reported peak was 803 MW. Chart 66 to Chart 70 include hourly plots of forecast and actual values to assist in determining the sources of the differences between actual and forecast loads.

[67] Negative percentages indicate an under-forecasted peak. Positive percentages indicate an over-forecasted peak.
[68] Temperature difference at forecast peak and actual peak. Negative values indicate that the temperature was warmer than forecast. Positive values indicate the temperature was colder than forecast.
[69] Wind speed difference at the forecast peak and the actual peak. Negative values indicate wind speed was more than forecast. Positive values indicate the wind speed was less than forecast.

Chart 66 shows the hourly distribution of the total load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted a 5:00 p.m. peak of 788 MW; the actual peak was 800 MW, resulting in an underestimate of 1.4%.

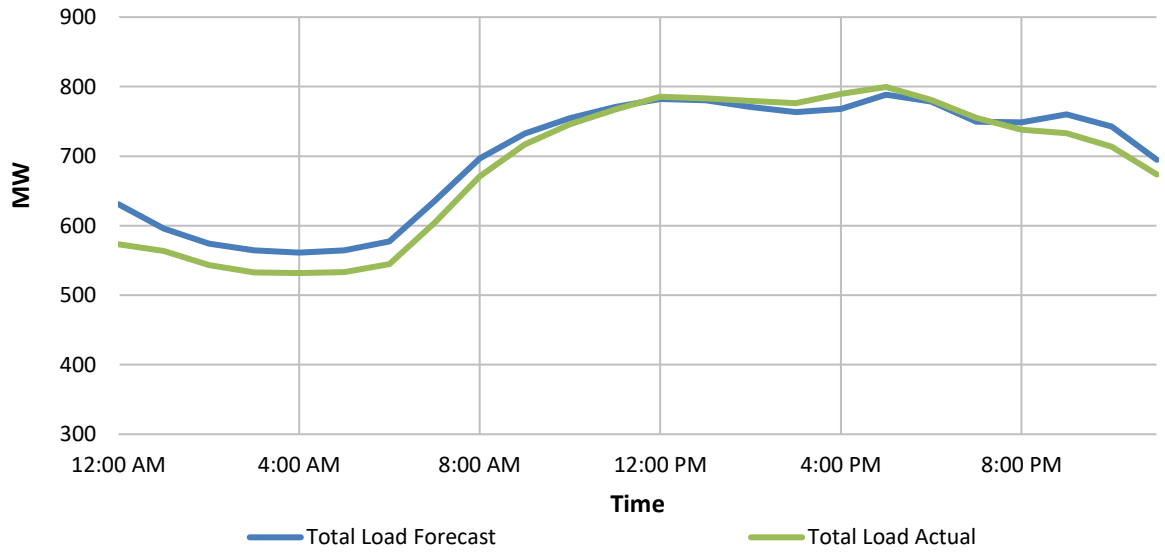

Chart 66: Forecast vs Actual Total Load for August 1, 2024

Chart 67 shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 5:00 p.m. of 612 MW; the actual peak was 655 MW, resulting in an underestimate of 6.5%.

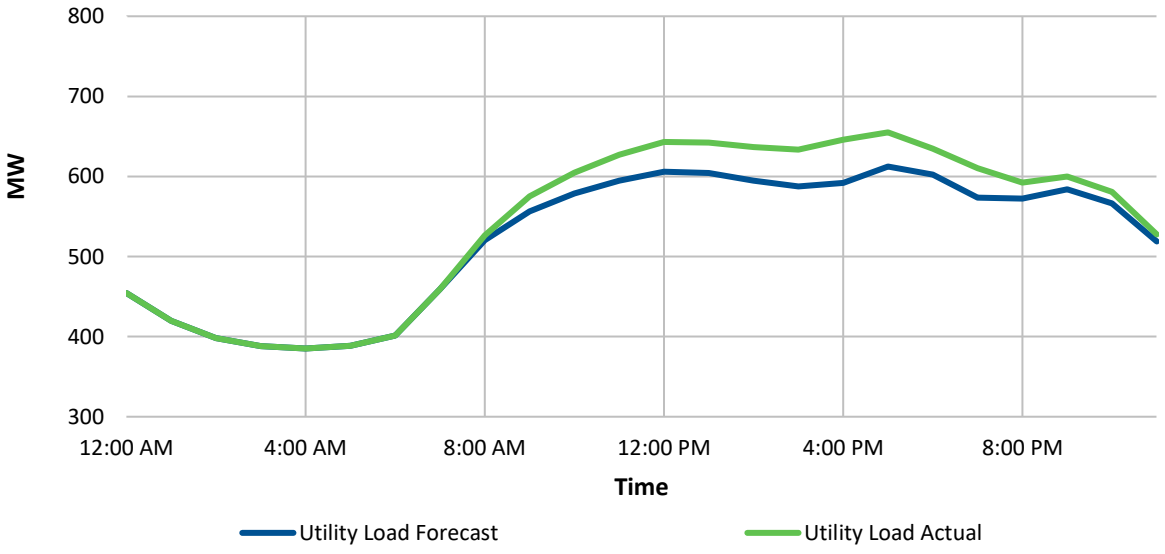

Chart 67: Forecast vs Actual Utility Load for August 1, 2024

Chart 68 shows the actual temperature in St. John's compared to the forecast. The temperature was on average 2°C hotter in the hours leading up to peak. The difference in forecast and actual temperatures may have contributed to the forecast error, as the model may not have incorporated some cooling load that materialized with the hotter temperatures. The peak temperature for August 1, 2024, in St. John's was 29°C.

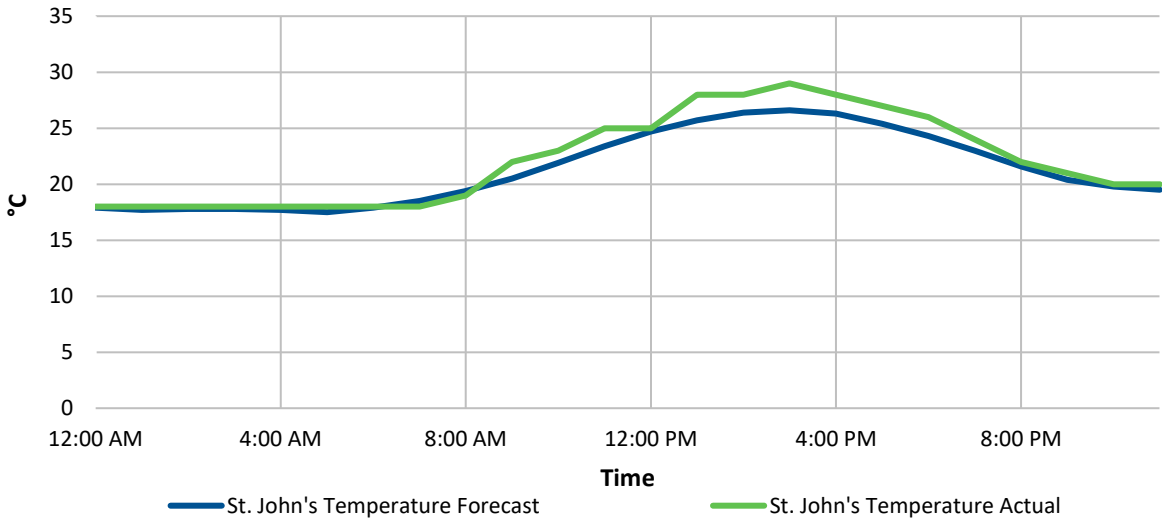

Chart 68: Forecast vs Actual Temperature for August 1, 2024

Chart 69 shows the actual wind speed in St. John's compared to the forecast. The wind speed was close to forecast for the majority of the day.

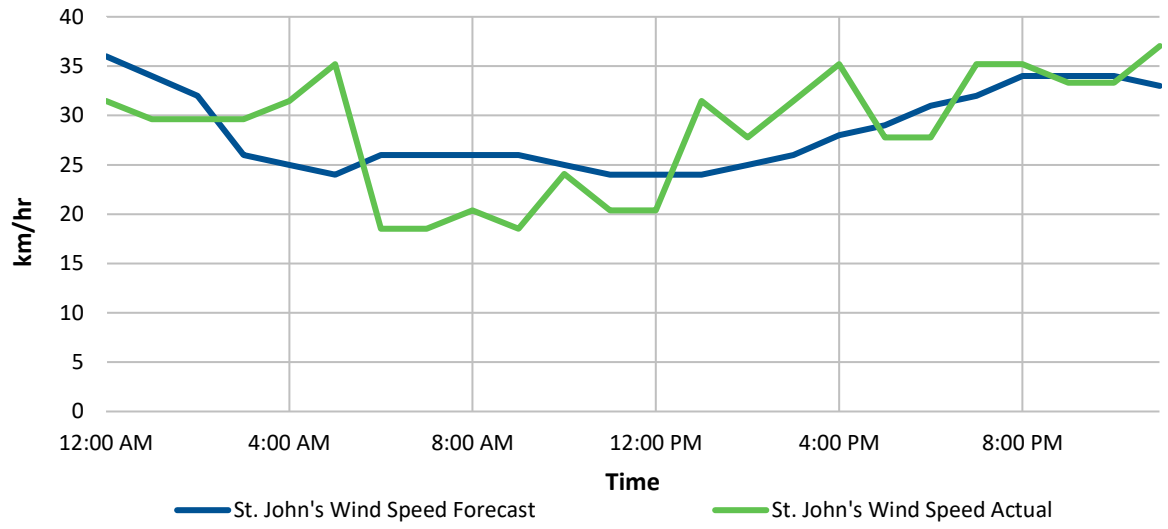

Chart 69: Forecast vs Actual Wind Speed for August 1, 2024

Chart 70 shows the actual cloud cover in St. John's compared to the forecast. It was cloudier than forecast for the majority of the day.

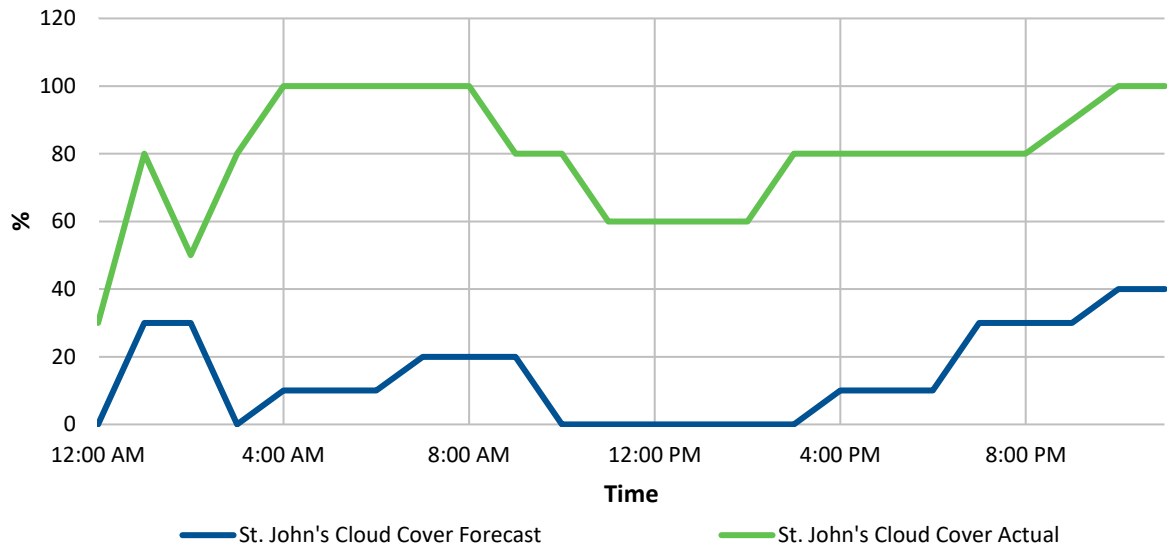

Chart 70: Forecast vs Actual Cloud Cover for August 1, 2024

The discrepancy between Utility Actual and Utility Forecast load was primarily attributed to the temperature variations from the forecast and the additional cooling load.

2.3.8 October 2024

In October 2024, the forecast utility peak was 976 MW on October 31, 2024, which is consistent with the forecast utility peak for that day of 973 MW. The actual utility peak of 989 MW occurred on October 29, 2024, and was consistent with the forecast utility peak of that day of 973 MW. Absolute error for the month was 22 MW on average, with an average percent error of -0.5%, an average absolute error of 3.0%, and an average actual/forecast of -0.6%.

2.3.8.1 October 1, 2024

Table 15 provides a summary of forecast peak data for October 1, 2024.

Table 15: Peak Data Summary for October 1, 2024

	Load (MW)	Time	Error (%)[70]	Temperature Delta (°C)[71]	Wind Speed Delta (km/h)[72]
Utility Forecast	631	7:00 p.m.	-9.5	1.00	(5.00)
Utility Actual	697	5:00 p.m.		1.00	3.00
Total Forecast	808	7:00 p.m.	-5.9	1.00	(5.00)
Total Actual	858	5:00 p.m.		1.00	3.00
Board Forecast	810	N/A	N/A	N/A	N/A
Board Actual	862				

The forecast peak at 7:20 a.m., as reported to the Board, was 810 MW; the actual reported peak was 862 MW. Chart 71 to Chart 75 include hourly plots of forecast and actual values to assist in determining the sources of the differences between actual and forecast loads.

Chart 71 shows the hourly distribution of the total load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted a 7:00 p.m. peak of 808 MW; the actual peak was 858 MW, and occurred at 5:00 p.m., resulting in an underestimate of 5.9%. The forecast load at the time of peak was 794 MW.

[70] Negative percentages indicate an under-forecasted peak. Positive percentages indicate an over-forecasted peak.
[71] Temperature difference at forecast peak and actual peak. Negative values indicate that the temperature was warmer than forecast. Positive values indicate the temperature was colder than forecast.
[72] Wind speed difference at the forecast peak and the actual peak. Negative values indicate wind speed was more than forecast. Positive values indicate the wind speed was less than forecast.

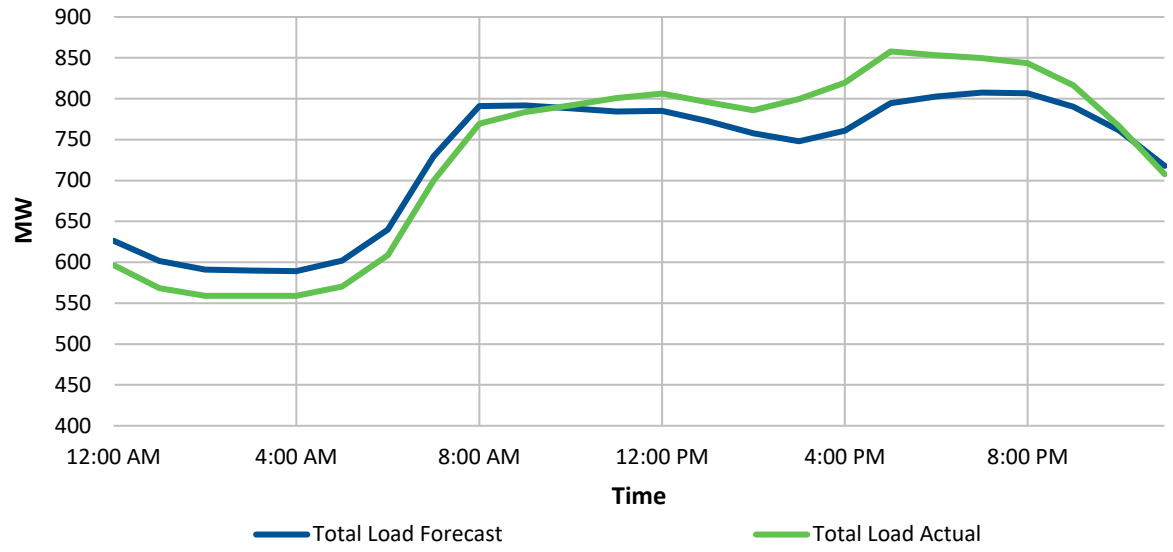

Chart 71: Forecast vs Actual Total Load for October 1, 2024

Chart 72 shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 7:00 p.m. of 631 MW; the actual peak was 697 MW, and occurred at 5:00 p.m., resulting in an underestimate of 9.5%. The forecast load at the time of peak was 618 MW.

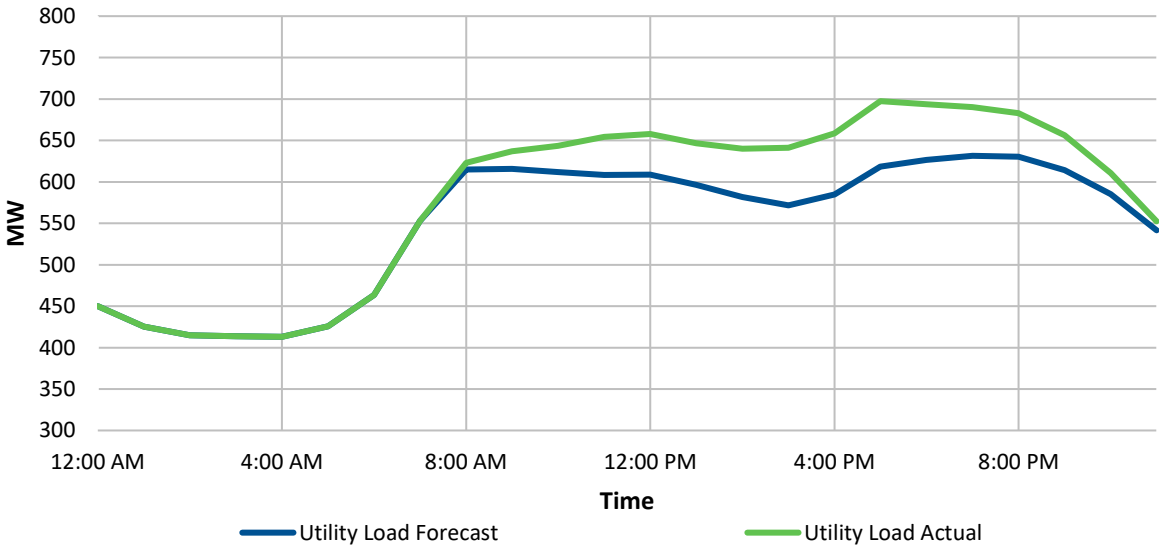

Chart 72: Forecast vs Actual Utility Load for October 1, 2024

Chart 73 shows the actual temperature in St. John's compared to the forecast. The temperature was close to forecast until 5:00 p.m. when it was colder than forecast by 1°C. The difference in forecast and actual temperatures may have contributed to the forecast error.

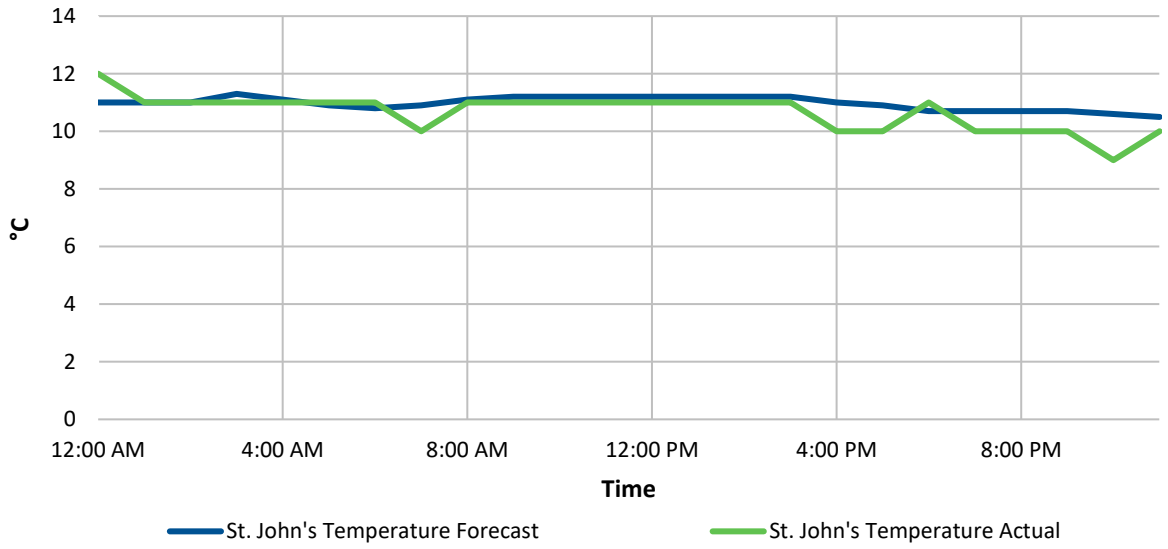

Chart 73: Forecast vs Actual Temperature for October 1, 2024

Chart 74 shows the actual wind speed in St. John's compared to the forecast. The wind speed was close to the forecast for the majority of the day.

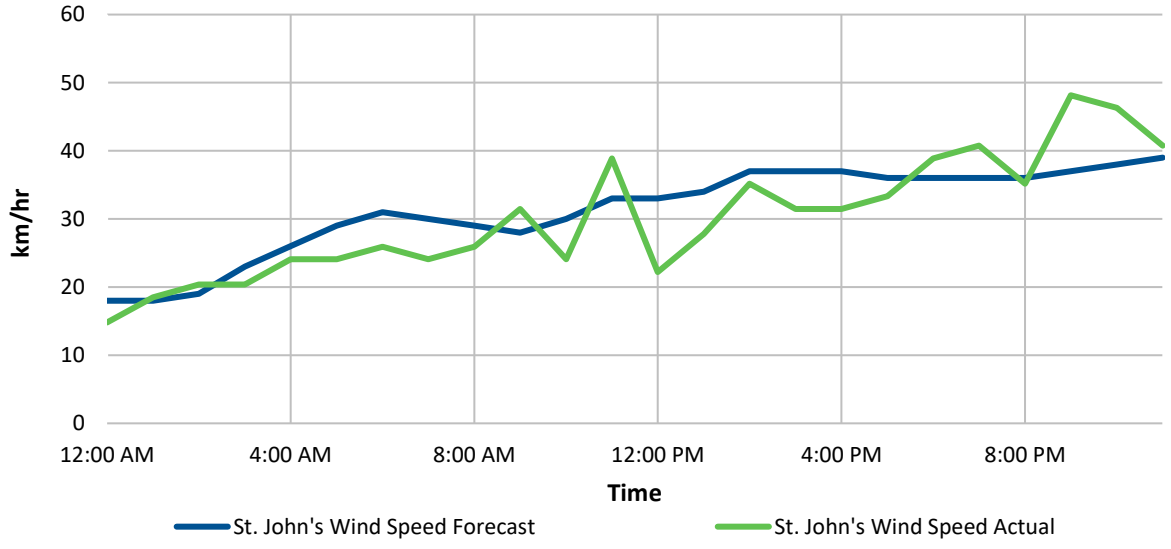

Chart 74: Forecast vs Actual Wind Speed for October 1, 2024

Chart 75 shows the actual cloud cover in St. John's compared to the forecast. Cloud cover was similar to forecast for the majority of the day.

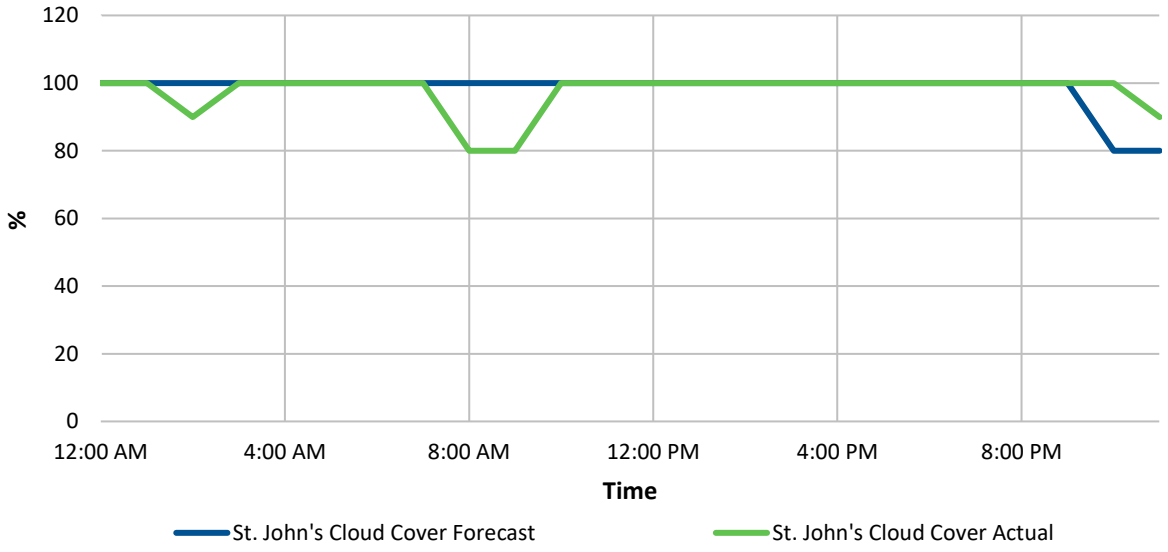

Chart 75: Forecast vs Actual Cloud Cover for October 1, 2024

The discrepancy between Utility Actual and Utility Forecast load was primarily attributed to the temperature variations from the forecast and underestimation by the load forecasting software.

2.3.8.2 October 2, 2024

Table 16 provides a summary of forecast peak data for October 2, 2024.

Table 16: Peak Data Summary for October 2, 2024

	Load (MW)	Time	Error (%)[73]	Temperature Delta (°C)[74]	Wind Speed Delta (km/h)[75]
Utility Forecast	680	8:00 a.m.	-6.7	1.00	5.00
Utility Actual	729	5:00 p.m.		2.00	2.00
Total Forecast	856	8:00 a.m.	-3.4	1.00	5.00
Total Actual	886	7:00 p.m.		1.00	2.00
Board Forecast	855	N/A	N/A	N/A	N/A
Board Actual	893				

[73] Negative percentages indicate an under-forecasted peak. Positive percentages indicate an over-forecasted peak.
[74] Temperature difference at forecast peak and actual peak. Negative values indicate that the temperature was warmer than forecast. Positive values indicate the temperature was colder than forecast.
[75] Wind speed difference at the forecast peak and the actual peak. Negative values indicate wind speed was more than forecast. Positive values indicate the wind speed was less than forecast.

The forecast peak at 7:20 a.m., as reported to the Board, was 855 MW; the actual reported peak was 893 MW. Chart 76 to Chart 80 include hourly plots of forecast and actual values to assist in determining the sources of the differences between actual and forecast loads.

Chart 76 shows the hourly distribution of the total load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted an 8:00 a.m. peak of 856 MW; the actual peak was 886 MW and occurred at 7:00 p.m., resulting in an underestimate of 3.4%. The forecast load at the time of peak was 849 MW.

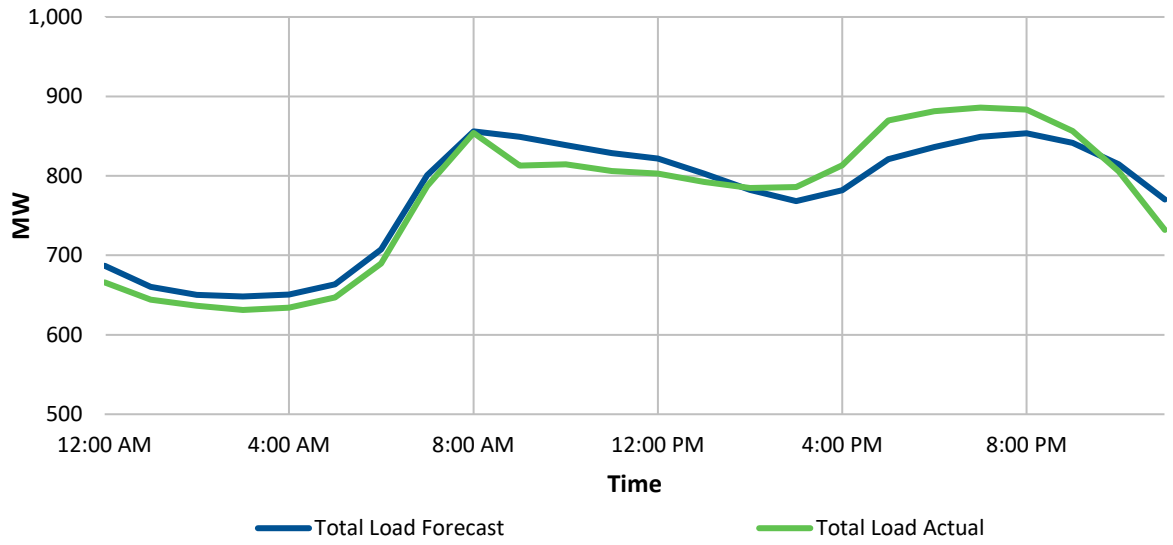

Chart 76: Forecast vs Actual Total Load for October 2, 2024

Chart 77 shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 8:00 a.m. of 680 MW; the actual peak was 729 MW and occurred at 5:00 p.m., resulting in an underestimate of 6.7%. The forecast load at the time of peak was 645 MW.

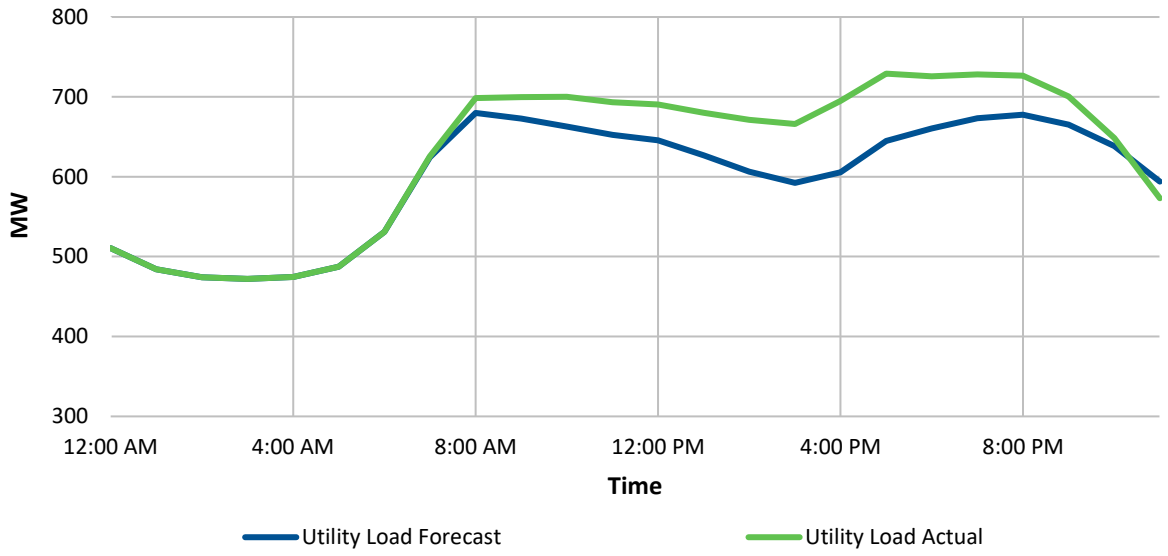

Chart 77: Forecast vs Actual Utility Load for October 2, 2024

Chart 78 shows the actual temperature in St. John's compared to the forecast. The temperature was on average 1°C to 2°C cooler in the hours leading up to the actual peak. The difference in forecast and actual temperatures may have contributed to the forecast error.

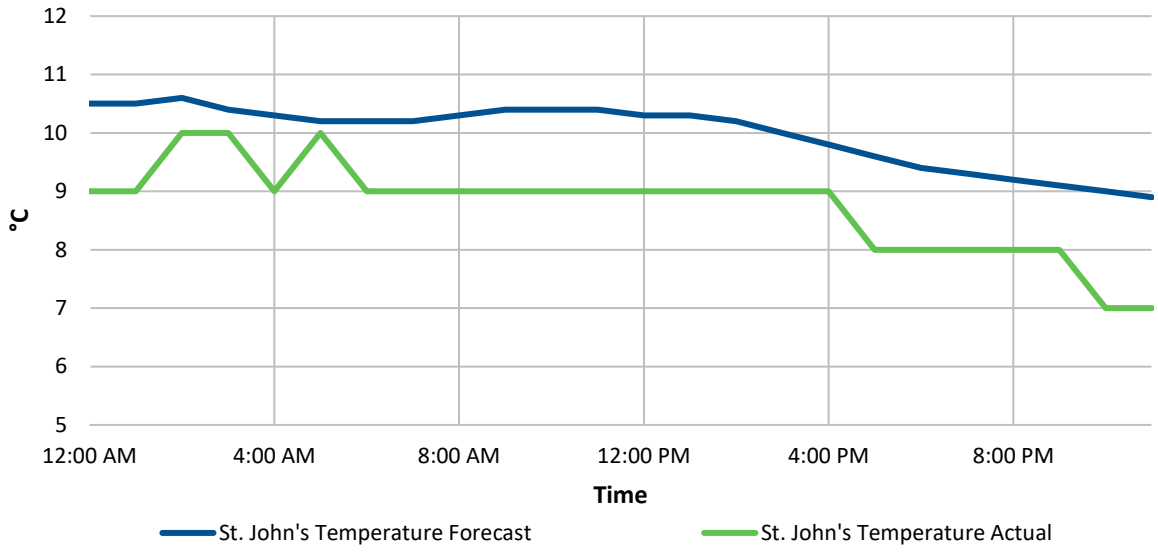

Chart 78: Forecast vs Actual Temperature for October 2, 2024

Chart 79 shows the actual wind speed in St. John's compared to the forecast. The wind speed was similar to forecast for the majority of the day.

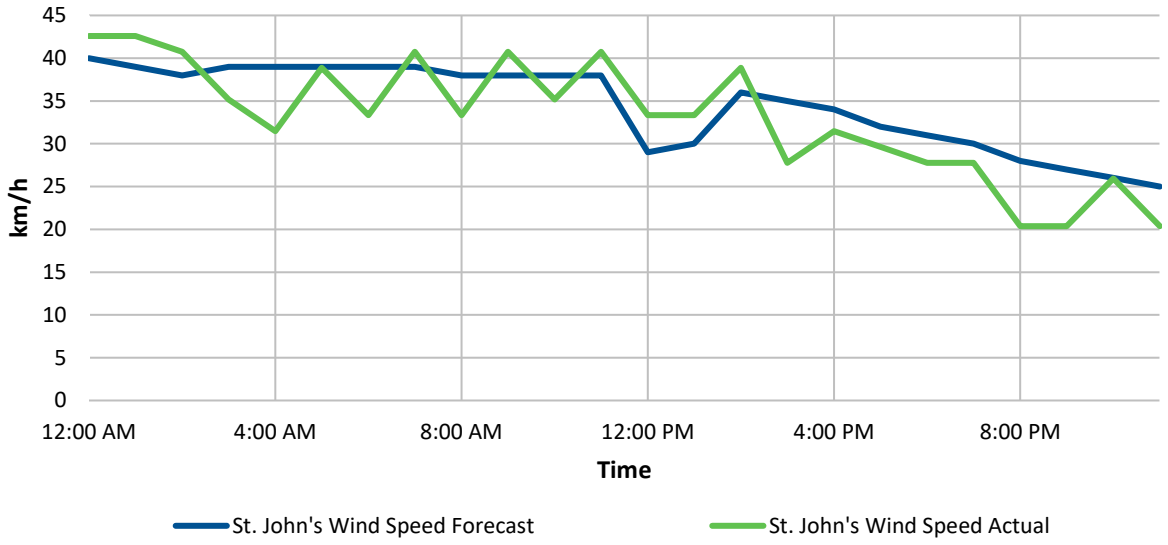

Chart 79: Forecast vs Actual Wind Speed for October 2, 2024

Chart 80 shows the actual cloud cover in St. John's compared to the forecast. It was cloudier than forecast for the majority of the day.

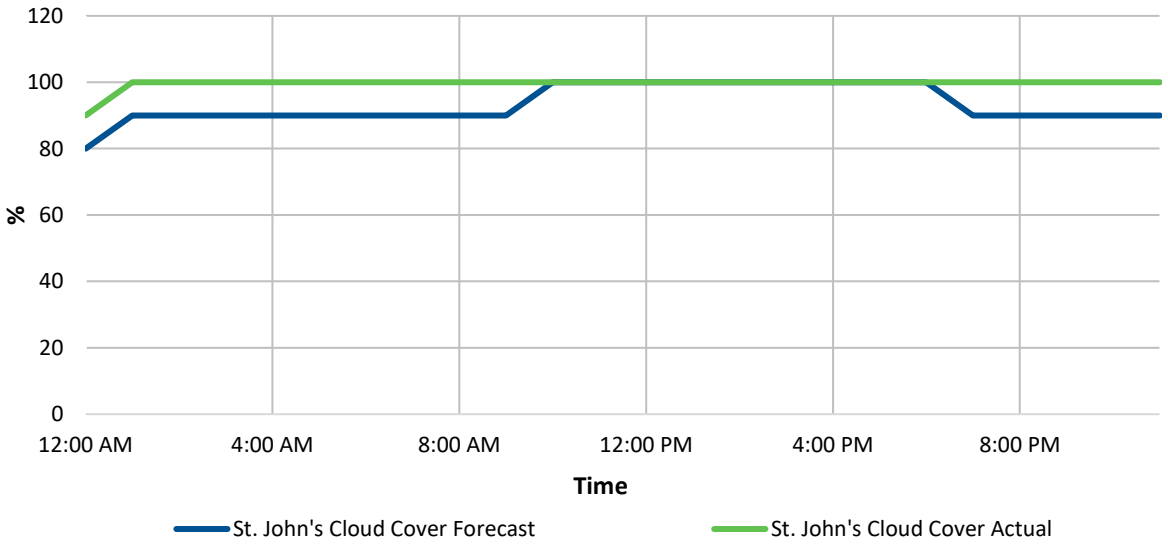

Chart 80: Forecast vs Actual Cloud Cover for October 2, 2024

The discrepancy between Utility Actual and Utility Forecast load was primarily attributed to the temperature variations from the forecast.

2.3.8.3 October 25, 2024

Table 17 provides a summary of forecast peak data for October 25, 2024.

Table 17: Peak Data Summary for October 25, 2024

	Load (MW)	Time	Error (%)[76]	Temperature Delta (°C)[77]	Wind Speed Delta (km/h)[78]
Utility Forecast	661	6:00 p.m.	-10.0	(1.00)	7.00
Utility Actual	734	5:00 p.m.		(1.00)	2.00
Total Forecast	804	6:00 p.m.	-5.0	(1.00)	7.00
Total Actual	846	6:00 p.m.		(1.00)	7.00
Board Forecast	835	N/A	N/A	N/A	N/A
Board Actual	860				

The forecast peak at 7:20 a.m., as reported to the Board, was 835 MW; the actual reported peak was 860 MW. Chart 81 to Chart 85 include hourly plots of forecast and actual values to assist in determining the sources of the differences between actual and forecast loads.

Chart 81 shows the hourly distribution of the total load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted a 6:00 p.m. peak of 804 MW; the actual peak was 846 MW, resulting in an underestimate of 5.0%.

[76] Negative percentages indicate an under-forecasted peak. Positive percentages indicate an over-forecasted peak.
[77] Temperature difference at forecast peak and actual peak. Negative values indicate that the temperature was warmer than forecast. Positive values indicate the temperature was colder than forecast.
[78] Wind speed difference at the forecast peak and the actual peak. Negative values indicate wind speed was more than forecast. Positive values indicate the wind speed was less than forecast.

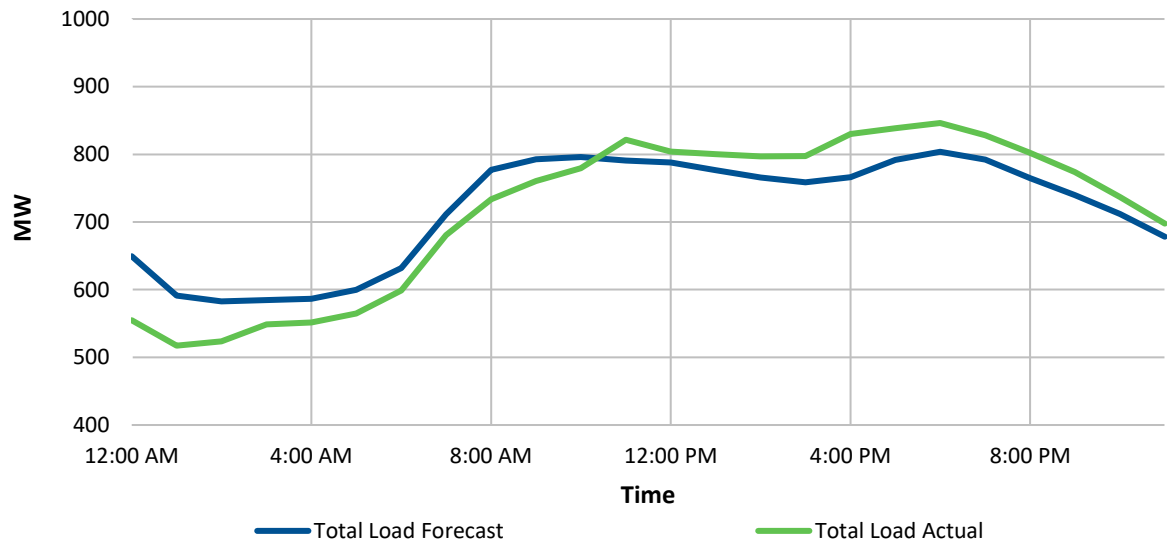

Chart 81: Forecast vs Actual Total Load for October 25, 2024

Chart 82 shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 6:00 p.m. of 661 MW; the actual peak was 734 MW and occurred at 5:00 p.m., resulting in an underestimate of 10.0%. The forecast load at the time of peak was 649 MW.

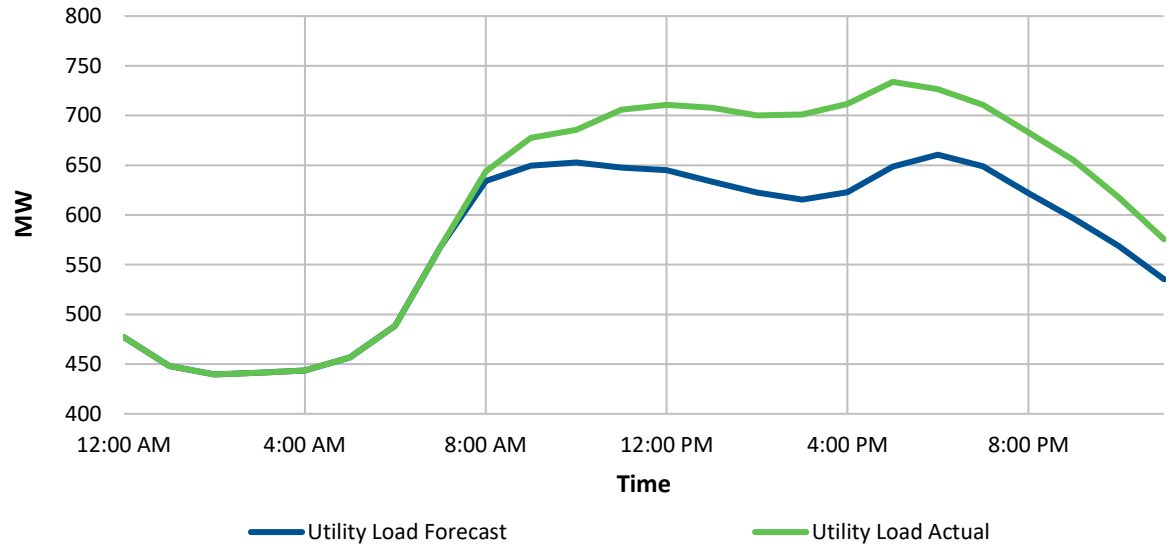

Chart 82: Forecast vs Actual Utility Load for October 25, 2024

Chart 83 shows the actual temperature in St. John's compared to the forecast. The temperature was warmer than forecast for the majority of the day.

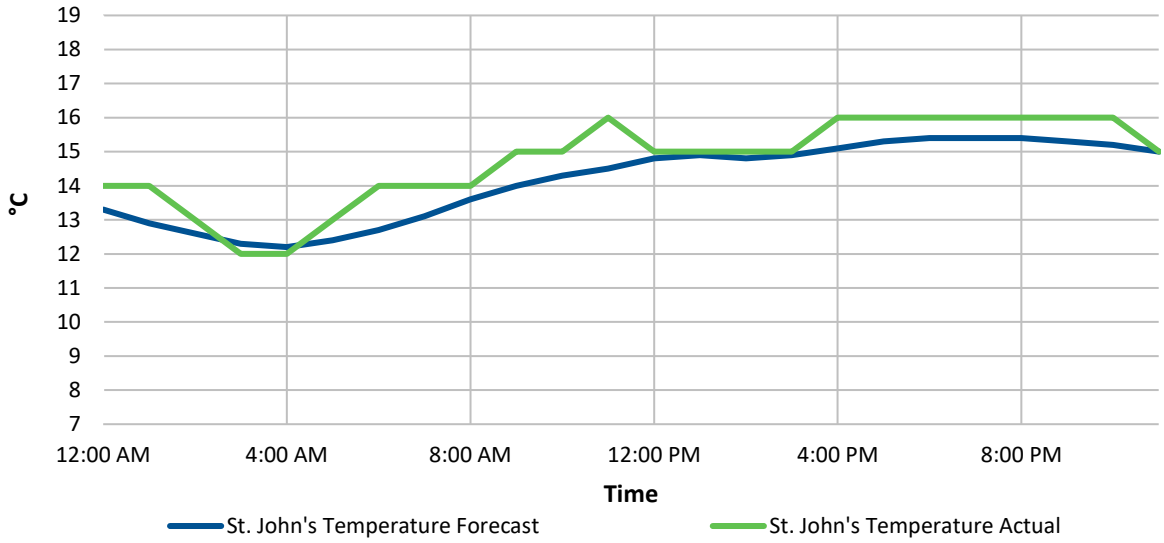

Chart 83: Forecast vs Actual Temperature for October 25, 2024

Chart 84 shows the actual wind speed in St. John's compared to the forecast. The wind speed was higher than forecast in the hours leading up to the actual peak, which may have contributed to the forecast error.

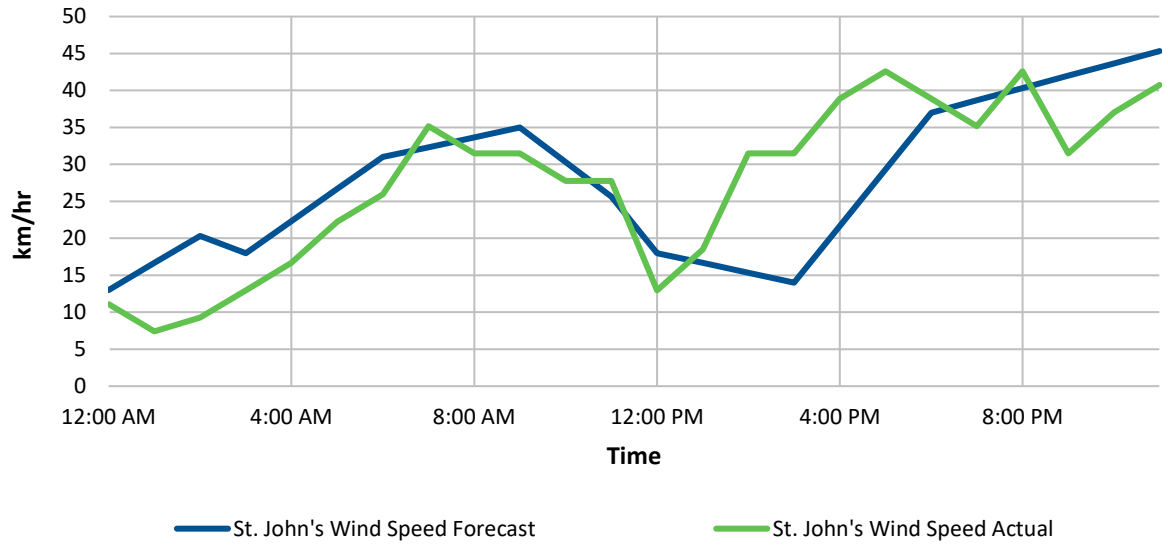

Chart 84: Forecast vs Actual Wind Speed for October 16, 2023

Chart 85 shows the actual cloud cover in St. John's compared to the forecast. It was close to forecast for the majority of the day.

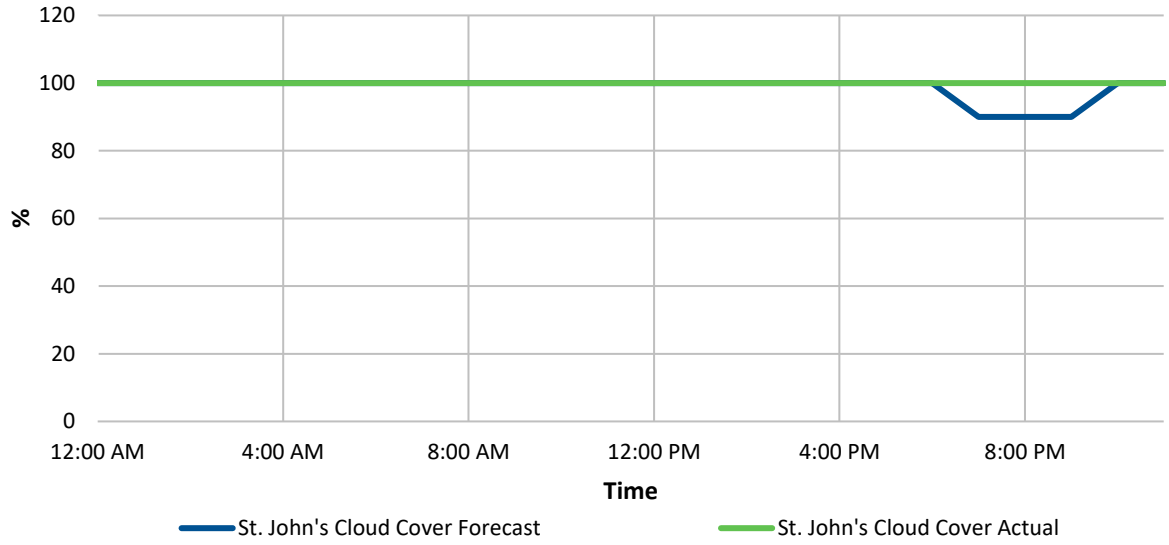

Chart 85: Forecast vs Actual Cloud Cover for October 25, 2024

The discrepancy between Utility Actual and Utility Forecast load was primarily attributed to underestimation by the load forecasting software.

2.3.9 November 2024

In November 2024, the forecast utility peak was 1,063 MW on November 4, 2024, which is consistent with the actual utility peak of 1,063 MW on that day. Absolute error for the month was 21 MW on average, with an average percent error of 0.8%, an average absolute error of 2.3%, and an average actual/forecast of 0.7%.

2.3.9.1 November 16, 2024

Table 18 provides a summary of forecast peak data for November 16, 2024.

Table 18: Peak Data Summary for November 16, 2024

	Load (MW)	Time	Error (%)[79]	Temperature Delta (°C)[80]	Wind Speed Delta (km/h)[81]
Utility Forecast	832	5:00 p.m.	8.0	0.00	1.00
Utility Actual	770	5:00 p.m.		0.00	1.00
Total Forecast	915	5:00 p.m.	10.0	0.00	1.00
Total Actual	832	5:00 p.m.		0.00	1.00
Board Forecast	920	N/A	N/A	N/A	N/A
Board Actual	835				

The forecast peak at 7:20 a.m., as reported to the Board, was 920 MW; the actual reported peak was 835 MW. Chart 86 to Chart 90 include hourly plots of forecast and actual values to assist in determining the sources of the differences between actual and forecast loads.

Chart 86 shows the hourly distribution of the total load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted a 5:00 p.m. peak of 915 MW; the actual peak was 832 MW, resulting in an overestimate of 10.0%.

[79] Negative percentages indicate an under-forecasted peak. Positive percentages indicate an over-forecasted peak.
[80] Temperature difference at forecast peak and actual peak. Negative values indicate that the temperature was warmer than forecast. Positive values indicate the temperature was colder than forecast.
[81] Wind speed difference at the forecast peak and the actual peak. Negative values indicate wind speed was more than forecast. Positive values indicate the wind speed was less than forecast.

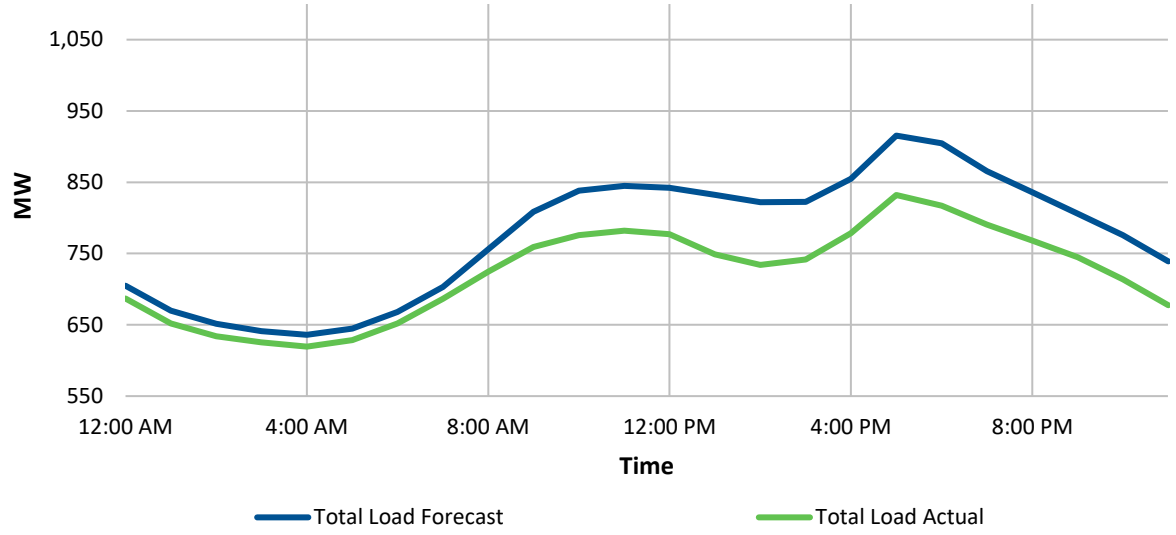

Chart 86: Forecast vs Actual Total Load for November 16, 2024

Chart 87 shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 5:00 p.m. of 832 MW; the actual peak was 770 MW, resulting in an overestimate of 8.0%.

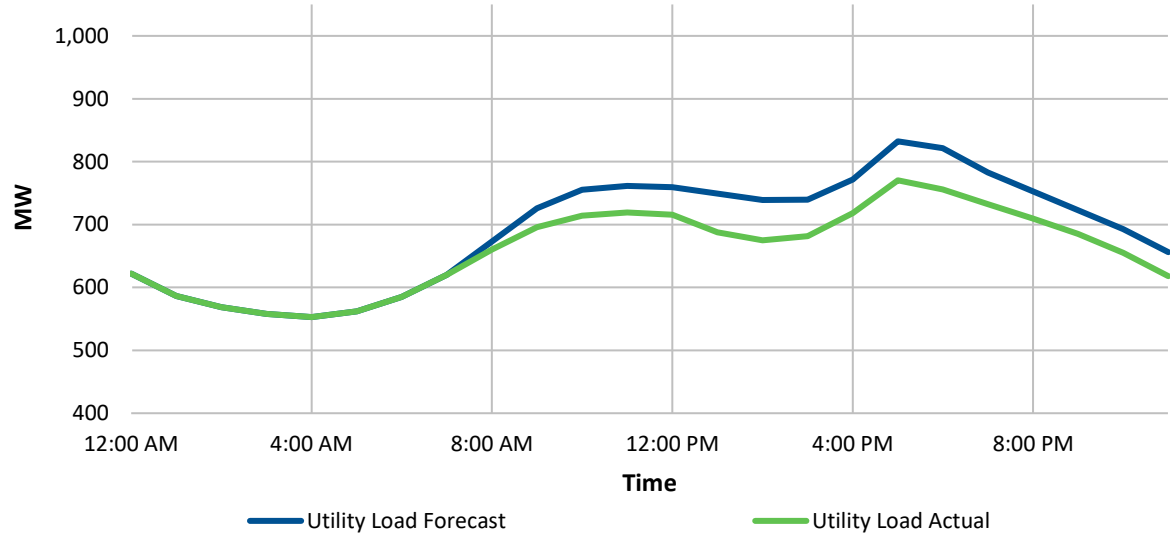

Chart 87: Forecast vs Actual Utility Load for November 16, 2024

Chart 88 shows the actual temperature in St. John's compared to the forecast. The temperature was warmer for the majority of the day and likely would have contributed to the forecast error.

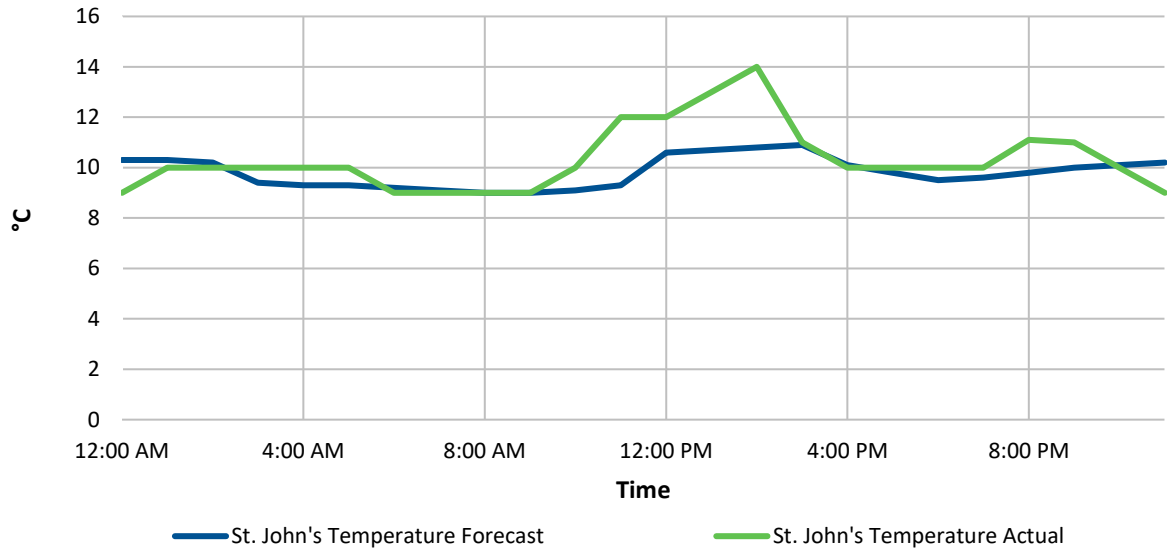

Chart 88: Forecast vs Actual Temperature for November 16, 2024

Chart 89 shows the actual wind speed in St. John's compared to the forecast. The wind speed was less than forecast for the majority of the day.

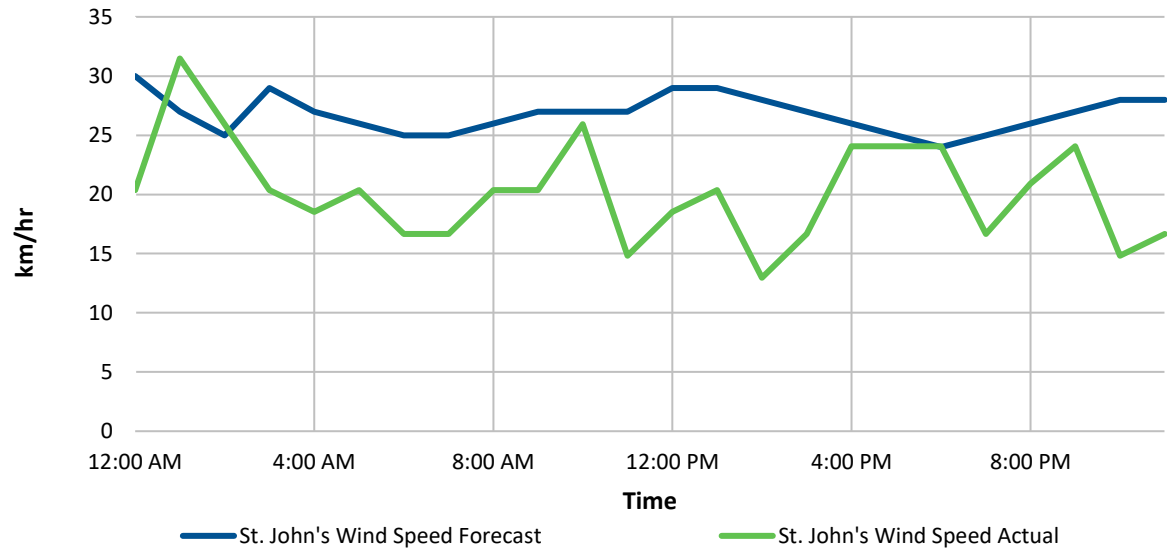

Chart 89: Forecast vs Actual Wind Speed for November 16, 2024

Chart 90 shows the actual cloud cover in St. John's compared to the forecast. Cloud cover was close to the forecast for the day.

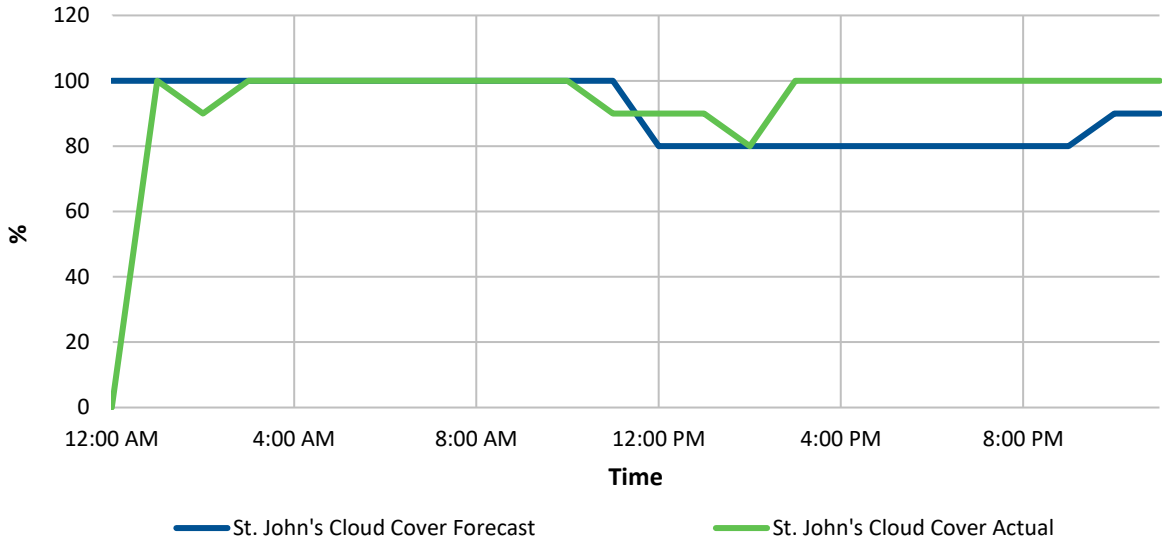

Chart 90: Forecast vs Actual Cloud Cover for November 16, 2024

The discrepancy between Utility Actual and Utility Forecast load was primarily attributed to warmer than forecast temperatures for the majority of the day. The daytime high of 14°C was abnormally warm for this time of year.

2.3.9.2 November 18, 2024

Table 19 provides a summary of forecast peak data for November 18, 2024.

Table 19: Peak Data Summary for November 18, 2024

	Load (MW)	Time	Error (%)[82]	Temperature Delta (°C)[83]	Wind Speed Delta (km/h)[84]
Utility Forecast	863	5:00 p.m.	5.7	1.00	6.00
Utility Actual	817	5:00 p.m.		1.00	6.00
Total Forecast	946	5:00 p.m.	7.3	1.00	6.00
Total Actual	882	5:00 p.m.		1.00	6.00
Board Forecast	950	N/A	N/A	N/A	N/A
Board Actual	888				

[82] Negative percentages indicate an under-forecasted peak. Positive percentages indicate an over-forecasted peak.
[83] Temperature difference at forecast peak and actual peak. Negative values indicate that the temperature was warmer than forecast. Positive values indicate the temperature was colder than forecast.
[84] Wind speed difference at the forecast peak and the actual peak. Negative values indicate wind speed was more than forecast. Positive values indicate the wind speed was less than forecast.

The forecast peak at 7:20 a.m., as reported to the Board, was 950 MW; the actual reported peak was 888 MW. Chart 91 to Chart 95 include hourly plots of forecast and actual values to assist in determining the sources of the differences between actual and forecast loads.

Chart 91 shows the hourly distribution of the total load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted a 5:00 p.m. peak of 946 MW; the actual peak was 882 MW, resulting in an overestimate of 7.3%.

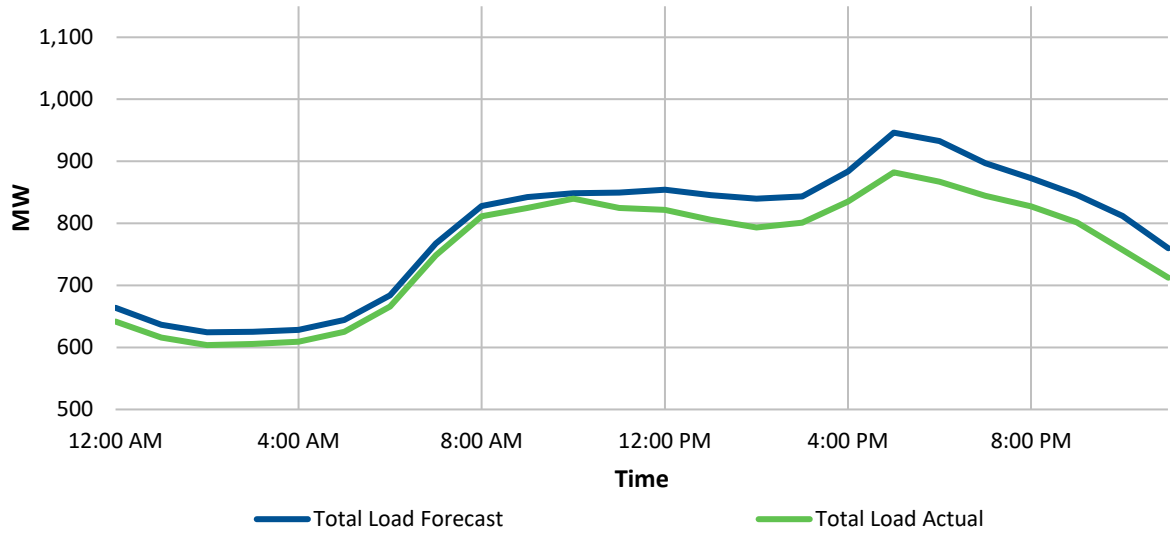

Chart 91: Forecast vs Actual Total Load for November 18, 2024

Chart 92 shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 5:00 p.m. of 863 MW; the actual peak was 817 MW, resulting in an overestimate of 5.7%.

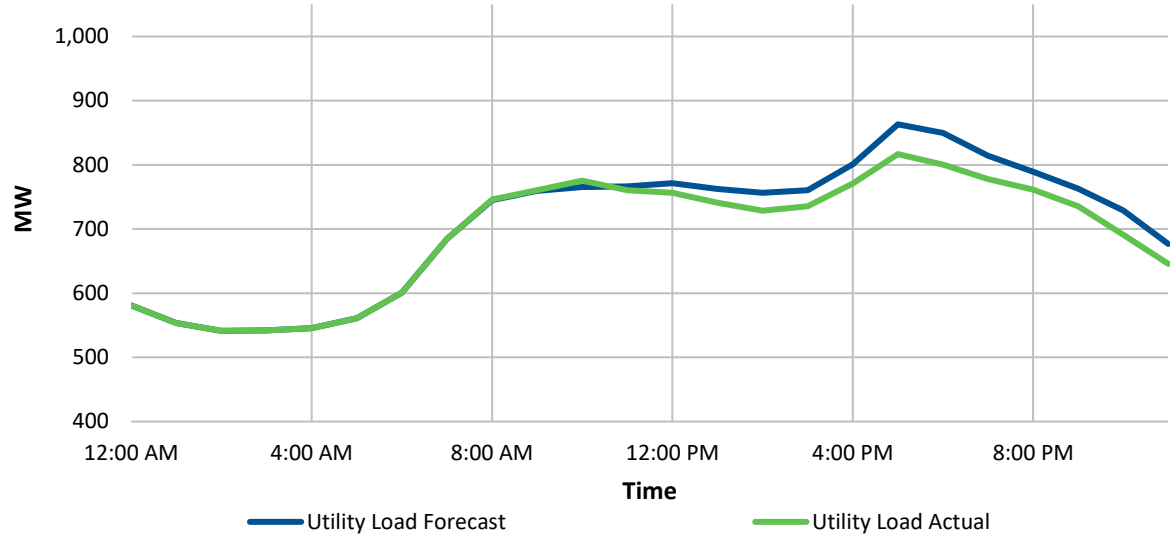

Chart 92: Forecast vs Actual Utility Load for November 18, 2024

Chart 93 shows the actual temperature in St. John's compared to the forecast. The temperature was 1°C warmer in the 5 hours leading up to peak which may contributed to forecast error.

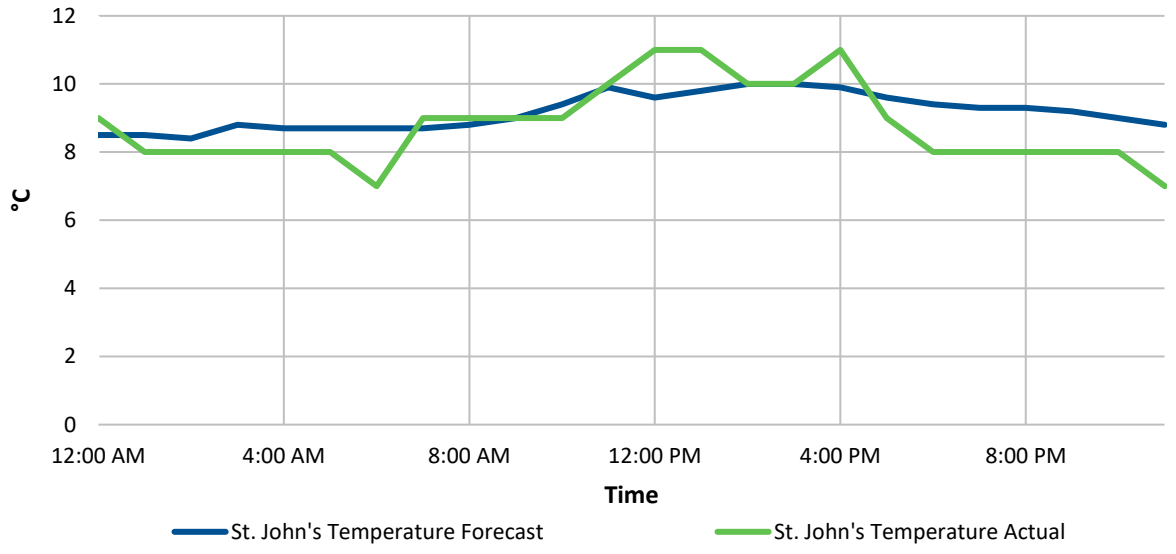

Chart 93: Forecast vs Actual Temperature for November 18, 2024

Chart 94 shows the actual wind speed in St. John's compared to the forecast. The wind speed was less than forecast for the majority of the day.

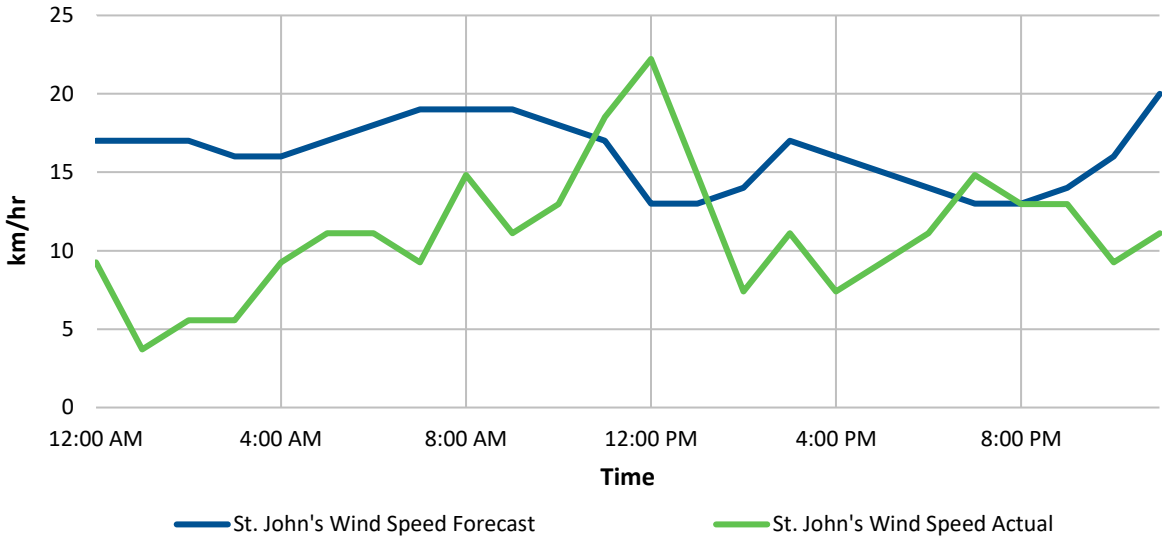

Chart 94: Forecast vs Actual Wind Speed for November 18, 2024

Chart 95 shows the actual cloud cover in St. John's compared to the forecast. Cloud cover data was missing for the majority of the day.

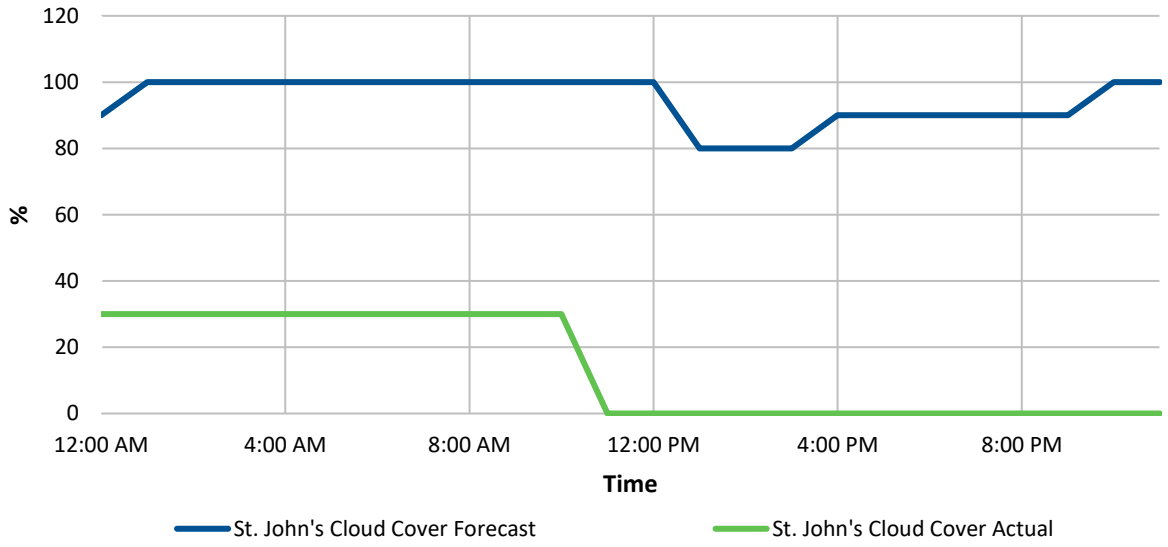

Chart 95: Forecast vs Actual Cloud Cover for November 18, 2024

The discrepancy between Utility Actual and Utility Forecast load was primarily attributed to warmer than forecast weather in addition to following an abnormally warm weekend.

2.3.10 December 2024

In December 2024, the forecast utility peak was 1,358 MW on December 24, 2024, which is consistent with the actual utility peak of 1,379 MW on that day. The peak of 1,379 MW occurred on both December 24, 2024 and December 25, 2024. Absolute error for the month was 26 MW on average, with an average percent error of -0.9%, an average absolute error of 2.3%, and an average actual/forecast of -1.0%.

2.3.10.1 December 12, 2024

Table 20 provides a summary of forecast peak data for December 12, 2024.

Table 20: Peak Data Summary for December 12, 2024

	Load (MW)	Time	Error (%)[85]	Temperature Delta (°C)[86]	Wind Speed Delta (km/h)[87]
Utility Forecast	933	5:00 p.m.	6.9	(2.00)	13.00
Utility Actual	872	5:00 p.m.		(2.00)	13.00
Total Forecast	1,099	5:00 p.m.	9.7	(2.00)	13.00
Total Actual	1,002	6:00 p.m.		(1.00)	11.00
Board Forecast	1,105	N/A	N/A	N/A	N/A
Board Actual	1,012				

The forecast peak at 7:20 a.m., as reported to the Board, was 1,105 MW; the actual reported peak was 1,012 MW. Chart 96 to Chart 100 include hourly plots of forecast and actual values to assist in determining the sources of the differences between actual and forecast loads.

Chart 96 shows the hourly distribution of the total load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted a 5:00 p.m. peak of 1,099 MW; the actual peak was 1,002 MW and occurred at 6:00 p.m., resulting in an overestimate of 9.7%. The forecast load at the time of peak was 1,089 MW.

[85] Negative percentages indicate an under-forecasted peak. Positive percentages indicate an over-forecasted peak.
[86] Temperature difference at forecast peak and actual peak. Negative values indicate that the temperature was warmer than forecast. Positive values indicate the temperature was colder than forecast.
[87] Wind speed difference at the forecast peak and the actual peak. Negative values indicate wind speed was more than forecast. Positive values indicate the wind speed was less than forecast.

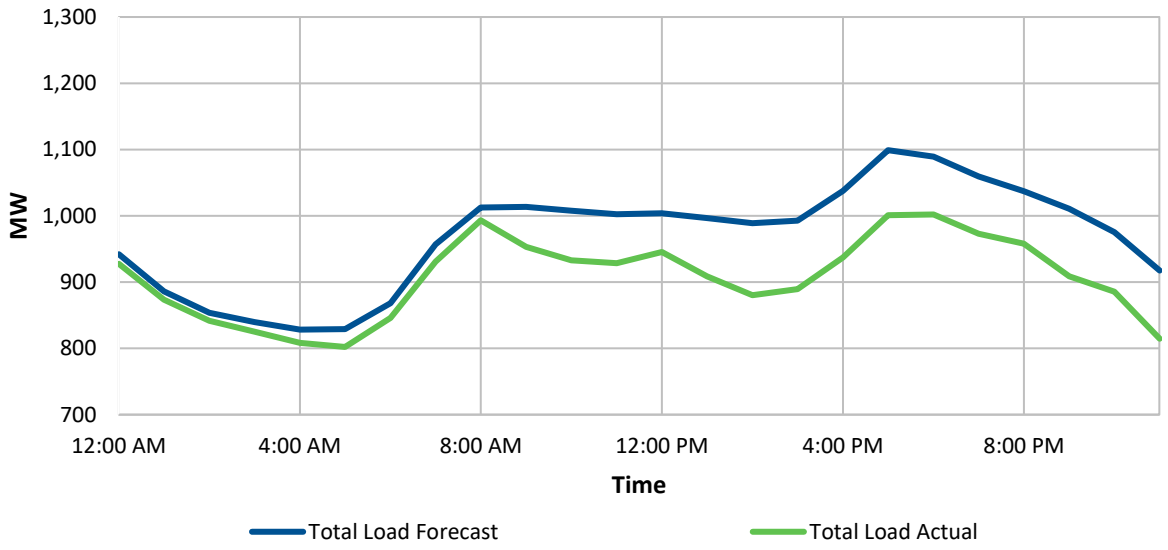

Chart 96: Forecast vs Actual Total Load for December 12, 2024

Chart 97 shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 5:00 p.m. of 933 MW; the actual peak was 872 MW, resulting in an overestimate of 6.9%.

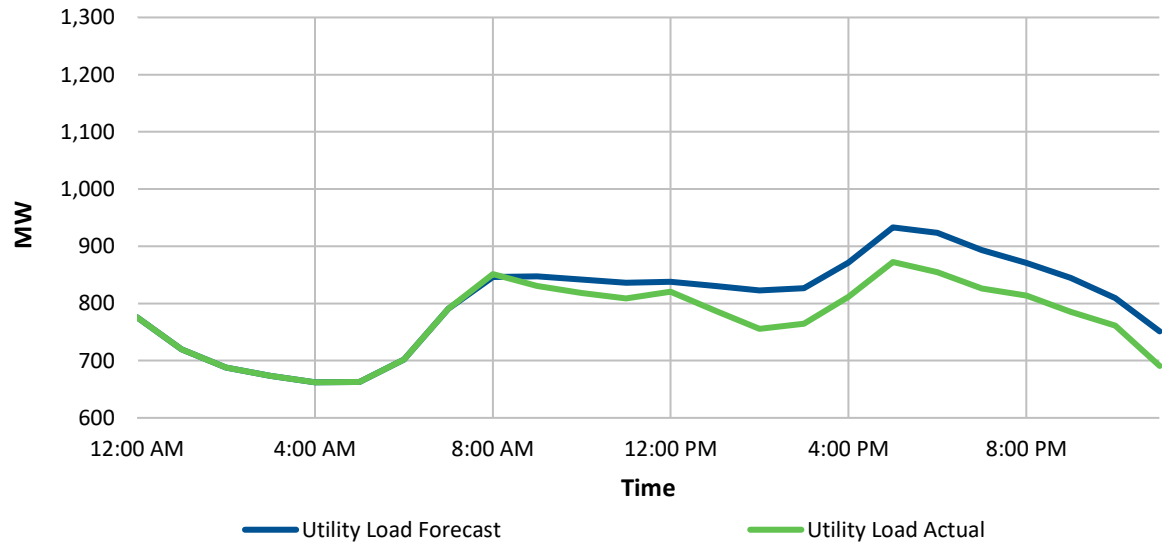

Chart 97: Forecast vs Actual Utility Load for December 12, 2024

Chart 98 shows the actual temperature in St. John's compared to the forecast. The temperature was well above seasonal for the middle of December and was on average 3°C warmer than forecast during the prior 14 hours leading up to peak. The difference in the forecast and actual temperatures likely contributed to the forecast error.

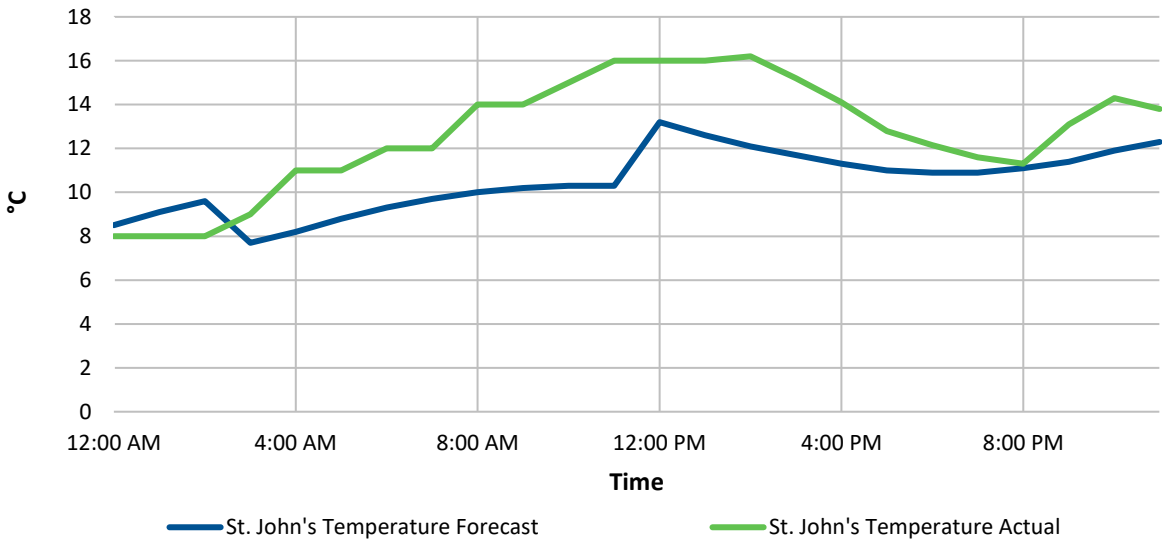

Chart 98: Forecast vs Actual Temperature for December 12, 2024

Chart 99 shows the actual wind speed in St. John's compared to the forecast. The wind speed was less than forecast for the majority of the day, which also may have contributed to the forecast error.

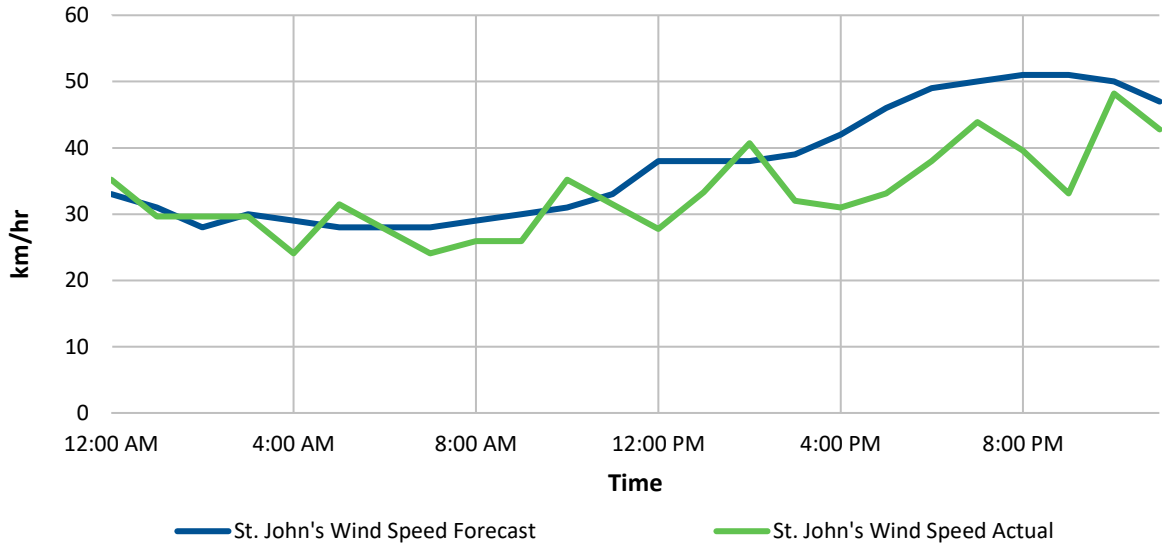

Chart 99: Forecast vs Actual Wind Speed for December 12, 2024

Chart 100 shows the actual cloud cover in St. John's compared to the forecast. It was cloudier than forecast for the majority of the day.

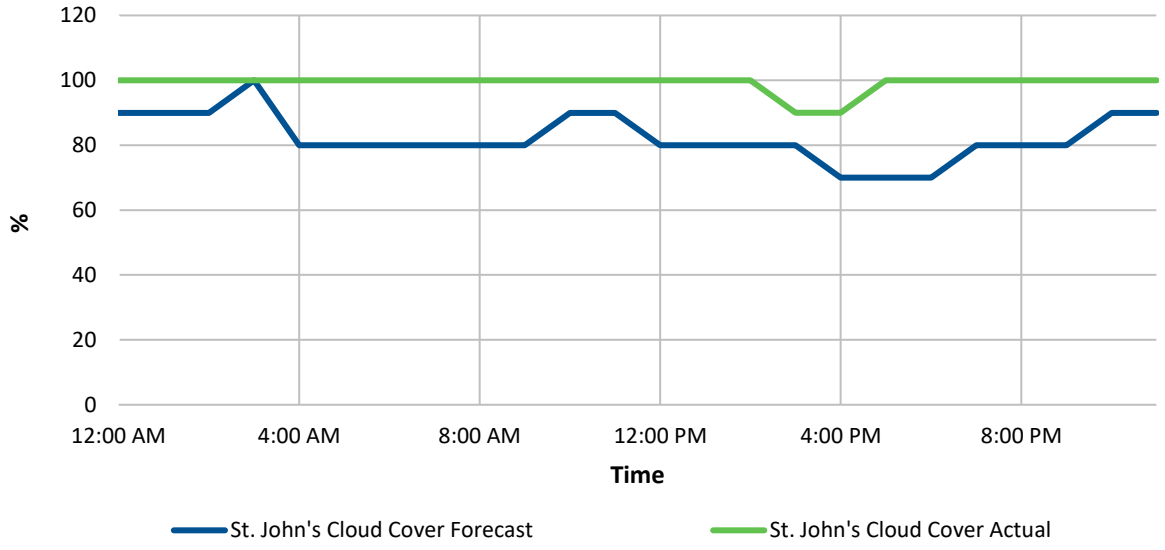

Chart 100: Forecast vs Actual Cloud Cover for December 12, 2024

The discrepancy between Utility Actual and Utility Forecast load was primarily attributed to variations in the temperature and wind speed compared to forecast.

2.3.10.2 December 28, 2024

Table 21 provides a summary of forecast peak data for December 28, 2024.

Table 21: Peak Data Summary for December 28, 2024

	Load (MW)	Time	Error (%)[88]	Temperature Delta (°C)[89]	Wind Speed Delta (km/h)[90]
Utility Forecast	1,123	5:00 p.m.	-5.2	1.00	3.00
Utility Actual	1,185	5:00 p.m.		1.00	3.00
Total Forecast	1,206	5:00 p.m.	-4.5	1.00	3.00
Total Actual	1,263	5:00 p.m.		1.00	3.00
Board Forecast	1,215	N/A	N/A	N/A	N/A
Board Actual	1,264				

[88] Negative percentages indicate an under-forecasted peak. Positive percentages indicate an over-forecasted peak.
[89] Temperature difference at forecast peak and actual peak. Negative values indicate that the temperature was warmer than forecast. Positive values indicate the temperature was colder than forecast.
[90] Wind speed difference at the forecast peak and the actual peak. Negative values indicate wind speed was more than forecast. Positive values indicate the wind speed was less than forecast.

The forecast peak at 7:20 a.m., as reported to the Board, was 1,215 MW; the actual reported peak was 1,264 MW. Chart 101 to Chart 105 include hourly plots of forecast and actual values to assist in determining the sources of the differences between actual and forecast loads.

Chart 101 shows the hourly distribution of the total load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted a 5:00 p.m. peak of 1,206 MW; the actual peak was 1,263 MW, resulting in an underestimate of 4.5%.

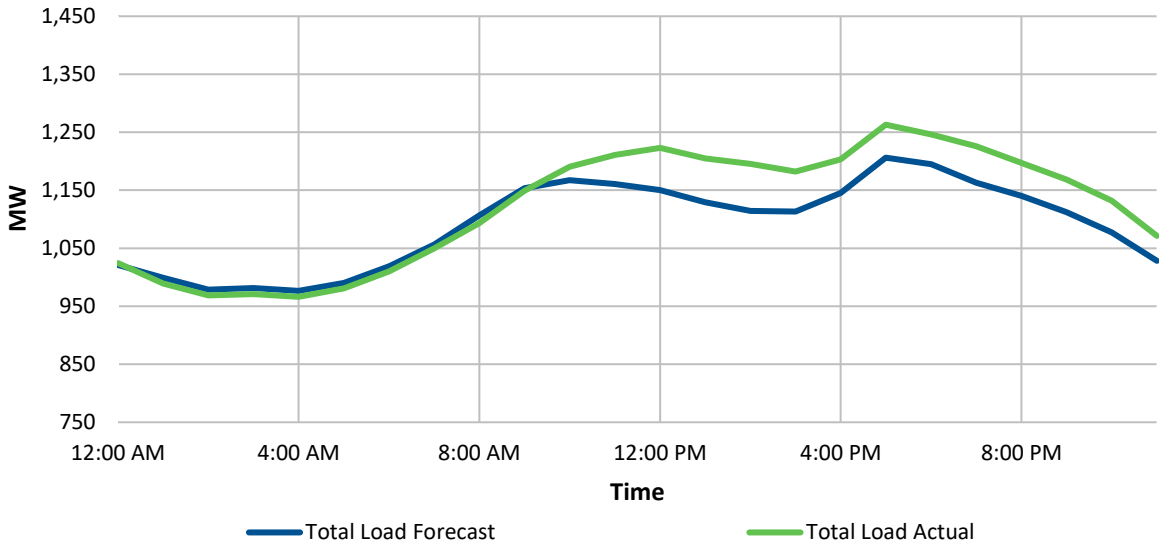

Chart 101: Forecast vs Actual Total Load for December 28, 2024

Chart 102 shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 5:00 p.m. of 1,123 MW; the actual peak was 1,185 MW, resulting in an underestimate of 5.2%.

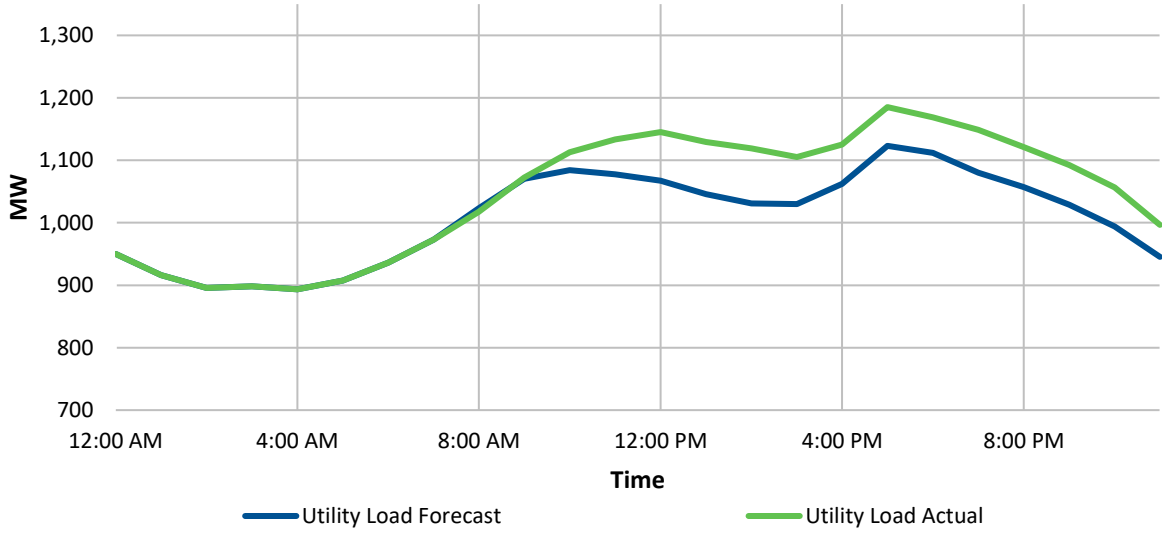

Chart 102: Forecast vs Actual Utility Load for December 28, 2024

Chart 103 shows the actual temperature in St. John's compared to the forecast. The temperature was 1°C to 2°C cooler all day leading up to the actual peak, which may have contributed to the forecast error.

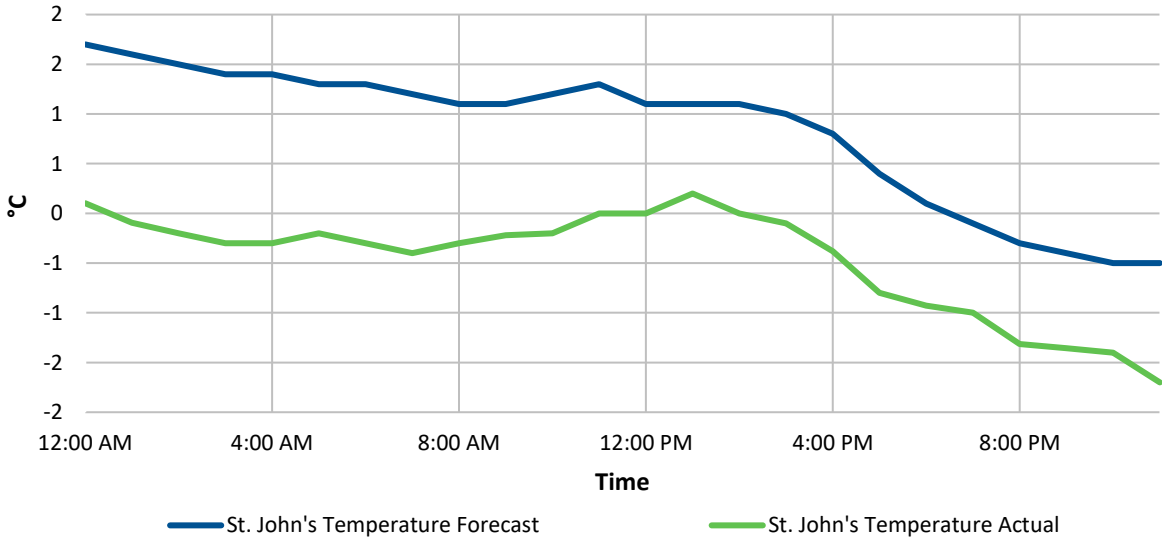

Chart 103: Forecast vs Actual Temperature for December 28, 2024

Chart 104 shows the actual wind speed in St. John's compared to the forecast. The wind speed was close to forecast for the majority of the day.

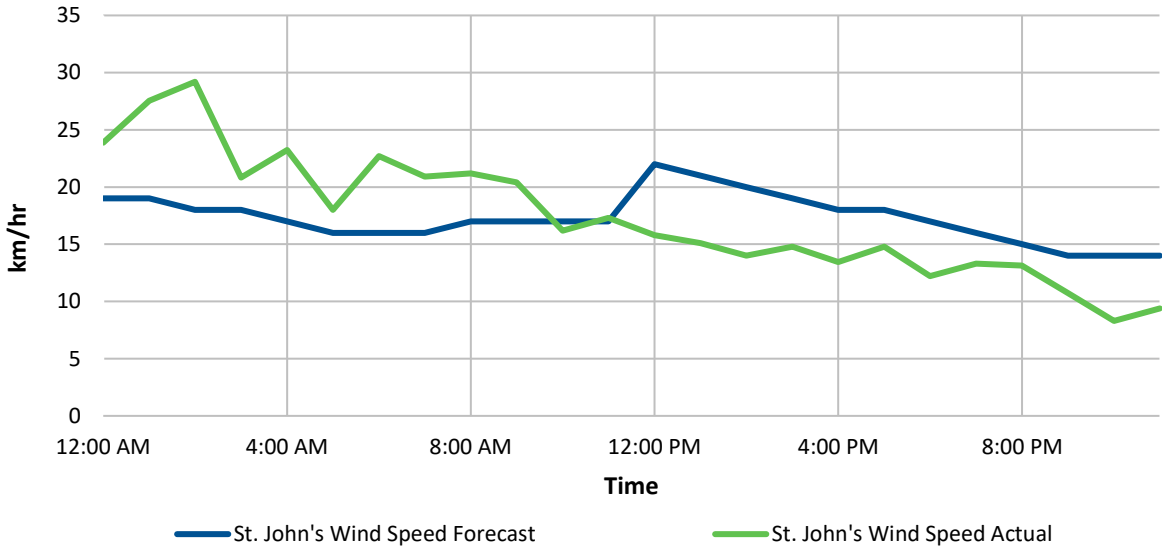

Chart 104: Forecast vs Actual Wind Speed for December 28, 2024

Chart 105 shows the actual cloud cover in St. John's compared to the forecast. It was cloudier than forecast for the day.

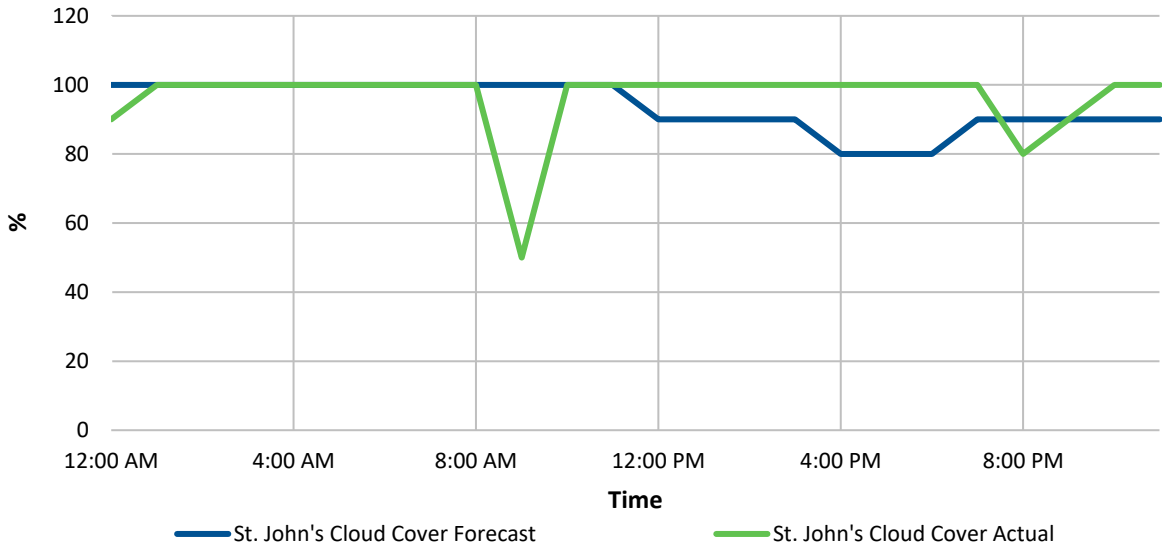

Chart 105: Forecast vs Actual Cloud Cover for December 28, 2024

The discrepancy between Utility Actual and Utility Forecast load was primarily attributed to the temperature variations from the forecast as well as non-uniform customer behaviour as this day fell on a Saturday during the Christmas holidays.

2.3.10.3 December 31, 2024

Table 22 provides a summary of forecast peak data for December 31, 2024.

Table 22: Peak Data Summary for December 31, 2024

	Load (MW)	Time	Error (%)[91]	Temperature Delta (°C)[92]	Wind Speed Delta (km/h)[93]
Utility Forecast	1,114	5:00 p.m.	-5.3	3.00	5.00
Utility Actual	1,177	5:00 p.m.		3.00	5.00
Total Forecast	1,198	5:00 p.m.	-3.7	3.00	5.00
Total Actual	1,244	5:00 p.m.		3.00	5.00
Board Forecast	1,200	N/A	N/A	N/A	N/A
Board Actual	1,245				

The forecast peak at 7:20 a.m., as reported to the Board, was 1,200 MW; the actual reported peak was 1,245 MW. Chart 106 to Chart 110 include hourly plots of forecast and actual values to assist in determining the sources of the differences between actual and forecast loads.

Chart 106 shows the hourly distribution of the total load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted a 5:00 p.m. peak of 1,198 MW; the actual peak was 1,244 MW, resulting in an underestimate of 3.7%.

[91] Negative percentages indicate an under-forecasted peak. Positive percentages indicate an over-forecasted peak.
[92] Temperature difference at forecast peak and actual peak. Negative values indicate that the temperature was warmer than forecast. Positive values indicate the temperature was colder than forecast.
[93] Wind speed difference at the forecast peak and the actual peak. Negative values indicate wind speed was more than forecast. Positive values indicate the wind speed was less than forecast.

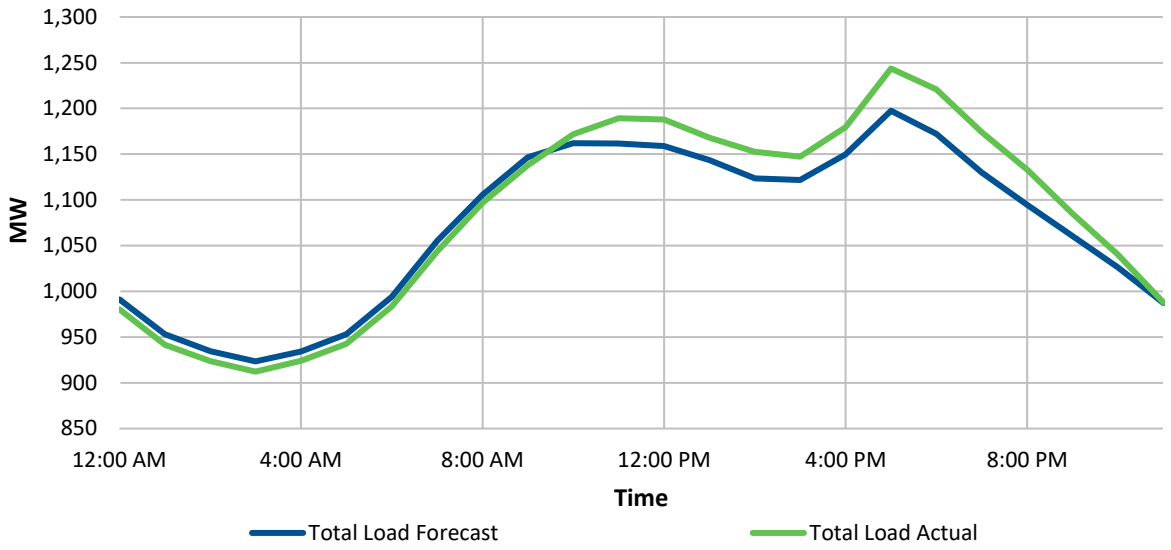

Chart 106: Forecast vs Actual Total Load for December 31, 2024

Chart 107 shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 5:00 p.m. of 1,114 MW; the actual peak was 1,177 MW, resulting in an underestimate of 5.3%.

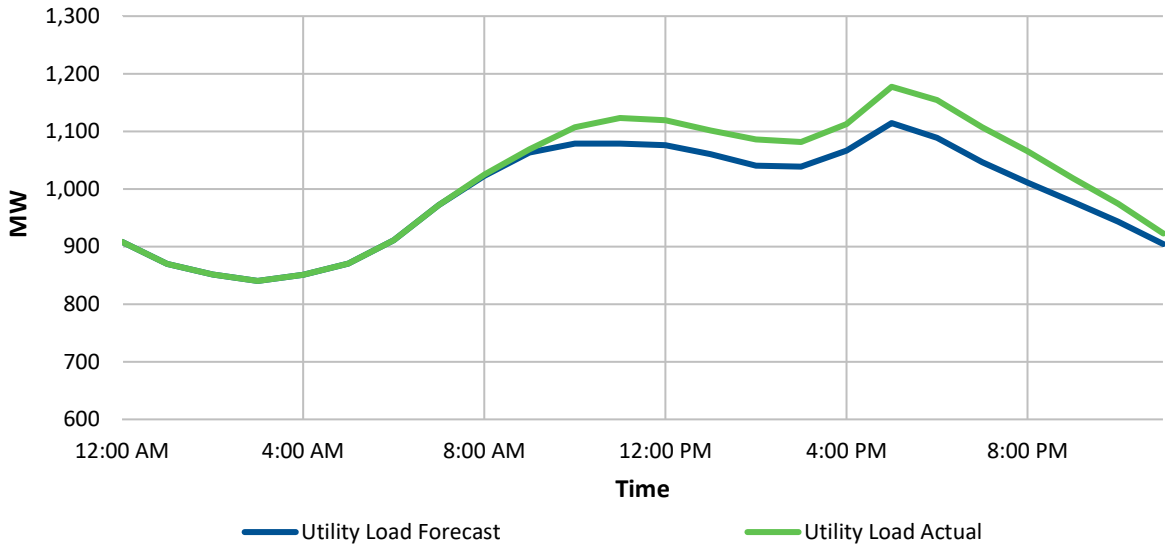

Chart 107: Forecast vs Actual Utility Load for December 31, 2024

Chart 108 shows the actual temperature in St. John's compared to the forecast. The temperature was on average 2°C colder than forecast for the 12 hours leading up to the peak, this likely contributed to the forecast error.

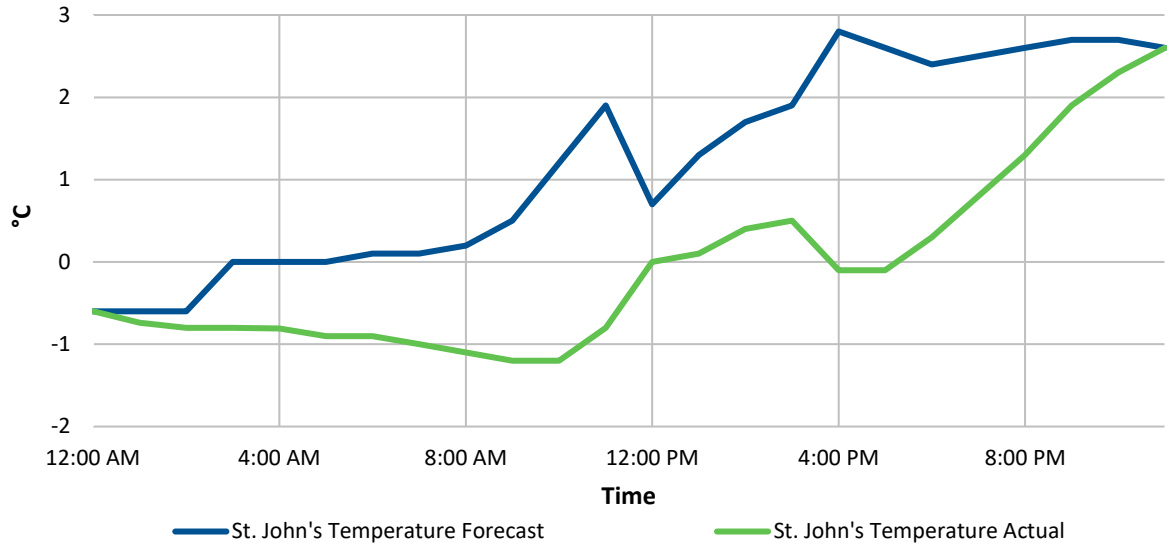

Chart 108: Forecast vs Actual Temperature for December 31, 2024

Chart 109 shows the actual wind speed in St. John's compared to the forecast. The wind speed was slightly less than forecast for the majority of the day.

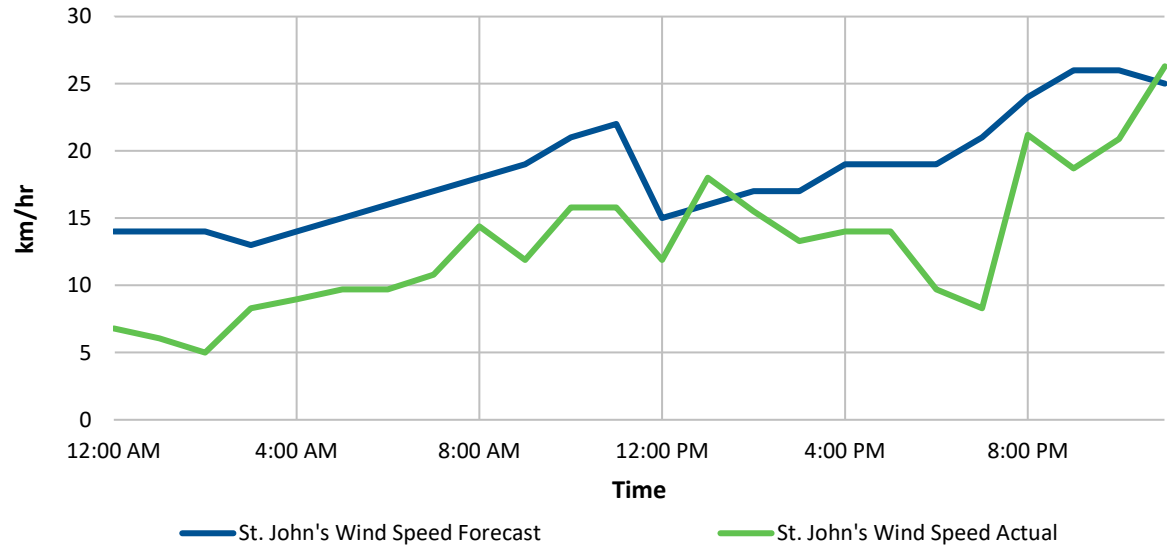

Chart 109: Forecast vs Actual Wind Speed for December 31, 2024

Chart 110 shows the actual cloud cover in St. John's compared to the forecast. It was cloudier than forecast for the majority of the day.

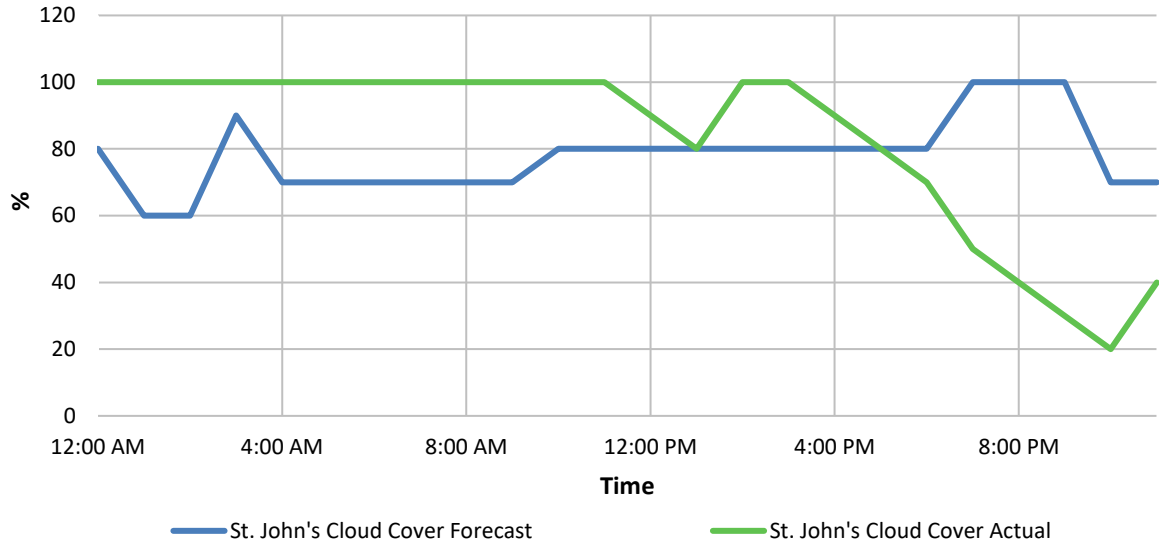

Chart 110: Forecast vs Actual Cloud Cover for December 31, 2024

The discrepancy between Utility Actual and Utility Forecast load was primarily attributed to the temperature variations from the forecast as it was colder than forecast for the majority of the day.

3.0 Forecast Accuracy Review

Table A-25 summarizes the error in the average monthly peak demand of the utility load forecast by month in 2024. The absolute percent error of the average demand for each month varied between 1.6% (February 2024) and 3.0% (October 2024) with an average of 2.3%. This is comparable to last year's observed absolute percent error for average monthly peak demand, which had a maximum average error of 2.1%.[94] For reference, Hydro considers an error below 4.95% to be within acceptable forecasting limits. Comparing absolute percent error, there does not appear to be any seasonal correlation. The average error was negative in ten months of the year and positive in two months of the year. On average, the forecast typically underestimates the load, though the average understatement is -0.8% of actual peak. The average absolute error in 2024 was 20 MW, which compares to the average absolute error in 2023[95] of 19 MW.

[94] 2023 data started February 23, 2023 through December 31, 2023.
[95] 2023 data started February 23, 2023 through December 31, 2023.

Table A-26 summarizes the maximum statistics for the utility load forecast by month in 2024. The maximum absolute error varied between 4.5% (February 2024) and 11.9% (April 2024). This is similar to last year's observed maximum error of 11.1%. Comparing absolute percent error, the higher error values occurred in April, May, and October which are "shoulder" seasons. The maximum errors were positive in all months analyzed. For days that experienced the maximum errors, the forecast was typically underestimated (rather than overestimated). The largest absolute error at peak in 2024 was 138 MW and occurred on April 18, 2024, which fell on a Thursday.

It should be noted that the load forecast program uses historical data (weather and load) to predict the hourly load forecast. In the past two to three years, there has been an increase in oil to electric conversions. This impact on the load is still being "learned" by the program, and may result in more underestimated loads during this period of transition.

Table A-27 summarizes the error at the ten highest utility loads during the reporting period. The highest loads in this reporting period occurred in January 2024 (eight instances), and February 2024 (two instances). Two of the ten highest loads were overestimated and eight were underestimated. The percent error varied from -5.7% to 3.0%; the overall average was -1.3%. The absolute percent error varied from 0.4% to 5.7%, with an average of 2.0%. With the exception of one day, these statistics confirm that there is no correlation between high load and high error in the load forecast and that the short-term load forecasting software's forecasting of high loads are within the acceptable forecasting limit of less than 4.95% error.

Table A-28 summarizes the result of the investigations into instances of high forecast error selected based on high error in the utility load forecast against the actual utility load at peak. Most errors occur because of variations in the weather forecast at or near the time of peak. Non-uniform customer behaviour is also a source of error, as some high error days occurred on the weekend or statutory holidays. Some errors remain unexplained; they result from unpredictable customer behavior that was not modelled correctly by the load forecasting software. Of the 22 included instances of high forecast error, 7 occurred on a weekend and 15 occurred on a weekday. Of the 15 weekdays, 1 fell on a statutory holiday.

Appendix A

Supporting Tables

Table A-1: Total Island Interconnected System Load Forecasting Data for January 2024[1]

Date	Forecast Total Peak (MW)	Actual Total Peak (MW)	Error (MW)	Error (%)	Available Island Supply[2] (MW)	Forecast Reserve[3] (MW)
1-Jan-2024	1,640	1,552	88	5.7	2,024	384
2-Jan-2024	1,625	1,579	46	2.9	2,117	492
3-Jan-2024	1,555	1,495	60	4.0	2,145	590
4-Jan-2024	1,575	1,574	1	0.1	2,012	437
5-Jan-2024	1,665	1,674	-9	-0.5	2,006	341
6-Jan-2024	1,830	1,833	-3	-0.2	2,100	270
7-Jan-2024	1,755	1,771	-16	-0.9	1,996	241
8-Jan-2024	1,695	1,678	17	1.0	2,035	340
9-Jan-2024	1,710	1,625	85	5.2	2,079	369
10-Jan-2024	1,735	1,723	12	0.7	2,064	329
11-Jan-2024	1,595	1,556	39	2.5	2,096	501
12-Jan-2024	1,505	1,437	68	4.7	2,106	601
13-Jan-2024	1,530	1,520	10	0.7	2,071	541
14-Jan-2024	1,545	1,576	-31	-2.0	2,086	541
15-Jan-2024	1,500	1,429	71	5.0	2,083	583
16-Jan-2024	1,595	1,532	63	4.1	2,084	489
17-Jan-2024	1,580	1,554	26	1.7	2,105	525
18-Jan-2024	**1,665**	**1,681**	**-16**	**-1.0**	**2,258**	**593**
19-Jan-2024	1,745	1,706	39	2.3	2,178	433
20-Jan-2024	1,545	1,591	-46	-2.9	2,228	683
21-Jan-2024	1,520	1,451	69	4.8	2,232	712
22-Jan-2024	1,625	1,632	-7	-0.4	2,247	622
23-Jan-2024	1,645	1,676	-31	-1.8	2,277	632
24-Jan-2024	1,990	1,968	22	1.1	2,249	259
25-Jan-2024	1,710	1,495	215	14.4	2,272	562
26-Jan-2024	1,605	1,583	22	1.4	2,069	464
27-Jan-2024	1,395	1,388	7	0.5	1,893	498
28-Jan-2024	1,375	1,330	45	3.4	2,068	693
29-Jan-2024	1,465	1,490	-25	-1.7	2,058	593
30-Jan-2024	1,620	1,605	15	0.9	2,098	478
31-Jan-2024	1,595	1,582	13	0.8	2,071	476
Minimum	1,375	1,330	-46	-2.9	1,893	241
Average	1,617	1,590	27	1.8	2,110	493
Maximum	1,990	1,968	215	14.4	2,277	712

[1] Forecast reserve does not include adjustments for interruptible load, the impact of voltage reduction, or scheduled off-Island imports.

[2] Includes total amount forecast to be delivered via the LIL, inclusive of exports.

[3] Includes exports via the Maritime Link.

Table A-2: Total Island Interconnected System Load Forecasting Data for February 2024[1]

Date	Forecast Total Peak (MW)	Actual Total Peak (MW)	Error (MW)	Error (%)	Available Island Supply[2] (MW)	Forecast Reserve[3] (MW)
1-Feb-2024	1,555	1,496	59	3.9	2,047	492
2-Feb-2024	1,410	1,373	37	2.7	2,038	628
3-Feb-2024	1,415	1,395	20	1.4	1,906	491
4-Feb-2024	1,365	1,382	-17	-1.2	1,890	525
5-Feb-2024	1,335	1,333	2	0.2	1,880	545
6-Feb-2024	1,390	1,366	24	1.8	1,915	525
7-Feb-2024	1,415	1,384	31	2.2	1,940	525
8-Feb-2024	1,440	1,412	28	2.0	1,982	542
9-Feb-2024	1,385	1,368	17	1.2	1,954	569
10-Feb-2024	1,340	1,355	-15	-1.1	1,701	361
11-Feb-2024	1,255	1,221	34	2.8	1,870	615
12-Feb-2024	1,265	1,238	27	2.2	1,859	594
13-Feb-2024	1,360	1,288	72	5.6	1,888	528
14-Feb-2024	1,390	1,412	-22	-1.6	1,984	594
15-Feb-2024	1,375	1,362	13	1.0	1,960	585
16-Feb-2024	1,400	1,353	47	3.5	1,985	585
17-Feb-2024	1,400	1,386	14	1.0	2,039	639
18-Feb-2024	1,460	1,455	5	0.3	2,044	584
19-Feb-2024	1,495	1,483	12	0.8	2,076	581
20-Feb-2024	1,515	1,519	-4	-0.3	2,074	559
21-Feb-2024	1,660	1,638	22	1.3	2,061	401
22-Feb-2024	1,580	1,616	-36	-2.2	1,857	277
23-Feb-2024	1,310	1,304	6	0.5	1,956	646
24-Feb-2024	1,210	1,186	24	2.0	1,810	600
25-Feb-2024	1,395	1,374	21	1.5	1,854	459
26-Feb-2024	1,465	1,509	-44	-2.9	1,806	341
27-Feb-2024	1,390	1,396	-6	-0.4	1,830	440
28-Feb-2024	1,265	1,248	17	1.4	2,110	845
29-Feb-2024	1,160	1,114	46	4.1	2,064	904
Minimum	1,210	1,186	-44	-2.9	1,701	277
Average	1,401	1,388	14	1.1	1,940	538
Maximum	1,660	1,638	72	5.6	2,110	845

[1] Forecast reserve does not include adjustments for interruptible load, the impact of voltage reduction, or scheduled off-Island imports.
[2] Includes total amount forecast to be delivered via the LIL, inclusive of exports.
[3] Includes exports via the Maritime Link.

Table A-3: Total Island Interconnected System Load Forecasting Data for March 2024[1]

Date	Forecast Total Peak (MW)	Actual Total Peak (MW)	Error (MW)	Error (%)	Available Island Supply[2] (MW)	Forecast Reserve[3] (MW)
1-Mar-2024	**1,450**	**1,479**	**-29**	**-2.0**	**2,116**	**666**
2-Mar-2024	1,425	1,399	26	1.9	2,104	679
3-Mar-2024	1,230	1,250	-20	-1.6	2,066	836
4-Mar-2024	**1,420**	**1,325**	**95**	**7.2**	**1,816**	**396**
5-Mar-2024	1,480	1,414	66	4.7	1,790	310
6-Mar-2024	1,245	1,267	-22	-1.7	1,837	592
7-Mar-2024	1,290	1,320	-30	-2.3	2,063	773
8-Mar-2024	1,350	1,393	-43	-3.1	2,079	729
9-Mar-2024	1,340	1,337	3	0.2	2,066	726
10-Mar-2024	1,270	1,300	-30	-2.3	1,800	530
11-Mar-2024	1,355	1,377	-22	-1.6	1,806	451
12-Mar-2024	1,300	1,283	17	1.3	1,818	518
13-Mar-2024	1,265	1,265	0	0.0	2,021	756
14-Mar-2024	1,275	1,280	-5	-0.4	1,970	695
15-Mar-2024	1,325	1,329	-4	-0.3	1,805	480
16-Mar-2024	1,205	1,214	-9	-0.7	1,879	674
17-Mar-2024	1,220	1,165	55	4.7	1,855	635
18-Mar-2024	1,295	1,328	-33	-2.5	1,931	636
19-Mar-2024	1,245	1,242	3	0.2	1,932	687
20-Mar-2024	1,290	1,251	39	3.1	1,918	628
21-Mar-2024	1,290	1,231	59	4.8	1,891	601
22-Mar-2024	1,295	1,283	12	0.9	1,888	593
23-Mar-2024	1,295	1,314	-19	-1.4	1,903	608
24-Mar-2024	1,220	1,246	-26	-2.1	1,899	679
25-Mar-2024	1,335	1,287	48	3.7	1,738	403
26-Mar-2024	1,400	1,386	14	1.0	1,720	320
27-Mar-2024	1,330	1,300	30	2.3	1,730	400
28-Mar-2024	1,170	1,156	14	1.2	1,742	572
29-Mar-2024	955	968	-13	-1.3	1,640	685
30-Mar-2024	1,030	950	80	8.4	1,595	565
31-Mar-2024	**1,095**	**1,116**	**-21**	**-1.9**	**1,575**	**480**
Minimum	955	950	-43	-3.1	1,575	310
Average	1,280	1,273	8	0.7	1,871	590
Maximum	1,480	1,479	95	8.4	2,116	836

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[1] Forecast reserve does not include adjustments for interruptible load, the impact of voltage reduction, or scheduled off-Island imports.
[2] Includes total amount forecast to be delivered via the LIL, inclusive of exports.
[3] Includes exports via the Maritime Link.

Table A-4: Total Island Interconnected System Load Forecasting Data for April 2024[1]

Date	Forecast Total Peak (MW)	Actual Total Peak (MW)	Error (MW)	Error (%)	Available Island Supply[2] (MW)	Forecast Reserve[3] (MW)
1-Apr-2024	1,180	1,185	-5	-0.4	1,710	530
2-Apr-2024	1,165	1,158	7	0.6	1,760	595
3-Apr-2024	1,225	1,263	-38	-3.0	1,745	520
4-Apr-2024	1,205	1,199	6	0.5	1,735	530
5-Apr-2024	1,195	1,149	46	4.0	1,740	545
6-Apr-2024	1,160	1,127	33	2.9	1,740	580
7-Apr-2024	1,140	1,048	92	8.8	1,735	595
8-Apr-2024	1,265	1,199	66	5.5	1,735	470
9-Apr-2024	1,250	1,205	45	3.7	1,685	435
10-Apr-2024	1,290	1,245	45	3.6	1,630	340
11-Apr-2024	1,160	1,133	27	2.4	1,652	492
12-Apr-2024	1,070	1,040	30	2.9	1,662	592
13-Apr-2024	875	820	55	6.7	1,597	722
14-Apr-2024	860	843	17	2.0	1,600	740
15-Apr-2024	915	902	13	1.4	1,510	595
16-Apr-2024	875	897	-22	-2.5	1,501	626
17-Apr-2024	975	978	-3	-0.3	1,545	570
18-Apr-2024	**1,110**	**1,221**	**-111**	**-9.1**	**1,585**	**475**
19-Apr-2024	1,225	1,247	-22	-1.8	1,530	305
20-Apr-2024	1,115	1,048	67	6.4	1,492	377
21-Apr-2024	1,100	1,135	-35	-3.1	1,691	591
22-Apr-2024	1,095	1,103	-8	-0.7	1,690	595
23-Apr-2024	1,135	1,116	19	1.7	1,545	410
24-Apr-2024	1,125	1,141	-16	-1.4	1,610	485
25-Apr-2024	970	988	-18	-1.8	1,453	483
26-Apr-2024	1,140	1,148	-8	-0.7	1,545	405
27-Apr-2024	1,065	1,021	44	4.3	1,556	491
28-Apr-2024	1,110	1,113	-3	-0.3	1,726	616
29-Apr-2024	1,050	1,057	-7	-0.7	1,374	324
30-Apr-2024	1,040	1,051	-11	-1.0	1,395	355
Minimum	860	820	-111	-9.1	1,374	305
Average	1,103	1,093	10	1.0	1,616	513
Maximum	1,290	1,263	92	8.8	1,760	740

[1] Forecast reserve does not include adjustments for interruptible load, the impact of voltage reduction, or scheduled off-Island imports.
[2] Includes total amount forecast to be delivered via the LIL, inclusive of exports.
[3] Includes exports via the Maritime Link.

Table A-5: Total Island Interconnected System Load Forecasting Data for May 2024[1]

Date	Forecast Total Peak (MW)	Actual Total Peak (MW)	Error (MW)	Error (%)	Available Island Supply[2] (MW)	Forecast Reserve[3] (MW)
1-May-2024	1,067	1,038	29	2.8	1,370	303
2-May-2024	1,055	1,050	5	0.5	1,365	310
3-May-2024	1,065	1,045	20	1.9	1,380	315
4-May-2024	1,093	1,068	25	2.3	1,619	526
5-May-2024	1,055	1,057	-2	-0.2	1,594	539
6-May-2024	1,045	1,040	5	0.5	1,624	579
7-May-2024	995	991	4	0.4	1,566	571
8-May-2024	980	999	-19	-1.9	1,616	636
9-May-2024	1,005	973	32	3.3	1,577	572
10-May-2024	1,010	1,013	-3	-0.3	1,544	534
11-May-2024	1,025	1,069	-44	-4.1	1,488	463
12-May-2024	**1,055**	**1,142**	**-87**	**-7.6**	**1,533**	**478**
13-May-2024	995	971	24	2.5	1,581	586
14-May-2024	945	948	-3	-0.3	1,380	435
15-May-2024	1,015	950	65	6.8	1,407	392
16-May-2024	950	897	53	5.9	1,320	370
17-May-2024	935	903	32	3.5	1,316	381
18-May-2024	940	900	40	4.4	1,337	397
19-May-2024	970	932	38	4.1	1,352	382
20-May-2024	**925**	**825**	**100**	**12.1**	**1,537**	**612**
21-May-2024	840	828	12	1.4	1,238	398
22-May-2024	855	853	2	0.2	1,220	365
23-May-2024	960	964	-4	-0.4	1,320	360
24-May-2024	980	1,033	-53	-5.1	1,420	440
25-May-2024	**855**	**940**	**-85**	**-9.0**	**1,313**	**458**
26-May-2024	990	983	7	0.7	1,505	515
27-May-2024	1,045	1,051	-6	-0.6	1,465	420
28-May-2024	960	951	9	0.9	1,355	395
29-May-2024	920	927	-7	-0.8	1,453	533
30-May-2024	835	776	59	7.6	1,486	651
31-May-2024	820	802	18	2.2	1,379	559
Minimum	820	776	-87	-9.0	1,220	303
Average	974	965	9	1.1	1,441	467
Maximum	1,093	1,142	100	12.1	1,624	651

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[1] Forecast reserve does not include adjustments for interruptible load, the impact of voltage reduction, or scheduled off-Island imports.
[2] Includes total amount forecast to be delivered via the LIL, inclusive of exports.
[3] Includes exports via the Maritime Link.

Table A-6: Total Island Interconnected System Load Forecasting Data for June 2024[1]

Date	Forecast Total Peak (MW)	Actual Total Peak (MW)	Error (MW)	Error (%)	Available Island Supply[2] (MW)	Forecast Reserve[3] (MW)
1-Jun-2024	**895**	**942**	**-47**	**-5.0**	**1,431**	**536**
2-Jun-2024	**890**	**916**	**-26**	**-2.8**	**1,453**	**563**
3-Jun-2024	905	893	12	1.3	1,356	451
4-Jun-2024	900	899	1	0.1	1,363	463
5-Jun-2024	915	866	49	5.7	1,354	439
6-Jun-2024	900	817	83	10.2	1,364	464
7-Jun-2024	845	836	9	1.1	1,353	508
8-Jun-2024	815	790	25	3.2	1,345	530
9-Jun-2024	770	768	2	0.3	1,354	584
10-Jun-2024	815	840	-25	-3.0	1,349	534
11-Jun-2024	800	776	24	3.1	1,347	547
12-Jun-2024	770	760	10	1.3	1,330	560
13-Jun-2024	775	725	50	6.9	1,445	670
14-Jun-2024	800	742	58	7.8	1,418	618
15-Jun-2024	760	741	19	2.6	1,440	680
16-Jun-2024	780	751	29	3.9	1,434	654
17-Jun-2024	805	748	57	7.6	1,370	565
18-Jun-2024	775	741	34	4.6	1,395	620
19-Jun-2024	770	746	24	3.2	1,381	611
20-Jun-2024	785	764	21	2.7	1,416	631
21-Jun-2024	795	739	56	7.6	1,378	583
22-Jun-2024	765	703	62	8.8	1,372	607
23-Jun-2024	750	726	24	3.3	1,381	631
24-Jun-2024	770	796	-26	-3.3	1,396	626
25-Jun-2024	**785**	**792**	**-7**	**-0.9**	**1,374**	**589**
26-Jun-2024	785	750	35	4.7	1,382	597
27-Jun-2024	765	760	5	0.7	1,408	643
28-Jun-2024	790	775	15	1.9	1,380	590
29-Jun-2024	790	752	38	5.1	1,389	599
30-Jun-2024	775	754	21	2.8	1,380	605
Minimum	750	703	-47	-5.0	1,330	439
Average	808	787	21	2.8	1,385	577
Maximum	915	942	83	10.2	1,453	680

[1] Forecast reserve does not include adjustments for interruptible load, the impact of voltage reduction, or scheduled off-Island imports.
[2] Includes total amount forecast to be delivered via the LIL, inclusive of exports.
[3] Includes exports via the Maritime Link.

Table A-7: Total Island Interconnected System Load Forecasting Data for July 2024[1]

Date	Forecast Total Peak (MW)	Actual Total Peak (MW)	Error (MW)	Error (%)	Available Island Supply[2] (MW)	Forecast Reserve[3] (MW)
1-Jul-2024	780	744	36	4.8	1,410	630
2-Jul-2024	**770**	**785**	**-15**	**-1.9**	**1,344**	**574**
3-Jul-2024	787	734	53	7.2	1,371	584
4-Jul-2024	775	734	41	5.6	1,274	499
5-Jul-2024	760	752	8	1.1	1,280	520
6-Jul-2024	735	733	2	0.3	1,299	564
7-Jul-2024	740	755	-15	-2.0	1,303	563
8-Jul-2024	785	765	20	2.6	1,270	485
9-Jul-2024	780	733	47	6.4	1,305	525
10-Jul-2024	780	771	9	1.2	1,229	449
11-Jul-2024	770	732	38	5.2	1,239	469
12-Jul-2024	765	726	39	5.4	1,220	455
13-Jul-2024	740	733	7	1.0	1,205	465
14-Jul-2024	740	718	22	3.1	1,169	429
15-Jul-2024	770	758	12	1.6	1,207	437
16-Jul-2024	**775**	**772**	**3**	**0.4**	**1,219**	**444**
17-Jul-2024	790	764	26	3.4	1,203	413
18-Jul-2024	795	787	8	1.0	1,204	409
19-Jul-2024	780	775	5	0.6	1,222	442
20-Jul-2024	745	724	21	2.9	1,205	460
21-Jul-2024	735	724	11	1.5	1,203	468
22-Jul-2024	775	756	19	2.5	1,200	425
23-Jul-2024	765	755	10	1.3	1,207	442
24-Jul-2024	765	748	17	2.3	1,155	390
25-Jul-2024	770	739	31	4.2	1,161	391
26-Jul-2024	755	733	22	3.0	1,198	443
27-Jul-2024	745	690	55	8.0	1,303	558
28-Jul-2024	735	709	26	3.7	1,309	574
29-Jul-2024	800	813	-13	-1.6	1,213	413
30-Jul-2024	820	806	14	1.7	1,338	518
31-Jul-2024	820	792	28	3.5	1,215	395
Minimum	735	690	-15	-2.0	1,155	390
Average	769	750	19	2.6	1,248	478
Maximum	820	813	55	8.0	1,410	630

[1] Forecast reserve does not include adjustments for interruptible load, the impact of voltage reduction, or scheduled off-Island imports.
[2] Includes total amount forecast to be delivered via the LIL, inclusive of exports.
[3] Includes exports via the Maritime Link.

Table A-8: Total Island Interconnected System Load Forecasting Data for August 2024[1]

Date	Forecast Total Peak (MW)	Actual Total Peak (MW)	Error (MW)	Error (%)	Available Island Supply[2] (MW)	Forecast Reserve[3] (MW)
1-Aug-2024	**790**	**803**	**-13**	**-1.6**	**1,200**	**410**
2-Aug-2024	785	737	48	6.5	1,205	420
3-Aug-2024	735	715	20	2.8	1,190	455
4-Aug-2024	765	743	22	3.0	1,185	420
5-Aug-2024	805	779	26	3.3	1,195	390
6-Aug-2024	785	761	24	3.2	1,205	420
7-Aug-2024	760	721	39	5.4	1,190	430
8-Aug-2024	760	747	13	1.7	1,180	420
9-Aug-2024	760	738	22	3.0	1,175	415
10-Aug-2024	750	735	15	2.0	1,210	460
11-Aug-2024	755	736	19	2.6	1,125	370
12-Aug-2024	790	763	27	3.5	1,110	320
13-Aug-2024	770	713	57	8.0	1,105	335
14-Aug-2024	775	713	62	8.7	1,085	310
15-Aug-2024	755	732	23	3.1	1,085	330
16-Aug-2024	755	733	22	3.0	1,235	480
17-Aug-2024	735	707	28	4.0	1,235	500
18-Aug-2024	750	712	38	5.3	1,180	430
19-Aug-2024	795	770	25	3.2	1,165	370
20-Aug-2024	795	778	17	2.2	1,190	395
21-Aug-2024	780	753	27	3.6	1,210	430
22-Aug-2024	775	729	46	6.3	1,195	420
23-Aug-2024	755	731	24	3.3	1,165	410
24-Aug-2024	730	679	51	7.5	1,250	520
25-Aug-2024	740	693	47	6.8	1,255	515
26-Aug-2024	775	751	24	3.2	1,195	420
27-Aug-2024	775	717	58	8.1	1,200	425
28-Aug-2024	785	715	70	9.8	1,210	425
29-Aug-2024	765	733	32	4.4	1,125	360
30-Aug-2024	750	667	83	12.4	1,200	450
31-Aug-2024	720	678	42	6.2	1,200	480
Minimum	720	667	-13	-1.6	1,085	310
Average	765	732	33	4.7	1,182	417
Maximum	805	803	83	12.4	1,255	520

[1] Forecast reserve does not include adjustments for interruptible load, the impact of voltage reduction, or scheduled off-Island imports.
[2] Includes total amount forecast to be delivered via the LIL, inclusive of exports.
[3] Includes exports via the Maritime Link.

Table A-9: Total Island Interconnected System Load Forecasting Data for September 2024[1]

Date	Forecast Total Peak (MW)	Actual Total Peak (MW)	Error (MW)	Error (%)	Available Island Supply[2] (MW)	Forecast Reserve[3] (MW)
1-Sep-2024	725	672	53	7.9	1,200	475
2-Sep-2024	755	752	3	0.4	1,202	447
3-Sep-2024	745	713	32	4.5	1,196	451
4-Sep-2024	740	707	33	4.7	1,242	502
5-Sep-2024	730	721	9	1.2	1,213	483
6-Sep-2024	735	742	-7	-0.9	1,242	507
7-Sep-2024	710	672	38	5.7	1,218	508
8-Sep-2024	740	704	36	5.1	1,299	559
9-Sep-2024	770	744	26	3.5	1,435	665
10-Sep-2024	755	707	48	6.8	1,255	500
11-Sep-2024	740	717	23	3.2	1,384	644
12-Sep-2024	745	730	15	2.1	1,390	645
13-Sep-2024	688	707	-19	-2.7	1,379	691
14-Sep-2024	745	732	13	1.8	1,278	533
15-Sep-2024	780	746	34	4.6	1,351	571
16-Sep-2024	790	789	1	0.1	1,192	402
17-Sep-2024	775	718	57	7.9	1,209	434
18-Sep-2024	745	733	12	1.6	1,195	450
19-Sep-2024	760	738	22	3.0	1,195	435
20-Sep-2024	755	745	10	1.3	1,212	457
21-Sep-2024	775	777	-2	-0.3	1,275	500
22-Sep-2024	805	811	-6	-0.7	1,275	470
23-Sep-2024	835	806	29	3.6	1,275	440
24-Sep-2024	800	797	3	0.4	1,280	480
25-Sep-2024	805	824	-19	-2.3	1,285	480
26-Sep-2024	825	830	-5	-0.6	1,280	455
27-Sep-2024	830	818	12	1.5	1,380	550
28-Sep-2024	805	809	-4	-0.5	1,624	819
29-Sep-2024	800	777	23	3.0	1,630	830
30-Sep-2024	800	791	9	1.1	1,545	745
Minimum	688	672	-19	-2.7	1,192	402
Average	767	751	16	2.2	1,305	538
Maximum	835	830	57	7.9	1,630	830

[1] Forecast reserve does not include adjustments for interruptible load, the impact of voltage reduction, or scheduled off-Island imports.
[2] Includes total amount forecast to be delivered via the LIL, inclusive of exports.
[3] Includes exports via the Maritime Link.

Table A-10: Total Island Interconnected System Load Forecasting Data for October 2024[1]

Date	Forecast Total Peak (MW)	Actual Total Peak (MW)	Error (MW)	Error (%)	Available Island Supply[2] (MW)	Forecast Reserve[3] (MW)
1-Oct-2024	**810**	**862**	**-52**	**-6.0**	**1,565**	**755**
2-Oct-2024	**855**	**893**	**-38**	**-4.3**	**1,580**	**725**
3-Oct-2024	900	883	17	1.9	1,562	662
4-Oct-2024	930	908	22	2.4	1,560	630
5-Oct-2024	795	750	45	6.0	1,634	839
6-Oct-2024	835	827	8	1.0	1,640	805
7-Oct-2024	910	885	25	2.8	1,405	495
8-Oct-2024	895	851	44	5.2	1,617	722
9-Oct-2024	880	845	35	4.1	1,576	696
10-Oct-2024	850	817	33	4.0	1,380	530
11-Oct-2024	885	845	40	4.7	1,390	505
12-Oct-2024	855	840	15	1.8	1,791	936
13-Oct-2024	900	866	34	3.9	1,888	988
14-Oct-2024	930	818	112	13.7	1,948	1,018
15-Oct-2024	875	840	35	4.2	1,876	1,001
16-Oct-2024	890	838	52	6.2	1,978	1,088
17-Oct-2024	955	897	58	6.5	1,956	1,001
18-Oct-2024	985	1,116	-131	-11.7	1,895	910
19-Oct-2024	980	910	70	7.7	1,947	967
20-Oct-2024	860	802	58	7.2	1,912	1,052
21-Oct-2024	870	842	28	3.3	1,960	1,090
22-Oct-2024	965	870	95	10.9	1,970	1,005
23-Oct-2024	1,025	984	41	4.2	1,770	745
24-Oct-2024	855	768	87	11.3	1,747	892
25-Oct-2024	**835**	**860**	**-25**	**-2.9**	**1,940**	**1,105**
26-Oct-2024	940	883	57	6.5	1,778	838
27-Oct-2024	970	929	41	4.4	1,806	836
28-Oct-2024	1,070	1,054	16	1.5	1,939	869
29-Oct-2024	1,140	1,121	19	1.7	1,873	733
30-Oct-2024	1,140	1,128	12	1.1	1,951	811
31-Oct-2024	1,140	1,092	48	4.4	1,945	805
Minimum	795	750	-131	-11.7	1,380	495
Average	927	898	29	3.5	1,767	840
Maximum	1,140	1,128	112	13.7	1,978	1,105

[1] Forecast reserve does not include adjustments for interruptible load, the impact of voltage reduction, or scheduled off-Island imports.
[2] Includes total amount forecast to be delivered via the LIL, inclusive of exports.
[3] Includes exports via the Maritime Link.

Table A-11: Total Island Interconnected System Load Forecasting Data for November 2024[1]

Date	Forecast Total Peak (MW)	Actual Total Peak (MW)	Error (MW)	Error (%)	Available Island Supply[2] (MW)	Forecast Reserve[3] (MW)
1-Nov-2024	920	905	15	1.7	1,760	840
2-Nov-2024	1,040	1,031	9	0.9	1,994	954
3-Nov-2024	1,135	1,098	37	3.4	2,007	872
4-Nov-2024	1,235	1,204	31	2.6	1,985	750
5-Nov-2024	1,195	1,161	34	2.9	1,936	741
6-Nov-2024	1,070	990	80	8.1	1,946	876
7-Nov-2024	1,110	1,068	42	3.9	1,937	827
8-Nov-2024	1,105	1,069	36	3.4	1,957	852
9-Nov-2024	1,120	1,085	35	3.2	1,990	870
10-Nov-2024	1,210	1,162	48	4.1	1,910	700
11-Nov-2024	1,095	1,011	84	8.3	1,865	770
12-Nov-2024	970	886	84	9.5	1,951	981
13-Nov-2024	1,145	1,122	23	2.0	1,938	793
14-Nov-2024	1,115	1,064	51	4.8	1,970	855
15-Nov-2024	975	886	89	10.0	1,914	939
16-Nov-2024	**920**	**835**	**85**	**10.2**	**1,765**	**845**
17-Nov-2024	885	850	35	4.1	1,785	900
18-Nov-2024	**950**	**888**	**62**	**7.0**	**1,622**	**672**
19-Nov-2024	930	893	37	4.1	1,774	844
20-Nov-2024	980	941	39	4.1	1,799	819
21-Nov-2024	1,015	982	33	3.4	1,769	754
22-Nov-2024	1,055	1,082	-27	-2.5	1,756	701
23-Nov-2024	1,150	1,091	59	5.4	1,795	645
24-Nov-2024	1,075	1,010	65	6.4	1,779	704
25-Nov-2024	1,085	1,096	-11	-1.0	1,799	714
26-Nov-2024	1,180	1,140	40	3.5	1,768	588
27-Nov-2024	1,175	1,188	-13	-1.1	1,627	452
28-Nov-2024	1,185	1,147	38	3.3	1,678	493
29-Nov-2024	1,185	1,212	-27	-2.2	1,890	705
30-Nov-2024	1,170	1,141	29	2.5	1,776	606
Minimum	885	835	-27	-2.5	1,622	452
Average	1,079	1,041	38	3.9	1,848	769
Maximum	1,235	1,212	89	10.2	2,007	981

[1] Forecast reserve does not include adjustments for interruptible load, the impact of voltage reduction, or scheduled off-Island imports.
[2] Includes total amount forecast to be delivered via the LIL, inclusive of exports.
[3] Includes exports via the Maritime Link.

Table A-12: Total Island Interconnected System Load Forecasting Data for December 2024[1]

Date	Forecast Total Peak (MW)	Actual Total Peak (MW)	Error (MW)	Error (%)	Available Island Supply[2] (MW)	Forecast Reserve[3] (MW)
1-Dec-2024	1,245	1,203	42	3.5	1,865	620
2-Dec-2024	1,240	1,247	-7	-0.6	2,019	779
3-Dec-2024	1,285	1,266	19	1.5	2,027	742
4-Dec-2024	1,355	1,339	16	1.2	2,036	681
5-Dec-2024	1,405	1,401	4	0.3	1,816	411
6-Dec-2024	1,310	1,237	73	5.9	1,722	412
7-Dec-2024	1,335	1,336	-1	-0.1	1,871	536
8-Dec-2024	1,365	1,378	-13	-0.9	2,005	640
9-Dec-2024	1,300	1,326	-26	-2.0	2,138	838
10-Dec-2024	1,400	1,386	14	1.0	2,049	649
11-Dec-2024	1,335	1,304	31	2.4	2,105	770
12-Dec-2024	**1,105**	**1,012**	**93**	**9.2**	**1,918**	**813**
13-Dec-2024	1,195	1,207	-12	-1.0	1,926	731
14-Dec-2024	1,375	1,336	39	2.9	2,049	674
15-Dec-2024	1,425	1,347	78	5.8	2,115	690
16-Dec-2024	1,370	1,341	29	2.2	2,172	802
17-Dec-2024	1,320	1,304	16	1.2	1,857	537
18-Dec-2024	1,240	1,160	80	6.9	1,970	730
19-Dec-2024	1,220	1,194	26	2.2	1,866	646
20-Dec-2024	1,340	1,321	19	1.4	1,925	585
21-Dec-2024	1,260	1,302	-42	-3.2	1,902	642
22-Dec-2024	1,375	1,363	12	0.9	1,947	572
23-Dec-2024	1,465	1,446	19	1.3	2,141	676
24-Dec-2024	1,440	1,458	-18	-1.2	2,147	707
25-Dec-2024	1,420	1,463	-43	-2.9	2,062	642
26-Dec-2024	1,295	1,250	45	3.6	1,953	658
27-Dec-2024	1,220	1,267	-47	-3.7	1,940	720
28-Dec-2024	**1,215**	**1,264**	**-49**	**-3.9**	**1,943**	**728**
29-Dec-2024	1,220	1,264	-44	-3.5	1,913	693
30-Dec-2024	1,240	1,251	-11	-0.9	1,931	691
31-Dec-2024	**1,200**	**1,245**	**-45**	**-3.6**	**1,927**	**727**
Minimum	1,105	1,012	-49	-3.9	1,722	411
Average	1,307	1,297	10	0.8	1,976	669
Maximum	1,465	1,463	93	9.2	2,172	838

[1] Forecast reserve does not include adjustments for interruptible load, the impact of voltage reduction, or scheduled off-Island imports.
[2] Includes total amount forecast to be delivered via the LIL, inclusive of exports.
[3] Includes exports via the Maritime Link.

Table A-13: Analysis of Utility Forecast Error for January 2024[1]

Date	Actual Utility Peak (MW)	Forecast Utility Peak (MW)	Error (MW)	Absolute Error (MW)	Error (%)	Absolute Error (%)	Actual/ Forecast (%)
1-Jan-2024	1,232	1,273	40	40	3.3	3.3	3.2
2-Jan-2024	1,321	1,291	-30	30	-2.3	2.3	-2.3
3-Jan-2024	1,198	1,200	2	2	0.2	0.2	0.2
4-Jan-2024	1,223	1,221	-2	2	-0.1	0.1	-0.1
5-Jan-2024	1,267	1,225	-42	42	-3.3	3.3	-3.4
6-Jan-2024	1,521	1,487	-33	33	-2.2	2.2	-2.3
7-Jan-2024	1,459	1,418	-42	42	-2.9	2.9	-2.9
8-Jan-2024	1,352	1,349	-3	3	-0.2	0.2	-0.2
9-Jan-2024	1,317	1,368	51	51	3.9	3.9	3.8
10-Jan-2024	1,404	1,398	-6	6	-0.4	0.4	-0.4
11-Jan-2024	1,243	1,252	8	8	0.7	0.7	0.7
12-Jan-2024	1,072	1,117	46	46	4.2	4.2	4.1
13-Jan-2024	1,180	1,188	8	8	0.6	0.6	0.6
14-Jan-2024	1,189	1,165	-25	25	-2.1	2.1	-2.1
15-Jan-2024	1,146	1,164	17	17	1.5	1.5	1.5
16-Jan-2024	1,246	1,256	9	9	0.7	0.7	0.7
17-Jan-2024	1,266	1,243	-22	22	-1.8	1.8	-1.8
18-Jan-2024	**1,399**	**1,320**	**-79**	**79**	**-5.7**	**5.7**	**-6.0**
19-Jan-2024	1,394	1,404	10	10	0.7	0.7	0.7
20-Jan-2024	1,224	1,199	-25	25	-2.0	2.0	-2.0
21-Jan-2024	1,147	1,174	27	27	2.3	2.3	2.3
22-Jan-2024	1,230	1,282	52	52	4.3	4.3	4.1
23-Jan-2024	1,340	1,277	-63	63	-4.7	4.7	-4.9
24-Jan-2024	1,647	1,656	9	9	0.6	0.6	0.5
25-Jan-2024	1,375	1,374	-1	1	0.0	0.0	0.0
26-Jan-2024	1,447	1,434	-14	14	-0.9	0.9	-0.9
27-Jan-2024	1,237	1,222	-16	16	-1.3	1.3	-1.3
28-Jan-2024	1,221	1,198	-23	23	-1.9	1.9	-1.9
29-Jan-2024	1,342	1,296	-46	46	-3.4	3.4	-3.5
30-Jan-2024	1,473	1,443	-30	30	-2.0	2.0	-2.1
31-Jan-2024	1,438	1,425	-13	13	-0.9	0.9	-0.9
Minimum	1,072	1,117	-79	1	-5.7	0.0	-6.0
Average	1,308	1,301	-7	26	-0.5	2.0	-0.5
Maximum	1,647	1,656	52	79	4.3	5.7	4.1

[1] Lines that have been bolded indicate further examination of the hourly forecast provided in this report.

Table A-14: Analysis of Utility Forecast Error for February 2024

Date	Actual Utility Peak (MW)	Forecast Utility Peak (MW)	Error (MW)	Absolute Error (MW)	Error (%)	Absolute Error (%)	Actual/ Forecast (%)
1-Feb-2024	1,384	1,386	1	1	0.1	0.1	0.1
2-Feb-2024	1,230	1,239	9	9	0.8	0.8	0.8
3-Feb-2024	1,242	1,240	-2	2	-0.2	0.2	-0.2
4-Feb-2024	1,231	1,189	-42	42	-3.4	3.4	-3.5
5-Feb-2024	1,171	1,159	-12	12	-1.0	1.0	-1.0
6-Feb-2024	1,268	1,210	-58	58	-4.5	4.5	-4.8
7-Feb-2024	1,246	1,243	-3	3	-0.3	0.3	-0.3
8-Feb-2024	1,269	1,270	1	1	0.1	0.1	0.1
9-Feb-2024	1,231	1,216	-15	15	-1.2	1.2	-1.2
10-Feb-2024	1,201	1,190	-12	12	-1.0	1.0	-1.0
11-Feb-2024	1,075	1,100	26	26	2.4	2.4	2.3
12-Feb-2024	1,102	1,107	5	5	0.5	0.5	0.5
13-Feb-2024	1,153	1,202	48	48	4.2	4.2	4.0
14-Feb-2024	1,261	1,232	-29	29	-2.3	2.3	-2.4
15-Feb-2024	1,222	1,215	-7	7	-0.6	0.6	-0.6
16-Feb-2024	1,195	1,241	47	47	3.9	3.9	3.7
17-Feb-2024	1,223	1,244	21	21	1.7	1.7	1.7
18-Feb-2024	1,295	1,306	11	11	0.8	0.8	0.8
19-Feb-2024	1,311	1,321	10	10	0.8	0.8	0.8
20-Feb-2024	1,374	1,364	-10	10	-0.7	0.7	-0.7
21-Feb-2024	1,462	1,505	43	43	3.0	3.0	2.9
22-Feb-2024	1,458	1,437	-21	21	-1.5	1.5	-1.5
23-Feb-2024	1,153	1,151	-2	2	-0.2	0.2	-0.2
24-Feb-2024	1,017	1,048	30	30	3.0	3.0	2.9
25-Feb-2024	1,211	1,238	28	28	2.3	2.3	2.2
26-Feb-2024	1,345	1,308	-37	37	-2.8	2.8	-2.9
27-Feb-2024	1,234	1,232	-2	2	-0.1	0.1	-0.1
28-Feb-2024	1,096	1,109	13	13	1.1	1.1	1.1
29-Feb-2024	978	1,006	28	28	2.9	2.9	2.8
Minimum	1,064	1,039	-57	0	-5.2	0.0	-5.5
Average	1,212	1,211	0	18	-0.1	1.5	-0.1
Maximum	1,559	1,559	116	116	9.3	9.3	8.5

Table A-15: Analysis of Utility Forecast Error for March 2024[1]

Date	Actual Utility Peak (MW)	Forecast Utility Peak (MW)	Error (MW)	Absolute Error (MW)	Error (%)	Absolute Error (%)	Actual/ Forecast (%)
1-Mar-2024	**1,367**	**1,288**	**-78**	**78**	**-5.7**	**5.7**	**-6.1**
2-Mar-2024	1,249	1,268	19	19	1.5	1.5	1.5
3-Mar-2024	1,098	1,074	-24	24	-2.2	2.2	-2.2
4-Mar-2024	**1,178**	**1,262**	**84**	**84**	**7.1**	**7.1**	**6.6**
5-Mar-2024	1,297	1,333	35	35	2.7	2.7	2.7
6-Mar-2024	1,120	1,091	-28	28	-2.5	2.5	-2.6
7-Mar-2024	1,161	1,134	-27	27	-2.3	2.3	-2.3
8-Mar-2024	1,254	1,195	-59	59	-4.7	4.7	-4.9
9-Mar-2024	1,183	1,184	1	1	0.1	0.1	0.1
10-Mar-2024	1,146	1,112	-34	34	-3.0	3.0	-3.1
11-Mar-2024	1,219	1,196	-23	23	-1.9	1.9	-1.9
12-Mar-2024	1,141	1,138	-3	3	-0.3	0.3	-0.3
13-Mar-2024	1,111	1,106	-5	5	-0.5	0.5	-0.5
14-Mar-2024	1,113	1,115	2	2	0.2	0.2	0.2
15-Mar-2024	1,167	1,158	-8	8	-0.7	0.7	-0.7
16-Mar-2024	1,053	1,048	-5	5	-0.5	0.5	-0.5
17-Mar-2024	1,041	1,061	20	20	1.9	1.9	1.9
18-Mar-2024	1,193	1,139	-53	53	-4.5	4.5	-4.7
19-Mar-2024	1,103	1,100	-3	3	-0.2	0.2	-0.2
20-Mar-2024	1,128	1,132	4	4	0.4	0.4	0.4
21-Mar-2024	1,136	1,146	9	9	0.8	0.8	0.8
22-Mar-2024	1,130	1,133	3	3	0.3	0.3	0.3
23-Mar-2024	1,175	1,139	-37	37	-3.1	3.1	-3.2
24-Mar-2024	1,091	1,060	-31	31	-2.9	2.9	-2.9
25-Mar-2024	1,183	1,174	-9	9	-0.8	0.8	-0.8
26-Mar-2024	1,257	1,242	-16	16	-1.3	1.3	-1.3
27-Mar-2024	1,153	1,173	20	20	1.7	1.7	1.7
28-Mar-2024	1,015	1,013	-2	2	-0.2	0.2	-0.2
29-Mar-2024	837	797	-39	39	-4.7	4.7	-4.9
30-Mar-2024	860	871	11	11	1.2	1.2	1.2
31-Mar-2024	**986**	**933**	**-52**	**52**	**-5.3**	**5.3**	**-5.6**
Minimum	837	797	-78	1	-5.7	0.1	-6.1
Average	1,134	1,123	-11	24	-0.9	2.1	-1.0
Maximum	1,367	1,333	84	84	7.1	7.1	6.6

[1] Lines that have been bolded indicate further examination of the hourly forecast provided in this report.

Table A-16: Analysis of Utility Forecast Error for April 2024[1]

Date	Actual Utility Peak (MW)	Forecast Utility Peak (MW)	Error (MW)	Absolute Error (MW)	Error (%)	Absolute Error (%)	Actual/ Forecast (%)
1-Apr-2024	1,050	1,013	-37	37	-3.5	3.5	-3.6
2-Apr-2024	1,071	1,036	-36	36	-3.3	3.3	-3.5
3-Apr-2024	1,136	1,110	-26	26	-2.3	2.3	-2.4
4-Apr-2024	1,100	1,082	-17	17	-1.6	1.6	-1.6
5-Apr-2024	1,112	1,079	-34	34	-3.0	3.0	-3.1
6-Apr-2024	1,092	1,039	-53	53	-4.8	4.8	-5.1
7-Apr-2024	1,006	1,019	13	13	1.3	1.3	1.3
8-Apr-2024	1,153	1,149	-4	4	-0.3	0.3	-0.3
9-Apr-2024	1,169	1,155	-14	14	-1.2	1.2	-1.2
10-Apr-2024	1,200	1,175	-25	25	-2.1	2.1	-2.1
11-Apr-2024	1,091	1,110	19	19	1.7	1.7	1.7
12-Apr-2024	1,009	1,019	11	11	1.0	1.0	1.0
13-Apr-2024	793	823	30	30	3.8	3.8	3.7
14-Apr-2024	773	787	14	14	1.8	1.8	1.7
15-Apr-2024	824	843	19	19	2.3	2.3	2.2
16-Apr-2024	832	814	-18	18	-2.1	2.1	-2.2
17-Apr-2024	897	855	-41	41	-4.6	4.6	-4.8
18-Apr-2024	**1,158**	**1,020**	**-138**	**138**	**-11.9**	**11.9**	**-13.5**
19-Apr-2024	1,151	1,119	-32	32	-2.7	2.7	-2.8
20-Apr-2024	939	981	42	42	4.4	4.4	4.2
21-Apr-2024	1,009	986	-23	23	-2.3	2.3	-2.3
22-Apr-2024	975	979	3	3	0.3	0.3	0.3
23-Apr-2024	1,004	1,018	14	14	1.4	1.4	1.4
24-Apr-2024	1,015	1,008	-7	7	-0.7	0.7	-0.7
25-Apr-2024	868	855	-13	13	-1.5	1.5	-1.5
26-Apr-2024	1,042	1,025	-16	16	-1.6	1.6	-1.6
27-Apr-2024	934	949	15	15	1.6	1.6	1.6
28-Apr-2024	989	990	1	1	0.1	0.1	0.1
29-Apr-2024	936	937	0	0	0.0	0.0	0.0
30-Apr-2024	923	926	3	3	0.3	0.3	0.3
Minimum	773	787	-138	0	-11.9	0.0	-13.5
Average	1,008	997	-12	24	-1.0	2.3	-1.1
Maximum	1,200	1,175	42	138	4.4	11.9	4.2

[1] Lines that have been bolded indicate further examination of the hourly forecast provided in this report.

Table A-17: Analysis of Utility Forecast Error for May 2024[1]

Date	Actual Utility Peak (MW)	Forecast Utility Peak (MW)	Error (MW)	Absolute Error (MW)	Error (%)	Absolute Error (%)	Actual/ Forecast (%)
1-May-2024	930	923	-7	7	-0.8	0.8	-0.8
2-May-2024	921	917	-4	4	-0.4	0.4	-0.5
3-May-2024	964	921	-43	43	-4.4	4.4	-4.6
4-May-2024	953	912	-41	41	-4.3	4.3	-4.5
5-May-2024	926	919	-7	7	-0.7	0.7	-0.7
6-May-2024	888	904	17	17	1.9	1.9	1.8
7-May-2024	865	862	-3	3	-0.3	0.3	-0.3
8-May-2024	853	845	-8	8	-1.0	1.0	-1.0
9-May-2024	847	851	4	4	0.5	0.5	0.5
10-May-2024	872	871	-1	1	-0.1	0.1	-0.1
11-May-2024	919	893	-26	26	-2.9	2.9	-2.9
12-May-2024	**995**	**920**	**-75**	**75**	**-7.5**	**7.5**	**-8.1**
13-May-2024	839	839	0	0	0.0	0.0	0.0
14-May-2024	838	807	-31	31	-3.7	3.7	-3.9
15-May-2024	854	846	-8	8	-0.9	0.9	-0.9
16-May-2024	767	785	18	18	2.3	2.3	2.3
17-May-2024	814	802	-12	12	-1.5	1.5	-1.5
18-May-2024	771	803	32	32	4.1	4.1	3.9
19-May-2024	805	835	30	30	3.8	3.8	3.6
20-May-2024	**711**	**784**	**73**	**73**	**10.2**	**10.2**	**9.3**
21-May-2024	715	707	-8	8	-1.2	1.2	-1.2
22-May-2024	727	717	-11	11	-1.5	1.5	-1.5
23-May-2024	845	827	-18	18	-2.1	2.1	-2.2
24-May-2024	890	845	-45	45	-5.0	5.0	-5.3
25-May-2024	**787**	**709**	**-79**	**79**	**-10.0**	**10.0**	**-11.1**
26-May-2024	832	830	-2	2	-0.2	0.2	-0.2
27-May-2024	891	881	-10	10	-1.1	1.1	-1.1
28-May-2024	789	782	-8	8	-1.0	1.0	-1.0
29-May-2024	786	758	-28	28	-3.5	3.5	-3.7
30-May-2024	661	660	0	0	0.0	0.0	0.0
31-May-2024	662	660	-1	1	-0.2	0.2	-0.2
Minimum	661	660	-79	0	-10.0	0.0	-11.1
Average	836	826	-10	21	-1.0	2.5	-1.2
Maximum	995	923	73	79	10.2	10.2	9.3

[1] Lines that have been bolded indicate further examination of the hourly forecast provided in this report.

Table A-18: Analysis of Utility Forecast Error for June 2024[1]

Date	Actual Utility Peak (MW)	Forecast Utility Peak (MW)	Error (MW)	Absolute Error (MW)	Error (%)	Absolute Error (%)	Actual/ Forecast (%)
1-Jun-2024	**789**	**731**	**-58**	**58**	**-7.4**	**7.4**	**-7.9**
2-Jun-2024	**772**	**728**	**-44**	**44**	**-5.7**	**5.7**	**-6.1**
3-Jun-2024	739	741	2	2	0.2	0.2	0.2
4-Jun-2024	759	741	-18	18	-2.4	2.4	-2.4
5-Jun-2024	742	752	9	9	1.3	1.3	1.3
6-Jun-2024	719	724	5	5	0.7	0.7	0.7
7-Jun-2024	694	679	-15	15	-2.2	2.2	-2.2
8-Jun-2024	648	650	2	2	0.3	0.3	0.3
9-Jun-2024	623	610	-13	13	-2.1	2.1	-2.1
10-Jun-2024	678	656	-23	23	-3.3	3.3	-3.4
11-Jun-2024	629	641	13	13	2.0	2.0	2.0
12-Jun-2024	601	612	12	12	2.0	2.0	1.9
13-Jun-2024	618	612	-6	6	-1.0	1.0	-1.0
14-Jun-2024	598	620	22	22	3.6	3.6	3.5
15-Jun-2024	594	584	-11	11	-1.8	1.8	-1.8
16-Jun-2024	600	607	7	7	1.2	1.2	1.2
17-Jun-2024	602	626	24	24	4.0	4.0	3.8
18-Jun-2024	592	602	9	9	1.6	1.6	1.5
19-Jun-2024	593	593	0	0	-0.1	0.1	-0.1
20-Jun-2024	619	610	-8	8	-1.3	1.3	-1.3
21-Jun-2024	588	618	29	29	5.0	5.0	4.8
22-Jun-2024	559	589	30	30	5.4	5.4	5.1
23-Jun-2024	567	577	10	10	1.8	1.8	1.8
24-Jun-2024	630	595	-36	36	-5.6	5.6	-6.0
25-Jun-2024	**650**	**606**	**-43**	**43**	**-6.7**	**6.7**	**-7.1**
26-Jun-2024	603	610	7	7	1.1	1.1	1.1
27-Jun-2024	596	586	-10	10	-1.7	1.7	-1.7
28-Jun-2024	609	611	2	2	0.3	0.3	0.3
29-Jun-2024	583	610	27	27	4.7	4.7	4.5
30-Jun-2024	598	602	4	4	0.6	0.6	0.6
Minimum	559	577	-58	0	-7.4	0.1	-7.9
Average	640	637	-2	17	-0.2	2.6	-0.3
Maximum	789	752	30	58	5.4	7.4	5.1

[1] Lines that have been bolded indicate further examination of the hourly forecast provided in this report.

Table A-19: Analysis of Utility Forecast Error for July 2024[1]

Date	Actual Utility Peak (MW)	Forecast Utility Peak (MW)	Error (MW)	Absolute Error (MW)	Error (%)	Absolute Error (%)	Actual/ Forecast (%)
1-Jul-2024	598	600	2	2	0.3	0.3	0.3
2-Jul-2024	**638**	**592**	**-47**	**47**	**-7.3**	**7.3**	**-7.9**
3-Jul-2024	591	604	13	13	2.2	2.2	2.2
4-Jul-2024	587	596	9	9	1.5	1.5	1.5
5-Jul-2024	594	583	-12	12	-1.9	1.9	-2.0
6-Jul-2024	569	561	-9	9	-1.5	1.5	-1.5
7-Jul-2024	593	566	-27	27	-4.5	4.5	-4.7
8-Jul-2024	615	605	-10	10	-1.7	1.7	-1.7
9-Jul-2024	612	600	-12	12	-2.0	2.0	-2.1
10-Jul-2024	622	602	-20	20	-3.3	3.3	-3.4
11-Jul-2024	602	596	-6	6	-1.0	1.0	-1.0
12-Jul-2024	580	590	10	10	1.7	1.7	1.7
13-Jul-2024	577	564	-13	13	-2.3	2.3	-2.4
14-Jul-2024	560	559	-2	2	-0.3	0.3	-0.3
15-Jul-2024	604	594	-10	10	-1.7	1.7	-1.7
16-Jul-2024	**632**	**596**	**-36**	**36**	**-5.7**	**5.7**	**-6.0**
17-Jul-2024	618	612	-6	6	-0.9	0.9	-0.9
18-Jul-2024	642	618	-25	25	-3.8	3.8	-4.0
19-Jul-2024	625	604	-21	21	-3.4	3.4	-3.5
20-Jul-2024	583	566	-17	17	-3.0	3.0	-3.1
21-Jul-2024	576	556	-20	20	-3.4	3.4	-3.5
22-Jul-2024	599	597	-2	2	-0.4	0.4	-0.4
23-Jul-2024	607	588	-19	19	-3.1	3.1	-3.2
24-Jul-2024	604	586	-18	18	-2.9	2.9	-3.0
25-Jul-2024	600	593	-7	7	-1.2	1.2	-1.2
26-Jul-2024	590	581	-10	10	-1.6	1.6	-1.6
27-Jul-2024	554	563	9	9	1.6	1.6	1.6
28-Jul-2024	564	559	-5	5	-0.9	0.9	-0.9
29-Jul-2024	646	621	-25	25	-3.9	3.9	-4.0
30-Jul-2024	665	642	-24	24	-3.6	3.6	-3.7
31-Jul-2024	648	639	-10	10	-1.5	1.5	-1.5
Minimum	554	556	-47	2	-7.3	0.3	-7.9
Average	603	591	-12	15	-1.9	2.4	-2.0
Maximum	665	642	13	47	2.2	7.3	2.2

[1] Lines that have been bolded indicate further examination of the hourly forecast provided in this report.

Table A-20: Analysis of Utility Forecast Error for August 2024[1]

Date	Actual Utility Peak (MW)	Forecast Utility Peak (MW)	Error (MW)	Absolute Error (MW)	Error (%)	Absolute Error (%)	Actual/ Forecast (%)
1-Aug-2024	**655**	**612**	**-43**	**43**	**-6.5**	**6.5**	**-7.0**
2-Aug-2024	638	608	-30	30	-4.8	4.8	-5.0
3-Aug-2024	580	556	-24	24	-4.1	4.1	-4.3
4-Aug-2024	608	580	-27	27	-4.5	4.5	-4.7
5-Aug-2024	648	627	-21	21	-3.3	3.3	-3.4
6-Aug-2024	612	607	-6	6	-0.9	0.9	-0.9
7-Aug-2024	583	580	-4	4	-0.6	0.6	-0.6
8-Aug-2024	593	583	-10	10	-1.7	1.7	-1.8
9-Aug-2024	585	584	-1	1	-0.1	0.1	-0.1
10-Aug-2024	585	570	-15	15	-2.6	2.6	-2.7
11-Aug-2024	587	577	-10	10	-1.6	1.6	-1.7
12-Aug-2024	623	615	-9	9	-1.4	1.4	-1.4
13-Aug-2024	602	590	-12	12	-2.1	2.1	-2.1
14-Aug-2024	578	597	19	19	3.3	3.3	3.2
15-Aug-2024	581	576	-5	5	-0.9	0.9	-0.9
16-Aug-2024	584	574	-10	10	-1.8	1.8	-1.8
17-Aug-2024	558	552	-6	6	-1.0	1.0	-1.0
18-Aug-2024	590	574	-16	16	-2.6	2.6	-2.7
19-Aug-2024	633	618	-15	15	-2.4	2.4	-2.5
20-Aug-2024	640	616	-25	25	-3.9	3.9	-4.0
21-Aug-2024	621	604	-17	17	-2.7	2.7	-2.8
22-Aug-2024	578	596	17	17	3.0	3.0	2.9
23-Aug-2024	577	575	-1	1	-0.2	0.2	-0.2
24-Aug-2024	554	554	0	0	0.0	0.0	0.0
25-Aug-2024	577	560	-17	17	-2.9	2.9	-3.0
26-Aug-2024	624	599	-24	24	-3.9	3.9	-4.1
27-Aug-2024	600	598	-2	2	-0.4	0.4	-0.4
28-Aug-2024	595	607	11	11	1.9	1.9	1.8
29-Aug-2024	587	582	-5	5	-0.9	0.9	-0.9
30-Aug-2024	560	573	13	13	2.3	2.3	2.3
31-Aug-2024	522	539	17	17	3.2	3.2	3.1
Minimum	522	539	-43	0	-6.5	0.0	-7.0
Average	595	586	-9	14	-1.4	2.3	-1.5
Maximum	655	627	19	43	3.3	6.5	3.2

[1] Lines that have been bolded indicate further examination of the hourly forecast provided in this report.

Table A-21: Analysis of Utility Forecast Error for September 2024

Date	Actual Utility Peak (MW)	Forecast Utility Peak (MW)	Error (MW)	Absolute Error (MW)	Error (%)	Absolute Error (%)	Actual/ Forecast (%)
1-Sep-2024	523	547	25	25	4.7	4.7	4.5
2-Sep-2024	603	573	-30	30	-4.9	4.9	-5.2
3-Sep-2024	580	568	-12	12	-2.1	2.1	-2.2
4-Sep-2024	560	563	3	3	0.6	0.6	0.6
5-Sep-2024	575	556	-19	19	-3.3	3.3	-3.5
6-Sep-2024	586	557	-29	29	-4.9	4.9	-5.1
7-Sep-2024	543	529	-13	13	-2.5	2.5	-2.5
8-Sep-2024	573	563	-11	11	-1.9	1.9	-1.9
9-Sep-2024	599	591	-8	8	-1.3	1.3	-1.3
10-Sep-2024	570	577	8	8	1.4	1.4	1.3
11-Sep-2024	574	561	-13	13	-2.2	2.2	-2.3
12-Sep-2024	560	567	7	7	1.2	1.2	1.2
13-Sep-2024	568	549	-19	19	-3.4	3.4	-3.5
14-Sep-2024	577	568	-9	9	-1.5	1.5	-1.5
15-Sep-2024	592	606	14	14	2.3	2.3	2.3
16-Sep-2024	627	613	-15	15	-2.4	2.4	-2.4
17-Sep-2024	583	595	11	11	2.0	2.0	1.9
18-Sep-2024	584	568	-16	16	-2.7	2.7	-2.8
19-Sep-2024	604	580	-25	25	-4.1	4.1	-4.3
20-Sep-2024	593	581	-13	13	-2.2	2.2	-2.2
21-Sep-2024	624	595	-29	29	-4.6	4.6	-4.9
22-Sep-2024	649	627	-22	22	-3.4	3.4	-3.5
23-Sep-2024	654	658	4	4	0.6	0.6	0.6
24-Sep-2024	648	617	-31	31	-4.8	4.8	-5.0
25-Sep-2024	659	629	-30	30	-4.6	4.6	-4.8
26-Sep-2024	663	646	-17	17	-2.5	2.5	-2.6
27-Sep-2024	678	646	-32	32	-4.8	4.8	-5.0
28-Sep-2024	651	628	-23	23	-3.5	3.5	-3.6
29-Sep-2024	615	623	8	8	1.3	1.3	1.3
30-Sep-2024	647	622	-25	25	-3.8	3.8	-4.0
Minimum	523	529	-32	3	-4.9	0.6	-5.2
Average	602	590	-12	17	-1.9	2.8	-2.0
Maximum	678	658	25	32	4.7	4.9	4.5

Table A-22: Analysis of Utility Forecast Error for October 2024[1]

Date	Actual Utility Peak (MW)	Forecast Utility Peak (MW)	Error (MW)	Absolute Error (MW)	Error (%)	Absolute Error (%)	Actual/ Forecast (%)
1-Oct-2024	**697**	**631**	**-66**	**66**	**-9.5**	**9.5**	**-10.4**
2-Oct-2024	**729**	**680**	**-49**	**49**	**-6.7**	**6.7**	**-7.2**
3-Oct-2024	735	722	-13	13	-1.8	1.8	-1.8
4-Oct-2024	755	753	-2	2	-0.3	0.3	-0.3
5-Oct-2024	614	613	-1	1	-0.1	0.1	-0.1
6-Oct-2024	691	658	-33	33	-4.8	4.8	-5.1
7-Oct-2024	738	736	-2	2	-0.3	0.3	-0.3
8-Oct-2024	715	728	13	13	1.8	1.8	1.8
9-Oct-2024	708	713	5	5	0.8	0.8	0.8
10-Oct-2024	678	676	-2	2	-0.4	0.4	-0.4
11-Oct-2024	716	708	-8	8	-1.2	1.2	-1.2
12-Oct-2024	711	677	-34	34	-4.7	4.7	-5.0
13-Oct-2024	738	724	-13	13	-1.8	1.8	-1.8
14-Oct-2024	724	752	28	28	3.8	3.8	3.7
15-Oct-2024	727	700	-27	27	-3.7	3.7	-3.8
16-Oct-2024	696	713	17	17	2.5	2.5	2.4
17-Oct-2024	748	780	32	32	4.3	4.3	4.1
18-Oct-2024	790	808	18	18	2.3	2.3	2.3
19-Oct-2024	773	803	30	30	3.9	3.9	3.7
20-Oct-2024	663	680	18	18	2.7	2.7	2.6
21-Oct-2024	699	691	-8	8	-1.2	1.2	-1.2
22-Oct-2024	738	788	50	50	6.8	6.8	6.4
23-Oct-2024	879	855	-24	24	-2.7	2.7	-2.8
24-Oct-2024	661	682	21	21	3.1	3.1	3.1
25-Oct-2024	**734**	**661**	**-73**	**73**	**-10.0**	**10.0**	**-11.1**
26-Oct-2024	748	789	42	42	5.6	5.6	5.3
27-Oct-2024	793	799	7	7	0.9	0.9	0.8
28-Oct-2024	902	894	-7	7	-0.8	0.8	-0.8
29-Oct-2024	989	973	-16	16	-1.6	1.6	-1.6
30-Oct-2024	981	966	-16	16	-1.6	1.6	-1.6
31-Oct-2024	973	976	3	3	0.3	0.3	0.3
Minimum	614	613	-73	1	-10.0	0.1	-11.1
Average	756	753	-4	22	-0.5	3.0	-0.6
Maximum	989	976	50	73	6.8	10.0	6.4

[1] Lines that have been bolded indicate further examination of the hourly forecast provided in this report.

Table A-23: Analysis of Utility Forecast Error for November 2024[1]

Date	Actual Utility Peak (MW)	Forecast Utility Peak (MW)	Error (MW)	Absolute Error (MW)	Error (%)	Absolute Error (%)	Actual/ Forecast (%)
1-Nov-2024	753	755	2	2	0.3	0.3	0.3
2-Nov-2024	877	875	-2	2	-0.2	0.2	-0.2
3-Nov-2024	945	964	19	19	2.0	2.0	2.0
4-Nov-2024	1,063	1,063	0	0	0.0	0.0	0.0
5-Nov-2024	1,022	1,026	4	4	0.4	0.4	0.4
6-Nov-2024	868	904	35	35	4.1	4.1	3.9
7-Nov-2024	915	941	26	26	2.8	2.8	2.7
8-Nov-2024	916	939	23	23	2.5	2.5	2.5
9-Nov-2024	942	950	8	8	0.8	0.8	0.8
10-Nov-2024	1,032	1,040	9	9	0.8	0.8	0.8
11-Nov-2024	945	957	12	12	1.3	1.3	1.3
12-Nov-2024	816	832	16	16	1.9	1.9	1.9
13-Nov-2024	1,052	1,005	-47	47	-4.5	4.5	-4.7
14-Nov-2024	1,000	975	-25	25	-2.5	2.5	-2.5
15-Nov-2024	827	857	30	30	3.6	3.6	3.5
16-Nov-2024	**770**	**832**	**62**	**62**	**8.0**	**8.0**	**7.4**
17-Nov-2024	795	797	2	2	0.3	0.3	0.3
18-Nov-2024	**817**	**863**	**46**	**46**	**5.7**	**5.7**	**5.4**
19-Nov-2024	839	846	8	8	0.9	0.9	0.9
20-Nov-2024	895	896	1	1	0.1	0.1	0.1
21-Nov-2024	906	931	25	25	2.7	2.7	2.6
22-Nov-2024	1,009	968	-41	41	-4.1	4.1	-4.3
23-Nov-2024	989	979	-10	10	-1.0	1.0	-1.0
24-Nov-2024	900	906	6	6	0.7	0.7	0.7
25-Nov-2024	948	905	-43	43	-4.5	4.5	-4.7
26-Nov-2024	983	1,011	28	28	2.8	2.8	2.8
27-Nov-2024	1,028	1,007	-21	21	-2.0	2.0	-2.1
28-Nov-2024	998	1,017	19	19	1.9	1.9	1.9
29-Nov-2024	1,051	1,018	-32	32	-3.1	3.1	-3.2
30-Nov-2024	983	1,000	17	17	1.7	1.7	1.7
Minimum	753	755	-47	0	-4.5	0.0	-4.7
Average	930	935	6	21	0.8	2.3	0.7
Maximum	1,063	1,063	62	62	8.0	8.0	7.4

[1] Lines that have been bolded indicate further examination of the hourly forecast provided in this report.

Table A-24: Analysis of Utility Forecast Error for December 2024[1]

Date	Actual Utility Peak (MW)	Forecast Utility Peak (MW)	Error (MW)	Absolute Error (MW)	Error (%)	Absolute Error (%)	Actual/ Forecast (%)
1-Dec-2024	1,066	1,073	7	7	0.6	0.6	0.6
2-Dec-2024	1,084	1,075	-9	9	-0.8	0.8	-0.8
3-Dec-2024	1,113	1,114	1	1	0.1	0.1	0.1
4-Dec-2024	1,185	1,182	-2	2	-0.2	0.2	-0.2
5-Dec-2024	1,240	1,237	-3	3	-0.2	0.2	-0.2
6-Dec-2024	1,095	1,145	51	51	4.6	4.6	4.4
7-Dec-2024	1,177	1,160	-17	17	-1.4	1.4	-1.4
8-Dec-2024	1,222	1,192	-30	30	-2.4	2.4	-2.5
9-Dec-2024	1,172	1,131	-41	41	-3.5	3.5	-3.7
10-Dec-2024	1,229	1,224	-5	5	-0.4	0.4	-0.4
11-Dec-2024	1,144	1,159	15	15	1.3	1.3	1.3
12-Dec-2024	**872**	**933**	**61**	**61**	**6.9**	**6.9**	**6.5**
13-Dec-2024	1,051	1,024	-27	27	-2.6	2.6	-2.7
14-Dec-2024	1,182	1,201	19	19	1.6	1.6	1.6
15-Dec-2024	1,230	1,256	26	26	2.1	2.1	2.1
16-Dec-2024	1,197	1,190	-7	7	-0.6	0.6	-0.6
17-Dec-2024	1,158	1,150	-8	8	-0.7	0.7	-0.7
18-Dec-2024	1,040	1,067	27	27	2.6	2.6	2.5
19-Dec-2024	1,071	1,055	-16	16	-1.5	1.5	-1.5
20-Dec-2024	1,183	1,168	-15	15	-1.3	1.3	-1.3
21-Dec-2024	1,152	1,093	-59	59	-5.1	5.1	-5.4
22-Dec-2024	1,213	1,206	-7	7	-0.5	0.5	-0.5
23-Dec-2024	1,307	1,293	-14	14	-1.1	1.1	-1.1
24-Dec-2024	1,379	1,358	-21	21	-1.5	1.5	-1.6
25-Dec-2024	1,379	1,327	-51	51	-3.7	3.7	-3.9
26-Dec-2024	1,184	1,204	20	20	1.7	1.7	1.7
27-Dec-2024	1,189	1,134	-55	55	-4.6	4.6	-4.8
28-Dec-2024	**1,185**	**1,123**	**-62**	**62**	**-5.2**	**5.2**	**-5.5**
29-Dec-2024	1,188	1,138	-50	50	-4.2	4.2	-4.4
30-Dec-2024	1,180	1,157	-24	24	-2.0	2.0	-2.1
31-Dec-2024	**1,177**	**1,114**	**-63**	**63**	**-5.3**	**5.3**	**-5.7**
Minimum	872	933	-63	1	-5.3	0.1	-5.7
Average	1,169	1,158	-12	26	-0.9	2.3	-1.0
Maximum	1,379	1,358	61	63	6.9	6.9	6.5

[1] Lines that have been bolded indicate further examination of the hourly forecast provided in this report.

Table A-25: Monthly Peak Utility Load Error Summary – Average Error

Date	Actual Utility Peak (MW)	Forecast Utility Peak (MW)	Error (MW)	Absolute Error (MW)	Error (%)	Absolute Error (%)	Actual/ Forecast (%)
Jan 2024	1,308	1,301	-7	26	-0.5	2.0	-0.5
Feb 2024	1,238	1,239	1	20	0.2	1.6	0.1
Mar 2024	1,134	1,123	-11	24	-0.9	2.1	-1.0
Apr 2024	1,008	997	-12	24	-1.0	2.3	-1.1
May 2024	836	826	-10	21	-1.0	2.5	-1.2
Jun 2024	640	637	-2	17	-0.2	2.6	-0.3
Jul 2024	603	591	-12	15	-1.9	2.4	-2.0
Aug 2024	595	586	-9	14	-1.4	2.3	-1.5
Sep 2024	602	590	-12	17	-1.9	2.8	-2.0
Oct 2024	756	753	-4	22	-0.5	3.0	-0.6
Nov 2024	930	935	6	21	0.8	2.3	0.7
Dec 2024	1,169	1,158	-12	26	-0.9	2.3	-1.0
Total Average	902	895	-7	20	-0.8	2.3	-0.9

Table A-26: Monthly Peak Utility Load Error Summary – Maximum Statistics[1]

Date	Actual Utility Peak (MW)	Forecast Utility Peak (MW)	Error (MW)	Absolute Error (MW)	Error (%)	Absolute Error (%)	Actual/ Forecast (%)
Jan 2024	1,647	1,656	52	79	4.3	5.7	4.1
Feb 2024	1,462	1,505	48	58	4.2	4.5	4.0
Mar 2024	1,367	1,333	84	84	7.1	7.1	6.6
Apr 2024	1,200	1,175	42	138	4.4	11.9	4.2
May 2024	995	923	73	79	10.2	10.2	9.3
Jun 2024	789	752	30	58	5.4	7.4	5.1
Jul 2024	665	642	13	47	2.2	7.3	2.2
Aug 2024	655	627	19	43	3.3	6.5	3.2
Sep 2024	678	658	25	32	4.7	4.9	4.5
Oct 2024	989	976	50	73	6.8	10.0	6.4
Nov 2024	1,063	1,063	62	62	8.0	8.0	7.4
Dec 2024	1,379	1,358	61	63	6.9	6.9	6.5
Annual	1,074	1,056	46	68	5.6	7.5	5.3

[1] The maximum forecast, the maximum peak, and the maximum error do not necessarily occur on the same day.

Table A-27: Error in Ten Highest Utility Loads

Date	Actual Utility Peak (MW)	Forecast Utility Peak (MW)	Error (MW)	Absolute Error (MW)	Error (%)	Absolute Error (%)	Actual/ Forecast (%)
24-Jan-2024	1,647	1,656	9	9	0.6	0.6	0.5
6-Jan-2024	1,521	1,487	-33	33	-2.2	2.2	-2.3
30-Jan-2024	1,473	1,443	-30	30	-2.0	2.0	-2.1
21-Feb-2024	1,462	1,505	43	43	3.0	3.0	2.9
7-Jan-2024	1,459	1,418	-42	42	-2.9	2.9	-2.9
22-Feb-2024	1,458	1,437	-21	21	-1.5	1.5	-1.5
26-Jan-2024	1,447	1,434	-14	14	-0.9	0.9	-0.9
31-Jan-2024	1,438	1,425	-13	13	-0.9	0.9	-0.9
10-Jan-2024	1,404	1,398	-6	6	-0.4	0.4	-0.4
18-Jan-2024	1,399	1,320	-79	79	-5.7	5.7	-6.0
Average	1,471	1,452	-19	29	-1.3	2.0	-1.4

Table A-28: Summary of Forecast Issues

Date	Actual Utility Peak (MW)	Forecast Utility Peak (MW)	Error (MW)	Absolute Error (MW)	Error (%)	Explanation
18-Jan-2024	1,399	1,320	-79	79	-5.7	Error in Weather Data
1-Mar-2024	1,367	1,288	-78	78	-5.7	Error in Weather Data
4-Mar-2024	1,178	1,262	84	84	7.1	Error in Weather Data
31-Mar-2024	986	933	-52	52	-5.3	Error in Weather Data/Non-Uniform Customer Behaviour
18-Apr-2024	1,158	1,020	-138	138	-11.9	Error in Weather Data/Under estimate by load forecasting software
12-May-2024	995	920	-75	75	-7.5	Error in Weather Data/Non-Uniform Customer Behaviour
20-May-2024	711	784	73	73	10.2	Error in Weather Data/Non-Uniform Customer Behaviour
25-May-2024	787	709	-79	79	-10.0	Error in Weather Data/Non-Uniform Customer Behaviour
1-Jun-2024	789	731	-58	58	-7.4	Error in Weather Data/Non-Uniform Customer Behaviour/Under estimate by load forecasting software
2-Jun-2024	772	728	-44	44	-5.7	Error in Weather Data/Non-Uniform Customer Behaviour
25-Jun-2024	650	606	-43	43	-6.7	Error in Weather Data
2-Jul-2024	638	592	-47	47	-7.3	Error in Weather Data
16-Jul-2024	632	596	-36	36	-5.7	Error in Weather Data/Under estimate by load forecasting software
1-Aug-2024	655	612	-43	43	-6.5	Error in Weather Data/Under estimate by load forecasting software
1-Oct-2024	697	631	-66	66	-9.5	Error in Weather Data/Under estimate by load forecasting software
2-Oct-2024	729	680	-49	49	-6.7	Error in Weather Data
25-Oct-2024	734	661	-73	73	-10.0	Under estimate by load forecasting software
16-Nov-2024	770	832	62	62	8.0	Error in Weather Data
18-Nov-2024	817	863	46	46	5.7	Error in Weather Data/Over estimate by load forecasting software
12-Dec-2024	872	933	61	61	6.9	Error in Weather Data
28-Dec-2024	1,185	1,123	-62	62	-5.2	Error in Weather Data/Non-Uniform Customer Behaviour
31-Dec-2024	1,177	1,114	-63	63	-5.3	Error in Weather Data

Appendix B

Supporting Charts

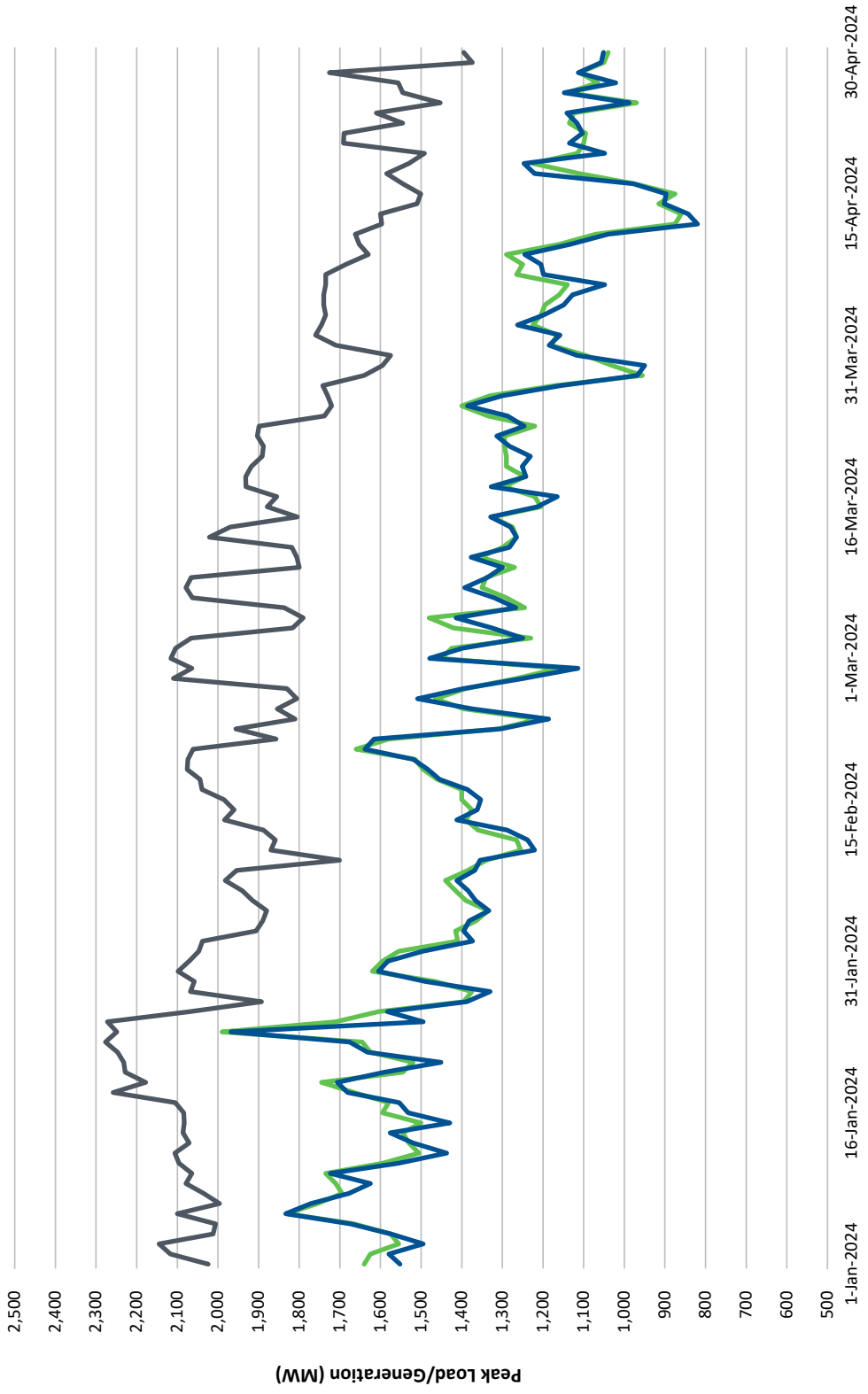

Chart B-1: Peak Forecast, Total Load, and Available Supply from January 2024 through April 2024

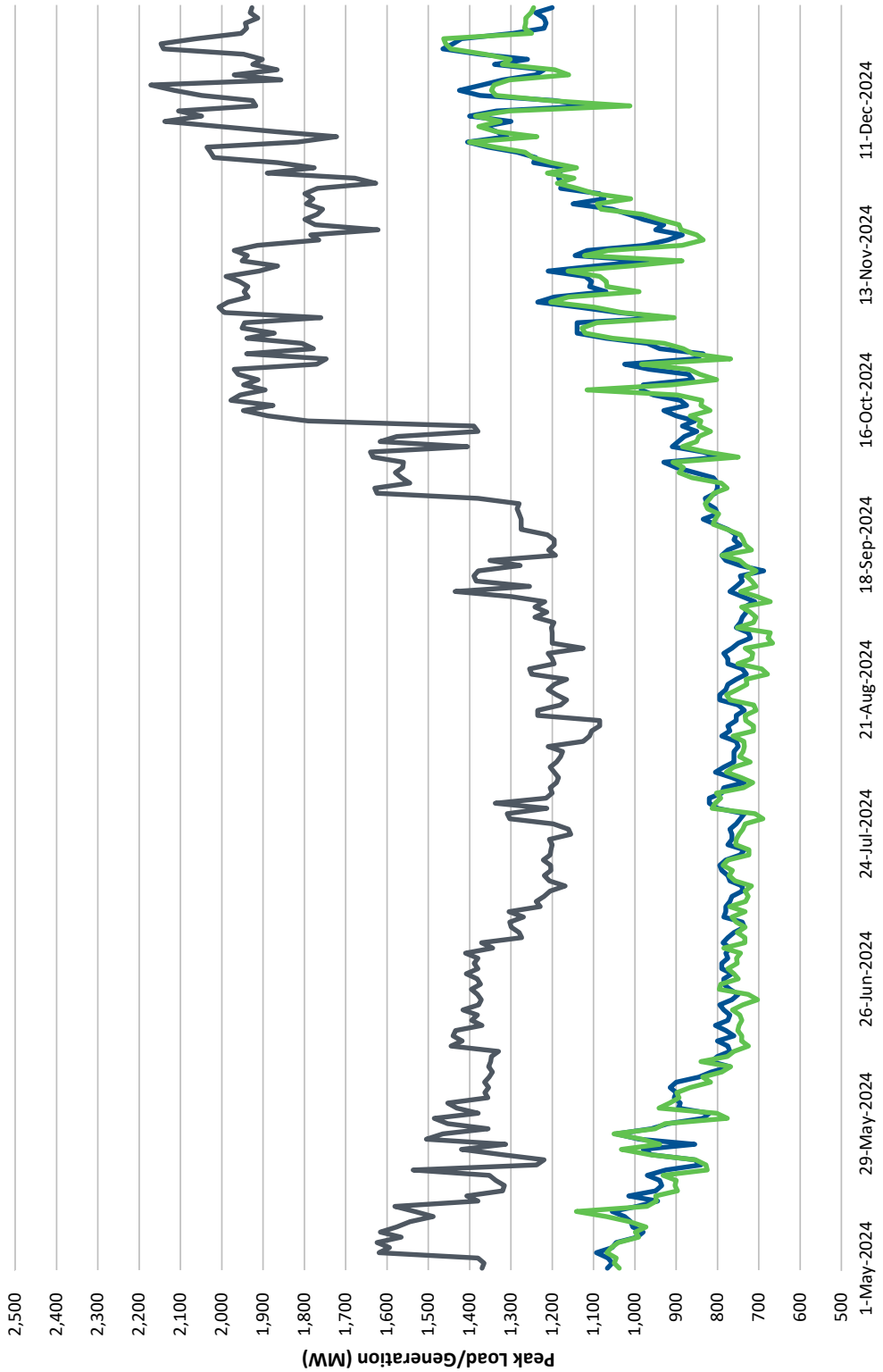

Chart B-2: Peak Forecast, Total Load, and Available Supply from May 2024 through December 2024

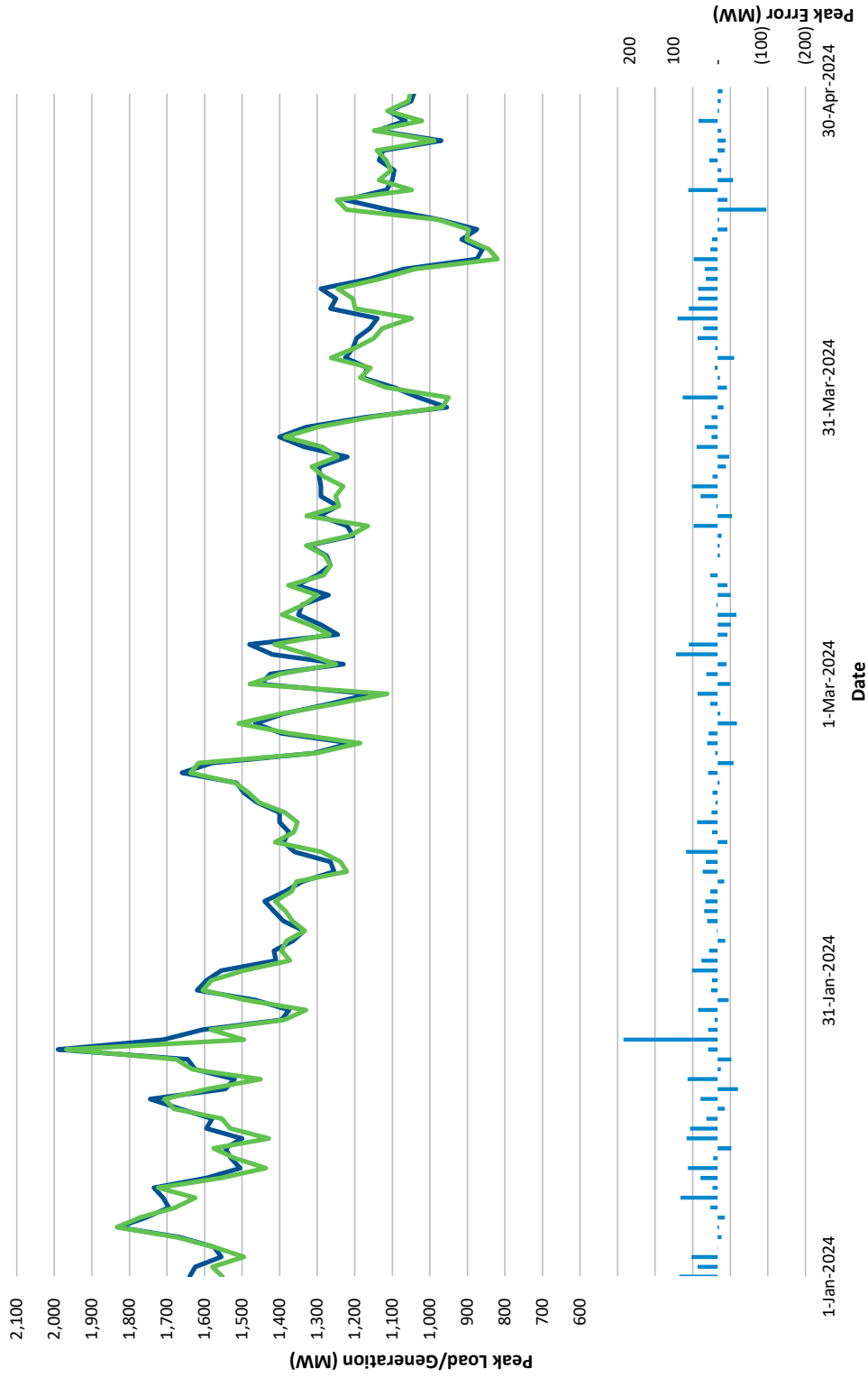

Chart B-3: Peak Forecast, Total Load, and Error from January 2024 through April 2024

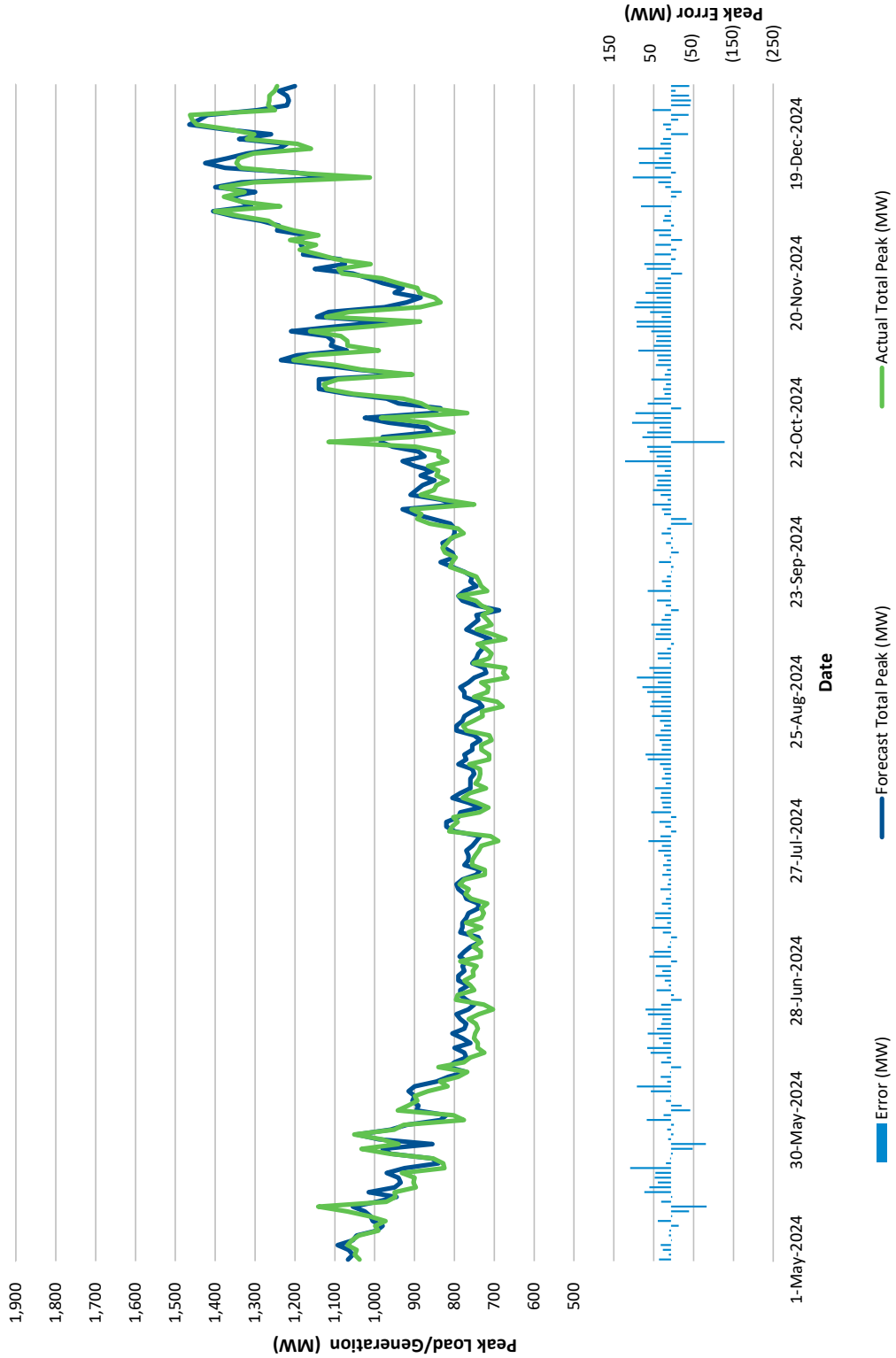

Chart B-4: Peak Forecast, Total Load, and Error from May 2024 through December 2024

Chart B-5: Peak Forecast, Utility Load, and Error from January 2024 through April 2024

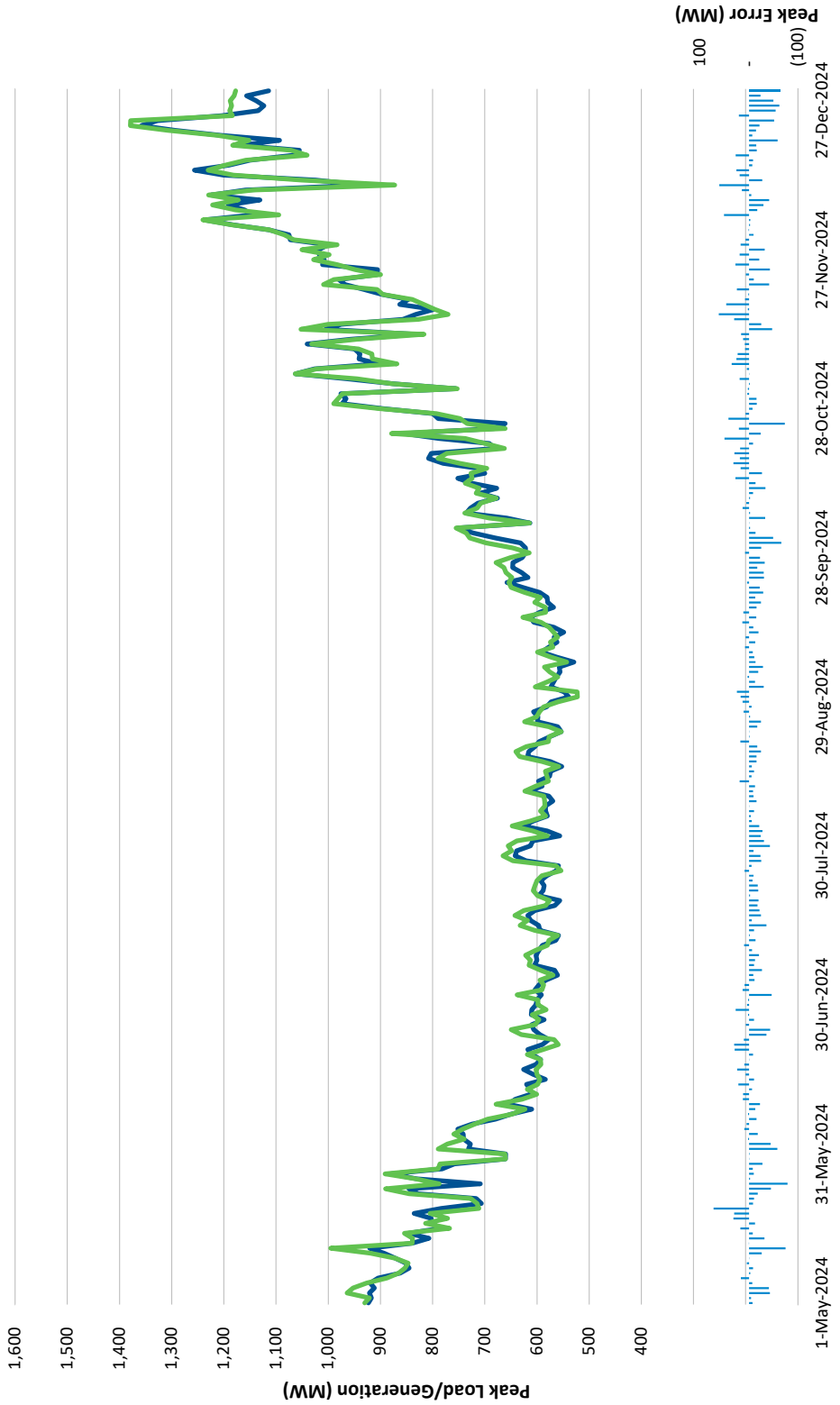

Chart B-6: Peak Forecast, Utility Load, and Error from May 2024 through December 2024