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January 31, 2023

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

Attention: Cheryl Blundon
Director of Corporate Services and Board Secretary

Re: Nostradamus Load Forecasting Accuracy – 2022 Annual Report

Please find enclosed Newfoundland and Labrador Hydro's annual report on the accuracy of the Nostradamus load forecasting software. The analysis contained within the report encompasses data from January 1 to December 31, 2022.

Should you have any questions, please contact the undersigned.

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO

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Senior Legal Counsel, Regulatory
SAW/sk

Encl.

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Nostradamus Load Forecasting Accuracy

2022 Annual Report

January 31, 2022

A report to the Board of Commissioners of Public Utilities

newfoundland labrador hydro

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1.0 Nostradamus Load Forecasting

1.1 Nostradamus

Newfoundland and Labrador Hydro ("Hydro") currently uses software called Nostradamus[1] for short-term load forecasting with a period of seven days.[2] The Nostradamus user guide provides the following description of the software, stating:

> The Nostradamus Neural Network Forecasting system is a flexible neural network-based forecasting tool developed specifically for utility demand forecasting. Unlike conventional computing processes, which are programmed, neural networks use sophisticated mathematical techniques to train a network of inputs and outputs. Neural networks recognize and learn the joint relationships (linear or non-linear) between the ranges of variables considered. Once the network learns these intricate relationships, this knowledge can then easily be extended to produce accurate forecasts.[3]

The Nostradamus model is trained using a sequence of continuous historic periods of hourly weather and demand data. The model then forecasts system demand for a seven-day horizon using predictions of weather parameters.

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 and firm market export requirements.

1.2.1 Utility Load[4]

Hydro has a contract with WSP Global Inc. ("WSP")[5] to provide twice-daily weather parameters in the form of hourly weather forecasts for the following seven days.[6] At the same time the weather forecast data is provided, WSP also provides recently observed data at the locations used in the forecasts.[7] The actual and forecast data is automatically retrieved from WSP and inputted into the Nostradamus database.

[1] The product is provided by Hitachi Energy.
[2] Hydro is nearing completion of a new forecasting software program, MetrixIDR, which will replace Nostradamus in the first quarter of 2023.
[3] "Nostradamus User Guide," Ventyx (an ABB Company), Release 8.2, EMDDB-0170-1405-06, May 2014.
[4] Utility load is the summation of Newfoundland Power and Hydro Rural requirements.
[5] Formerly Wood PLC ("Wood").
[6] This weather forecast will transition to 14 days once MetrixIDR has replaced Nostradamus.
[7] St. John's, Gander, and Deer Lake.

Nostradamus can use 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. Nostradamus can use each variable more than once; for example, the current and forecasted air temperatures are both used in forecasting load; however, wind chill is not explicitly used, as the neural network function of Nostradamus forms relationships between load, wind, and temperature.

Nostradamus uses weather data for St. John's, Gander, and Deer Lake as well as a parameter that indicates daily daylight hours. Training and verification[8] periods are selected to provide a sufficiently long period to ensure that a range of weather parameters are included (e.g., high and low temperatures) but short enough that the historic load is still representative of loads that can be expected in the future. Historically, data included in the training period has consisted of three years of training data compared to up to one year of verification data. However, following this methodology would have resulted in verifying data that includes the effects of the COVID-19 pandemic on short-term load against a pre-pandemic training period. This would have resulted in a forecast that was unable to properly map the inputs (i.e., the load affected by the COVID-19 pandemic) to the outputs (i.e., the new load forecast), thus not improving the short-term forecast. To accurately account for the effects of the COVID-19 pandemic on system load and to improve the short-term forecast, Hydro worked with Nostradamus software support in 2020 to modify the defined period traditionally used in training.[9] The result is a forecast that is trained to create a strong relationship between inputs and outputs, thus improving the short-term forecast during the COVID-19 pandemic period. The most recent training and validation exercises used data from October 16, 2019 to April 30, 2022.

Demand data for the Island Interconnected System utility load[10] is imported into Nostradamus automatically each hour. Newfoundland Power Inc. and Hydro's total utility load (conforming)[11] is inputted into the Nostradamus model. Industrial load (non-conforming),[12] which is not a function of

[8] Nostradamus 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 upon which the model has not trained. This ensures the model is not memorizing the correct answer.
[9] While the impacts of the COVID-19 pandemic on system load cannot be fully quantified, the implementation of public health measures throughout 2020, 2021, and the first quarter of 2022 may have contributed to increases in non-uniform customer behaviour that may have resulted in a small impact on the overall load and load shape.
[10] Load forecasts for the Avalon Peninsula are still generated but are no longer a focus since the in-service of TL267, the third transmission line from the Bay d'Espoir Hydroelectric Generating Facility.
[11] Conforming load refers to load that changes consistently with the load pattern of an area.
[12] Non-conforming load refers to load that changes abnormally with respect to the load pattern of an area.

weather, is forecast outside of the Nostradamus program and added to the forecasts provided by Nostradamus to derive the total load forecast.

During the training process, the Nostradamus model creates separate sub-models for weekdays, weekends, and holidays to account for the variation in customer use of electricity. Nostradamus has separate holiday groups for statutory holidays and for days known to have unusual loads, for instance, the days between Christmas and New Year's Day and the schools' Easter break.[13]

1.2.2 Industrial Load

Industrial loads tend to be almost constant as industrial processes are independent of the weather. Under the current procedure, the Power-on-Order 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 some knowledge of customer loads, for instance, a temporary decrease in requirements at Braya Renewable Fuels (Newfoundland) GP Inc. associated with ongoing work related to the conversion to renewable diesel and sustainable aviation fuel service. The expected load can be modified in any given hour of the seven-day forecast or the default value can be modified to be used indefinitely.[14]

1.2.3 Supply and Demand Status Reporting

Since December 2014, Hydro has submitted periodic reports on the accuracy of Nostradamus load forecasting 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. On January 18, 2018, the Board indicated that the reporting frequency should change to annually commencing in November 2018.[15] The forecast peak as of 7:20 a.m. is reported to the Board daily in the Supply and Demand Status Reports.[16]

[13] Training the Nostradamus model is a process that is performed on an approximately annual basis. The goal is to improve the forecasting accuracy by providing Nostradamus with updated data and trends of recent loads and weather. This helps ensure that variables such as load growth and extreme weather are properly accounted for when predicting future load requirements.
[14] 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.
[15] On November 6, 2018, the Board accepted Hydro's request to change the annual filing date of this report to January 31, which allows the report to cover the previous calendar year.
[16] Hydro's daily Supply and Demand Status reports can be accessed at <http://www.pub.nl.ca/applications/IslandInterconnectedSystem/DemandStatusReports.htm>.

The weather forecast for the next seven days and the observed weather data for the previous day are inputted into Nostradamus at approximately 5:00 a.m. and 2:00 p.m. Nostradamus is then run in every hour of the day, following which the generated forecast is made available for reference in monitoring and managing both available and spinning reserves. The within-day forecast updates are primarily used to manage operating reserve, in particular in advance of the forecast system peaks.

1.3 Potential Sources of Variance

As with any forecasting analysis, there will be discrepancies between the forecasted and actual values. Typical sources of variance in 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.
- Differences in the industrial load forecast due to unexpected changes in Industrial customer loads. For example, if an Industrial customer were to undertake maintenance 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.
- Non-uniform customer behaviour, which results in unpredictability. The impacts of the COVID-19 pandemic on load can be considered non-uniform behaviour.

Delivery of the Nova Scotia Block and Supplemental Block continued in 2022.[17,18,19] These scheduled deliveries are included in the forecast at peak as reported by 7:20 a.m. each day. 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 at peak as reported by 7:20 a.m. each day does not always account for exports as exports could be contracted at any time throughout the day. As previously noted, 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.

[17] First delivery of the Nova Scotia Block occurred in August 2021 and the first delivery of the Supplemental Block occurred in November 2021.
[18] Pursuant to the Energy and Capacity Agreement between Nalcor Energy and Emera Inc.
[19] Physical delivery of the Nova Scotia Block will only occur when the Labrador-Island Link is online and able to transfer power.

2.0 Forecast Accuracy Summary

2.1 Analysis

This report examines the accuracy of the Hydro forecasting process from January to December 2022. All tables and figures referenced throughout the report are contained in Appendix A and Appendix B, respectively. Table 1 presents the daily Island Interconnected System forecast total peak, the actual total peak, and the available Island supply, as included in Hydro's Supply and Demand Status Reports submitted to the Board daily. The data is also presented in Figures 1(a) and 1(b).

The total Island Interconnected System peak load during the period varied between 616 MW (September 24, 2022) and 1,847 MW (February 16, 2022). The available Island supply varied from 1,219 MW to 2,418 MW. Island Interconnected System reserves were sufficient throughout the period.

Table 2 presents error statistics for the total Island Interconnected System peak forecasts for the forecast period. Figures 2(a) and 2(b) are a plot of the total forecast and actual total peaks, as shown in Figures 1(a) and 1(b), but with the addition of a bar chart showing the difference between the two data series, in megawatts. In both the tables and the figures, a positive error is an overestimate and a negative error is an underestimate.

Figures 2(a) and 2(b) reveal that 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.

Table 3 presents error statistics for the utility peak forecast (i.e., the portion of the forecast determined by the Nostradamus model). Neither the industrial forecast nor the Maritime Link export activity is included in the values presented in Table 3. Figures 3(a) and 3(b) plot the data and error for the utility peak. Examination of the utility forecast provides more insight into the accuracy of Nostradamus, as error in the industrial forecast and export activity introduces error to the total forecast, making the total forecast appear worse or, at times, better than it is.

2.2 Data Adjustments and Forecast Issues

In analysing the data, some instances require adjustments for a variety of reasons. In these instances, the data for affected hours is replaced using interpolation so that in the future, when the data for this period is used for training, Nostradamus will use a value not affected by the event.

In its "2022 Capital Budget Application," Hydro proposed the replacement of Nostradamus via the Replacement of Short-Term Load Forecasting Software project.[20] Hydro noted that increases in the instances of unpredictable errors and issues with inaccurate forecasts were determined to be related to Nostradamus. Despite working extensively with Nostradamus support on such matters when they occur, Nostradamus support has concluded that the problem is within the Nostradamus software package itself and cannot be precisely determined or corrected. Such instances reduced Hydro's confidence that the existing software remains capable of meeting the evolving needs of the power system. Hydro received Board approval to replace Nostradamus in Board Order No. P.U. 37(2021).[21]

The report for 2022 is based on the Nostradamus load forecasting software. Hydro will implement its new forecasting software, MetrixIDR, in the first quarter of 2023.

Between 6:00 a.m. and 9:00 a.m. on February 14, 2022, there was a communication error at Soldiers Pond. The value for the Labrador-Island Link was reporting 253 MW whereas the true value was 170 MW. The error of 83 MW was corrected in Nostradamus and a manual forecast was run to ensure an accurate forecast for the remainder of the day.

On March 1, 2022, there were issues importing weather data into Nostradamus due to an error with values provided by the data service provider, WSP. A forecasted wind speed value was outside the normal range and the file did not import correctly. On March 3, 2022, the error was corrected and a manual forecast was run at 5:20 a.m. to ensure forecast values were up to date for that day.

On March 21, 2022, the actual load importing into Nostradamus was not executing correctly. Values were updated manually and a manual forecast was run with the updated values to ensure the forecast for the remainder of the day was up to date.

On August 25, 2022, the utility load erroneously increased by 50 MW between 2:00 p.m. and 3:00 p.m. This was caused by a drop in Maritime Link exports and a planned trip of the Labrador-Island Link. The value was corrected.

[20] "2022 Capital Budget Application, Newfoundland and Labrador Hydro, rev. September 17, 2021 (originally filed August 2, 2021), vol. II, s. 7, at pp. 18–26.
[21] *Public Utilities Act*, RSNL 1990, c P-47, Board Order No. P.U. 37(2021), Board of Commissioners of Public Utilities, December 20, 2021.

On September 19, 2022, actual data stopped importing into Nostradamus. On September 21, 2022, the issue was resolved and actual data was imported for the missing hours.

On November 16, 2022, an error occurred with the actual load imported into Nostradamus due to an erroneous Maritime Link value. The 6:00 p.m. actual load value was manually corrected by 100 MW in Nostradamus.

On December 11, 2022, actual data stopped importing into Nostradamus. On December 13, 2022, the issue was resolved and actual data was imported for the missing hours.

2.3 Days of High Error[22]

The bolded dates in Tables 2 and 3 indicate the days of high error[23] in the load forecast. In previous years, Hydro selected the days of highest error based on total loads (Table 2 data). Hydro will select days of highest error based on the utility load (Table 3 data)[24]. Hydro selects the days with the highest error (up to three days per month) for a more detailed analysis, which includes:

- January 7 and 25, 2022;
- February 12, 19, and 22, 2022;
- April 2, 17, and 23, 2022;
- May 23 and 28, 2022;
- June 1 and 6, 2022;
- July 23, 2022;
- August 6 and 20, 2022;
- September 5, 11, and 29, 2022;
- October 2, 18, and 29, 2022;

[22] 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.
[23] Hydro considers an error below 4.95% to be within acceptable forecasting limits.
[24] For ease of reference, Hydro has kept the data in Tables 2 and 3 consistent with previous years.

- November 12, 16, and 19, 2022; and
- December 6, 11, and 25, 2022.

There were no days of high error in the utility load forecast during the month of March 2022.

2.3.1 January 7, 2022

On January 7, 2022, the forecast peak at 7:20 a.m., as reported to the Board, was 1,610 MW; the actual reported peak was 1,504 MW. Figure 4 includes an hourly plot of the load forecast for January 7, 2022, as well as several plots to assist in determining the sources of the differences between actual and forecast loads.

Figure 4(a) 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 1,422 MW; the actual peak was 1,293 MW[25] and occurred at 5:00 p.m., resulting in an overestimate of 10.0%.

Figure 4(b) shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 5:00 p.m. of 1,259 MW; the actual peak was 1,195 MW and occurred at 5:00 p.m., resulting in an overestimate of 5.3%.

Figure 4(c) shows the actual temperature in St. John's compared to the forecast. The temperature was 1°C to 2°C warmer than forecast from 9:00 a.m. until 9:00 p.m. The slightly warmer-than-forecast temperatures likely contributed to the load forecast error.

Figure 4(d) shows the actual wind speed in St. John's compared to the forecast. The actual wind speed was lower than forecast for the majority of the day. The slightly higher-than-actual forecasted wind speed would likely have contributed to the load forecast error.

Figure 4(e) shows the forecast and actual cloud cover. It was more cloudy than forecast for the majority of the day.

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

The discrepancy between utility actual and utility forecast load for January 7, 2022 was primarily attributed to slightly warmer temperatures and lower-than-forecast wind speed. An overestimation of the load resulted in more than enough reserve being available.

2.3.2 January 25, 2022

On January 25, 2022, the forecast peak at 7:20 a.m., as reported to the Board, was 1,605 MW; the actual reported peak was 1,476 MW. Figure 5 includes an hourly plot of the load forecast for January 25, 2022, as well as several plots to assist in determining the sources of the differences between actual and forecast loads.

Figure 5(a) shows the total hourly distribution of the load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted a 6:00 p.m. peak of 1,391 MW; the actual peak was 1,249 MW and occurred at 6:00 p.m., resulting in an overestimate of 11.4%.

Figure 5(b) shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 6:00 p.m. of 1,232 MW; the actual peak was 1,170 MW and occurred at 6:00 p.m., resulting in an overestimate of 5.3%.

Figure 5(c) shows the actual temperature in St. John's compared to the forecast. The temperature was 1°C to 2°C warmer than forecast from 2:00 p.m. until midnight. The slightly warmer-than-forecast temperatures likely contributed to the load forecast error.

Figure 5(d) shows the actual wind speed in St. John's compared to the forecast. The actual wind speed was lower than forecast for the majority of the day. The slightly higher-than-actual forecasted wind speed would likely have contributed to the load forecast error.

Figure 5(e) shows the forecast and actual cloud cover. It was more cloudy than forecast for the majority of the day.

The discrepancy between utility actual and utility forecast load for January 25, 2022 was primarily attributed to the temperature and wind speed forecasts. An overestimation of the load resulted in more than enough reserve being available.

2.3.3 February 12, 2022

On February 12, 2022, the forecast peak at 7:20 a.m., as reported to the Board, was 1,405 MW; the actual reported peak was 1,455 MW. Figure 6 includes an hourly plot of the load forecast for February 12, 2022, as well as several plots to assist in determining the sources of the differences between actual and forecast loads.

Figure 6(a) shows the total hourly distribution of the load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted a 9:00 a.m. peak of 1,189 MW; the actual peak was 1,240 MW and occurred at noon, resulting in an underestimate of 4.1%. The total load forecast for the time of peak was 1,144 MW.

Figure 6(b) shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 9:00 a.m. of 1,031 MW; the actual peak was 1,090 MW and occurred at noon, resulting in an underestimate of 5.4%. The utility load forecast for the time of peak was 986 MW.

Figure 6(c) shows the actual temperature in St. John's compared to the forecast. The temperature averaged 0.5°C cooler than forecast for the day and may have contributed to the forecast error.

Figure 6(d) shows the actual wind speed in St. John's compared to the forecast. The actual wind speed was lower than forecast for the majority of the day.

Figure 6(e) shows the forecast and actual cloud cover.

The discrepancy between utility actual and utility forecast load for February 12, 2022 was primarily attributed to slightly cooler temperatures and non-uniform customer behaviour, as February 12, 2022 was on the weekend before Valentine's Day.

2.3.4 February 19, 2022

On February 19, 2022, the forecast peak at 7:20 a.m., as reported to the Board, was 1,645 MW; the actual reported peak was 1,528 MW. Figure 7 includes an hourly plot of the load forecast for February 19, 2022, as well as several plots to assist in determining the sources of the differences between actual and forecast loads.

Figure 7(a) shows the total hourly distribution of the load forecast compared to the actual load. The hourly forecast predicted a 6:00 p.m. peak of 1,443 MW; the actual peak was 1,308 MW and occurred at

7:00 p.m., resulting in an underestimate of 10.3%. The total load forecast for the time of peak was 1,433 MW.

Figure 7(b) shows the hourly distribution of the utility load forecast only (i.e., the load forecast with the industrial component removed). The hourly forecast predicted a utility peak at 6:00 p.m. of 1,285 MW; the actual peak was 1,158 MW and occurred at 7:00 p.m.; resulting in an overestimate of 10.9%. The utility load forecast for the time of peak was 1,275 MW.

Figure 7(c) shows the actual temperature in St. John's compared to the forecast. The temperature was an average of 2°C warmer than forecast from 5:00 a.m. until midnight. The warmer-than-forecast temperatures likely contributed to the load forecast error.

Figure 7(d) shows the actual wind speed in St. John's compared to the forecast. The actual wind speed was lower than forecast for the majority of the day. The lower-than-forecast wind conditions likely contributed to the load forecast error.

Figure 7(e) shows the forecast and actual cloud cover. It was less cloudy than forecast for the majority of the day.

The discrepancy between utility actual and utility forecast load for February 19, 2022 was primarily attributed to the weather and non-uniform customer behaviour, as February 19, 2022 was on a weekend.

An overestimate of the load resulted in more than enough reserve being available. The forecast remained overestimated for the remainder of the day.

2.3.5 February 22, 2022

On February 22, 2022, the forecast peak at 7:20 a.m., as reported to the Board, was 1,675 MW; the actual reported peak was 1,493 MW. Figure 8 includes an hourly plot of the load forecast for February 22, 2022 as well as several plots to assist in determining the sources of the differences between actual and forecast loads.

Figure 8(a) shows the total hourly distribution of the load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted a 6:00 p.m. peak of 1,462 MW; the actual peak was 1,343 MW and occurred at 8:00 p.m.; resulting in an overestimate of 8.9%.

Figure 8(b) shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 6:00 p.m. of 1,304 MW; the actual peak was 1,237 MW and occurred at 8:00 a.m., resulting in an overestimate of 5.4%. The utility load forecast for the time of peak was 1,248 MW.

Figure 8(c) shows the actual temperature in St. John's compared to the forecast. The temperature was an average of 2°C warmer than forecast from 11:00 a.m. until midnight. The warmer-than-forecast temperatures likely contributed to the load forecast error.

Figure 8(d) shows the actual wind speed in St. John's compared to the forecast. The actual wind speed was lower than forecast for the majority of the day. The lower-than-forecast wind conditions likely contributed to the load forecast error.

Figure 8(e) shows the forecast and actual cloud cover. The discrepancy between utility actual and utility forecast load for February 22, 2022 was primarily attributed to the weather as the warmer-than-forecast temperatures throughout the day could have contributed to a lower evening demand, thus impacting the load forecast error.

2.3.6 April 2, 2022

On April 2, 2022, the forecast peak at 7:20 a.m., as reported to the Board, was 1,270 MW; the actual reported peak was 1,253 MW. Figure 9 includes an hourly plot of the load forecast for April 2, 2022 as well as several plots to assist in determining the sources of the differences between actual and forecast loads.

Figure 9(a) shows the total hourly distribution of the load forecast compared to the actual load. The hourly forecast predicted an 8:00 p.m. peak of 1,060 MW; the actual peak was 1,058 MW and it occurred at noon; resulting in an underestimate of 0.2%. The total load forecast for the time of peak was 1,024 MW.

Figure 9(b) shows the hourly distribution of the utility load forecast only (i.e., the load forecast with the industrial component removed). The hourly forecast predicted a utility peak at 8:00 p.m. of 897 MW; the actual peak was 951 MW and occurred at 8:00 p.m.; resulting in an underestimate of 5.7%.

Figure 9(c) shows the actual temperature in St. John's compared to the forecast. The temperature was overestimated by an average of 2°C from 1:00 a.m. until 5:00 p.m. The cooler-than-forecast temperatures likely contributed to the higher utility demand.

Figures 9(d) and 9(e) are provided for context; however, the discrepancy between utility actual and utility forecast load for April 2, 2022 was primarily attributed to the temperature and non-uniform customer behaviour as April 2, 2022 was on a weekend.

2.3.7 April 17, 2022

On April 17, 2022, the forecast peak at 7:20 a.m., as reported to the Board, was 1,120 MW; the actual reported peak was 1,176 MW. Figure 10 includes an hourly plot of the load forecast for April 17, 2022 as well as an actual load chart to assist in determining the sources of the differences between actual and forecast loads.

Figure 10(a) shows the total hourly distribution of the load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted a 10:00 a.m. peak of 971 MW; the actual peak of 1,014 MW occurred at 11:00 a.m.; resulting in an underestimate of 4.2%. The total load forecast for the time of peak was 971 MW.

Figure 10(b) shows the hourly distribution of the utility load forecast only (i.e., the load forecast with the industrial and export component removed). The hourly forecast predicted a utility peak at 10:00 a.m. of 808 MW; the actual peak was 879 MW and occurred at 11:00 a.m. resulting in an underestimate of 8.0%. The utility load forecast for the time of peak was 808 MW.

Figures 10(c), 10(d), and 10(e) are provided for context; however, temperature, wind speed, and cloud cover were similar to forecast around and leading up to peak. The discrepancy between the actual and forecast load was likely due to non-uniform customer behaviour, as this day occurred during a weekend and a holiday (Easter Sunday). In 2021, Nostradamus also underestimated the load for Easter Sunday (April 4, 2021).

2.3.8 April 23, 2022

On April 23, 2022, the forecast peak at 7:20 a.m., as reported to the Board, was 1,085 MW; the actual reported peak was 1,105 MW. Figure 11 includes an hourly plot of the load forecast for April 23, 2022 as

well as several plots to assist in determining the sources of the differences between actual and forecast loads.

Figure 11(a) shows the total hourly distribution of the load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted a 10:00 a.m. peak of 1,049 MW; the actual peak of 1,094 MW occurred at noon, resulting in an underestimate of 4.1%. The total load forecast for the time of peak was 1,025 MW.[26]

Figure 11(b) shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 10:00 a.m. of 886 MW; the actual peak was 947 MW and occurred at noon, resulting in an underestimate of 6.5%. The utility load forecast for the time of peak was 862 MW.

Figure 11(c) shows the actual temperature in St. John's compared to the forecast. The temperature was on average 1°C cooler than forecast from 7:00 am to midnight, which may have contributed to the forecast error.

Figure 11(d) shows the actual wind speed in St. John's compared to the forecast. The actual wind speed was slightly higher than forecast throughout the day and may have contributed to the forecast error.

Figure 11(e) shows the actual cloud cover compared to the forecast, which was cloudier than forecast during daylight hours and may have contributed to the forecast error.

The discrepancy between utility actual and utility forecast load for April 23, 2022 was primarily attributed to the temperature and wind variations from the forecast as well as non-uniform customer behaviour, as April 23, 2022 was on a weekend.

2.3.9 May 23, 2022

On May 23, 2022, the forecast peak at 7:20 a.m., as reported to the Board, was 895 MW; the actual reported peak was 905 MW. Figure 12 includes an hourly plot of the load forecast for May 23, 2022, as well as several plots to assist in determining the sources of the differences between actual and forecast loads.

[26] The data for the hour of 11:00 a.m. was interpolated due to a server error that caused interruptions in industrial load calculations.

Figure 12(a) shows the total hourly distribution of the load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted a noon peak of 765 MW; the actual peak of 771 MW occurred at 5:00 p.m., resulting in an underestimate of 0.8%. The total load forecast for the time of peak was 755 MW.

Figure 12(b) shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at noon of 602 MW; the actual peak was 658 MW and occurred at 5:00 p.m., resulting in an underestimate of 8.6%. The utility load forecast for the time of peak was 592 MW.

Figures 12(c), 12(d), and 12(e) are provided for context; however, the discrepancy between the actual and forecast load was primarily attributed to non-uniform customer behaviour, as May 23, 2022 occurred on a holiday (Victoria Day).

2.3.10 May 28, 2022

On May 28, 2022, the forecast peak at 7:20 a.m., as reported to the Board, was 1,085 MW; the actual reported peak was 1,158 MW. Figure 13 includes an hourly plot of the load forecast for May 28, 2022, as well as several plots to assist in determining the sources of the differences between actual and forecast loads.

Figure 13(a) shows the total hourly distribution of the load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted a 9:00 p.m. peak of 908 MW; the actual peak was 964 MW and occurred at 5:00 p.m., resulting in an underestimate of 5.8%. The total load forecast for the time of peak was 899 MW.

Figure 13(b) shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 9:00 p.m. of 755 MW; the actual peak was 836 MW and occurred at 5:00 p.m.; resulting in an underestimate of 9.7%. The utility load forecast for the time of peak was 746 MW.

Figure 13(c) shows the actual temperature in St. John's compared to the forecast. The temperature was an average 1°C cooler than forecast from 7:00 am to midnight and may have contributed to the forecast error.

Figure 13(d) shows the wind speed was higher than forecast at peak.

Figure 13(e) shows cloud cover was close to forecast.

The discrepancy between actual and forecast load for May 28, 2022 was primarily attributed to slightly cooler and windier conditions than forecast as well as non-uniform customer behaviour, as May 28, 2022 was on a weekend.

2.3.11 June 1, 2022

On June 1, 2022, the forecast peak at 7:20 a.m., as reported to the Board, was 1,220 MW; the actual reported peak was 1,221 MW. Figure 14 includes an hourly plot of the load forecast for June 1, 2022, as well as several plots to assist in determining the sources of the differences between actual and forecast loads.

Figure 14(a) shows the total hourly distribution of the load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted an 8:00 a.m. peak of 974 MW; the actual peak was 957 MW and occurred at 8:00 a.m. resulting in an overestimate of 1.8%.

Figure 14(b) shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 8:00 a.m. of 811 MW; the actual peak was 864 MW and occurred at 5:00 p.m., resulting in an underestimate of 6.1%. The utility load forecast for the time of peak was 807 MW.

Figures 14(c), 14(d), and 14(e) are provided for context; however, the temperature, wind speed, and cloud cover were relatively consistent with the forecast.

The discrepancy between actual and forecast load for June 1, 2022 was primarily attributed to an underestimate of load by Nostradamus. The load forecast was underestimated for the day after 2:00 a.m. The forecast did not improve after peak. The utility load was higher than forecast all day and Nostradamus didn't perform within the acceptable forecast error. This may have been due to non-conforming customer behaviour.

2.3.12 June 6, 2022

On June 6, 2022, the forecast peak at 7:20 a.m., as reported to the Board, was 1,065 MW; the actual reported peak was 1,015 MW. Figure 15 includes an hourly plot of the load forecast for June 6, 2022, as well as several plots to assist in determining the sources of the differences between actual and forecast loads.

Figure 15(a) shows the total hourly distribution of the load forecast compared to the actual load. The hourly forecast predicted a 9:00 a.m. peak of 929 MW; the actual peak was 862 MW and occurred at 8:00 a.m., resulting in an overestimate of 7.8%. The total load forecast for the time of peak was 904 MW.

Figure 15(b) shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 9:00 a.m. of 766 MW; the actual peak was 728 MW and occurred at 8:00 a.m., resulting in an overestimate of 5.3%. The utility load forecast for the time of peak was 741 MW.

Figures 15(c), 15(d), and 15(e) are provided for context; however, weather conditions were comparable to forecast up to and including the peak.

The discrepancy between actual and forecast load for June 6, 2022 was primarily attributed to an overestimate of load by Nostradamus. The load forecast was overestimated for the day and did not improve after peak. The utility load was lower than forecast all day and Nostradamus didn't perform within the acceptable forecast error. This may have been due to non-conforming customer behaviour.

2.3.13 July 23, 2022

On July 23, 2022, the forecast peak at 7:20 a.m., as reported to the Board, was 830 MW; the actual reported peak was 844 MW. Figure 16 includes an hourly plot of the load forecast for July 23, 2022, as well as several plots to assist in determining the sources of the differences between actual and forecast loads.

Figure 16(a) shows the total hourly distribution of the load forecast compared to the actual load. The hourly forecast predicted a 6:00 p.m. peak of 702 MW; the actual peak was 716 MW and occurred at noon, resulting in an underestimate of 2.0%. The total load forecast for the time of peak was 701 MW.

Figure 16(b) shows the hourly distribution of the utility load forecast only (i.e., the load forecast with the industrial component removed). The hourly forecast predicted a utility peak at 5:00 p.m. of 539 MW; the actual peak was 575 MW and occurred at noon, resulting in an underestimate of 6.2%. The utility load for the time of peak was 538 MW.

Figure 16(c) shows the actual temperature in St. John's compared to the forecast. The temperature was an average 3°C warmer than forecast leading up to the peak at noon, which may have contributed to the

higher utility demand as a result of increased cooling load. The use of mini-splits has increased significantly in the past three years, which may be contributing to higher summer demands during periods of warm weather.

Figures 16(d) and 16(e) are provided for context; however, the discrepancy between actual and forecast utility load for July 23, 2022 was attributed to warmer temperatures than forecast and non-uniform customer behaviour, as July 23, 2022 fell on a weekend.

2.3.14 August 6, 2022

On August 6, 2022, the forecast peak at 7:20 a.m., as reported to the Board, was 825 MW; the actual reported peak was 830 MW. Figure 17 includes an hourly plot of the load forecast for August 6, 2022, as well as several plots to assist in determining the sources of the differences between actual and forecast loads.

Figure 17(a) shows the total hourly distribution of the load forecast compared to the actual load. The hourly forecast predicted a noon peak of 696 MW; the actual peak was 699 MW and occurred at noon, resulting in an underestimate of less than 1%.

Figure 17(b) shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at noon of 533 MW; the actual peak was 578 MW and occurred at noon, resulting in an underestimate of 7.9%.

Figures 17(c), 17(d), and 17(e) are provided for context; however, the discrepancy between actual and forecast load for August 6, 2022 was primarily due to non-uniform customer behaviour, as August 6, 2022 fell on a weekend, as well as the possibility of the addition of cooling load from mini-split heat pumps.

2.3.15 August 20, 2022

On August 20, 2022, the forecast peak at 7:20 a.m., as reported to the Board, was 745 MW; the actual reported peak was 724 MW. Figure 18 includes an hourly plot of the load forecast for August 20, 2022, as well as several plots to assist in determining the sources of the differences between actual and forecast loads.

Figure 18(a) shows the total hourly distribution of the load forecast compared to the actual load. The hourly forecast predicted a 5:00 p.m. peak of 691 MW; the actual peak was 690 MW and occurred at noon; resulting in an underestimate of 0.1%. The total load forecast for the time of peak was 691 MW.

Figure 18(b) shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 5:00 p.m. of 528 MW; the actual peak was 559 MW and occurred at noon, resulting in an underestimate of 5.6%. The utility load for the time of peak was 528 MW.

Figures 18(c), 18(d), and 18(e) are provided for context; however, the discrepancy between actual and forecast load for August 20, 2022 was primarily due to non-uniform customer behaviour, as August 20, 2022 occurred on a weekend.

As the temperatures were higher than forecast and in the low 20s, cooling load may have had an impact on the actual peak.

2.3.16 September 5, 2022

On September 5, 2022, the forecast peak at 7:20 a.m., as reported to the Board, was 770 MW; the actual reported peak was 774 MW. Figure 19 includes an hourly plot of the load forecast for September 5, 2022, as well as several plots to assist in determining the sources of the differences between actual and forecast loads.

Figure 19(a) shows the total hourly distribution of the load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted a 5:00 p.m. peak of 715 MW; the actual peak was 722 MW and occurred at 5:00 p.m., resulting in an underestimate of 1.0%.

Figure 19(b) shows the hourly distribution of the utility load forecast only (i.e., the load forecast with the industrial and export components removed). The hourly forecast predicted a utility peak at 5:00 p.m. of 551 MW; the actual utility peak was 583 MW and occurred at 5:00 p.m., resulting in an underestimate of 5.4%.

Figures 19(c) and 19(d) show the temperature was an average 1°C warmer leading up to peak and the wind speed was less than forecast, which may have contributed to cooling load.

Figure 19(e) shows the cloud cover was close to forecast at peak.

The discrepancy between actual and forecast load for September 5, 2022 was primarily due to non-conforming customer behaviour, as September 5, 2022 was a holiday (Labour Day).

2.3.17 September 11, 2022

On September 11, 2022, the forecast peak at 7:20 a.m., as reported to the Board, was 765 MW; the actual reported peak was 785 MW. Figure 20 includes an hourly plot of the load forecast for September 11, 2022, as well as several plots to assist in determining the sources of the differences between actual and forecast loads.

Figure 20(a) shows the total hourly distribution of the load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted a noon peak of 740 MW; the actual peak was 748 MW and occurred at 5:00 p.m., resulting in an underestimate of 1.1%. The total load forecast for the time of peak was 736 MW.

Figure 20(b) shows the hourly distribution of the utility load forecast only (i.e., the load forecast with the industrial and export components removed). The hourly forecast predicted a utility peak at noon of 577 MW; the actual utility peak was 622 MW and occurred at 5:00 p.m., resulting in an underestimate of 7.2%. The utility load forecast for the time of peak was 573 MW.

Figures 20(c) show the temperature as 2°C cooler than forecast.

Figure 20(d) shows the wind speed close to forecast.

Figure 20(e) is provided for context; however, the cloud cover data was not available on September 11, 2022.

The discrepancy between actual and forecast load for September 11, 2022 was primarily due non-conforming customer behaviour, as September 11, 2022 occurred on a weekend.

2.3.18 September 29, 2022

On September 29, 2022, the forecast peak at 7:20 a.m., as reported to the Board, was 910 MW; the actual reported peak was 919 MW. Figure 21 includes an hourly plot of the load forecast for September 29, 2022, as well as several plots to assist in determining the sources of the differences between actual and forecast loads.

Figure 21(a) shows the total hourly distribution of the load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted a noon peak of 700 MW; the actual peak was 691 MW and occurred at 7:00 p.m., resulting in an underestimate of 1.3%. The total load forecast for the time of peak was 690 MW.

Figure 21(b) shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at noon of 537 MW; the actual peak was 573 MW and occurred at 5:00 p.m., resulting in an underestimate of 6.3%. The utility load forecast for the time of peak was 512 MW.

Figure 21(c) shows the actual temperature in St. John's compared to the forecast. The temperature did not differ significantly from the forecast and likely did not contribute to the load forecast error.

Figure 21(d) shows the actual wind speed in St. John's compared to the forecast. The actual wind speed was close to forecast for the majority of the day.

Figure 21(e) shows the cloud cover forecast, which was relatively accurate during daylight hours.

The discrepancy between actual and forecast load for September 29, 2022 was primarily attributed to non-uniform customer behaviour, as September 29, 2022 occurred before a statutory holiday (National Day for Truth and Reconciliation).

2.3.19 October 2, 2022

On October 2, 2022, the forecast peak at 7:20 a.m., as reported to the Board, was 980 MW; the actual reported peak was 997 MW. Figure 22 includes an hourly plot of the load forecast for October 2, 2022, as well as several plots to assist in determining the sources of the differences between actual and forecast loads.

Figure 22(a) shows the total hourly distribution of the load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted an 8:00 p.m. peak of 784 MW; the actual peak was 799 MW and occurred at 8:00 p.m., resulting in an underestimate of 1.9%.

Figure 22(b) shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 8:00 p.m. of 621 MW; the actual peak was 670 MW and occurred at 8:00 p.m., resulting in an underestimate of 7.4%.

Figure 22(c) shows the actual temperature in St. John's compared to the forecast. The temperature was 1°C cooler than forecast from 5:00 p.m. to 10:00 p.m. and may have contributed to the forecast error.

Figures 22(d) and 22(e) are provided for context; however, the discrepancy between actual and forecast load was primarily attributed to slightly cooler-than-forecast temperatures and non-uniform customer behaviour, as October 2, 2022 occurred on a weekend.

2.3.20 October 18, 2022

On October 18, 2022, the forecast peak at 7:20 a.m., as reported to the Board, was 1,035 MW; the actual reported peak was 956 MW. Figure 23 includes an hourly plot of the load forecast for October 18, 2022, as well as several plots to assist in determining the sources of the differences between actual and forecast loads.

Figure 23(a) shows the total hourly distribution of the load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted a 7:00 p.m. peak of 1,046 MW; the actual peak was 946 MW and occurred at 8:00 p.m., resulting in an overestimate of 10.6%. The total load forecast for the time of peak was 1,033 MW.

Figure 23(b) shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 5:00 p.m. of 705 MW; the actual peak was 644 MW and occurred at 7:00 p.m., resulting in an overestimate of 9.5%. The utility load forecast at the time of peak was 685 MW.

Figures 23(c), 23(d), and 23(e) are provided for context; however, the discrepancy between actual and forecast load for October 18, 2022 was primarily attributed to an overestimate of load by Nostradamus. The load forecast was overestimated for the majority of the day after 11:00 a.m. An overestimate of the load resulted in more-than-enough reserve being available. The forecast improved slightly after peak.

2.3.21 October 29, 2022

On October 29, 2022, the forecast peak at 7:20 a.m., as reported to the Board, was 1,060 MW; the actual reported peak was 1,074 MW. Figure 24 includes an hourly plot of the load forecast for October 29, 2022, as well as several plots to assist in determining the sources of the differences between actual and forecast loads.

Figure 24(a) shows the hourly distribution of the load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted a 9:00 a.m. peak of 836 MW; the actual peak was 848 MW and occurred at 9:00 a.m., resulting in an underestimate of 1.4%.

Figure 24(b) shows the hourly distribution of the utility load forecast only (i.e., the load forecast with the industrial component removed). The hourly forecast predicted a utility peak at 9:00 a.m. of 673 MW; the actual peak was 725 MW and occurred at 9:00 a.m., resulting in an underestimate of 7.2%.

Figure 24(c) shows the actual temperature in St. John's compared to the forecast. The actual temperature was colder than forecast in the morning period, which may have contributed to the forecast error.

Figure 24(d) shows the actual wind speed in St. John's was close to forecast at the time of peak.

Figure 24(e) is provided for context; however, the discrepancy between actual and forecast peak is primarily attributed to the difference in forecast versus actual temperature and non-uniform customer behaviour, as October 29, 2022 fell on a weekend.

2.3.22 November 12, 2022

On November 12, 2022, the forecast peak at 7:20 a.m., as reported to the Board, was 1,110 MW; the actual reported peak was 1,176 MW. Figure 25 includes an hourly plot of the load forecast for November 12, 2022, as well as several plots to assist in determining the sources of the differences between actual and forecast loads.

Figure 25(a) shows the total hourly distribution of the load forecast compared to the actual load. The hourly forecast predicted a 5:00 p.m. peak of 1,071 MW; the actual peak was 1,134 MW and occurred at 5:00 p.m., resulting in an underestimate of 5.6%.

Figure 25(b) shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 5:00 p.m. of 913 MW; the actual peak was 1,009 MW and occurred at 5:00 p.m., resulting in an underestimate of 9.5%.

Figure 25(c) shows the actual temperature in St. John's compared to the forecast. The temperature was overestimated by 1°C to 2°C for the majority of the day. The colder-than-forecast temperatures likely contributed to the load forecast error.

Figure 25(d) shows the actual wind speed in St. John's compared to the forecast. The actual wind speed was close to the forecast from noon to 8:00 p.m.

Figure 25(e) shows the cloud cover forecast was relatively accurate for the day.

The discrepancy between actual and forecast load for November 12, 2022 was primarily attributed to cooler-than-forecast temperatures and non-uniform customer behaviour, as November 12, 2022 occurred on a weekend and followed a statutory holiday (Remembrance Day).

2.3.23 November 16, 2022

On November 16, 2022, the forecast peak at 7:20 a.m., as reported to the Board, was 1,505 MW; the actual reported peak was 1,546 MW. Figure 26 includes an hourly plot of the load forecast for November 16, 2022, as well as several plots to assist in determining the sources of the differences between actual and forecast loads.

Figure 26(a) shows the total hourly distribution of the load forecast compared to the actual load. The hourly forecast predicted an 8:00 a.m. peak of 1,194 MW; the actual peak was 1,233 MW and occurred at 5:00 p.m., resulting in an underestimate of 3.2%. The total load for the time of peak was 1,178 MW.

Figure 26(b) shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 10:00 a.m. of 1,031 MW; the actual peak was 1,100 MW and occurred at 5:00 p.m., resulting in an underestimate of 6.3%. The utility load forecast for the time of peak was 1,015 MW.

Figure 26(c) shows the actual temperature in St. John's compared to the forecast. The temperature was overestimated by 1°C for the majority of the day. The colder-than-forecast temperatures likely contributed to the load forecast error.

Figure 26(d) 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.

Figure 26(e) shows the cloud cover was more than forecast during daylight hours and may have contributed to the forecast error.

The discrepancy between actual and forecast load for November 16, 2022 was primarily attributed to a colder-than-anticipated temperature forecast.

2.3.24 November 19, 2022

On November 19, 2022, the forecast peak at 7:20 a.m., as reported to the Board, was 1,125 MW; the actual reported peak was 1,176 MW. Figure 27 includes an hourly plot of the load forecast for November 19, 2022, as well as several plots to assist in determining the sources of the differences between actual and forecast loads.

Figure 27(a) shows the total hourly distribution of the load forecast compared to the actual load, exclusive of export activity. The hourly forecast predicted a 6:00 p.m. peak of 1,127 MW; the actual peak was 1,176 MW and occurred at 5:00 p.m., resulting in an underestimate of 4.2%.The total load forecast for the time of peak was 1,100 MW.

Figure 27(b) shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 6:00 p.m. of 964 MW; the actual peak was 1,046 MW and occurred at 5:00 p.m., resulting in an underestimate of 7.9%. The utility load forecast for the time of peak was 937 MW.

Figures 27(c), 27(d), and 27(e) show temperature, wind speed, and cloud cover were close to forecast leading up to peak and are provided for context; however, the discrepancy between actual and forecast load for November 19, 2022 was primarily attributed to non-uniform customer behaviour, as November 19, 2022 occurred on a weekend.

2.3.25 December 6, 2022

On December 6, 2022, the forecast peak at 7:20 a.m., as reported to the Board, was 1,210 MW; the actual reported peak was 1,456 MW. Figure 28 includes an hourly plot of the load forecast for December 6, 2022, as well as several plots to assist in determining the sources of the differences between actual and forecast loads.

Figure 28(a) shows the total hourly distribution of the load forecast compared to the actual load. The hourly forecast predicted an 8:00 a.m. peak of 1,219 MW; the actual peak was 1,185 MW and occurred at 5:00 p.m., resulting in an overestimate of 2.9%. The total load forecast for the time of peak was 1,196 MW.

Figure 28(b) shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 8:00 a.m. of 1,056 MW; the actual peak was 1,119 MW and occurred at 5:00 p.m., resulting in an underestimate of 5.6%. The utility forecast for the time of peak was 1,033 MW.

Figure 28(c) shows the actual temperature in St. John's compared to the forecast. The temperature was overestimated by 1°C to 3°C for the majority of the day, with the largest variance occurring in the evening hours. The colder-than-forecast temperatures likely contributed to the evening peak and the high load forecast error.

Figures 28(d) and 28(e) are provided for context; however, there was no cloud cover data for December 6, 2022.

The discrepancy between actual and forecast load for December 6, 2022 was primarily attributed to under-forecasted temperature.

2.3.26 December 11, 2022

On December 11, 2022, the forecast peak at 7:20 a.m., as reported to the Board, was 1,320 MW; the actual reported peak was 1,418 MW. Figure 29 includes an hourly plot of the load forecast for December 11, 2022, as well as several plots to assist in determining the sources of the differences between actual and forecast loads.

Figure 29(a) shows the total hourly distribution of the load forecast compared to the actual load. The hourly forecast predicted a 5:00 p.m. peak of 1,317 MW; the actual peak was 1,357 MW and occurred at 5:00 p.m., resulting in an underestimate of 2.9%.

Figure 29(b) shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at 5:00 p.m. of 1,159 MW; the actual peak of 1,249 MW occurred at 5:00 p.m., resulting in an underestimate of 7.2%.

Figure 29(c) shows the actual temperature in St. John's compared to the forecast. The temperature was overestimated by 1°C to 2°C for the majority of the day. The colder-than-forecast temperatures likely contributed to the load forecast error.

Figures 29(d) and 29(e) are provided for context; however, the discrepancy between actual and forecast load for December 11, 2022 was primarily attributed to a colder-than-forecast temperature and non-uniform customer behaviour, as December 11, 2022 occurred during the weekend.

2.3.27 December 25, 2022

On December 25, 2022, the forecast peak at 7:20 a.m., as reported to the Board, was 1,165 MW; the actual reported peak was 1,218 MW. Figure 30 includes an hourly plot of the load forecast for December 25, 2022, as well as several plots to assist in determining the sources of the differences between actual and forecast loads.

Figure 30(a) shows the total hourly distribution of the load forecast compared to the actual load. The hourly forecast predicted a noon peak of 1,166 MW; the actual peak was 1,217 MW and occurred at 11:00 a.m., resulting in an underestimate of 4.2%. The total load forecast for the time of peak was 1,164 MW.

Figure 30(b) shows the hourly distribution of the utility load forecast only. The hourly forecast predicted a utility peak at noon of 1,003 MW; the actual peak of 1,074 MW occurred at 11:00 a.m., resulting in an underestimate of 6.7%. The utility load forecast for the time of peak was 1,001 MW.

Figures 30(c), 30(d), and 30(e) are provided for context; however, the discrepancy between actual and forecast load is primarily attributed to non-uniform customer behaviour, as December 25, 2022 was a holiday (Christmas Day) and also occurred during the weekend.

3.0 Forecast Accuracy Review

Table 4 summarizes the errors in the average monthly peak demand of the utility load forecast by month in 2022. The absolute percent error of the average demand for each month varied between 1.8% (July 2022) and 3.1% (November 2022) with an average of 2.4%. This is consistent with last year's observed absolute percent error for average monthly peak demand, which had a maximum error of 3.2%.[27] 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 2022 was 21 MW, which compares to the average absolute error in 2021

[27] June 2021 had an absolute percent error of 7.5%, which was due to an issue with Nostradamus producing load forecasts for the period of June 20 to June 27, 2021.

of 26 MW. The slight decrease in average error at peak in 2022 compared to 2021 is likely due to the software error that occurred from June 20 to 27, 2021, significantly increasing the average error in 2021.

Table 5 summarizes the maximum statistics for the utility load forecast by month in 2022. The maximum absolute error varied between 4.4% (March 2022) and 10.9% (February 2022). This is less than last year's observed maximum error of 17%.[28] Comparing absolute percent error, there does not appear to be any seasonal correlation. The maximum errors were positive in all 12 months. For days that experienced the maximum errors, the load forecast was typically overestimated (rather than underestimated). The largest absolute error at peak in 2022 was 126 MW and occurred on February 19, 2022, which fell on a weekend.

Table 6 summarizes the error at the ten highest utility loads during the reporting period. The highest loads in this reporting period occurred in February 2022 (four instances), January 2022 (three instances), March 2022 (two instances) and December 2022 (one instance). Two of the ten highest loads were overestimated and eight were underestimated. The percent error varied from -4.3% to 1.9%; the overall average was -1.4%. The absolute percent error varied from 0.3% to 4.3%, with an average of 1.9%. These statistics confirm that there is no correlation between high load and high error in the load forecast and that Nostradamus is forecasting high load at peak well within the acceptable forecasting limit of less than 4.95% error.

Table 7 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 non-uniform customer behaviour, as the high error days occurred on the weekend or statutory holidays. Less frequently, errors occur due to the weather forecast—largely driven by errors in temperature and wind speed forecasting. Some errors remain unexplained; they result from unpredictable customer behaviour that was not forecasted correctly by Nostradamus. An additional source of non-conforming error is the impact that the COVID-19 pandemic had on load in the first half of 2022. While the impacts cannot be fully quantified, the implementation of public health measures at different times through the year may have contributed to increases in non-uniform customer behaviour

[28] Excluding June 2021, which had a 122.5% error due to the issue with Nostradamus load forecasts between June 20 and 27, 2021.

that may have resulted in a small impact on the overall load and load shape. Of the 27 included instances of high forecast error, 16 occurred on a weekend and 11 occurred on a weekday.

Appendix A

Supporting Tables

Table 1: Total Island Interconnected System Load Forecasting Data (MW)[29]

Date	Forecast Total Peak	Actual Total Peak	Available Island Supply	Forecast Reserve
1-Jan-2022	1,404	1,455	2,075	671
2-Jan-2022	1,396	1,415	2,043	647
3-Jan-2022	1,492	1,580	2,055	563
4-Jan-2022	1,726	1,705	2,169	443
5-Jan-2022	1,682	1,655	2,210	528
6-Jan-2022	1,368	1,440	2,167	799
7-Jan-2022	1,504	1,610	2,235	731
8-Jan-2022	1,601	1,620	2,230	629
9-Jan-2022	1,647	1,660	2,210	563
10-Jan-2022	1,496	1,555	2,203	707
11-Jan-2022	1,677	1,710	2,215	538
12-Jan-2022	1,789	1,780	2,229	440
13-Jan-2022	1,587	1,630	2,231	644
14-Jan-2022	1,428	1,465	2,360	932
15-Jan-2022	1,370	1,410	2,375	1,005
16-Jan-2022	1,684	1,715	2,367	683
17-Jan-2022	1,587	1,530	2,040	453
18-Jan-2022	1,316	1,360	1,975	659
19-Jan-2022	1,482	1,460	2,000	518
20-Jan-2022	1,383	1,375	2,010	627
21-Jan-2022	1,507	1,430	1,985	478
22-Jan-2022	1,529	1,475	1,985	456
23-Jan-2022	1,560	1,590	2,050	490
24-Jan-2022	1,565	1,545	2,218	653
25-Jan-2022	1,476	1,605	2,344	868
26-Jan-2022	1,451	1,505	2,418	967
27-Jan-2022	1,563	1,660	2,035	472
28-Jan-2022	1,705	1,730	2,174	469
29-Jan-2022	1,468	1,440	1,885	417
30-Jan-2022	1,360	1,420	2,074	714
31-Jan-2022	1,450	1,465	2,057	607
Minimum	1,316	1,360	1,885	417
Average	1,524	1,548	2,149	625
Maximum	1,789	1,780	2,418	1,005

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

Date	Forecast Total Peak	Actual Total Peak	Available Island Supply	Forecast Reserve
1-Feb-2022	1,570	1,561	2,050	480
2-Feb-2022	1,650	1,649	2,032	382
3-Feb-2022	1,575	1,558	2,290	715
4-Feb-2022	1,550	1,496	2,270	720
5-Feb-2022	1,430	1,449	2,200	770
6-Feb-2022	1,730	1,767	2,267	537
7-Feb-2022	1,875	1,839	2,320	445
8-Feb-2022	1,615	1,579	2,316	701
9-Feb-2022	1,540	1,451	2,209	669
10-Feb-2022	1,505	1,428	2,197	692
11-Feb-2022	1,410	1,372	2,195	785
12-Feb-2022	1,405	1,455	2,296	891
13-Feb-2022	1,420	1,392	2,316	896
14-Feb-2022	1,615	1,658	2,298	683
15-Feb-2022	1,785	1,715	2,208	423
16-Feb-2022	1,820	1,847	2,348	528
17-Feb-2022	1,675	1,696	2,365	690
18-Feb-2022	1,420	1,363	2,062	642
19-Feb-2022	1,645	1,528	2,192	547
20-Feb-2022	1,590	1,539	2,249	659
21-Feb-2022	1,570	1,537	2,214	644
22-Feb-2022	1,675	1,493	2,182	507
23-Feb-2022	1,540	1,544	2,214	674
24-Feb-2022	1,615	1,564	2,181	566
25-Feb-2022	1,665	1,630	2,233	568
26-Feb-2022	1,409	1,460	2,055	646
27-Feb-2022	1,480	1,421	2,025	545
28-Feb-2022	1,425	1,388	2,020	595
Minimum	1,405	1,363	2,020	382
Average	1,579	1,549	2,207	629
Maximum	1,875	1,847	2,365	896

Date	Forecast Total Peak	Actual Total Peak	Available Island Supply	Forecast Reserve
1-Mar-2022	1,585	1,672	2,065	480
2-Mar-2022	1,545	1,515	2,005	460
3-Mar-2022	1,340	1,341	2,055	715
4-Mar-2022	1,460	1,398	2,035	575
5-Mar-2022	1,440	1,420	2,051	611
6-Mar-2022	1,420	1,345	2,041	621
7-Mar-2022	1,395	1,379	2,066	671
8-Mar-2022	1,345	1,329	2,046	701
9-Mar-2022	1,435	1,428	2,021	586
10-Mar-2022	1,415	1,387	2,010	595
11-Mar-2022	1,330	1,304	2,020	690
12-Mar-2022	1,360	1,316	2,015	655
13-Mar-2022	1,410	1,355	2,035	625
14-Mar-2022	1,415	1,496	2,050	635
15-Mar-2022	1,390	1,401	2,045	655
16-Mar-2022	1,475	1,453	2,030	555
17-Mar-2022	1,420	1,405	2,040	620
18-Mar-2022	1,235	1,224	1,910	675
19-Mar-2022	1,245	1,221	1,895	650
20-Mar-2022	1,305	1,339	2,035	730
21-Mar-2022	1,370	1,326	2,040	670
22-Mar-2022	1,345	1,286	2,065	720
23-Mar-2022	1,315	1,291	1,875	560
24-Mar-2022	1,355	1,448	1,910	555
25-Mar-2022	1,515	1,488	2,052	537
26-Mar-2022	1,515	1,508	2,049	534
27-Mar-2022	1,315	1,313	2,034	719
28-Mar-2022	1,380	1,346	2,069	689
29-Mar-2022	1,375	1,355	2,074	699
30-Mar-2022	1,490	1,434	2,041	551
31-Mar-2022	1,425	1,378	1,964	539
Minimum	1,235	1,221	1,875	460
Average	1,399	1,384	2,021	622
Maximum	1,585	1,672	2,074	730

Date	Forecast Total Peak	Actual Total Peak	Available Island Supply	Forecast Reserve
1-Apr-2022	1,375	1,333	1,932	557
2-Apr-2022	1,270	1,253	2,050	780
3-Apr-2022	1,380	1,342	2,066	686
4-Apr-2022	1,375	1,357	1,952	577
5-Apr-2022	1,315	1,292	1,934	619
6-Apr-2022	1,410	1,413	1,984	574
7-Apr-2022	1,365	1,374	2,035	670
8-Apr-2022	1,355	1,351	2,025	670
9-Apr-2022	1,320	1,344	2,037	717
10-Apr-2022	1,195	1,225	2,065	870
11-Apr-2022	1,350	1,328	2,000	650
12-Apr-2022	1,445	1,373	1,837	392
13-Apr-2022	1,390	1,326	1,924	534
14-Apr-2022	1,355	1,345	1,769	414
15-Apr-2022	1,250	1,216	1,732	482
16-Apr-2022	1,215	1,222	1,751	536
17-Apr-2022	1,120	1,176	1,739	619
18-Apr-2022	1,160	1,200	1,646	486
19-Apr-2022	1,300	1,259	1,766	466
20-Apr-2022	1,320	1,364	1,956	636
21-Apr-2022	1,200	1,217	1,806	606
22-Apr-2022	1,250	1,235	1,770	520
23-Apr-2022	1,085	1,105	1,550	465
24-Apr-2022	1,230	1,216	1,565	335
25-Apr-2022	1,170	1,184	1,580	410
26-Apr-2022	1,265	1,246	1,887	622
27-Apr-2022	1,230	1,204	1,684	454
28-Apr-2022	1,220	1,203	1,687	467
29-Apr-2022	1,225	1,220	1,696	471
30-Apr-2022	1,150	1,146	1,675	525
Minimum	1,085	1,105	1,550	335
Average	1,276	1,269	1,837	560
Maximum	1,445	1,413	2,066	870

Date	Forecast Total Peak	Actual Total Peak	Available Island Supply	Forecast Reserve
1-May-2022	1,140	1,112	1,679	539
2-May-2022	1,200	1,177	1,547	347
3-May-2022	1,205	1,163	1,644	439
4-May-2022	1,200	1,178	1,514	314
5-May-2022	1,155	1,178	1,529	374
6-May-2022	1,185	1,172	1,761	576
7-May-2022	1,175	1,188	1,751	576
8-May-2022	1,135	1,120	1,775	640
9-May-2022	1,170	1,151	1,710	540
10-May-2022	1,140	1,131	1,560	420
11-May-2022	1,070	1,049	1,561	491
12-May-2022	1,015	946	1,571	556
13-May-2022	1,075	1,035	1,522	447
14-May-2022	1,115	1,146	1,604	489
15-May-2022	1,130	1,157	1,695	565
16-May-2022	1,165	1,176	1,690	525
17-May-2022	1,120	1,103	1,699	579
18-May-2022	1,090	1,093	1,538	448
19-May-2022	1,035	1,061	1,664	629
20-May-2022	1,040	999	1,697	657
21-May-2022	910	881	1,683	773
22-May-2022	905	917	1,600	695
23-May-2022	895	905	1,708	813
24-May-2022	1,035	1,032	1,725	690
25-May-2022	1,085	1,080	1,700	615
26-May-2022	1,065	1,017	1,697	632
27-May-2022	1,090	1,053	1,690	600
28-May-2022	1,085	1,158	1,766	681
29-May-2022	1,060	1,083	1,606	546
30-May-2022	980	945	1,491	511
31-May-2022	1,055	1,105	1,471	416
Minimum	895	881	1,471	314
Average	1,088	1,081	1,640	552
Maximum	1,205	1,188	1,775	813

Date	Forecast Total Peak	Actual Total Peak	Available Island Supply	Forecast Reserve
1-Jun-2022	1,220	1,221	1,627	407
2-Jun-2022	1,320	1,309	1,708	388
3-Jun-2022	1,300	1,261	1,716	416
4-Jun-2022	1,040	1,024	1,465	425
5-Jun-2022	1,015	1,014	1,510	495
6-Jun-2022	1,065	1,015	1,509	444
7-Jun-2022	1,070	1,090	1,603	533
8-Jun-2022	1,065	1,065	1,572	507
9-Jun-2022	910	880	1,450	540
10-Jun-2022	875	916	1,460	585
11-Jun-2022	790	800	1,455	665
12-Jun-2022	770	774	1,470	700
13-Jun-2022	825	827	1,450	625
14-Jun-2022	855	814	1,375	520
15-Jun-2022	855	857	1,455	600
16-Jun-2022	915	867	1,581	666
17-Jun-2022	845	742	1,385	540
18-Jun-2022	765	771	1,465	700
19-Jun-2022	735	735	1,480	745
20-Jun-2022	800	776	1,275	475
21-Jun-2022	765	768	1,255	490
22-Jun-2022	745	742	1,250	505
23-Jun-2022	760	737	1,250	490
24-Jun-2022	755	826	1,260	505
25-Jun-2022	885	866	1,417	532
26-Jun-2022	870	851	1,393	523
27-Jun-2022	900	898	1,389	489
28-Jun-2022	925	884	1,439	514
29-Jun-2022	895	890	1,409	514
30-Jun-2022	915	867	1,404	489
Minimum	735	735	1,250	388
Average	915	903	1,449	534
Maximum	1,320	1,309	1,716	745

Date	Forecast Total Peak	Actual Total Peak	Available Island Supply	Forecast Reserve
1-Jul-2022	895	847	1,417	522
2-Jul-2022	855	834	1,412	557
3-Jul-2022	865	858	1,358	493
4-Jul-2022	885	845	1,324	439
5-Jul-2022	865	806	1,329	464
6-Jul-2022	875	803	1,335	460
7-Jul-2022	880	836	1,354	474
8-Jul-2022	860	804	1,477	617
9-Jul-2022	860	841	1,479	619
10-Jul-2022	870	838	1,508	638
11-Jul-2022	850	863	1,492	642
12-Jul-2022	850	858	1,499	649
13-Jul-2022	845	847	1,399	554
14-Jul-2022	840	831	1,394	554
15-Jul-2022	840	853	1,403	563
16-Jul-2022	800	824	1,408	608
17-Jul-2022	855	820	1,394	539
18-Jul-2022	875	879	1,429	554
19-Jul-2022	885	867	1,424	539
20-Jul-2022	870	844	1,340	470
21-Jul-2022	890	874	1,429	539
22-Jul-2022	870	844	1,398	528
23-Jul-2022	830	844	1,387	557
24-Jul-2022	855	830	1,433	578
25-Jul-2022	905	901	1,447	542
26-Jul-2022	975	973	1,565	590
27-Jul-2022	955	950	1,508	553
28-Jul-2022	945	922	1,513	568
29-Jul-2022	955	917	1,504	549
30-Jul-2022	915	903	1,516	601
31-Jul-2022	910	902	1,528	618
Minimum	800	803	1,324	439
Average	878	860	1,432	554
Maximum	975	973	1,565	649

Date	Forecast Total Peak	Actual Total Peak	Available Island Supply	Forecast Reserve
1-Aug-2022	915	948	1,525	610
2-Aug-2022	970	928	1,498	528
3-Aug-2022	955	945	1,524	569
4-Aug-2022	895	865	1,428	533
5-Aug-2022	920	904	1,518	598
6-Aug-2022	825	830	1,510	685
7-Aug-2022	880	861	1,456	576
8-Aug-2022	760	798	1,380	620
9-Aug-2022	830	771	1,375	545
10-Aug-2022	910	883	1,395	485
11-Aug-2022	910	871	1,444	534
12-Aug-2022	880	854	1,506	626
13-Aug-2022	860	842	1,516	656
14-Aug-2022	925	883	1,585	660
15-Aug-2022	945	941	1,591	646
16-Aug-2022	800	779	1,355	555
17-Aug-2022	795	739	1,370	575
18-Aug-2022	800	771	1,355	555
19-Aug-2022	795	779	1,375	580
20-Aug-2022	745	724	1,390	645
21-Aug-2022	755	746	1,370	615
22-Aug-2022	815	756	1,295	480
23-Aug-2022	775	750	1,290	515
24-Aug-2022	775	774	1,315	540
25-Aug-2022	785	807	1,290	505
26-Aug-2022	890	765	1,381	491
27-Aug-2022	815	791	1,265	450
28-Aug-2022	810	787	1,394	584
29-Aug-2022	820	799	1,295	475
30-Aug-2022	750	808	1,352	602
31-Aug-2022	755	726	1,260	505
Minimum	745	724	1,260	450
Average	841	820	1,407	566
Maximum	970	948	1,591	685

Date	Forecast Total Peak	Actual Total Peak	Available Island Supply	Forecast Reserve
1-Sep-2022	1,075	1,056	1,408	333
2-Sep-2022	1,050	1,027	1,219	169
3-Sep-2022	750	709	1,260	510
4-Sep-2022	750	708	1,255	505
5-Sep-2022	770	774	1,325	555
6-Sep-2022	840	775	1,310	470
7-Sep-2022	815	750	1,315	500
8-Sep-2022	820	770	1,255	435
9-Sep-2022	790	793	1,290	500
10-Sep-2022	785	790	1,375	590
11-Sep-2022	765	785	1,370	605
12-Sep-2022	805	933	1,425	620
13-Sep-2022	990	921	1,630	640
14-Sep-2022	920	859	1,585	665
15-Sep-2022	930	893	1,584	654
16-Sep-2022	945	904	1,549	604
17-Sep-2022	975	921	1,542	567
18-Sep-2022	980	934	1,503	523
19-Sep-2022	985	869	1,355	370
20-Sep-2022	740	739	1,292	552
21-Sep-2022	900	765	1,220	320
22-Sep-2022	955	844	1,420	465
23-Sep-2022	755	785	1,315	560
24-Sep-2022	690	616	1,467	777
25-Sep-2022	745	702	1,491	746
26-Sep-2022	740	706	1,400	660
27-Sep-2022	740	848	1,471	731
28-Sep-2022	835	881	1,487	652
29-Sep-2022	910	919	1,566	656
30-Sep-2022	925	926	1,550	625
Minimum	690	616	1,219	169
Average	856	830	1,408	552
Maximum	1,075	1,056	1,630	777

Date	Forecast Total Peak	Actual Total Peak	Available Island Supply	Forecast Reserve
1-Oct-2022	920	892	1,569	649
2-Oct-2022	980	997	1,536	556
3-Oct-2022	1,100	1,111	1,552	452
4-Oct-2022	1,085	1,117	1,648	563
5-Oct-2022	1,050	1,009	1,623	573
6-Oct-2022	1,020	992	1,528	508
7-Oct-2022	960	932	1,518	558
8-Oct-2022	960	949	1,496	536
9-Oct-2022	975	941	1,545	570
10-Oct-2022	1,015	1,013	1,602	587
11-Oct-2022	1,120	1,068	1,578	458
12-Oct-2022	1,035	977	1,598	563
13-Oct-2022	1,095	1,050	1,711	616
14-Oct-2022	955	910	1,553	598
15-Oct-2022	1,110	1,071	1,688	578
16-Oct-2022	1,025	988	1,704	679
17-Oct-2022	1,065	1,015	1,769	704
18-Oct-2022	1,035	956	1,698	663
19-Oct-2022	1,005	978	1,722	717
20-Oct-2022	855	849	1,620	765
21-Oct-2022	890	882	1,588	698
22-Oct-2022	990	943	1,569	579
23-Oct-2022	990	960	1,568	578
24-Oct-2022	1,045	1,048	1,558	513
25-Oct-2022	1,065	1,037	1,555	490
26-Oct-2022	1,010	976	1,545	535
27-Oct-2022	980	923	1,528	548
28-Oct-2022	1,030	1,014	1,550	520
29-Oct-2022	1,060	1,074	1,679	619
30-Oct-2022	1,085	1,040	1,707	622
31-Oct-2022	1,130	1,122	1,840	710
Minimum	855	849	1,496	452
Average	1,021	995	1,611	590
Maximum	1,130	1,122	1,840	765

Date	Forecast Total Peak	Actual Total Peak	Available Island Supply	Forecast Reserve
1-Nov-2022	1,175	1,129	1,824	649
2-Nov-2022	1,150	1,115	1,830	680
3-Nov-2022	1,210	1,222	1,750	540
4-Nov-2022	1,190	1,175	1,737	547
5-Nov-2022	1,055	1,030	1,825	770
6-Nov-2022	1,115	1,134	1,799	684
7-Nov-2022	1,085	1,051	1,846	761
8-Nov-2022	1,200	1,182	2,026	826
9-Nov-2022	1,450	1,360	2,040	590
10-Nov-2022	1,440	1,395	2,068	628
11-Nov-2022	1,290	1,302	2,004	714
12-Nov-2022	1,110	1,176	1,760	650
13-Nov-2022	1,150	1,129	1,855	705
14-Nov-2022	1,185	1,172	1,605	420
15-Nov-2022	1,420	1,344	2,039	619
16-Nov-2022	1,505	1,546	2,170	665
17-Nov-2022	1,465	1,413	2,192	727
18-Nov-2022	1,135	1,158	1,695	560
19-Nov-2022	1,125	1,176	1,680	555
20-Nov-2022	1,275	1,322	1,755	480
21-Nov-2022	1,515	1,555	2,077	562
22-Nov-2022	1,530	1,535	2,075	545
23-Nov-2022	1,550	1,531	2,064	514
24-Nov-2022	1,770	1,745	2,354	584
25-Nov-2022	1,575	1,599	2,108	533
26-Nov-2022	1,450	1,475	2,023	573
27-Nov-2022	1,480	1,447	2,133	653
28-Nov-2022	1,405	1,456	2,052	647
29-Nov-2022	1,630	1,537	2,108	478
30-Nov-2022	1,665	1,647	2,117	452
Minimum	1,055	1,030	1,605	420
Average	1,343	1,335	1,954	610
Maximum	1,770	1,745	2,354	826

Date	Forecast Total Peak	Actual Total Peak	Available Island Supply	Forecast Reserve
1-Dec-2022	1,505	1,488	2,004	499
2-Dec-2022	1,460	1,472	2,069	609
3-Dec-2022	1,430	1,480	1,770	340
4-Dec-2022	1,480	1,472	2,080	600
5-Dec-2022	1,535	1,545	2,216	681
6-Dec-2022	1,210	1,456	2,148	938
7-Dec-2022	1,220	1,459	2,218	998
8-Dec-2022	1,235	1,225	1,935	700
9-Dec-2022	1,195	1,199	1,860	665
10-Dec-2022	1,235	1,290	1,865	630
11-Dec-2022	1,320	1,418	1,865	545
12-Dec-2022	1,535	1,549	2,112	577
13-Dec-2022	1,490	1,458	2,165	675
14-Dec-2022	1,530	1,444	2,125	595
15-Dec-2022	1,580	1,546	2,188	608
16-Dec-2022	1,580	1,525	2,059	479
17-Dec-2022	1,355	1,363	1,954	599
18-Dec-2022	1,400	1,338	1,755	355
19-Dec-2022	1,540	1,485	2,199	659
20-Dec-2022	1,425	1,394	2,202	777
21-Dec-2022	1,455	1,362	1,887	432
22-Dec-2022	1,530	1,385	2,045	515
23-Dec-2022	1,385	1,365	2,037	652
24-Dec-2022	1,360	1,360	2,150	790
25-Dec-2022	1,165	1,218	2,052	887
26-Dec-2022	1,325	1,285	2,077	752
27-Dec-2022	1,540	1,481	2,057	517
28-Dec-2022	1,450	1,432	2,058	608
29-Dec-2022	1,530	1,739	2,050	520
30-Dec-2022	1,460	1,501	2,017	557
31-Dec-2022	1,510	1,382	2,235	725
Minimum	1,165	1,199	1,755	340
Average	1,418	1,423	2,047	629
Maximum	1,580	1,739	2,235	998

Table 2: Analysis of Total Island Interconnected System Forecast Error[30]

Date	Actual Total Peak (MW)	Forecast Total Peak (MW)	Error (MW)	Absolute Error (MW)	Percent Error	Absolute Percent Error	Actual/ Forecast
1-Jan-2022	1,455	1,404	-51	51	-3.5%	3.5%	-3.6%
2-Jan-2022	1,415	1,396	-19	19	-1.3%	1.3%	-1.4%
3-Jan-2022	1,580	1,492	-88	88	-5.6%	5.6%	-5.9%
4-Jan-2022	1,705	1,726	21	21	1.2%	1.2%	1.2%
5-Jan-2022	1,655	1,682	27	27	1.6%	1.6%	1.6%
6-Jan-2022	1,440	1,368	-72	72	-5.0%	5.0%	-5.3%
7-Jan-2022	**1,610**	**1,504**	**-106**	**106**	**-6.6%**	**6.6%**	**-7.0%**
8-Jan-2022	1,620	1,601	-19	19	-1.2%	1.2%	-1.2%
9-Jan-2022	1,660	1,647	-13	13	-0.8%	0.8%	-0.8%
10-Jan-2022	1,555	1,496	-59	59	-3.8%	3.8%	-3.9%
11-Jan-2022	1,710	1,677	-33	33	-1.9%	1.9%	-2.0%
12-Jan-2022	1,780	1,789	9	9	0.5%	0.5%	0.5%
13-Jan-2022	1,630	1,587	-43	43	-2.6%	2.6%	-2.7%
14-Jan-2022	1,465	1,428	-37	37	-2.5%	2.5%	-2.6%
15-Jan-2022	1,410	1,370	-40	40	-2.8%	2.8%	-2.9%
16-Jan-2022	1,715	1,684	-31	31	-1.8%	1.8%	-1.8%
17-Jan-2022	1,530	1,587	57	57	3.7%	3.7%	3.6%
18-Jan-2022	1,360	1,316	-44	44	-3.2%	3.2%	-3.3%
19-Jan-2022	1,460	1,482	22	22	1.5%	1.5%	1.5%
20-Jan-2022	1,375	1,383	8	8	0.6%	0.6%	0.6%
21-Jan-2022	1,430	1,507	77	77	5.4%	5.4%	5.1%
22-Jan-2022	1,475	1,529	54	54	3.7%	3.7%	3.5%
23-Jan-2022	1,590	1,560	-30	30	-1.9%	1.9%	-1.9%
24-Jan-2022	1,545	1,565	20	20	1.3%	1.3%	1.3%
25-Jan-2022	**1,605**	**1,476**	**-129**	**129**	**-8.0%**	**8.0%**	**-8.7%**
26-Jan-2022	1,505	1,451	-54	54	-3.6%	3.6%	-3.7%
27-Jan-2022	1,660	1,563	-97	97	-5.8%	5.8%	-6.2%
28-Jan-2022	1,730	1,705	-25	25	-1.4%	1.4%	-1.5%
29-Jan-2022	1,440	1,468	28	28	1.9%	1.9%	1.9%
30-Jan-2022	1,420	1,360	-60	60	-4.2%	4.2%	-4.4%
31-Jan-2022	1,465	1,450	-15	15	-1.0%	1.0%	-1.0%
Minimum	1,360	1,316	-129	8	-8.0%	0.5%	-8.7%
Average	1,548	1,524	-24	45	-1.5%	2.9%	-1.7%
Maximum	1,780	1,789	77	129	5.4%	8.0%	5.1%

[30] Lines that have been bolded indicate further examination of the hourly forecast was provided in this report due to high utility error.

Date	Actual Total Peak (MW)	Forecast Total Peak (MW)	Error (MW)	Absolute Error (MW)	Percent Error	Absolute Percent Error	Actual/ Forecast
1-Feb-2022	1,561	1,570	9	9	0.6%	0.6%	0.6%
2-Feb-2022	1,649	1,650	1	1	0.1%	0.1%	0.1%
3-Feb-2022	1,558	1,575	17	17	1.1%	1.1%	1.1%
4-Feb-2022	1,496	1,550	54	54	3.6%	3.6%	3.5%
5-Feb-2022	1,449	1,430	-19	19	-1.3%	1.3%	-1.3%
6-Feb-2022	1,767	1,730	-37	37	-2.1%	2.1%	-2.1%
7-Feb-2022	1,839	1,875	36	36	2.0%	2.0%	1.9%
8-Feb-2022	1,579	1,615	36	36	2.3%	2.3%	2.2%
9-Feb-2022	1,451	1,540	89	89	6.1%	6.1%	5.8%
10-Feb-2022	1,428	1,505	77	77	5.4%	5.4%	5.1%
11-Feb-2022	1,372	1,410	38	38	2.8%	2.8%	2.7%
12-Feb-2022	**1,455**	**1,405**	**-50**	**50**	**-3.4%**	**3.4%**	**-3.6%**
13-Feb-2022	1,392	1,420	28	28	2.0%	2.0%	2.0%
14-Feb-2022	1,658	1,615	-43	43	-2.6%	2.6%	-2.7%
15-Feb-2022	1,715	1,785	70	70	4.1%	4.1%	3.9%
16-Feb-2022	1,847	1,820	-27	27	-1.5%	1.5%	-1.5%
17-Feb-2022	1,696	1,675	-21	21	-1.2%	1.2%	-1.3%
18-Feb-2022	1,363	1,420	57	57	4.2%	4.2%	4.0%
19-Feb-2022	**1,528**	**1,645**	**117**	**117**	**7.7%**	**7.7%**	**7.1%**
20-Feb-2022	1,539	1,590	51	51	3.3%	3.3%	3.2%
21-Feb-2022	1,537	1,570	33	33	2.1%	2.1%	2.1%
22-Feb-2022	**1,493**	**1,675**	**182**	**182**	**12.2%**	**12.2%**	**10.9%**
23-Feb-2022	1,544	1,540	-4	4	-0.3%	0.3%	-0.3%
24-Feb-2022	1,564	1,615	51	51	3.3%	3.3%	3.2%
25-Feb-2022	1,630	1,665	35	35	2.1%	2.1%	2.1%
26-Feb-2022	1,460	1,409	-51	51	-3.5%	3.5%	-3.6%
27-Feb-2022	1,421	1,480	59	59	4.2%	4.2%	4.0%
28-Feb-2022	1,388	1,425	37	37	2.7%	2.7%	2.6%
Minimum	1,363	1,405	-51	1	-3.5%	0.1%	-3.6%
Average	1,549	1,579	29	47	2.0%	3.1%	1.8%
Maximum	1,847	1,875	182	182	12.2%	12.2%	10.9%

Date	Actual Total Peak (MW)	Forecast Total Peak (MW)	Error (MW)	Absolute Error (MW)	Percent Error	Absolute Percent Error	Actual/ Forecast
1-Mar-2022	1,672	1,585	-87	87	-5.2%	5.2%	-5.5%
2-Mar-2022	1,515	1,545	30	30	2.0%	2.0%	1.9%
3-Mar-2022	1,341	1,340	-1	1	-0.1%	0.1%	-0.1%
4-Mar-2022	1,398	1,460	62	62	4.4%	4.4%	4.2%
5-Mar-2022	1,420	1,440	20	20	1.4%	1.4%	1.4%
6-Mar-2022	1,345	1,420	75	75	5.6%	5.6%	5.3%
7-Mar-2022	1,379	1,395	16	16	1.2%	1.2%	1.1%
8-Mar-2022	1,329	1,345	16	16	1.2%	1.2%	1.2%
9-Mar-2022	1,428	1,435	7	7	0.5%	0.5%	0.5%
10-Mar-2022	1,387	1,415	28	28	2.0%	2.0%	2.0%
11-Mar-2022	1,304	1,330	26	26	2.0%	2.0%	2.0%
12-Mar-2022	1,316	1,360	44	44	3.3%	3.3%	3.2%
13-Mar-2022	1,355	1,410	55	55	4.1%	4.1%	3.9%
14-Mar-2022	1,496	1,415	-81	81	-5.4%	5.4%	-5.7%
15-Mar-2022	1,401	1,390	-11	11	-0.8%	0.8%	-0.8%
16-Mar-2022	1,453	1,475	22	22	1.5%	1.5%	1.5%
17-Mar-2022	1,405	1,420	15	15	1.1%	1.1%	1.1%
18-Mar-2022	1,224	1,235	11	11	0.9%	0.9%	0.9%
19-Mar-2022	1,221	1,245	24	24	2.0%	2.0%	1.9%
20-Mar-2022	1,339	1,305	-34	34	-2.5%	2.5%	-2.6%
21-Mar-2022	1,326	1,370	44	44	3.3%	3.3%	3.2%
22-Mar-2022	1,286	1,345	59	59	4.6%	4.6%	4.4%
23-Mar-2022	1,291	1,315	24	24	1.9%	1.9%	1.8%
24-Mar-2022	1,448	1,355	-93	93	-6.4%	6.4%	-6.9%
25-Mar-2022	1,488	1,515	27	27	1.8%	1.8%	1.8%
26-Mar-2022	1,508	1,515	7	7	0.5%	0.5%	0.5%
27-Mar-2022	1,313	1,315	2	2	0.2%	0.2%	0.2%
28-Mar-2022	1,346	1,380	34	34	2.5%	2.5%	2.5%
29-Mar-2022	1,355	1,375	20	20	1.5%	1.5%	1.5%
30-Mar-2022	1,434	1,490	56	56	3.9%	3.9%	3.8%
31-Mar-2022	1,378	1,425	47	47	3.4%	3.4%	3.3%
Minimum	1,221	1,235	-93	1	-6.4%	0.1%	-6.9%
Average	1,384	1,399	15	35	1.2%	2.5%	1.1%
Maximum	1,672	1,585	75	93	5.6%	6.4%	5.3%

Date	Actual Total Peak (MW)	Forecast Total Peak (MW)	Error (MW)	Absolute Error (MW)	Percent Error	Absolute Percent Error	Actual/ Forecast
1-Apr-2022	1,333	1,375	42	42	3.2%	3.2%	3.1%
2-Apr-2022	**1,253**	**1,270**	**17**	**17**	**1.4%**	**1.4%**	**1.3%**
3-Apr-2022	1,342	1,380	38	38	2.8%	2.8%	2.8%
4-Apr-2022	1,357	1,375	18	18	1.3%	1.3%	1.3%
5-Apr-2022	1,292	1,315	23	23	1.8%	1.8%	1.7%
6-Apr-2022	1,413	1,410	-3	3	-0.2%	0.2%	-0.2%
7-Apr-2022	1,374	1,365	-9	9	-0.7%	0.7%	-0.7%
8-Apr-2022	1,351	1,355	4	4	0.3%	0.3%	0.3%
9-Apr-2022	1,344	1,320	-24	24	-1.8%	1.8%	-1.8%
10-Apr-2022	1,225	1,195	-30	30	-2.4%	2.4%	-2.5%
11-Apr-2022	1,328	1,350	22	22	1.7%	1.7%	1.6%
12-Apr-2022	1,373	1,445	72	72	5.2%	5.2%	5.0%
13-Apr-2022	1,326	1,390	64	64	4.8%	4.8%	4.6%
14-Apr-2022	1,345	1,355	10	10	0.7%	0.7%	0.7%
15-Apr-2022	1,216	1,250	34	34	2.8%	2.8%	2.7%
16-Apr-2022	1,222	1,215	-7	7	-0.6%	0.6%	-0.6%
17-Apr-2022	**1,176**	**1,120**	**-56**	**56**	**-4.8%**	**4.8%**	**-5.0%**
18-Apr-2022	1,200	1,160	-40	40	-3.3%	3.3%	-3.4%
19-Apr-2022	1,259	1,300	41	41	3.3%	3.3%	3.2%
20-Apr-2022	1,364	1,320	-44	44	-3.2%	3.2%	-3.3%
21-Apr-2022	1,217	1,200	-17	17	-1.4%	1.4%	-1.4%
22-Apr-2022	1,235	1,250	15	15	1.2%	1.2%	1.2%
23-Apr-2022	**1,105**	**1,085**	**-20**	**20**	**-1.8%**	**1.8%**	**-1.8%**
24-Apr-2022	1,216	1,230	14	14	1.2%	1.2%	1.1%
25-Apr-2022	1,184	1,170	-14	14	-1.2%	1.2%	-1.2%
26-Apr-2022	1,246	1,265	19	19	1.5%	1.5%	1.5%
27-Apr-2022	1,204	1,230	26	26	2.2%	2.2%	2.1%
28-Apr-2022	1,203	1,220	17	17	1.4%	1.4%	1.4%
29-Apr-2022	1,220	1,225	5	5	0.4%	0.4%	0.4%
30-Apr-2022	1,146	1,150	4	4	0.3%	0.3%	0.3%
Minimum	1,105	1,085	-56	3	-4.8%	0.2%	-5.0%
Average	1,269	1,276	7	25	0.5%	2.0%	0.5%
Maximum	1,413	1,445	72	72	5.2%	5.2%	5.0%

Date	Actual Total Peak (MW)	Forecast Total Peak (MW)	Error (MW)	Absolute Error (MW)	Percent Error	Absolute Percent Error	Actual/ Forecast
1-May-2022	1,112	1,140	28	28	2.5%	2.5%	2.5%
2-May-2022	1,177	1,200	23	23	2.0%	2.0%	1.9%
3-May-2022	1,163	1,205	42	42	3.6%	3.6%	3.5%
4-May-2022	1,178	1,200	22	22	1.9%	1.9%	1.8%
5-May-2022	1,178	1,155	-23	23	-2.0%	2.0%	-2.0%
6-May-2022	1,172	1,185	13	13	1.1%	1.1%	1.1%
7-May-2022	1,188	1,175	-13	13	-1.1%	1.1%	-1.1%
8-May-2022	1,120	1,135	15	15	1.3%	1.3%	1.3%
9-May-2022	1,151	1,170	19	19	1.7%	1.7%	1.6%
10-May-2022	1,131	1,140	9	9	0.8%	0.8%	0.8%
11-May-2022	1,049	1,070	21	21	2.0%	2.0%	2.0%
12-May-2022	946	1,015	69	69	7.3%	7.3%	6.8%
13-May-2022	1,035	1,075	40	40	3.9%	3.9%	3.7%
14-May-2022	1,146	1,115	-31	31	-2.7%	2.7%	-2.8%
15-May-2022	1,157	1,130	-27	27	-2.3%	2.3%	-2.4%
16-May-2022	1,176	1,165	-11	11	-0.9%	0.9%	-0.9%
17-May-2022	1,103	1,120	17	17	1.5%	1.5%	1.5%
18-May-2022	1,093	1,090	-3	3	-0.3%	0.3%	-0.3%
19-May-2022	1,061	1,035	-26	26	-2.5%	2.5%	-2.5%
20-May-2022	999	1,040	41	41	4.1%	4.1%	3.9%
21-May-2022	881	910	29	29	3.3%	3.3%	3.2%
22-May-2022	917	905	-12	12	-1.3%	1.3%	-1.3%
23-May-2022	**905**	**895**	**-10**	**10**	**-1.1%**	**1.1%**	**-1.1%**
24-May-2022	1,032	1,035	3	3	0.3%	0.3%	0.3%
25-May-2022	1,080	1,085	5	5	0.5%	0.5%	0.5%
26-May-2022	1,017	1,065	48	48	4.7%	4.7%	4.5%
27-May-2022	1,053	1,090	37	37	3.5%	3.5%	3.4%
28-May-2022	**1,158**	**1,085**	**-73**	**73**	**-6.3%**	**6.3%**	**-6.7%**
29-May-2022	1,083	1,060	-23	23	-2.1%	2.1%	-2.2%
30-May-2022	945	980	35	35	3.7%	3.7%	3.6%
31-May-2022	1,105	1,055	-50	50	-4.5%	4.5%	-4.7%
Minimum	881	895	-73	3	-6.3%	0.3%	-6.7%
Average	1,081	1,088	7	26	0.7%	2.5%	0.6%
Maximum	1,188	1,205	69	73	7.3%	7.3%	6.8%

Date	Actual Total Peak (MW)	Forecast Total Peak (MW)	Error (MW)	Absolute Error (MW)	Percent Error	Absolute Percent Error	Actual/ Forecast
1-Jun-2022	**1,221**	**1,220**	**-1**	**1**	**-0.1%**	**0.1%**	**-0.1%**
2-Jun-2022	1,309	1,320	11	11	0.8%	0.8%	0.8%
3-Jun-2022	1,261	1,300	39	39	3.1%	3.1%	3.0%
4-Jun-2022	1,024	1,040	16	16	1.6%	1.6%	1.5%
5-Jun-2022	1,014	1,015	1	1	0.1%	0.1%	0.1%
6-Jun-2022	**1,015**	**1,065**	**50**	**50**	**4.9%**	**4.9%**	**4.7%**
7-Jun-2022	1,090	1,070	-20	20	-1.8%	1.8%	-1.9%
8-Jun-2022	1,065	1,065	0	0	0.0%	0.0%	0.0%
9-Jun-2022	880	910	30	30	3.4%	3.4%	3.3%
10-Jun-2022	916	875	-41	41	-4.5%	4.5%	-4.7%
11-Jun-2022	800	790	-10	10	-1.3%	1.3%	-1.3%
12-Jun-2022	774	770	-4	4	-0.5%	0.5%	-0.5%
13-Jun-2022	827	825	-2	2	-0.2%	0.2%	-0.2%
14-Jun-2022	814	855	41	41	5.0%	5.0%	4.8%
15-Jun-2022	857	855	-2	2	-0.2%	0.2%	-0.2%
16-Jun-2022	867	915	48	48	5.5%	5.5%	5.2%
17-Jun-2022	742	845	103	103	13.9%	13.9%	12.2%
18-Jun-2022	771	765	-6	6	-0.8%	0.8%	-0.8%
19-Jun-2022	735	735	0	0	0.0%	0.0%	0.0%
20-Jun-2022	776	800	24	24	3.1%	3.1%	3.0%
21-Jun-2022	768	765	-3	3	-0.4%	0.4%	-0.4%
22-Jun-2022	742	745	3	3	0.4%	0.4%	0.4%
23-Jun-2022	737	760	23	23	3.1%	3.1%	3.0%
24-Jun-2022	826	755	-71	71	-8.6%	8.6%	-9.4%
25-Jun-2022	866	885	19	19	2.2%	2.2%	2.1%
26-Jun-2022	851	870	19	19	2.2%	2.2%	2.2%
27-Jun-2022	898	900	2	2	0.2%	0.2%	0.2%
28-Jun-2022	884	925	41	41	4.6%	4.6%	4.4%
29-Jun-2022	890	895	5	5	0.6%	0.6%	0.6%
30-Jun-2022	867	915	48	48	5.5%	5.5%	5.2%
Minimum	735	735	-71	0	-8.6%	0.0%	-9.4%
Average	903	915	12	23	1.4%	2.6%	1.2%
Maximum	1,309	1,320	103	103	13.9%	13.9%	12.2%

Date	Actual Total Peak (MW)	Forecast Total Peak (MW)	Error (MW)	Absolute Error (MW)	Percent Error	Absolute Percent Error	Actual/ Forecast
1-Jul-2022	847	895	48	48	5.7%	5.7%	5.4%
2-Jul-2022	834	855	21	21	2.5%	2.5%	2.5%
3-Jul-2022	858	865	7	7	0.8%	0.8%	0.8%
4-Jul-2022	845	885	40	40	4.7%	4.7%	4.5%
5-Jul-2022	806	865	59	59	7.3%	7.3%	6.8%
6-Jul-2022	803	875	72	72	9.0%	9.0%	8.2%
7-Jul-2022	836	880	44	44	5.3%	5.3%	5.0%
8-Jul-2022	804	860	56	56	7.0%	7.0%	6.5%
9-Jul-2022	841	860	19	19	2.3%	2.3%	2.2%
10-Jul-2022	838	870	32	32	3.8%	3.8%	3.7%
11-Jul-2022	863	850	-13	13	-1.5%	1.5%	-1.5%
12-Jul-2022	858	850	-8	8	-0.9%	0.9%	-0.9%
13-Jul-2022	847	845	-2	2	-0.2%	0.2%	-0.2%
14-Jul-2022	831	840	9	9	1.1%	1.1%	1.1%
15-Jul-2022	853	840	-13	13	-1.5%	1.5%	-1.5%
16-Jul-2022	824	800	-24	24	-2.9%	2.9%	-3.0%
17-Jul-2022	820	855	35	35	4.3%	4.3%	4.1%
18-Jul-2022	879	875	-4	4	-0.5%	0.5%	-0.5%
19-Jul-2022	867	885	18	18	2.1%	2.1%	2.0%
20-Jul-2022	844	870	26	26	3.1%	3.1%	3.0%
21-Jul-2022	874	890	16	16	1.8%	1.8%	1.8%
22-Jul-2022	844	870	26	26	3.1%	3.1%	3.0%
23-Jul-2022	**844**	**830**	**-14**	**14**	**-1.7%**	**1.7%**	**-1.7%**
24-Jul-2022	830	855	25	25	3.0%	3.0%	2.9%
25-Jul-2022	901	905	4	4	0.4%	0.4%	0.4%
26-Jul-2022	973	975	2	2	0.2%	0.2%	0.2%
27-Jul-2022	950	955	5	5	0.5%	0.5%	0.5%
28-Jul-2022	922	945	23	23	2.5%	2.5%	2.4%
29-Jul-2022	917	955	38	38	4.1%	4.1%	4.0%
30-Jul-2022	903	915	12	12	1.3%	1.3%	1.3%
31-Jul-2022	902	910	8	8	0.9%	0.9%	0.9%
Minimum	803	800	-24	2	-2.9%	0.2%	-3.0%
Average	860	878	18	23	2.2%	2.8%	2.1%
Maximum	973	975	72	72	9.0%	9.0%	8.2%

Date	Actual Total Peak (MW)	Forecast Total Peak (MW)	Error (MW)	Absolute Error (MW)	Percent Error	Absolute Percent Error	Actual/ Forecast
1-Aug-2022	948	915	-33	33	-3.5%	3.5%	-3.6%
2-Aug-2022	928	970	42	42	4.5%	4.5%	4.3%
3-Aug-2022	945	955	10	10	1.1%	1.1%	1.0%
4-Aug-2022	865	895	30	30	3.5%	3.5%	3.4%
5-Aug-2022	904	920	16	16	1.8%	1.8%	1.7%
6-Aug-2022	**830**	**825**	**-5**	**5**	**-0.6%**	**0.6%**	**-0.6%**
7-Aug-2022	861	880	19	19	2.2%	2.2%	2.2%
8-Aug-2022	798	760	-38	38	-4.8%	4.8%	-5.0%
9-Aug-2022	771	830	59	59	7.7%	7.7%	7.1%
10-Aug-2022	883	910	27	27	3.1%	3.1%	3.0%
11-Aug-2022	871	910	39	39	4.5%	4.5%	4.3%
12-Aug-2022	854	880	26	26	3.0%	3.0%	3.0%
13-Aug-2022	842	860	18	18	2.1%	2.1%	2.1%
14-Aug-2022	883	925	42	42	4.8%	4.8%	4.5%
15-Aug-2022	941	945	4	4	0.4%	0.4%	0.4%
16-Aug-2022	779	800	21	21	2.7%	2.7%	2.6%
17-Aug-2022	739	795	56	56	7.6%	7.6%	7.0%
18-Aug-2022	771	800	29	29	3.8%	3.8%	3.6%
19-Aug-2022	779	795	16	16	2.1%	2.1%	2.0%
20-Aug-2022	**724**	**745**	**21**	**21**	**2.9%**	**2.9%**	**2.8%**
21-Aug-2022	746	755	9	9	1.2%	1.2%	1.2%
22-Aug-2022	756	815	59	59	7.8%	7.8%	7.2%
23-Aug-2022	750	775	25	25	3.3%	3.3%	3.2%
24-Aug-2022	774	775	1	1	0.1%	0.1%	0.1%
25-Aug-2022	807	785	-22	22	-2.7%	2.7%	-2.8%
26-Aug-2022	765	890	125	125	16.3%	16.3%	14.0%
27-Aug-2022	791	815	24	24	3.0%	3.0%	2.9%
28-Aug-2022	787	810	23	23	2.9%	2.9%	2.8%
29-Aug-2022	799	820	21	21	2.6%	2.6%	2.6%
30-Aug-2022	808	750	-58	58	-7.2%	7.2%	-7.7%
31-Aug-2022	726	755	29	29	4.0%	4.0%	3.8%
Minimum	724	745	-58	1	-7.2%	0.1%	-7.7%
Average	820	841	20	31	2.6%	3.8%	2.4%
Maximum	948	970	125	125	16.3%	16.3%	14.0%

Date	Actual Total Peak (MW)	Forecast Total Peak (MW)	Error (MW)	Absolute Error (MW)	Percent Error	Absolute Percent Error	Actual/ Forecast
1-Sep-2022	1,056	1,075	19	19	1.8%	1.8%	1.8%
2-Sep-2022	1,027	1,050	23	23	2.2%	2.2%	2.2%
3-Sep-2022	709	750	41	41	5.8%	5.8%	5.5%
4-Sep-2022	708	750	42	42	5.9%	5.9%	5.6%
5-Sep-2022	**774**	**770**	**-4**	**4**	**-0.5%**	**0.5%**	**-0.5%**
6-Sep-2022	775	840	65	65	8.4%	8.4%	7.7%
7-Sep-2022	750	815	65	65	8.7%	8.7%	8.0%
8-Sep-2022	770	820	50	50	6.5%	6.5%	6.1%
9-Sep-2022	793	790	-3	3	-0.4%	0.4%	-0.4%
10-Sep-2022	790	785	-5	5	-0.6%	0.6%	-0.6%
11-Sep-2022	**785**	**765**	**-20**	**20**	**-2.5%**	**2.5%**	**-2.6%**
12-Sep-2022	933	805	-128	128	-13.7%	13.7%	-15.9%
13-Sep-2022	921	990	69	69	7.5%	7.5%	7.0%
14-Sep-2022	859	920	61	61	7.1%	7.1%	6.6%
15-Sep-2022	893	930	37	37	4.1%	4.1%	4.0%
16-Sep-2022	904	945	41	41	4.5%	4.5%	4.3%
17-Sep-2022	921	975	54	54	5.9%	5.9%	5.5%
18-Sep-2022	934	980	46	46	4.9%	4.9%	4.7%
19-Sep-2022	869	985	116	116	13.3%	13.3%	11.8%
20-Sep-2022	739	740	1	1	0.1%	0.1%	0.1%
21-Sep-2022	765	900	135	135	17.6%	17.6%	15.0%
22-Sep-2022	844	955	111	111	13.2%	13.2%	11.6%
23-Sep-2022	785	755	-30	30	-3.8%	3.8%	-4.0%
24-Sep-2022	616	690	74	74	12.0%	12.0%	10.7%
25-Sep-2022	702	745	43	43	6.1%	6.1%	5.8%
26-Sep-2022	706	740	34	34	4.8%	4.8%	4.6%
27-Sep-2022	848	740	-108	108	-12.7%	12.7%	-14.6%
28-Sep-2022	881	835	-46	46	-5.2%	5.2%	-5.5%
29-Sep-2022	**919**	**910**	**-9**	**9**	**-1.0%**	**1.0%**	**-1.0%**
30-Sep-2022	926	925	-1	1	-0.1%	0.1%	-0.1%
Minimum	616	690	-128	1	-13.7%	0.1%	-15.9%
Average	830	856	26	49	3.3%	6.0%	2.8%
Maximum	1,056	1,075	135	135	17.6%	17.6%	15.0%

Date	Actual Total Peak (MW)	Forecast Total Peak (MW)	Error (MW)	Absolute Error (MW)	Percent Error	Absolute Percent Error	Actual/ Forecast
1-Oct-2022	892	920	28	28	3.1%	3.1%	3.0%
2-Oct-2022	**997**	**980**	**-17**	**17**	**-1.7%**	**1.7%**	**-1.7%**
3-Oct-2022	1,111	1,100	-11	11	-1.0%	1.0%	-1.0%
4-Oct-2022	1,117	1,085	-32	32	-2.9%	2.9%	-2.9%
5-Oct-2022	1,009	1,050	41	41	4.1%	4.1%	3.9%
6-Oct-2022	992	1,020	28	28	2.8%	2.8%	2.7%
7-Oct-2022	932	960	28	28	3.0%	3.0%	2.9%
8-Oct-2022	949	960	11	11	1.2%	1.2%	1.1%
9-Oct-2022	941	975	34	34	3.6%	3.6%	3.5%
10-Oct-2022	1,013	1,015	2	2	0.2%	0.2%	0.2%
11-Oct-2022	1,068	1,120	52	52	4.9%	4.9%	4.6%
12-Oct-2022	977	1,035	58	58	5.9%	5.9%	5.6%
13-Oct-2022	1,050	1,095	45	45	4.3%	4.3%	4.1%
14-Oct-2022	910	955	45	45	4.9%	4.9%	4.7%
15-Oct-2022	1,071	1,110	39	39	3.6%	3.6%	3.5%
16-Oct-2022	988	1,025	37	37	3.7%	3.7%	3.6%
17-Oct-2022	1,015	1,065	50	50	4.9%	4.9%	4.7%
18-Oct-2022	**956**	**1,035**	**79**	**79**	**8.3%**	**8.3%**	**7.6%**
19-Oct-2022	978	1,005	27	27	2.8%	2.8%	2.7%
20-Oct-2022	849	855	6	6	0.7%	0.7%	0.7%
21-Oct-2022	882	890	8	8	0.9%	0.9%	0.9%
22-Oct-2022	943	990	47	47	5.0%	5.0%	4.7%
23-Oct-2022	960	990	30	30	3.1%	3.1%	3.0%
24-Oct-2022	1,048	1,045	-3	3	-0.3%	0.3%	-0.3%
25-Oct-2022	1,037	1,065	28	28	2.7%	2.7%	2.6%
26-Oct-2022	976	1,010	34	34	3.5%	3.5%	3.4%
27-Oct-2022	923	980	57	57	6.2%	6.2%	5.8%
28-Oct-2022	1,014	1,030	16	16	1.6%	1.6%	1.6%
29-Oct-2022	**1,074**	**1,060**	**-14**	**14**	**-1.3%**	**1.3%**	**-1.3%**
30-Oct-2022	1,040	1,085	45	45	4.3%	4.3%	4.1%
31-Oct-2022	1,122	1,130	8	8	0.7%	0.7%	0.7%
Minimum	849	855	-32	2	-2.9%	0.2%	-2.9%
Average	995	1,021	26	31	2.7%	3.1%	2.5%
Maximum	1,122	1,130	79	79	8.3%	8.3%	7.6%

Date	Actual Total Peak (MW)	Forecast Total Peak (MW)	Error (MW)	Absolute Error (MW)	Percent Error	Absolute Percent Error	Actual/ Forecast
1-Nov-2022	1,129	1,175	46	46	4.1%	4.1%	3.9%
2-Nov-2022	1,115	1,150	35	35	3.1%	3.1%	3.0%
3-Nov-2022	1,222	1,210	-12	12	-1.0%	1.0%	-1.0%
4-Nov-2022	1,175	1,190	15	15	1.3%	1.3%	1.3%
5-Nov-2022	1,030	1,055	25	25	2.4%	2.4%	2.4%
6-Nov-2022	1,134	1,115	-19	19	-1.7%	1.7%	-1.7%
7-Nov-2022	1,051	1,085	34	34	3.2%	3.2%	3.1%
8-Nov-2022	1,182	1,200	18	18	1.5%	1.5%	1.5%
9-Nov-2022	1,360	1,450	90	90	6.6%	6.6%	6.2%
10-Nov-2022	1,395	1,440	45	45	3.2%	3.2%	3.1%
11-Nov-2022	1,302	1,290	-12	12	-0.9%	0.9%	-0.9%
12-Nov-2022	**1,176**	**1,110**	**-66**	**66**	**-5.6%**	**5.6%**	**-5.9%**
13-Nov-2022	1,129	1,150	21	21	1.9%	1.9%	1.8%
14-Nov-2022	1,172	1,185	13	13	1.1%	1.1%	1.1%
15-Nov-2022	1,344	1,420	76	76	5.7%	5.7%	5.4%
16-Nov-2022	**1,546**	**1,505**	**-41**	**41**	**-2.7%**	**2.7%**	**-2.7%**
17-Nov-2022	1,413	1,465	52	52	3.7%	3.7%	3.5%
18-Nov-2022	1,158	1,135	-23	23	-2.0%	2.0%	-2.0%
19-Nov-2022	**1,176**	**1,125**	**-51**	**51**	**-4.3%**	**4.3%**	**-4.5%**
20-Nov-2022	1,322	1,275	-47	47	-3.6%	3.6%	-3.7%
21-Nov-2022	1,555	1,515	-40	40	-2.6%	2.6%	-2.6%
22-Nov-2022	1,535	1,530	-5	5	-0.3%	0.3%	-0.3%
23-Nov-2022	1,531	1,550	19	19	1.2%	1.2%	1.2%
24-Nov-2022	1,745	1,770	25	25	1.4%	1.4%	1.4%
25-Nov-2022	1,599	1,575	-24	24	-1.5%	1.5%	-1.5%
26-Nov-2022	1,475	1,450	-25	25	-1.7%	1.7%	-1.7%
27-Nov-2022	1,447	1,480	33	33	2.3%	2.3%	2.2%
28-Nov-2022	1,456	1,405	-51	51	-3.5%	3.5%	-3.6%
29-Nov-2022	1,537	1,630	93	93	6.1%	6.1%	5.7%
30-Nov-2022	1,647	1,665	18	18	1.1%	1.1%	1.1%
Minimum	1,030	1,055	-66	5	-5.6%	0.3%	-5.9%
Average	1,335	1,343	8	36	0.6%	2.7%	0.5%
Maximum	1,745	1,770	93	93	6.6%	6.6%	6.2%

Date	Actual Total Peak (MW)	Forecast Total Peak (MW)	Error (MW)	Absolute Error (MW)	Percent Error	Absolute Percent Error	Actual/ Forecast
1-Dec-2022	1,488	1,505	17	17	1.1%	1.1%	1.1%
2-Dec-2022	1,472	1,460	-12	12	-0.8%	0.8%	-0.8%
3-Dec-2022	1,480	1,430	-50	50	-3.4%	3.4%	-3.5%
4-Dec-2022	1,472	1,480	8	8	0.5%	0.5%	0.5%
5-Dec-2022	1,545	1,535	-10	10	-0.6%	0.6%	-0.7%
6-Dec-2022	**1,456**	**1,210**	**-246**	**246**	**-16.9%**	**16.9%**	**-20.3%**
7-Dec-2022	1,459	1,220	-239	239	-16.4%	16.4%	-19.6%
8-Dec-2022	1,225	1,235	10	10	0.8%	0.8%	0.8%
9-Dec-2022	1,199	1,195	-4	4	-0.3%	0.3%	-0.3%
10-Dec-2022	1,290	1,235	-55	55	-4.3%	4.3%	-4.5%
11-Dec-2022	**1,418**	**1,320**	**-98**	**98**	**-6.9%**	**6.9%**	**-7.4%**
12-Dec-2022	1,549	1,535	-14	14	-0.9%	0.9%	-0.9%
13-Dec-2022	1,458	1,490	32	32	2.2%	2.2%	2.1%
14-Dec-2022	1,444	1,530	86	86	6.0%	6.0%	5.6%
15-Dec-2022	1,546	1,580	34	34	2.2%	2.2%	2.2%
16-Dec-2022	1,525	1,580	55	55	3.6%	3.6%	3.5%
17-Dec-2022	1,363	1,355	-8	8	-0.6%	0.6%	-0.6%
18-Dec-2022	1,338	1,400	62	62	4.6%	4.6%	4.4%
19-Dec-2022	1,485	1,540	55	55	3.7%	3.7%	3.6%
20-Dec-2022	1,394	1,425	31	31	2.2%	2.2%	2.2%
21-Dec-2022	1,362	1,455	93	93	6.8%	6.8%	6.4%
22-Dec-2022	1,385	1,530	145	145	10.5%	10.5%	9.5%
23-Dec-2022	1,365	1,385	20	20	1.5%	1.5%	1.4%
24-Dec-2022	1,360	1,360	0	0	0.0%	0.0%	0.0%
25-Dec-2022	**1,218**	**1,165**	**-53**	**53**	**-4.4%**	**4.4%**	**-4.5%**
26-Dec-2022	1,285	1,325	40	40	3.1%	3.1%	3.0%
27-Dec-2022	1,481	1,540	59	59	4.0%	4.0%	3.8%
28-Dec-2022	1,432	1,450	18	18	1.3%	1.3%	1.2%
29-Dec-2022	1,739	1,530	-209	209	-12.0%	12.0%	-13.7%
30-Dec-2022	1,501	1,460	-41	41	-2.7%	2.7%	-2.8%
31-Dec-2022	1,382	1,510	128	128	9.3%	9.3%	8.5%
Minimum	1,199	1,165	-246	0	-16.9%	0.0%	-20.3%
Average	1,423	1,418	-5	62	-0.2%	4.3%	-0.6%
Maximum	1,739	1,580	145	246	10.5%	16.9%	9.5%

Table 3: Analysis of Utility Forecast Error[31]

Date	Actual Utility Peak (MW)	Forecast Utility Peak (MW)	Error (MW)	Absolute Error (MW)	Percent Error	Absolute Percent Error	Actual/ Forecast
1-Jan-2022	1,159	1,164	6	6	0.5%	0.5%	0.5%
2-Jan-2022	1,148	1,126	-22	22	-1.9%	1.9%	-2.0%
3-Jan-2022	1,261	1,287	26	26	2.1%	2.1%	2.0%
4-Jan-2022	1,431	1,379	-53	53	-3.7%	3.7%	-3.8%
5-Jan-2022	1,366	1,323	-44	44	-3.2%	3.2%	-3.3%
6-Jan-2022	1,072	1,110	38	38	3.5%	3.5%	3.4%
7-Jan-2022	**1,195**	**1,259**	**64**	**64**	**5.3%**	**5.3%**	**5.1%**
8-Jan-2022	1,260	1,248	-12	12	-0.9%	0.9%	-0.9%
9-Jan-2022	1,297	1,289	-8	8	-0.6%	0.6%	-0.6%
10-Jan-2022	1,159	1,181	23	23	1.9%	1.9%	1.9%
11-Jan-2022	1,355	1,337	-18	18	-1.3%	1.3%	-1.4%
12-Jan-2022	1,411	1,406	-4	4	-0.3%	0.3%	-0.3%
13-Jan-2022	1,245	1,257	11	11	0.9%	0.9%	0.9%
14-Jan-2022	1,068	1,095	26	26	2.5%	2.5%	2.4%
15-Jan-2022	1,028	1,036	8	8	0.8%	0.8%	0.7%
16-Jan-2022	1,335	1,330	-5	5	-0.4%	0.4%	-0.4%
17-Jan-2022	1,332	1,316	-16	16	-1.2%	1.2%	-1.2%
18-Jan-2022	1,190	1,196	7	7	0.5%	0.5%	0.5%
19-Jan-2022	1,282	1,295	13	13	1.0%	1.0%	1.0%
20-Jan-2022	1,244	1,210	-34	34	-2.7%	2.7%	-2.8%
21-Jan-2022	1,270	1,267	-3	3	-0.3%	0.3%	-0.3%
22-Jan-2022	1,294	1,310	16	16	1.3%	1.3%	1.3%
23-Jan-2022	1,254	1,261	7	7	0.6%	0.6%	0.6%
24-Jan-2022	1,234	1,248	14	14	1.1%	1.1%	1.1%
25-Jan-2022	**1,170**	**1,232**	**62**	**62**	**5.3%**	**5.3%**	**5.1%**
26-Jan-2022	1,149	1,187	38	38	3.3%	3.3%	3.2%
27-Jan-2022	1,303	1,288	-15	15	-1.2%	1.2%	-1.2%
28-Jan-2022	1,455	1,433	-23	23	-1.6%	1.6%	-1.6%
29-Jan-2022	1,197	1,152	-46	46	-3.8%	3.8%	-4.0%
30-Jan-2022	1,081	1,131	50	50	4.6%	4.6%	4.4%
31-Jan-2022	1,161	1,176	15	15	1.3%	1.3%	1.2%
Minimum	1,028	1,036	-53	3	-3.8%	0.3%	-4.0%
Average	1,239	1,243	4	23	0.4%	1.9%	0.4%
Maximum	1,455	1,433	64	64	5.3%	5.3%	5.1%

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

Date	Actual Utility Peak (MW)	Forecast Utility Peak (MW)	Error (MW)	Absolute Error (MW)	Percent Error	Absolute Percent Error	Actual/ Forecast
1-Feb-2022	1,275	1,278	3	3	0.2%	0.2%	0.2%
2-Feb-2022	1,372	1,352	-20	20	-1.5%	1.5%	-1.5%
3-Feb-2022	1,198	1,204	5	5	0.5%	0.5%	0.5%
4-Feb-2022	1,218	1,225	7	7	0.6%	0.6%	0.6%
5-Feb-2022	1,100	1,067	-33	33	-3.0%	3.0%	-3.1%
6-Feb-2022	1,419	1,358	-61	61	-4.3%	4.3%	-4.5%
7-Feb-2022	1,495	1,503	8	8	0.6%	0.6%	0.6%
8-Feb-2022	1,245	1,241	-3	3	-0.3%	0.3%	-0.3%
9-Feb-2022	1,111	1,170	59	59	5.3%	5.3%	5.0%
10-Feb-2022	1,113	1,132	20	20	1.8%	1.8%	1.8%
11-Feb-2022	1,060	1,070	10	10	0.9%	0.9%	0.9%
12-Feb-2022	**1,090**	**1,031**	**-59**	**59**	**-5.4%**	**5.4%**	**-5.7%**
13-Feb-2022	1,042	1,046	4	4	0.3%	0.3%	0.3%
14-Feb-2022	1,371	1,318	-53	53	-3.9%	3.9%	-4.0%
15-Feb-2022	1,388	1,414	26	26	1.9%	1.9%	1.8%
16-Feb-2022	1,476	1,448	-28	28	-1.9%	1.9%	-2.0%
17-Feb-2022	1,334	1,304	-30	30	-2.3%	2.3%	-2.3%
18-Feb-2022	1,012	1,050	37	37	3.7%	3.7%	3.6%
19-Feb-2022	**1,158**	**1,285**	**126**	**126**	**10.9%**	**10.9%**	**9.8%**
20-Feb-2022	1,213	1,254	41	41	3.4%	3.4%	3.3%
21-Feb-2022	1,274	1,283	9	9	0.7%	0.7%	0.7%
22-Feb-2022	**1,237**	**1,304**	**67**	**67**	**5.4%**	**5.4%**	**5.1%**
23-Feb-2022	1,271	1,239	-32	32	-2.5%	2.5%	-2.6%
24-Feb-2022	1,303	1,312	8	8	0.6%	0.6%	0.6%
25-Feb-2022	1,352	1,370	18	18	1.3%	1.3%	1.3%
26-Feb-2022	1,317	1,355	38	38	2.9%	2.9%	2.8%
27-Feb-2022	1,269	1,323	54	54	4.2%	4.2%	4.1%
28-Feb-2022	1,262	1,267	5	5	0.4%	0.4%	0.4%
Minimum	1,012	1,031	-61	3	-5.4%	0.2%	-5.7%
Average	1,249	1,257	8	31	0.7%	2.5%	0.6%
Maximum	1,495	1,503	126	126	10.9%	10.9%	9.8%

Date	Actual Utility Peak (MW)	Forecast Utility Peak (MW)	Error (MW)	Absolute Error (MW)	Percent Error	Absolute Percent Error	Actual/ Forecast
1-Mar-2022	1,435	1,425	-9	9	-0.7%	0.7%	-0.7%
2-Mar-2022	1,386	1,369	-17	17	-1.2%	1.2%	-1.2%
3-Mar-2022	1,168	1,178	9	9	0.8%	0.8%	0.8%
4-Mar-2022	1,318	1,295	-24	24	-1.8%	1.8%	-1.8%
5-Mar-2022	1,287	1,286	-1	1	-0.1%	0.1%	-0.1%
6-Mar-2022	1,212	1,232	20	20	1.7%	1.7%	1.7%
7-Mar-2022	1,242	1,233	-10	10	-0.8%	0.8%	-0.8%
8-Mar-2022	1,194	1,180	-14	14	-1.1%	1.1%	-1.1%
9-Mar-2022	1,250	1,272	21	21	1.7%	1.7%	1.7%
10-Mar-2022	1,256	1,254	-1	1	-0.1%	0.1%	-0.1%
11-Mar-2022	1,129	1,168	39	39	3.4%	3.4%	3.3%
12-Mar-2022	1,120	1,147	27	27	2.4%	2.4%	2.3%
13-Mar-2022	1,220	1,248	28	28	2.3%	2.3%	2.2%
14-Mar-2022	1,304	1,253	-52	52	-4.0%	4.0%	-4.1%
15-Mar-2022	1,263	1,228	-35	35	-2.8%	2.8%	-2.8%
16-Mar-2022	1,313	1,268	-45	45	-3.4%	3.4%	-3.5%
17-Mar-2022	1,302	1,258	-44	44	-3.4%	3.4%	-3.5%
18-Mar-2022	1,078	1,072	-6	6	-0.5%	0.5%	-0.5%
19-Mar-2022	1,066	1,082	16	16	1.5%	1.5%	1.4%
20-Mar-2022	1,191	1,140	-51	51	-4.3%	4.3%	-4.5%
21-Mar-2022	1,195	1,248	53	53	4.4%	4.4%	4.2%
22-Mar-2022	1,142	1,175	33	33	2.9%	2.9%	2.8%
23-Mar-2022	1,156	1,150	-6	6	-0.6%	0.6%	-0.6%
24-Mar-2022	1,153	1,197	44	44	3.8%	3.8%	3.7%
25-Mar-2022	1,188	1,203	16	16	1.3%	1.3%	1.3%
26-Mar-2022	1,149	1,118	-31	31	-2.7%	2.7%	-2.8%
27-Mar-2022	979	955	-23	23	-2.4%	2.4%	-2.4%
28-Mar-2022	987	994	7	7	0.7%	0.7%	0.7%
29-Mar-2022	1,004	985	-19	19	-1.9%	1.9%	-1.9%
30-Mar-2022	1,080	1,096	17	17	1.5%	1.5%	1.5%
31-Mar-2022	1,052	1,061	9	9	0.9%	0.9%	0.9%
Minimum	1,435	1,425	-9	9	-0.7%	0.7%	-0.7%
Average	1,188	1,186	-2	23	-0.1%	2.0%	-0.1%
Maximum	1,435	1,425	53	53	4.4%	4.4%	4.2%

Date	Actual Utility Peak (MW)	Forecast Utility Peak (MW)	Error (MW)	Absolute Error (MW)	Percent Error	Absolute Percent Error	Actual/ Forecast
1-Apr-2022	1,077	1,054	-23	23	-2.1%	2.1%	-2.2%
2-Apr-2022	**951**	**897**	**-54**	**54**	**-5.7%**	**5.7%**	**-6.0%**
3-Apr-2022	1,023	1,006	-18	18	-1.7%	1.7%	-1.8%
4-Apr-2022	1,031	1,046	15	15	1.5%	1.5%	1.5%
5-Apr-2022	1,014	1,014	0	0	0.0%	0.0%	0.0%
6-Apr-2022	1,098	1,088	-11	11	-1.0%	1.0%	-1.0%
7-Apr-2022	1,057	1,033	-24	24	-2.3%	2.3%	-2.3%
8-Apr-2022	1,058	1,057	-1	1	-0.1%	0.1%	-0.1%
9-Apr-2022	1,023	999	-24	24	-2.3%	2.3%	-2.4%
10-Apr-2022	932	896	-37	37	-3.9%	3.9%	-4.1%
11-Apr-2022	1,029	1,050	20	20	2.0%	2.0%	1.9%
12-Apr-2022	1,100	1,092	-8	8	-0.7%	0.7%	-0.7%
13-Apr-2022	1,040	1,036	-5	5	-0.5%	0.5%	-0.5%
14-Apr-2022	1,072	1,072	0	0	0.0%	0.0%	0.0%
15-Apr-2022	938	965	27	27	2.8%	2.8%	2.7%
16-Apr-2022	987	934	-54	54	-5.4%	5.4%	-5.7%
17-Apr-2022	**879**	**808**	**-71**	**71**	**-8.0%**	**8.0%**	**-8.7%**
18-Apr-2022	919	876	-43	43	-4.7%	4.7%	-4.9%
19-Apr-2022	972	1,014	42	42	4.3%	4.3%	4.1%
20-Apr-2022	1,083	1,033	-49	49	-4.6%	4.6%	-4.8%
21-Apr-2022	925	907	-18	18	-1.9%	1.9%	-2.0%
22-Apr-2022	966	956	-10	10	-1.0%	1.0%	-1.0%
23-Apr-2022	**947**	**886**	**-61**	**61**	**-6.5%**	**6.5%**	**-6.9%**
24-Apr-2022	1,054	1,055	1	1	0.1%	0.1%	0.1%
25-Apr-2022	1,011	998	-13	13	-1.3%	1.3%	-1.3%
26-Apr-2022	965	981	16	16	1.6%	1.6%	1.6%
27-Apr-2022	928	948	20	20	2.1%	2.1%	2.1%
28-Apr-2022	912	935	23	23	2.6%	2.6%	2.5%
29-Apr-2022	935	940	5	5	0.6%	0.6%	0.6%
30-Apr-2022	847	861	14	14	1.6%	1.6%	1.6%
Minimum	847	808	-71	0	-8.0%	0.0%	-8.7%
Average	992	981	-11	24	-1.2%	2.4%	-1.3%
Maximum	1,100	1,092	42	71	4.3%	8.0%	4.1%

Date	Actual Utility Peak (MW)	Forecast Utility Peak (MW)	Error (MW)	Absolute Error (MW)	Percent Error	Absolute Percent Error	Actual/ Forecast
1-May-2022	834	845	11	11	1.4%	1.4%	1.3%
2-May-2022	901	926	26	26	2.9%	2.9%	2.8%
3-May-2022	903	917	15	15	1.6%	1.6%	1.6%
4-May-2022	906	911	5	5	0.6%	0.6%	0.6%
5-May-2022	887	866	-21	21	-2.4%	2.4%	-2.4%
6-May-2022	893	895	2	2	0.2%	0.2%	0.2%
7-May-2022	898	884	-14	14	-1.6%	1.6%	-1.6%
8-May-2022	833	847	14	14	1.7%	1.7%	1.7%
9-May-2022	860	883	23	23	2.7%	2.7%	2.6%
10-May-2022	840	851	11	11	1.4%	1.4%	1.3%
11-May-2022	753	749	-4	4	-0.5%	0.5%	-0.5%
12-May-2022	685	691	6	6	0.8%	0.8%	0.8%
13-May-2022	750	753	3	3	0.4%	0.4%	0.4%
14-May-2022	829	791	-38	38	-4.6%	4.6%	-4.9%
15-May-2022	873	843	-30	30	-3.5%	3.5%	-3.6%
16-May-2022	893	875	-18	18	-2.1%	2.1%	-2.1%
17-May-2022	834	832	-2	2	-0.2%	0.2%	-0.2%
18-May-2022	869	842	-26	26	-3.0%	3.0%	-3.1%
19-May-2022	771	740	-31	31	-4.0%	4.0%	-4.2%
20-May-2022	731	738	8	8	1.1%	1.1%	1.1%
21-May-2022	632	622	-10	10	-1.6%	1.6%	-1.6%
22-May-2022	636	611	-25	25	-3.9%	3.9%	-4.1%
23-May-2022	**658**	**602**	**-56**	**56**	**-8.6%**	**8.6%**	**-9.4%**
24-May-2022	752	742	-10	10	-1.4%	1.4%	-1.4%
25-May-2022	787	797	10	10	1.3%	1.3%	1.3%
26-May-2022	700	725	25	25	3.6%	3.6%	3.5%
27-May-2022	778	801	23	23	3.0%	3.0%	2.9%
28-May-2022	**836**	**755**	**-81**	**81**	**-9.7%**	**9.7%**	**-10.7%**
29-May-2022	769	739	-30	30	-3.9%	3.9%	-4.0%
30-May-2022	646	657	11	11	1.7%	1.7%	1.7%
31-May-2022	734	734	0	0	0.0%	0.0%	0.0%
Minimum	632	602	-81	0	-9.7%	0.0%	-10.7%
Average	796	789	-7	19	-0.9%	2.4%	-1.0%
Maximum	906	926	26	81	3.6%	9.7%	3.5%

Date	Actual Utility Peak (MW)	Forecast Utility Peak (MW)	Error (MW)	Absolute Error (MW)	Percent Error	Absolute Percent Error	Actual/ Forecast
1-Jun-2022	**864**	**811**	**-53**	**53**	**-6.1%**	**6.1%**	**-6.5%**
2-Jun-2022	861	858	-3	3	-0.4%	0.4%	-0.4%
3-Jun-2022	852	851	0	0	0.0%	0.0%	0.0%
4-Jun-2022	790	758	-31	31	-4.0%	4.0%	-4.2%
5-Jun-2022	724	700	-23	23	-3.2%	3.2%	-3.3%
6-Jun-2022	**728**	**766**	**39**	**39**	**5.3%**	**5.3%**	**5.0%**
7-Jun-2022	776	747	-29	29	-3.7%	3.7%	-3.8%
8-Jun-2022	770	787	17	17	2.2%	2.2%	2.1%
9-Jun-2022	746	748	3	3	0.4%	0.4%	0.4%
10-Jun-2022	702	670	-32	32	-4.5%	4.5%	-4.7%
11-Jun-2022	596	568	-28	28	-4.7%	4.7%	-4.9%
12-Jun-2022	580	553	-27	27	-4.7%	4.7%	-4.9%
13-Jun-2022	616	636	20	20	3.2%	3.2%	3.1%
14-Jun-2022	701	692	-10	10	-1.4%	1.4%	-1.4%
15-Jun-2022	703	684	-19	19	-2.7%	2.7%	-2.8%
16-Jun-2022	623	645	22	22	3.6%	3.6%	3.4%
17-Jun-2022	596	588	-8	8	-1.4%	1.4%	-1.4%
18-Jun-2022	598	572	-26	26	-4.3%	4.3%	-4.5%
19-Jun-2022	600	572	-28	28	-4.7%	4.7%	-4.9%
20-Jun-2022	626	635	9	9	1.4%	1.4%	1.4%
21-Jun-2022	623	604	-19	19	-3.1%	3.1%	-3.2%
22-Jun-2022	600	583	-17	17	-2.9%	2.9%	-3.0%
23-Jun-2022	597	597	-1	1	-0.1%	0.1%	-0.1%
24-Jun-2022	612	593	-19	19	-3.1%	3.1%	-3.2%
25-Jun-2022	570	562	-8	8	-1.4%	1.4%	-1.4%
26-Jun-2022	554	545	-9	9	-1.6%	1.6%	-1.6%
27-Jun-2022	590	577	-13	13	-2.2%	2.2%	-2.2%
28-Jun-2022	593	601	7	7	1.2%	1.2%	1.2%
29-Jun-2022	586	573	-12	12	-2.1%	2.1%	-2.1%
30-Jun-2022	574	592	19	19	3.3%	3.3%	3.2%
Minimum	554	545	-53	0	-6.1%	0.0%	-6.5%
Average	665	656	-9	18	-1.4%	2.8%	-1.5%
Maximum	864	858	39	53	5.3%	6.1%	5.0%

Date	Actual Utility Peak (MW)	Forecast Utility Peak (MW)	Error (MW)	Absolute Error (MW)	Percent Error	Absolute Percent Error	Actual/ Forecast
1-Jul-2022	555	570	15	15	2.6%	2.6%	2.6%
2-Jul-2022	529	532	3	3	0.5%	0.5%	0.5%
3-Jul-2022	552	543	-10	10	-1.7%	1.7%	-1.8%
4-Jul-2022	582	597	15	15	2.5%	2.5%	2.4%
5-Jul-2022	560	575	16	16	2.8%	2.8%	2.7%
6-Jul-2022	576	584	8	8	1.3%	1.3%	1.3%
7-Jul-2022	599	593	-6	6	-1.0%	1.0%	-1.0%
8-Jul-2022	568	569	1	1	0.2%	0.2%	0.2%
9-Jul-2022	546	536	-9	9	-1.7%	1.7%	-1.8%
10-Jul-2022	548	548	0	0	0.0%	0.0%	0.0%
11-Jul-2022	581	566	-14	14	-2.5%	2.5%	-2.5%
12-Jul-2022	570	566	-3	3	-0.6%	0.6%	-0.6%
13-Jul-2022	580	563	-16	16	-2.8%	2.8%	-2.9%
14-Jul-2022	572	561	-11	11	-1.9%	1.9%	-2.0%
15-Jul-2022	576	557	-18	18	-3.2%	3.2%	-3.3%
16-Jul-2022	536	522	-14	14	-2.7%	2.7%	-2.8%
17-Jul-2022	540	534	-6	6	-1.0%	1.0%	-1.1%
18-Jul-2022	585	577	-8	8	-1.4%	1.4%	-1.4%
19-Jul-2022	601	588	-14	14	-2.2%	2.2%	-2.3%
20-Jul-2022	593	572	-21	21	-3.6%	3.6%	-3.8%
21-Jul-2022	580	573	-7	7	-1.2%	1.2%	-1.2%
22-Jul-2022	576	581	5	5	0.8%	0.8%	0.8%
23-Jul-2022	**575**	**539**	**-36**	**36**	**-6.2%**	**6.2%**	**-6.6%**
24-Jul-2022	567	569	2	2	0.4%	0.4%	0.4%
25-Jul-2022	615	617	2	2	0.3%	0.3%	0.3%
26-Jul-2022	611	598	-13	13	-2.2%	2.2%	-2.2%
27-Jul-2022	593	578	-15	15	-2.5%	2.5%	-2.6%
28-Jul-2022	578	572	-6	6	-1.1%	1.1%	-1.1%
29-Jul-2022	568	571	4	4	0.7%	0.7%	0.7%
30-Jul-2022	557	545	-13	13	-2.2%	2.2%	-2.3%
31-Jul-2022	541	536	-5	5	-0.9%	0.9%	-0.9%
Minimum	529	522	-36	0	-6.2%	0.0%	-6.6%
Average	571	566	-6	10	-1.0%	1.8%	-1.0%
Maximum	615	617	16	36	2.8%	6.2%	2.7%

Date	Actual Utility Peak (MW)	Forecast Utility Peak (MW)	Error (MW)	Absolute Error (MW)	Percent Error	Absolute Percent Error	Actual/ Forecast
1-Aug-2022	595	573	-2022	22	-3.7%	3.7%	-3.8%
2-Aug-2022	597	596	-1	1	-0.1%	0.1%	-0.1%
3-Aug-2022	608	581	-27	27	-4.4%	4.4%	-4.6%
4-Aug-2022	587	570	-17	17	-2.9%	2.9%	-3.0%
5-Aug-2022	602	598	-4	4	-0.6%	0.6%	-0.6%
6-Aug-2022	**578**	**533**	**-46**	**46**	**-7.9%**	**7.9%**	**-8.6%**
7-Aug-2022	567	559	-9	9	-1.5%	1.5%	-1.5%
8-Aug-2022	600	598	-2	2	-0.4%	0.4%	-0.4%
9-Aug-2022	634	627	-7	7	-1.1%	1.1%	-1.2%
10-Aug-2022	580	585	5	5	0.9%	0.9%	0.9%
11-Aug-2022	574	586	12	12	2.2%	2.2%	2.1%
12-Aug-2022	562	558	-4	4	-0.8%	0.8%	-0.8%
13-Aug-2022	547	537	-10	10	-1.8%	1.8%	-1.8%
14-Aug-2022	558	550	-7	7	-1.3%	1.3%	-1.3%
15-Aug-2022	604	596	-8	8	-1.3%	1.3%	-1.4%
16-Aug-2022	594	583	-11	11	-1.8%	1.8%	-1.9%
17-Aug-2022	588	577	-11	11	-1.9%	1.9%	-1.9%
18-Aug-2022	598	581	-16	16	-2.7%	2.7%	-2.8%
19-Aug-2022	604	576	-28	28	-4.6%	4.6%	-4.8%
20-Aug-2022	**559**	**528**	**-31**	**31**	**-5.6%**	**5.6%**	**-5.9%**
21-Aug-2022	547	539	-7	7	-1.4%	1.4%	-1.4%
22-Aug-2022	590	598	8	8	1.3%	1.3%	1.3%
23-Aug-2022	588	589	1	1	0.2%	0.2%	0.2%
24-Aug-2022	596	583	-13	13	-2.2%	2.2%	-2.2%
25-Aug-2022	585	574	-11	11	-1.9%	1.9%	-2.0%
26-Aug-2022	587	570	-16	16	-2.8%	2.8%	-2.9%
27-Aug-2022	544	534	-10	10	-1.9%	1.9%	-1.9%
28-Aug-2022	539	540	0	0	0.1%	0.1%	0.1%
29-Aug-2022	582	575	-8	8	-1.3%	1.3%	-1.4%
30-Aug-2022	587	586	-1	1	-0.2%	0.2%	-0.2%
31-Aug-2022	597	591	-5	5	-0.9%	0.9%	-0.9%
Minimum	539	528	-46	0	-7.9%	0.1%	-8.6%
Average	583	573	-10	12	-1.7%	2.0%	-1.8%
Maximum	634	627	12	46	2.2%	7.9%	2.1%

Date	Actual Utility Peak (MW)	Forecast Utility Peak (MW)	Error (MW)	Absolute Error (MW)	Percent Error	Absolute Percent Error	Actual/ Forecast
1-Sep-2022	599	589	-11	11	-1.8%	1.8%	-1.9%
2-Sep-2022	593	565	-27	27	-4.6%	4.6%	-4.8%
3-Sep-2022	532	535	3	3	0.6%	0.6%	0.6%
4-Sep-2022	525	536	11	11	2.0%	2.0%	2.0%
5-Sep-2022	**583**	**551**	**-32**	**32**	**-5.4%**	**5.4%**	**-5.8%**
6-Sep-2022	600	623	24	24	3.9%	3.9%	3.8%
7-Sep-2022	588	606	18	18	3.0%	3.0%	2.9%
8-Sep-2022	577	602	25	25	4.4%	4.4%	4.2%
9-Sep-2022	584	577	-6	6	-1.1%	1.1%	-1.1%
10-Sep-2022	601	568	-33	33	-5.5%	5.5%	-5.8%
11-Sep-2022	**622**	**577**	**-45**	**45**	**-7.2%**	**7.2%**	**-7.8%**
12-Sep-2022	601	612	12	12	2.0%	2.0%	1.9%
13-Sep-2022	590	607	17	17	2.9%	2.9%	2.8%
14-Sep-2022	556	580	24	24	4.3%	4.3%	4.1%
15-Sep-2022	558	557	-1	1	-0.1%	0.1%	-0.1%
16-Sep-2022	563	571	8	8	1.3%	1.3%	1.3%
17-Sep-2022	581	601	20	20	3.5%	3.5%	3.4%
18-Sep-2022	597	607	9	9	1.5%	1.5%	1.5%
19-Sep-2022	613	614	2	2	0.3%	0.3%	0.3%
20-Sep-2022	601	590	-11	11	-1.9%	1.9%	-1.9%
21-Sep-2022	665	644	-21	21	-3.2%	3.2%	-3.3%
22-Sep-2022	608	593	-14	14	-2.4%	2.4%	-2.4%
23-Sep-2022	558	547	-11	11	-2.0%	2.0%	-2.0%
24-Sep-2022	548	529	-19	19	-3.5%	3.5%	-3.6%
25-Sep-2022	585	584	-1	1	-0.1%	0.1%	-0.1%
26-Sep-2022	601	577	-23	23	-3.9%	3.9%	-4.0%
27-Sep-2022	582	578	-4	4	-0.6%	0.6%	-0.6%
28-Sep-2022	580	578	-2	2	-0.4%	0.4%	-0.4%
29-Sep-2022	**573**	**537**	**-36**	**36**	**-6.3%**	**6.3%**	**-6.7%**
30-Sep-2022	575	606	32	32	5.5%	5.5%	5.3%
Minimum	525	529	-45	1	-7.2%	0.1%	-7.8%
Average	585	581	-3	17	-0.5%	2.8%	-0.6%
Maximum	665	644	32	45	5.5%	7.2%	5.3%

Date	Actual Utility Peak (MW)	Forecast Utility Peak (MW)	Error (MW)	Absolute Error (MW)	Percent Error	Absolute Percent Error	Actual/ Forecast
1-Oct-2022	556	561	5	5	1.0%	1.0%	0.9%
2-Oct-2022	**670**	**621**	**-49**	**49**	**-7.4%**	**7.4%**	**-7.9%**
3-Oct-2022	747	715	-31	31	-4.2%	4.2%	-4.3%
4-Oct-2022	768	759	-8	8	-1.1%	1.1%	-1.1%
5-Oct-2022	670	669	-1	1	-0.1%	0.1%	-0.1%
6-Oct-2022	662	644	-18	18	-2.7%	2.7%	-2.7%
7-Oct-2022	621	616	-4	4	-0.7%	0.7%	-0.7%
8-Oct-2022	642	630	-12	12	-1.9%	1.9%	-1.9%
9-Oct-2022	637	627	-10	10	-1.5%	1.5%	-1.6%
10-Oct-2022	669	651	-18	18	-2.8%	2.8%	-2.8%
11-Oct-2022	745	740	-5	5	-0.6%	0.6%	-0.6%
12-Oct-2022	701	699	-2	2	-0.3%	0.3%	-0.3%
13-Oct-2022	707	704	-3	3	-0.4%	0.4%	-0.4%
14-Oct-2022	686	685	-2	2	-0.3%	0.3%	-0.3%
15-Oct-2022	640	636	-4	4	-0.6%	0.6%	-0.6%
16-Oct-2022	665	650	-15	15	-2.3%	2.3%	-2.3%
17-Oct-2022	678	677	-1	1	-0.1%	0.1%	-0.1%
18-Oct-2022	**644**	**705**	**61**	**61**	**9.5%**	**9.5%**	**8.7%**
19-Oct-2022	628	661	33	33	5.2%	5.2%	5.0%
20-Oct-2022	634	620	-14	14	-2.2%	2.2%	-2.3%
21-Oct-2022	626	627	1	1	0.1%	0.1%	0.1%
22-Oct-2022	609	614	5	5	0.8%	0.8%	0.8%
23-Oct-2022	610	616	6	6	1.1%	1.1%	1.0%
24-Oct-2022	677	663	-13	13	-2.0%	2.0%	-2.0%
25-Oct-2022	679	678	-1	1	-0.2%	0.2%	-0.2%
26-Oct-2022	621	627	6	6	0.9%	0.9%	0.9%
27-Oct-2022	634	608	-26	26	-4.2%	4.2%	-4.3%
28-Oct-2022	653	656	4	4	0.5%	0.5%	0.5%
29-Oct-2022	**725**	**673**	**-53**	**53**	**-7.2%**	**7.2%**	**-7.8%**
30-Oct-2022	679	687	8	8	1.1%	1.1%	1.1%
31-Oct-2022	777	754	-22	22	-2.9%	2.9%	-3.0%
Minimum	556	561	-53	1	-7.4%	0.1%	-7.9%
Average	666	660	-6	14	-0.8%	2.1%	-0.9%
Maximum	777	759	61	61	9.5%	9.5%	8.7%

Date	Actual Utility Peak (MW)	Forecast Utility Peak (MW)	Error (MW)	Absolute Error (MW)	Percent Error	Absolute Percent Error	Actual/ Forecast
1-Nov-2022	787	787	-1	1	-0.1%	0.1%	-0.1%
2-Nov-2022	767	752	-15	15	-2.0%	2.0%	-2.0%
3-Nov-2022	940	920	-20	20	-2.2%	2.2%	-2.2%
4-Nov-2022	863	868	5	5	0.6%	0.6%	0.6%
5-Nov-2022	695	695	-1	1	-0.1%	0.1%	-0.1%
6-Nov-2022	793	745	-48	48	-6.0%	6.0%	-6.4%
7-Nov-2022	707	713	5	5	0.7%	0.7%	0.7%
8-Nov-2022	864	831	-33	33	-3.8%	3.8%	-3.9%
9-Nov-2022	1,035	1,079	44	44	4.3%	4.3%	4.1%
10-Nov-2022	988	1,007	19	19	2.0%	2.0%	1.9%
11-Nov-2022	915	863	-52	52	-5.6%	5.6%	-6.0%
12-Nov-2022	**1,009**	**913**	**-96**	**96**	**-9.5%**	**9.5%**	**-10.5%**
13-Nov-2022	996	973	-23	23	-2.3%	2.3%	-2.4%
14-Nov-2022	1,036	1,023	-14	14	-1.3%	1.3%	-1.3%
15-Nov-2022	1,007	1,050	43	43	4.3%	4.3%	4.1%
16-Nov-2022	**1,100**	**1,031**	**-69**	**69**	**-6.3%**	**6.3%**	**-6.7%**
17-Nov-2022	987	991	4	4	0.4%	0.4%	0.4%
18-Nov-2022	1,027	971	-56	56	-5.4%	5.4%	-5.8%
19-Nov-2022	**1,046**	**964**	**-82**	**82**	**-7.9%**	**7.9%**	**-8.5%**
20-Nov-2022	1,052	986	-66	66	-6.3%	6.3%	-6.7%
21-Nov-2022	1,195	1,188	-7	7	-0.6%	0.6%	-0.6%
22-Nov-2022	1,128	1,145	17	17	1.5%	1.5%	1.5%
23-Nov-2022	1,145	1,137	-7	7	-0.6%	0.6%	-0.7%
24-Nov-2022	1,316	1,292	-24	24	-1.8%	1.8%	-1.9%
25-Nov-2022	1,158	1,158	0	0	0.0%	0.0%	0.0%
26-Nov-2022	1,093	1,033	-60	60	-5.5%	5.5%	-5.8%
27-Nov-2022	1,013	1,014	1	1	0.1%	0.1%	0.1%
28-Nov-2022	1,081	1,025	-56	56	-5.2%	5.2%	-5.5%
29-Nov-2022	1,155	1,211	56	56	4.9%	4.9%	4.6%
30-Nov-2022	1,240	1,246	5	5	0.4%	0.4%	0.4%
Minimum	695	695	-96	0	-9.5%	0.0%	-10.5%
Average	1,005	987	-18	31	-1.8%	3.1%	-1.9%
Maximum	1,316	1,292	56	96	4.9%	9.5%	4.6%

Date	Actual Utility Peak (MW)	Forecast Utility Peak (MW)	Error (MW)	Absolute Error (MW)	Percent Error	Absolute Percent Error	Actual/ Forecast
1-Dec-2022	1,170	1,153	-17	17	-1.5%	1.5%	-1.5%
2-Dec-2022	1,087	1,040	-47	47	-4.3%	4.3%	-4.5%
3-Dec-2022	1,082	1,022	-60	60	-5.6%	5.6%	-5.9%
4-Dec-2022	1,094	1,063	-31	31	-2.8%	2.8%	-2.9%
5-Dec-2022	1,076	1,119	43	43	4.0%	4.0%	3.8%
6-Dec-2022	**1,119**	**1,056**	**-63**	**63**	**-5.6%**	**5.6%**	**-6.0%**
7-Dec-2022	1,082	1,066	-17	17	-1.5%	1.5%	-1.6%
8-Dec-2022	1,078	1,072	-5	5	-0.5%	0.5%	-0.5%
9-Dec-2022	1,068	1,033	-35	35	-3.3%	3.3%	-3.4%
10-Dec-2022	1,134	1,073	-61	61	-5.4%	5.4%	-5.7%
11-Dec-2022	**1,249**	**1,159**	**-90**	**90**	**-7.2%**	**7.2%**	**-7.8%**
12-Dec-2022	1,243	1,207	-36	36	-2.9%	2.9%	-3.0%
13-Dec-2022	1,146	1,163	16	16	1.4%	1.4%	1.4%
14-Dec-2022	1,084	1,112	28	28	2.6%	2.6%	2.5%
15-Dec-2022	1,156	1,161	5	5	0.4%	0.4%	0.4%
16-Dec-2022	1,141	1,164	23	23	2.0%	2.0%	2.0%
17-Dec-2022	1,157	1,102	-55	55	-4.7%	4.7%	-5.0%
18-Dec-2022	1,114	1,119	5	5	0.4%	0.4%	0.4%
19-Dec-2022	1,173	1,200	27	27	2.3%	2.3%	2.3%
20-Dec-2022	1,175	1,199	24	24	2.0%	2.0%	2.0%
21-Dec-2022	1,195	1,153	-42	42	-3.5%	3.5%	-3.7%
22-Dec-2022	1,229	1,204	-26	26	-2.1%	2.1%	-2.1%
23-Dec-2022	1,232	1,220	-12	12	-1.0%	1.0%	-1.0%
24-Dec-2022	1,248	1,198	-50	50	-4.0%	4.0%	-4.2%
25-Dec-2022	**1,074**	**1,003**	**-72**	**72**	**-6.7%**	**6.7%**	**-7.1%**
26-Dec-2022	1,148	1,163	15	15	1.3%	1.3%	1.3%
27-Dec-2022	1,206	1,213	7	7	0.5%	0.5%	0.5%
28-Dec-2022	1,303	1,288	-15	15	-1.1%	1.1%	-1.1%
29-Dec-2022	1,409	1,368	-41	41	-2.9%	2.9%	-3.0%
30-Dec-2022	1,277	1,296	19	19	1.5%	1.5%	1.5%
31-Dec-2022	1,129	1,191	62	62	5.5%	5.5%	5.2%
Minimum	1,068	1,003	-90	5	-7.2%	0.4%	-7.8%
Average	1,164	1,148	-16	34	-1.4%	2.9%	-1.5%
Maximum	1,409	1,368	62	90	5.5%	7.2%	5.2%

Table 4: Monthly Peak Utility Load Error Summary - Average Daily Demand

Date	Actual Utility Peak (MW)	Forecast Utility Peak (MW)	Error (MW)	Absolute Error (MW)	Percent Error	Absolute Percent Error	Actual/ Forecast
Jan 2022	1,239	1,243	4	23	0.4%	1.9%	0.4%
Feb 2022	1,249	1,257	8	31	0.7%	2.5%	0.6%
Mar 2022	1,188	1,186	-2	23	-0.1%	2.0%	-0.1%
Apr 2022	992	981	-11	24	-1.2%	2.4%	-1.3%
May 2022	796	789	-7	19	-0.9%	2.4%	-1.0%
Jun 2022	665	656	-9	18	-1.4%	2.8%	-1.5%
Jul 2022	571	566	-6	10	-1.0%	1.8%	-1.0%
Aug 2022	583	573	-10	12	-1.7%	2.0%	-1.8%
Sep 2022	585	581	-3	17	-0.5%	2.8%	-0.6%
Oct 2022	666	660	-6	14	-0.8%	2.1%	-0.9%
Nov 2022	1,005	987	-18	31	-1.8%	3.1%	-1.9%
Dec 2022	1,164	1,148	-16	34	-1.4%	2.9%	-1.5%
Total Average	**892**	**886**	**-6**	**21**	**-0.8%**	**2.4%**	**-0.9%**

Table 5: Monthly Peak Utility Load Error Summary - Maximum Statistics[32]

Date	Actual Utility Peak (MW)	Forecast Utility Peak (MW)	Error (MW)	Absolute Error (MW)	Percent Error	Absolute Percent Error	Actual/ Forecast
Jan 2022	1,455	1,433	64	64	5.3%	5.3%	5.1%
Feb 2022	1,495	1,503	126	126	10.9%	10.9%	9.8%
Mar 2022	1,435	1,425	53	53	4.4%	4.4%	4.2%
Apr 2022	1,100	1,092	42	71	4.3%	8.0%	4.1%
May 2022	906	926	26	81	3.6%	9.7%	3.5%
Jun 2022	864	858	39	53	5.3%	6.1%	5.0%
Jul 2022	615	617	16	36	2.8%	6.2%	2.7%
Aug 2022	634	627	12	46	2.2%	7.9%	2.1%
Sep 2022	665	644	32	45	5.5%	7.2%	5.3%
Oct 2022	777	759	61	61	9.5%	9.5%	8.7%
Nov 2022	1,316	1,292	56	96	4.9%	9.5%	4.6%
Dec 2022	1,409	1,368	62	90	5.5%	7.2%	5.2%
Annual	**1,495**	**1,503**	**126**	**126**	**10.9%**	**10.9%**	**9.8%**

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

Table 6: Error in Ten Highest Utility Loads

Date	Actual Utility Peak (MW)	Forecast Utility Peak (MW)	Error (MW)	Absolute Error (MW)	Percent Error	Absolute Percent Error	Actual/ Forecast
7-Feb-2022	1,495	1,503	8	8	0.6%	0.6%	0.6%
16-Feb-2022	1,476	1,448	-28	28	-1.9%	1.9%	-2.0%
28-Jan-2022	1,455	1,433	-23	23	-1.6%	1.6%	-1.6%
1-Mar-2022	1,435	1,425	-9	9	-0.7%	0.7%	-0.7%
4-Jan-2022	1,431	1,379	-53	53	-3.7%	3.7%	-3.8%
6-Feb-2022	1,419	1,358	-61	61	-4.3%	4.3%	-4.5%
12-Jan-2022	1,411	1,406	-4	4	-0.3%	0.3%	-0.3%
29-Dec-2022	1,409	1,368	-41	41	-2.9%	2.9%	-3.0%
15-Feb-2022	1,388	1,414	26	26	1.9%	1.9%	1.8%
2-Mar-2022	1,386	1,369	-17	17	-1.2%	1.2%	-1.2%
Average	**1,431**	**1,410**	**-20**	**27**	**-1.4%**	**1.9%**	**-1.5%**

Table 7: Summary of Forecast Issues

Date	Actual Utility Peak (MW)	Forecast Utility Peak (MW)	Error (MW)	Absolute Error (MW)	Absolute Percent Error	Explanation
7-Jan-2022	1195	1259	64	64	5.3%	Error in weather data
25-Jan-2022	1170	1232	62	62	5.3%	Error in weather data
12-Feb-2022	1090	1031	-59	59	-5.4%	Non-uniform customer behaviour/Error in weather data
19-Feb-2022	1158	1285	126	126	10.9%	Non-uniform customer behaviour/Error in Weather Data
22-Feb-2022	1237	1304	67	67	5.4%	Within Acceptable limits at Peak/Error in weather data
2-Apr-2022	951	897	-54	54	-5.7%	Non-uniform customer behaviour/Error in weather data
17-Apr-2022	879	808	-71	71	-8.0%	Non-uniform customer behaviour
23-Apr-2022	947	886	-61	61	-6.5%	Non-uniform customer behaviour/Error in weather data
23-May-2022	658	602	-56	56	-8.6%	Non-uniform customer behaviour
28-May-2022	836	755	-81	81	-9.7%	Non-uniform customer behaviour/Error in weather data
1-Jun-2022	864	811	-53	53	-6.1%	Non-uniform customer behaviour/Underestimate of load by Nostradamus

Date	Actual Utility Peak (MW)	Forecast Utility Peak (MW)	Error (MW)	Absolute Error (MW)	Absolute Percent Error	Explanation
6-Jun-2022	728	766	39	39	5.3%	Non-uniform customer behaviour/Overestimate of load by Nostradamus
23-Jul-2022	575	539	-36	36	-6.2%	Non-uniform customer behaviour
6-Aug-2022	578	533	-46	46	-7.9%	Non-uniform customer behaviour
20-Aug-2022	559	528	-31	31	-5.6%	Non-uniform customer behaviour
5-Sep-2022	583	551	-32	32	-5.4%	Non-uniform customer behaviour
11-Sep-2022	622	577	-45	45	-7.2%	Non-uniform customer behaviour
29-Sep-2022	573	537	-36	36	-6.3%	Non-uniform customer behaviour
2-Oct-2022	670	621	-49	49	-7.4%	Non-uniform customer behaviour/Error in weather data
18-Oct-2022	644	705	61	61	9.5%	Overestimate of load by Nostradamus
29-Oct-2022	725	673	-53	53	-7.2%	Non-uniform customer behaviour/Error in weather data
12-Nov-2022	1009	913	-96	96	-9.5%	Non-uniform customer behaviour/Error in weather data
16-Nov-2022	1100	1031	-69	69	-6.3%	Error in weather data
19-Nov-2022	1046	964	-82	82	-7.9%	Non-uniform customer behaviour
6-Dec-2022	1119	1056	-63	63	-5.6%	Error in weather data
11-Dec-2022	1249	1159	-90	90	-7.2%	Non-uniform customer behaviour/Error in weather data
25-Dec-2022	1074	1003	-72	72	-6.7%	Non-uniform customer behaviour

Appendix B

Supporting Figures

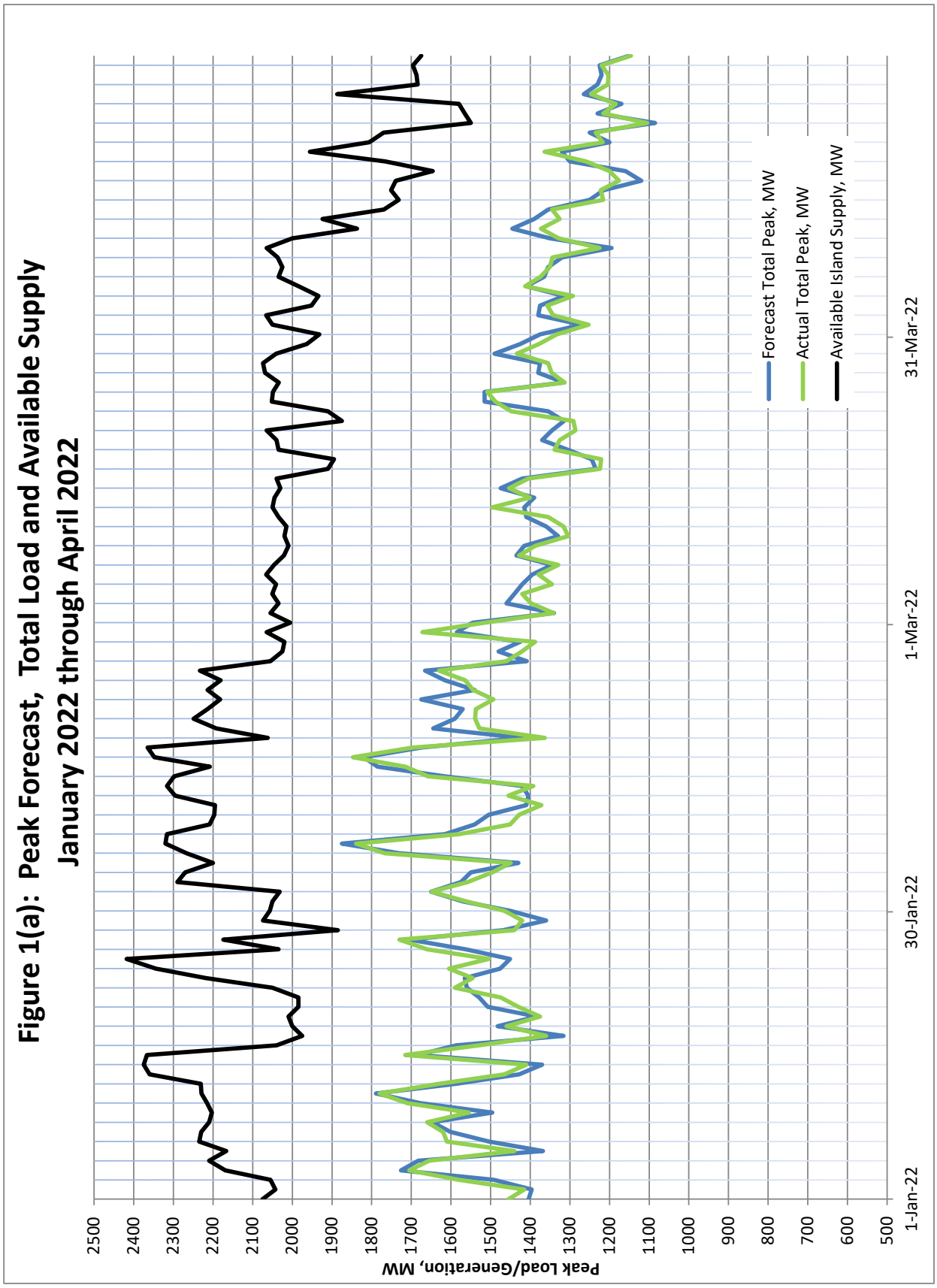
Figure 1(a): Peak Forecast, Total Load and Available Supply
January 2022 through April 2022
Peak Load/Generation, MW
2500
2400
2300
2200
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
1-Jan-22
30-Jan-22
1-Mar-22
31-Mar-22
Forecast Total Peak, MW
Actual Total Peak, MW
Available Island Supply, MW

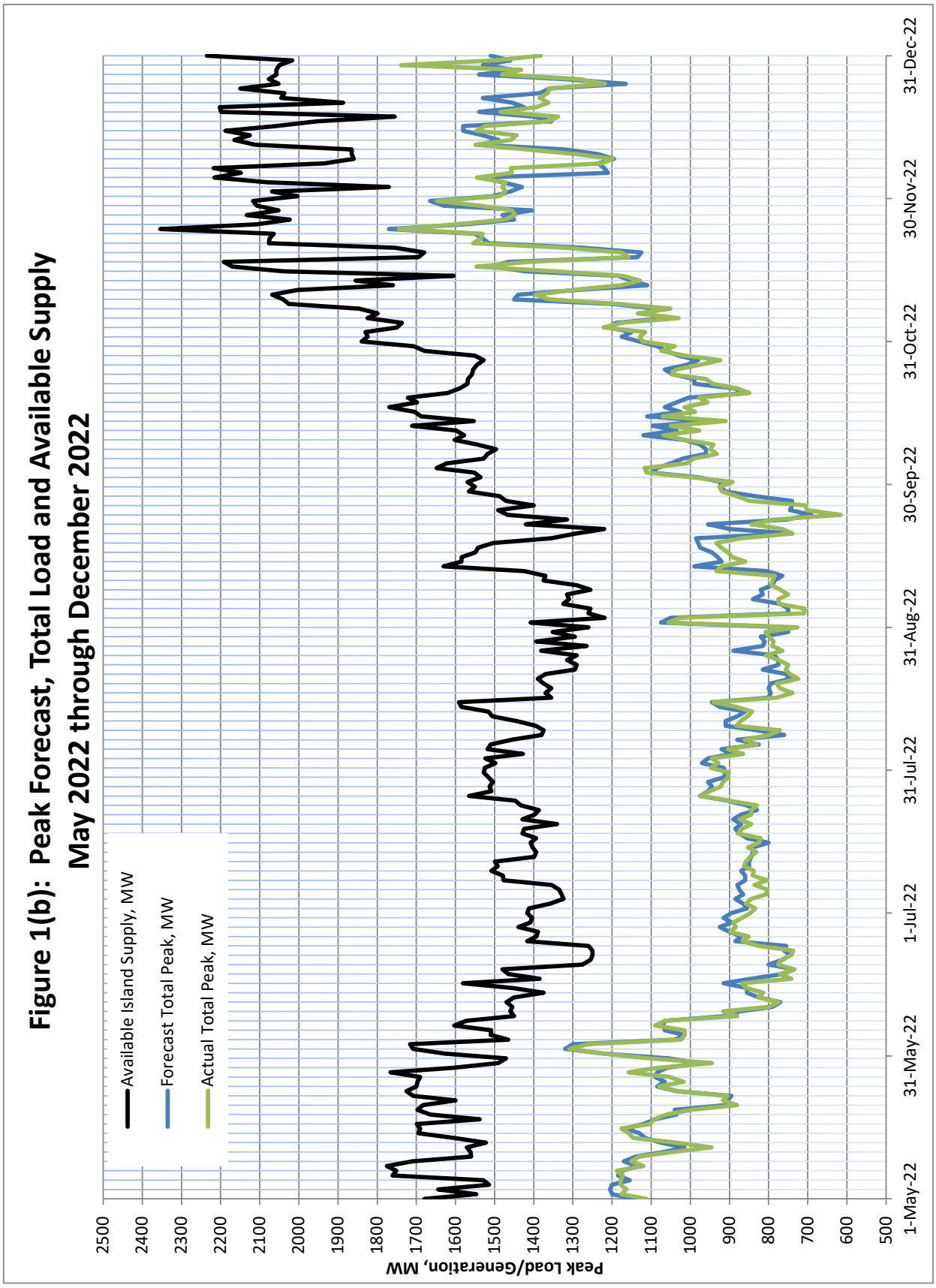
Figure 1(b): Peak Forecast, Total Load and Available Supply
May 2022 through December 2022
Available Island Supply, MW
Forecast Total Peak, MW
Actual Total Peak, MW
Peak Load/Generation, MW
2500
2400
2300
2200
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
1-May-22
31-May-22
1-Jul-22
31-Jul-22
31-Aug-22
30-Sep-22
31-Oct-22
30-Nov-22
31-Dec-22

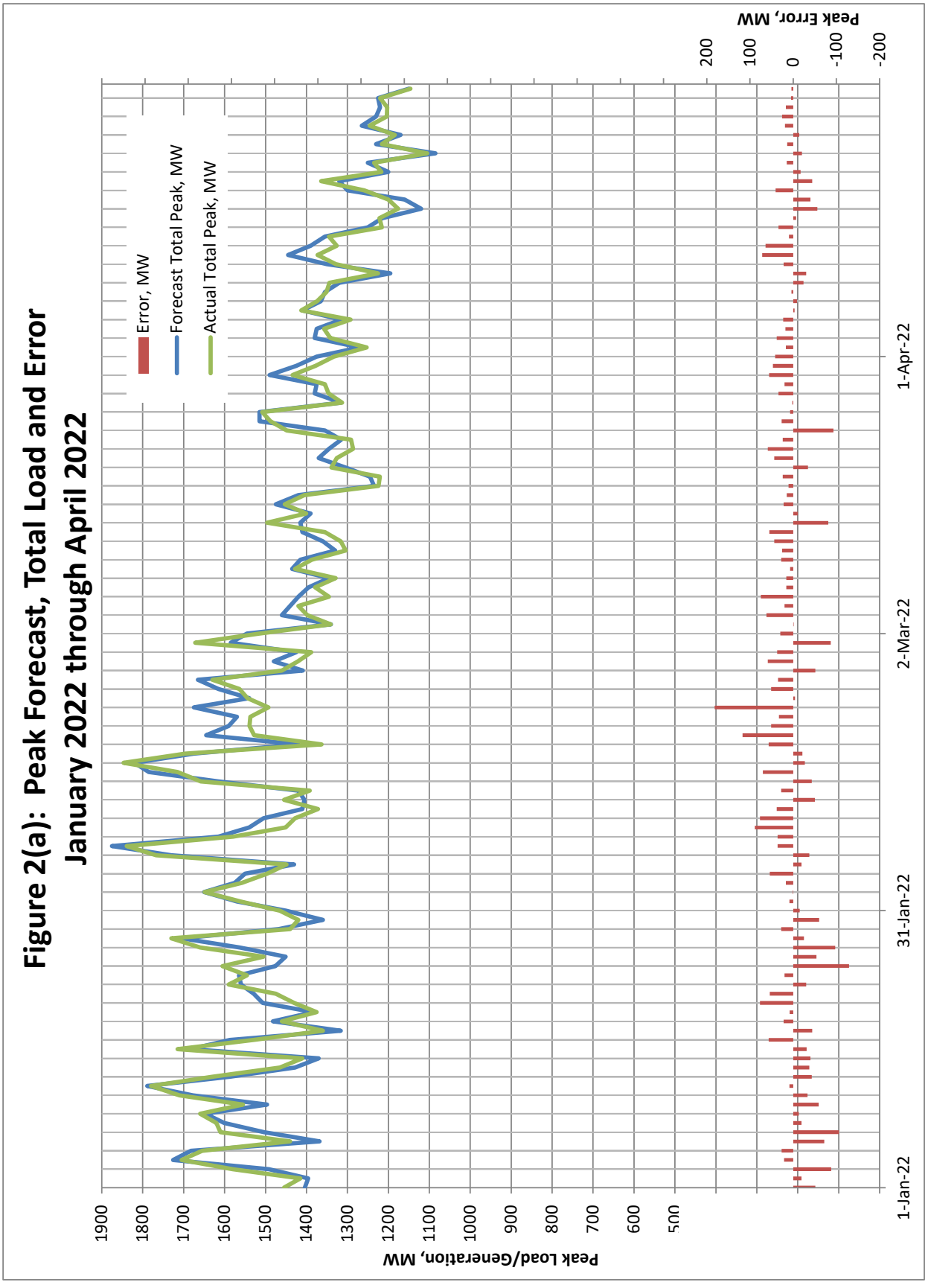
Figure 2(a): Peak Forecast, Total Load and Error
January 2022 through April 2022
Error, MW
Forecast Total Peak, MW
Actual Total Peak, MW
Peak Load/Generation, MW
Peak Error, MW
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
200
100
0
-100
-200
1-Jan-22
31-Jan-22
2-Mar-22
1-Apr-22

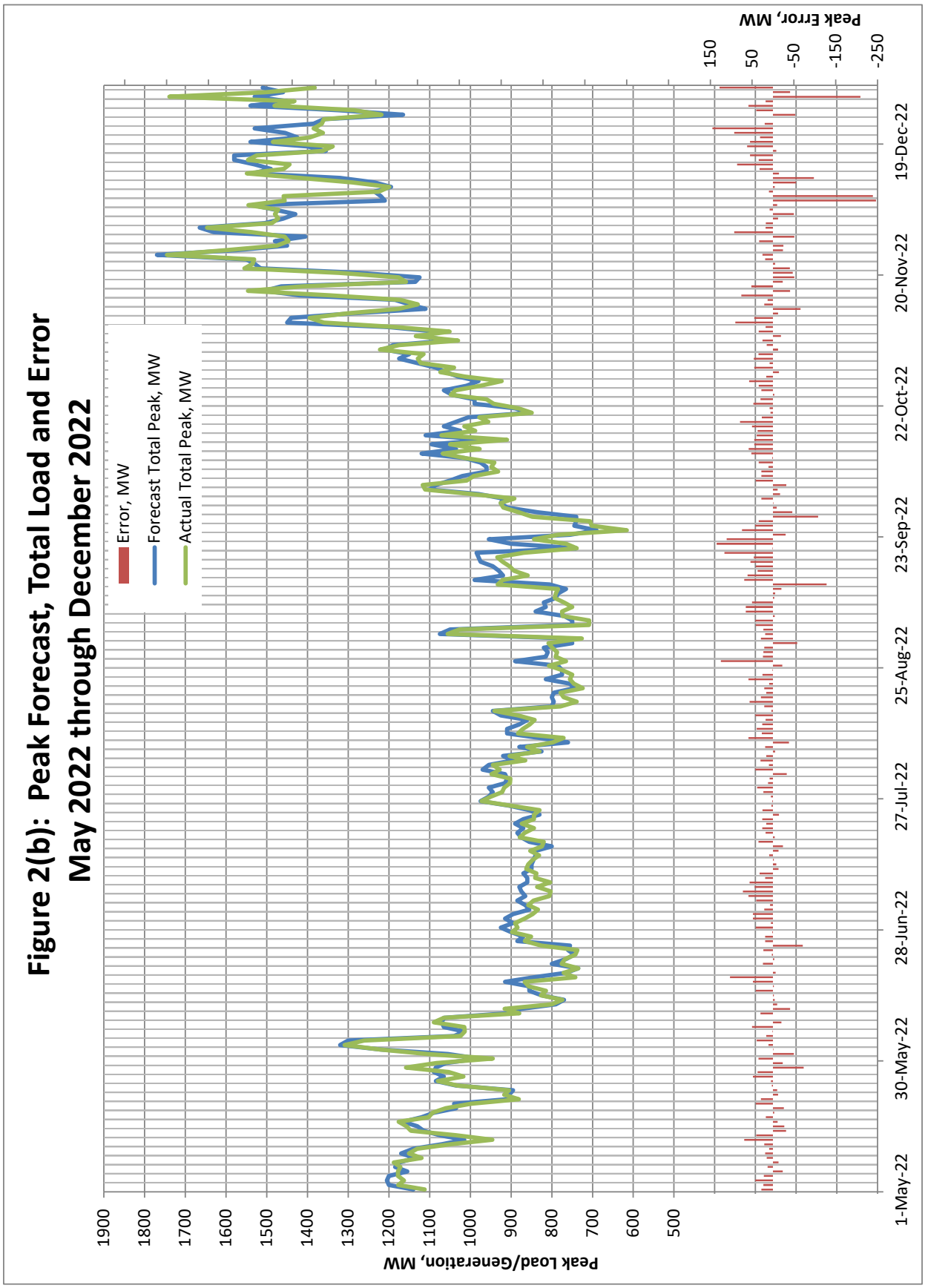
Figure 2(b): Peak Forecast, Total Load and Error
May 2022 through December 2022
Error, MW
Forecast Total Peak, MW
Actual Total Peak, MW
Peak Load/Generation, MW
Peak Error, MW
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
150
50
-50
-150
-250
1-May-22
30-May-22
28-Jun-22
27-Jul-22
25-Aug-22
23-Sep-22
22-Oct-22
20-Nov-22
19-Dec-22

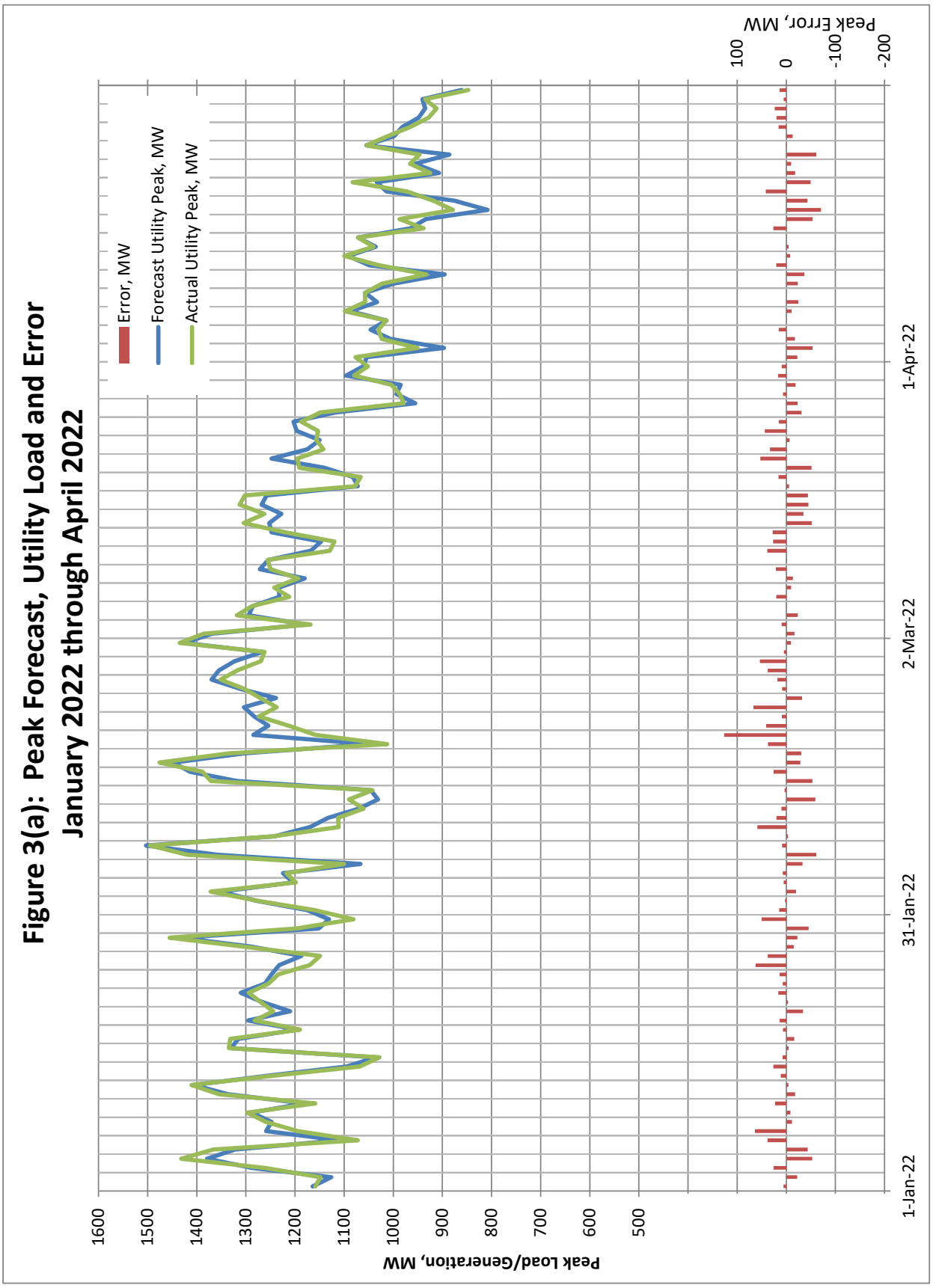
Figure 3(a): Peak Forecast, Utility Load and Error
January 2022 through April 2022
Error, MW
Forecast Utility Peak, MW
Actual Utility Peak, MW
Peak Load/Generation, MW
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
Peak Error, MW
100
0
-100
-200
1-Jan-22
31-Jan-22
2-Mar-22
1-Apr-22

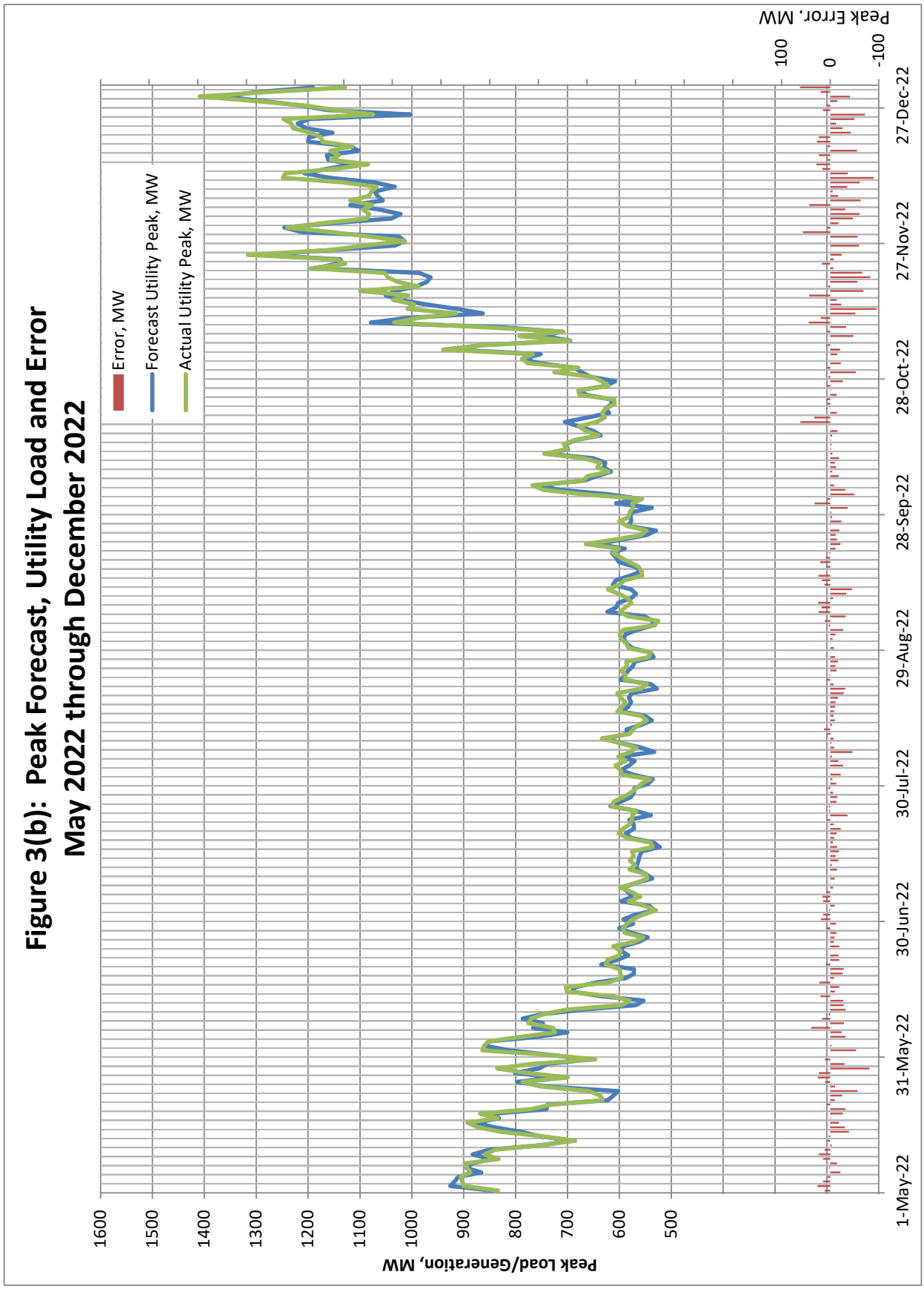
Figure 3(b): Peak Forecast, Utility Load and Error
May 2022 through December 2022
Error, MW
Forecast Utility Peak, MW
Actual Utility Peak, MW
Peak Load/Generation, MW
Peak Error, MW
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
100
0
-100
1-May-22
31-May-22
30-Jun-22
30-Jul-22
29-Aug-22
28-Sep-22
28-Oct-22
27-Nov-22
27-Dec-22

Figure 4 Accuracy Analysis - Jan 07, 2022

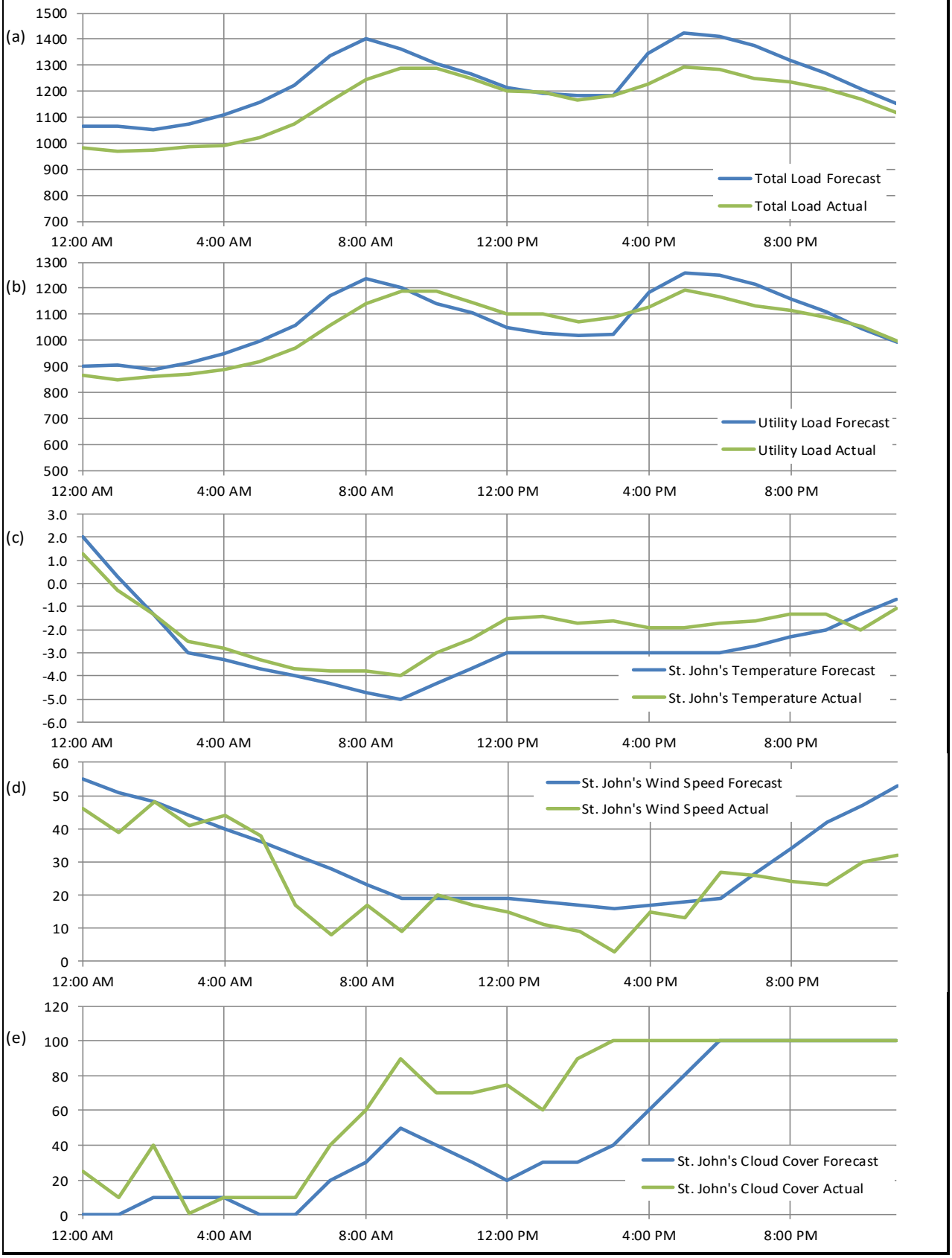

Figure 5 Accuracy Analysis - Jan 25, 2022

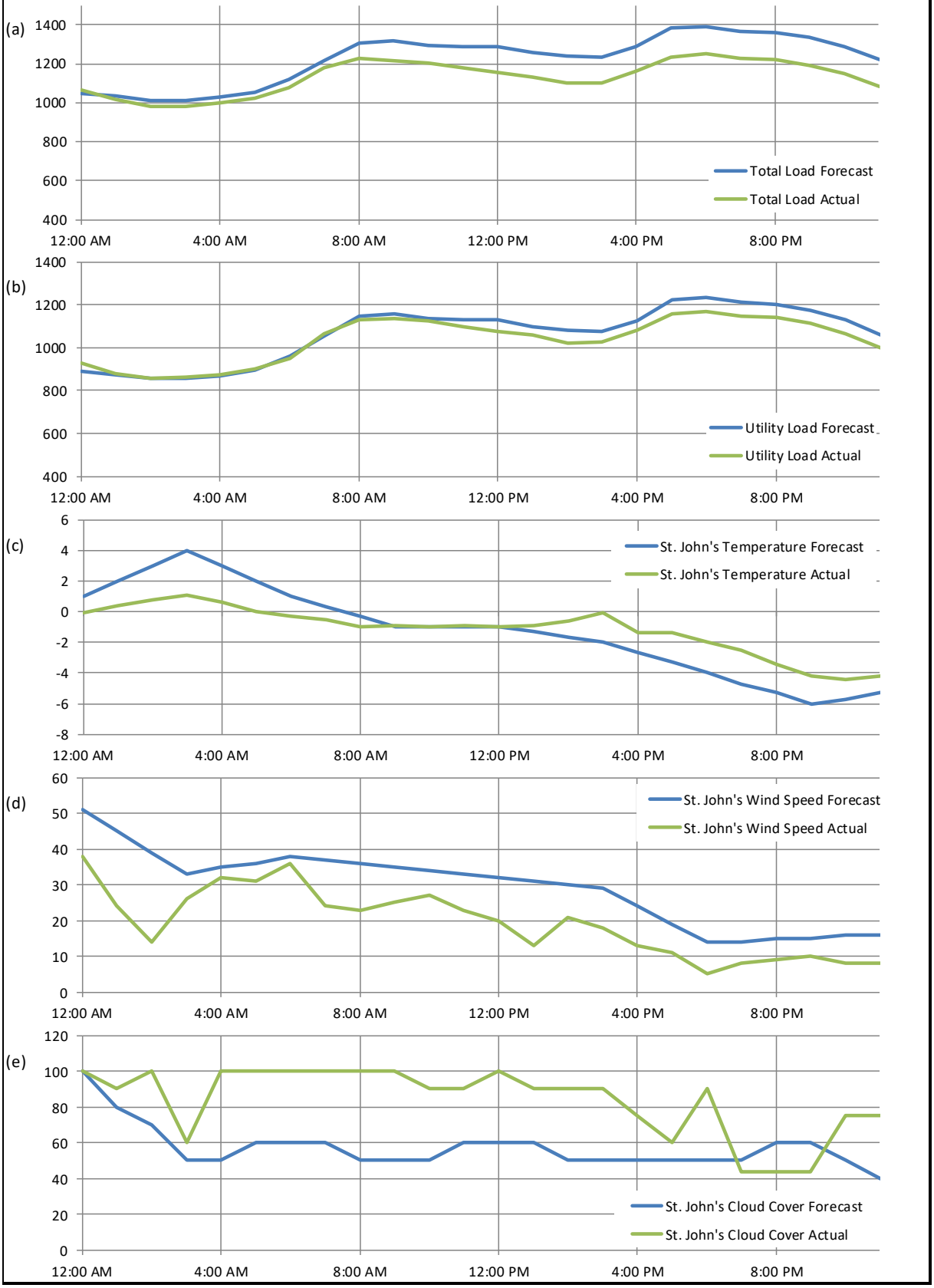

Figure 6 Accuracy Analysis - Feb 12, 2022

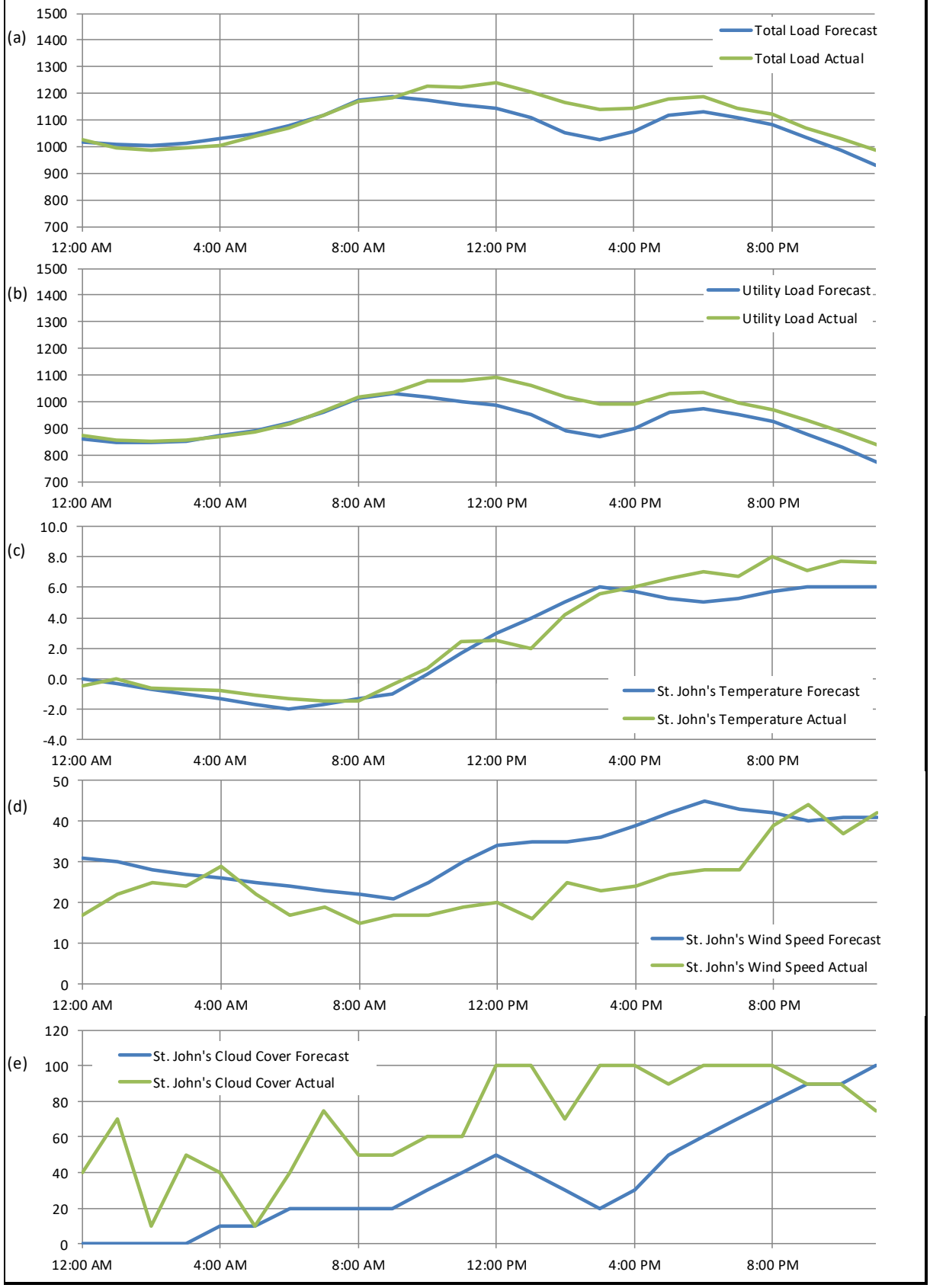

Figure 7 Accuracy Analysis - Feb 19, 2022

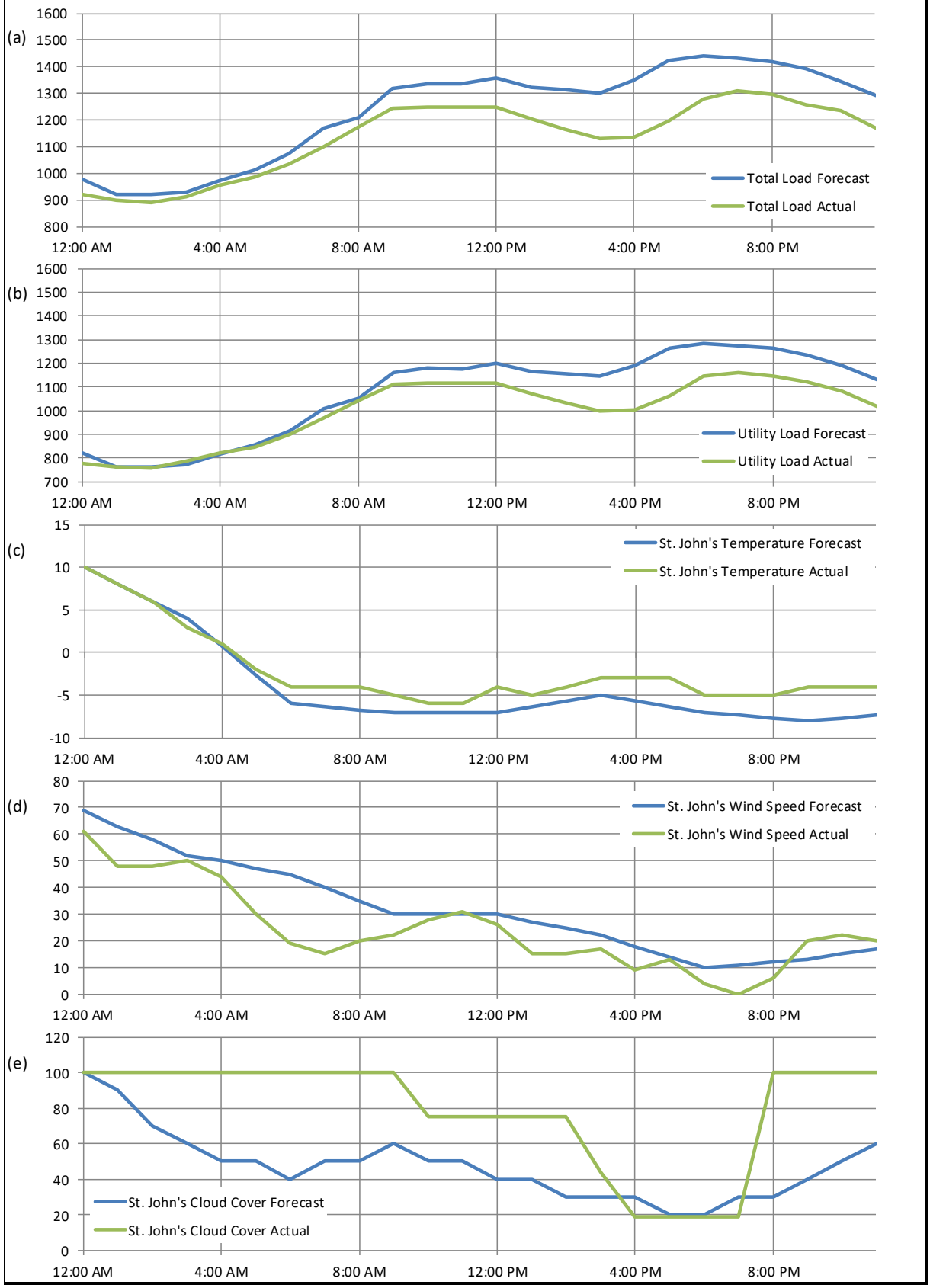

Figure 8 Accuracy Analysis - Feb 22, 2022

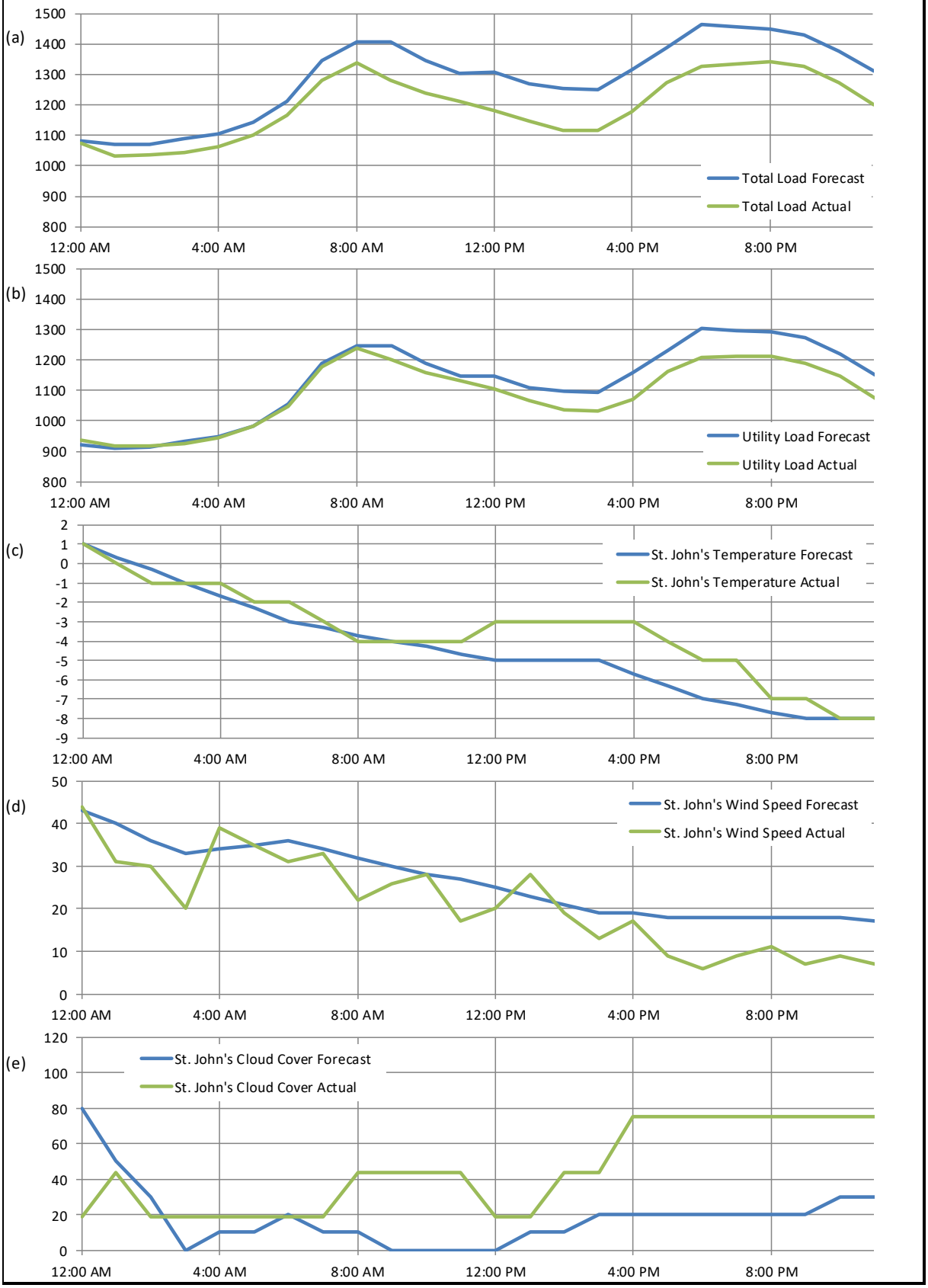

Figure 9 Accuracy Analysis - Apr 02, 2022

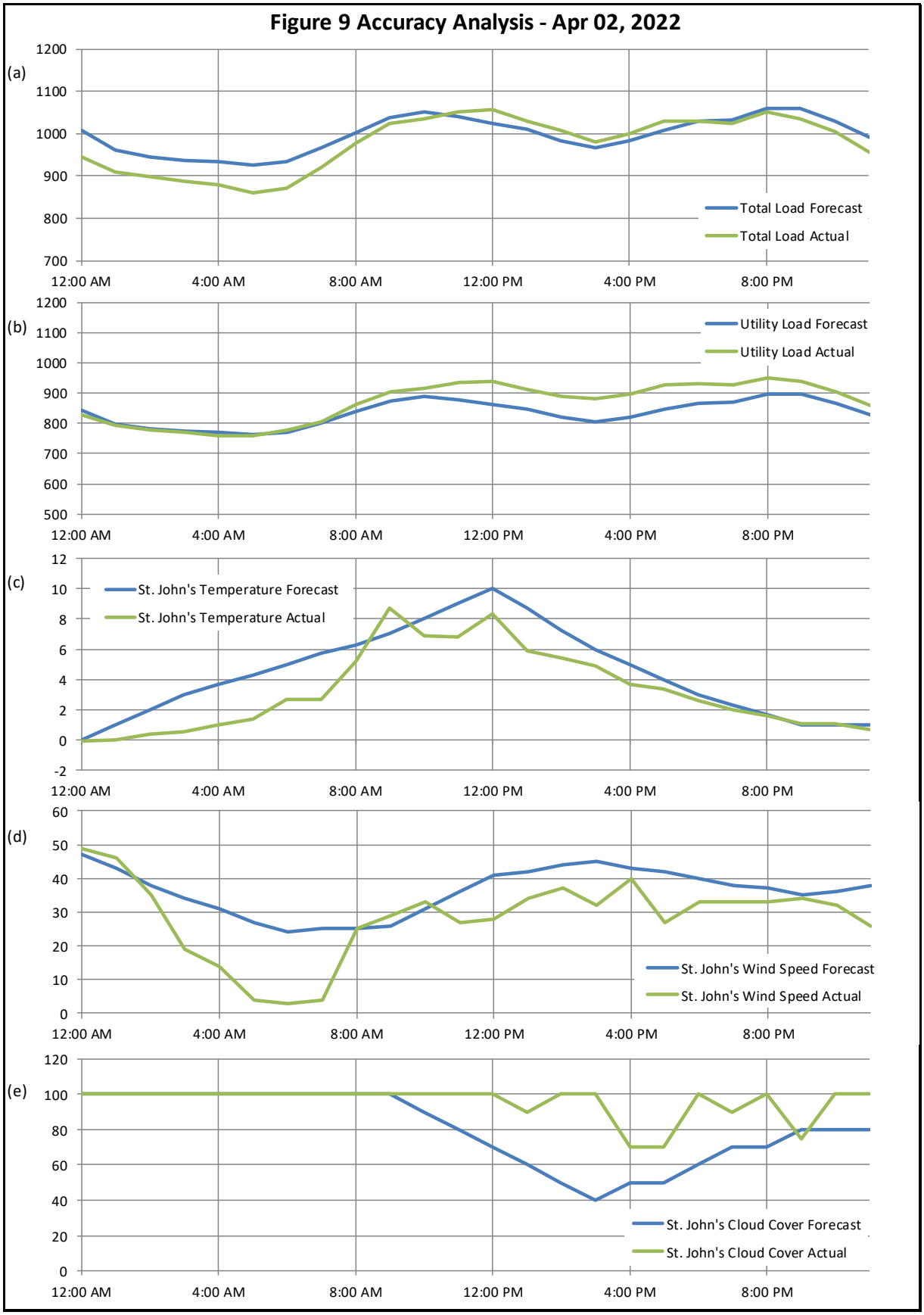

Figure 10 Accuracy Analysis - Apr 17, 2022

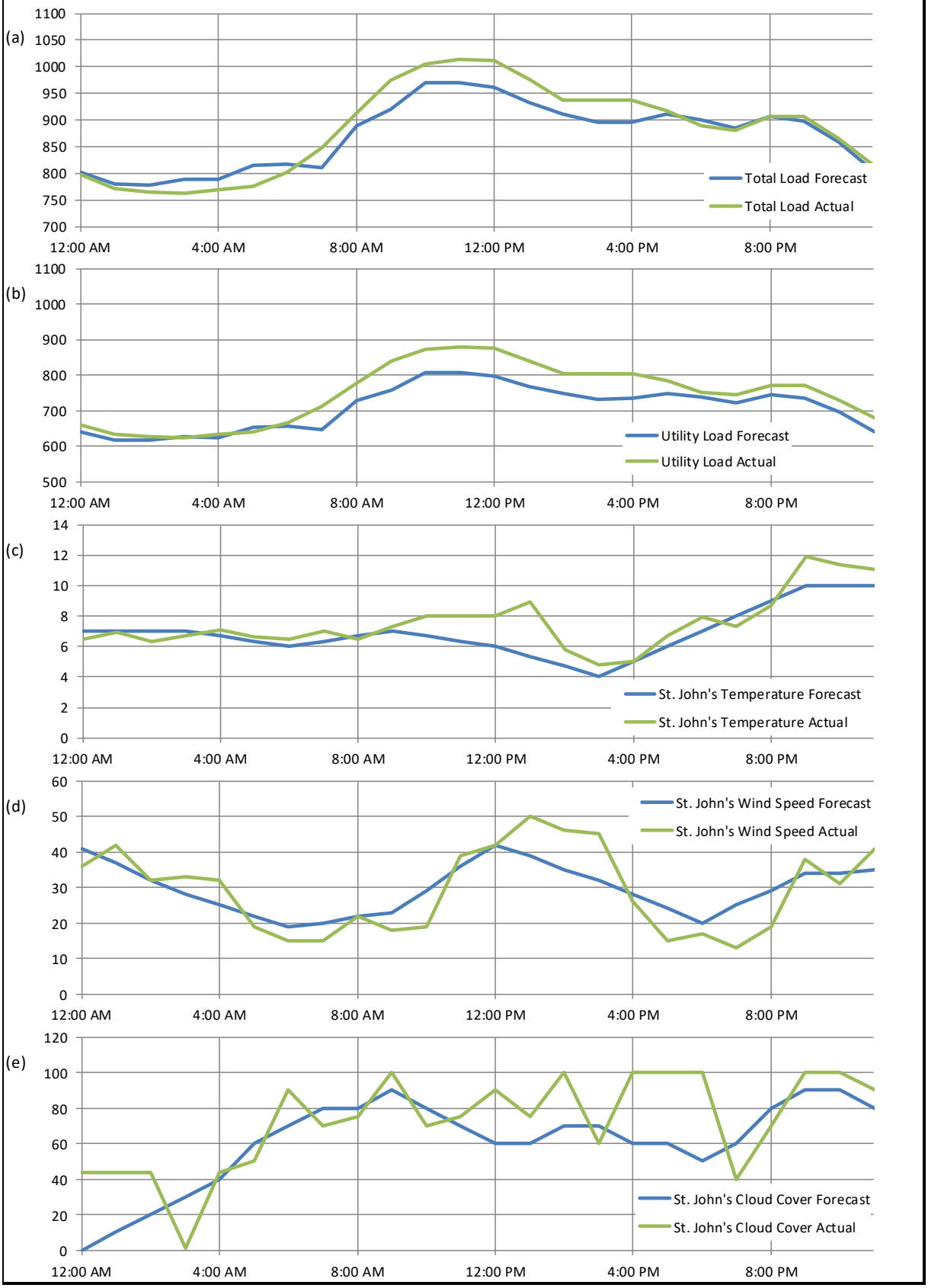

Figure 11 Accuracy Analysis - Apr 23, 2022

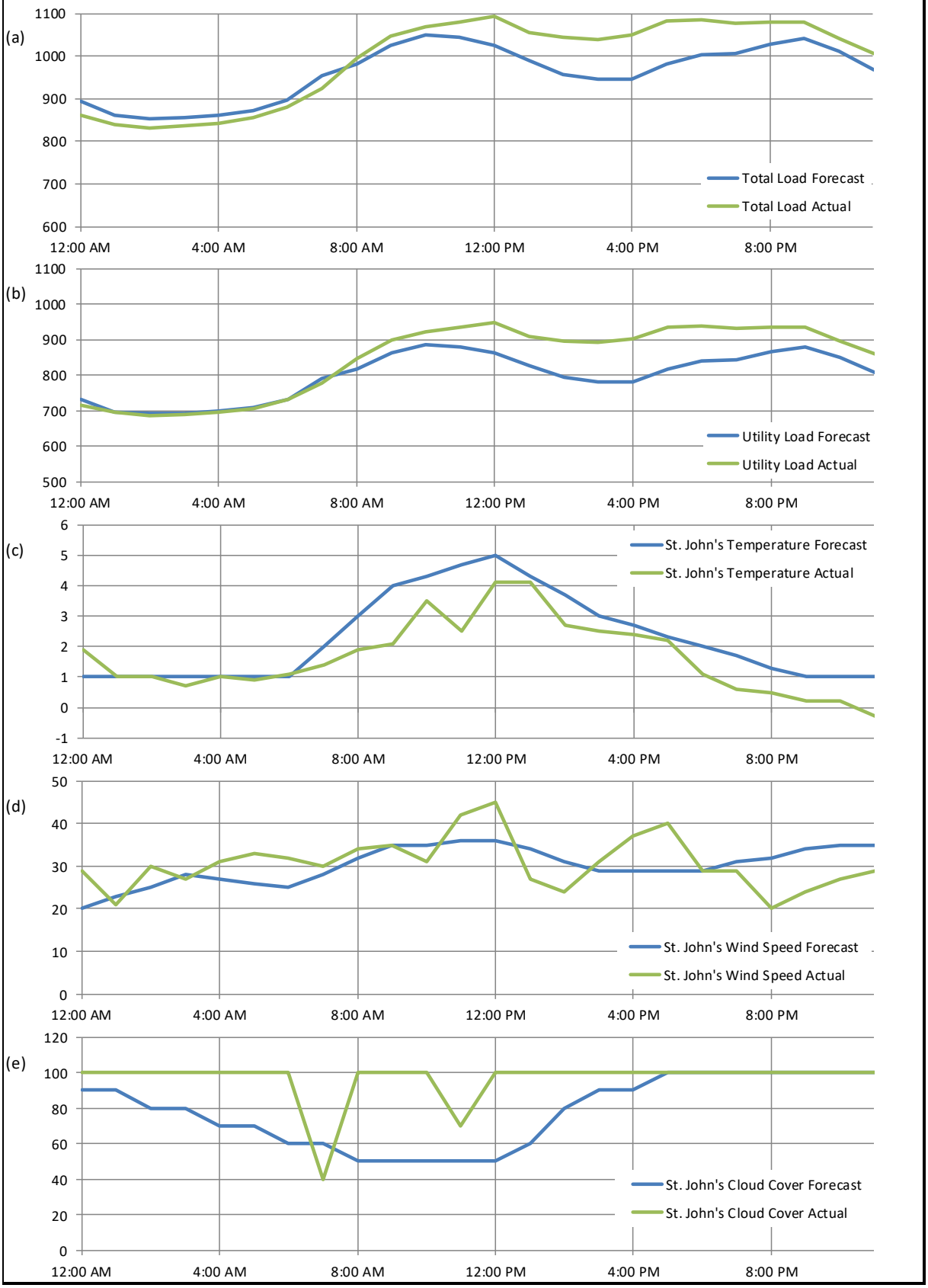

Figure 12 Accuracy Analysis - May 23, 2022

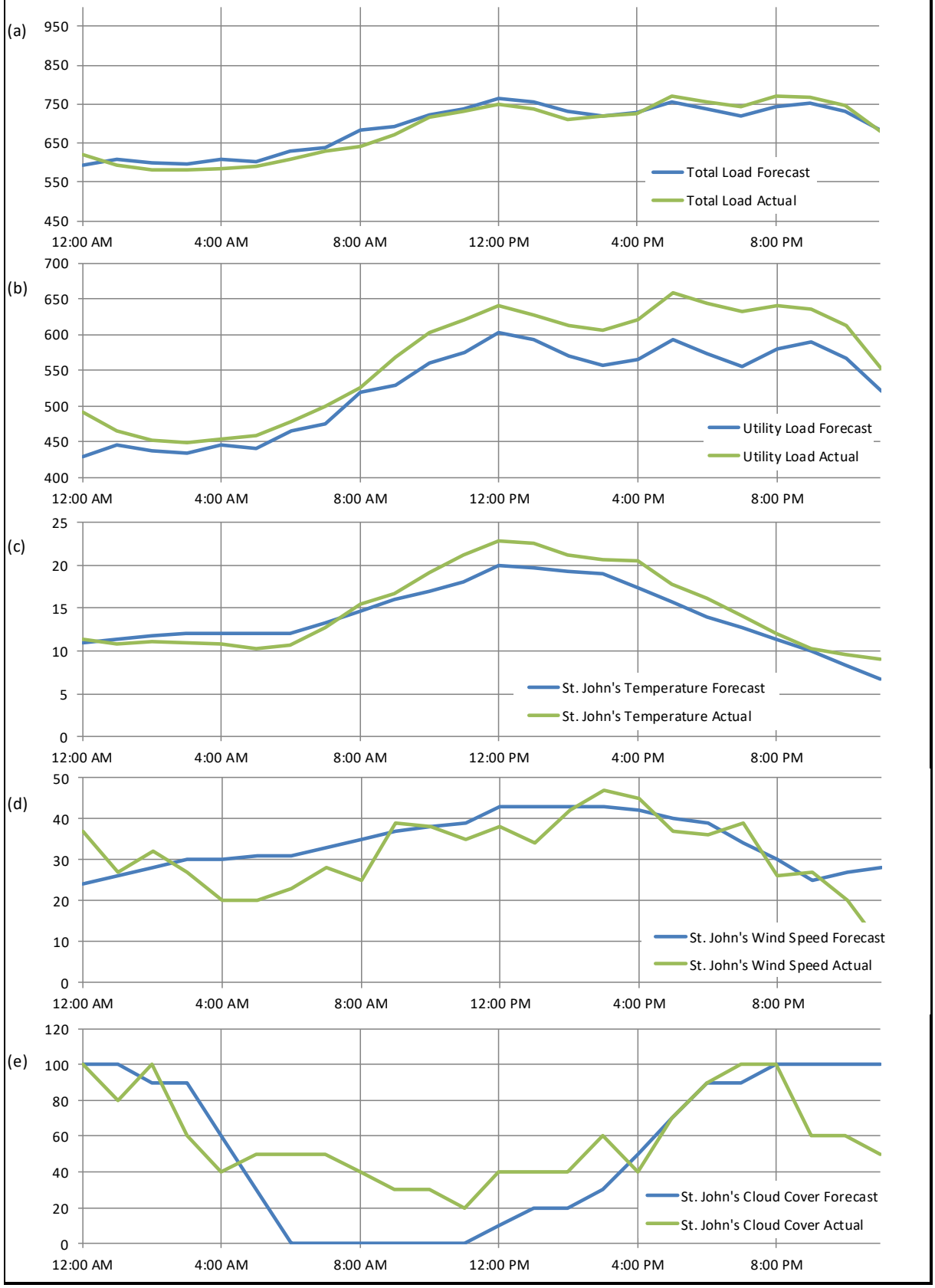

Figure 13 Accuracy Analysis - May 28, 2022

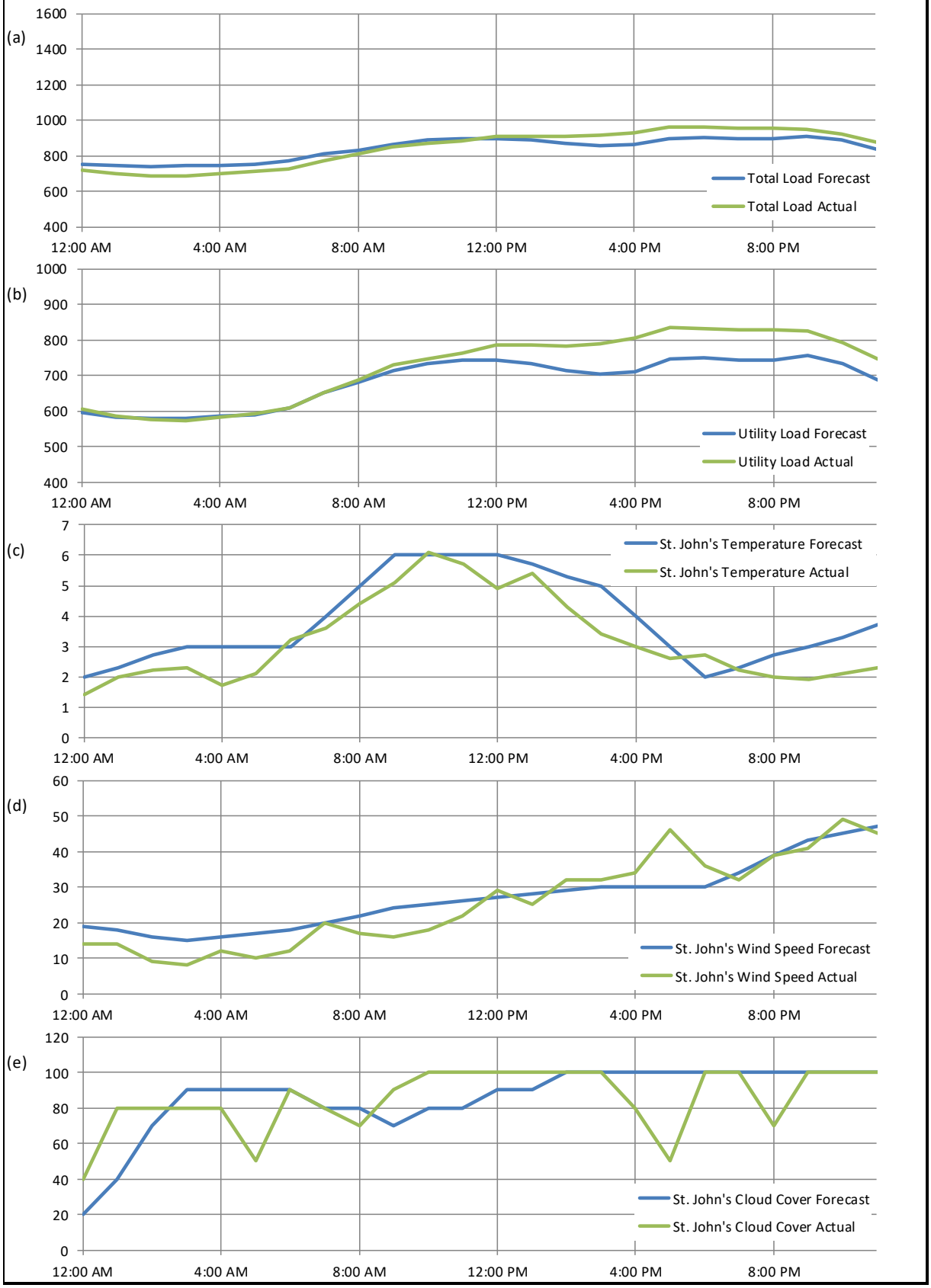

Figure 14 Accuracy Analysis - Jun 01, 2022

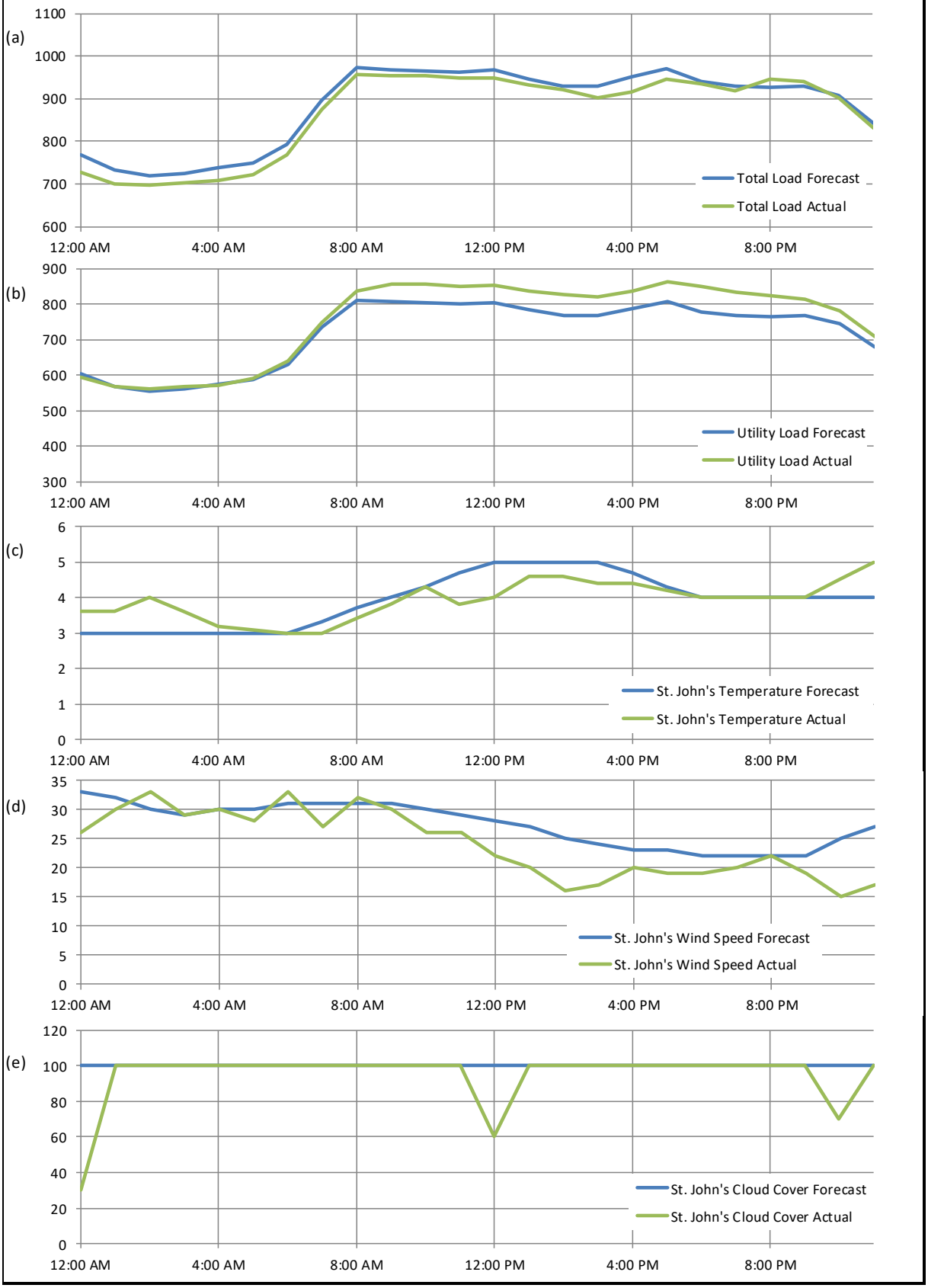

Figure 15 Accuracy Analysis - Jun 06, 2022

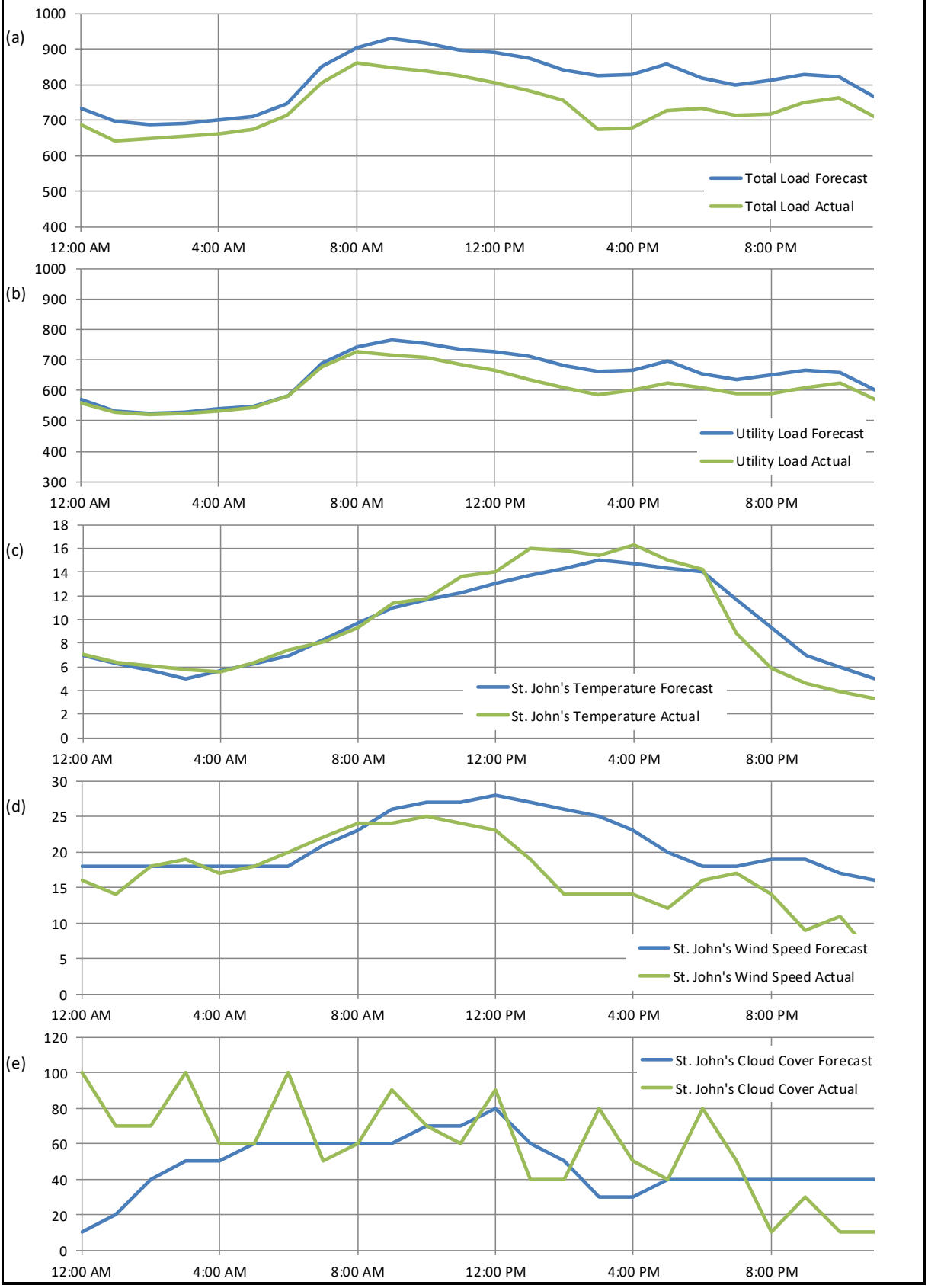

Figure 16 Accuracy Analysis - Jul 23, 2022

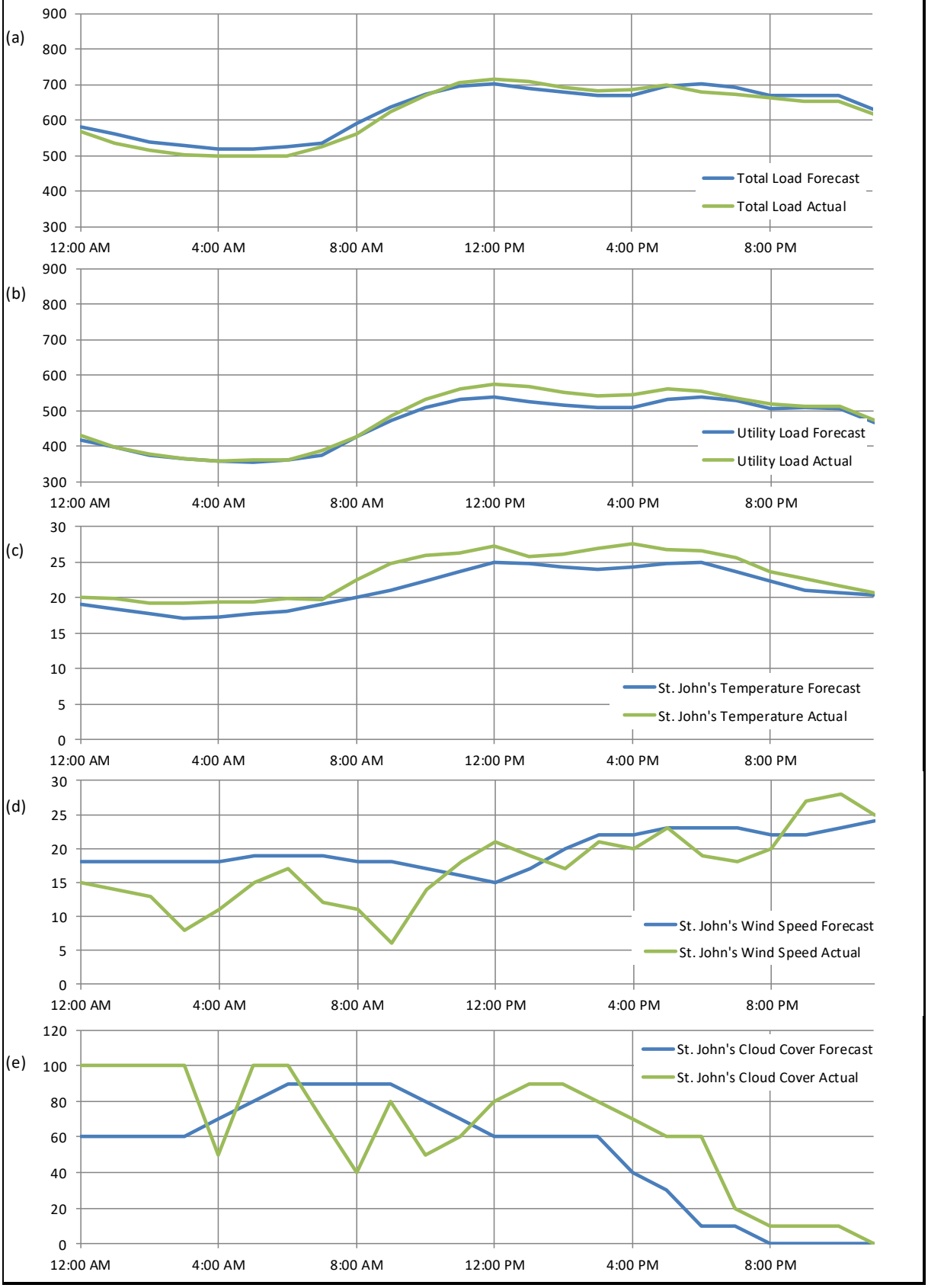

Figure 17 Accuracy Analysis - Aug 06, 2022

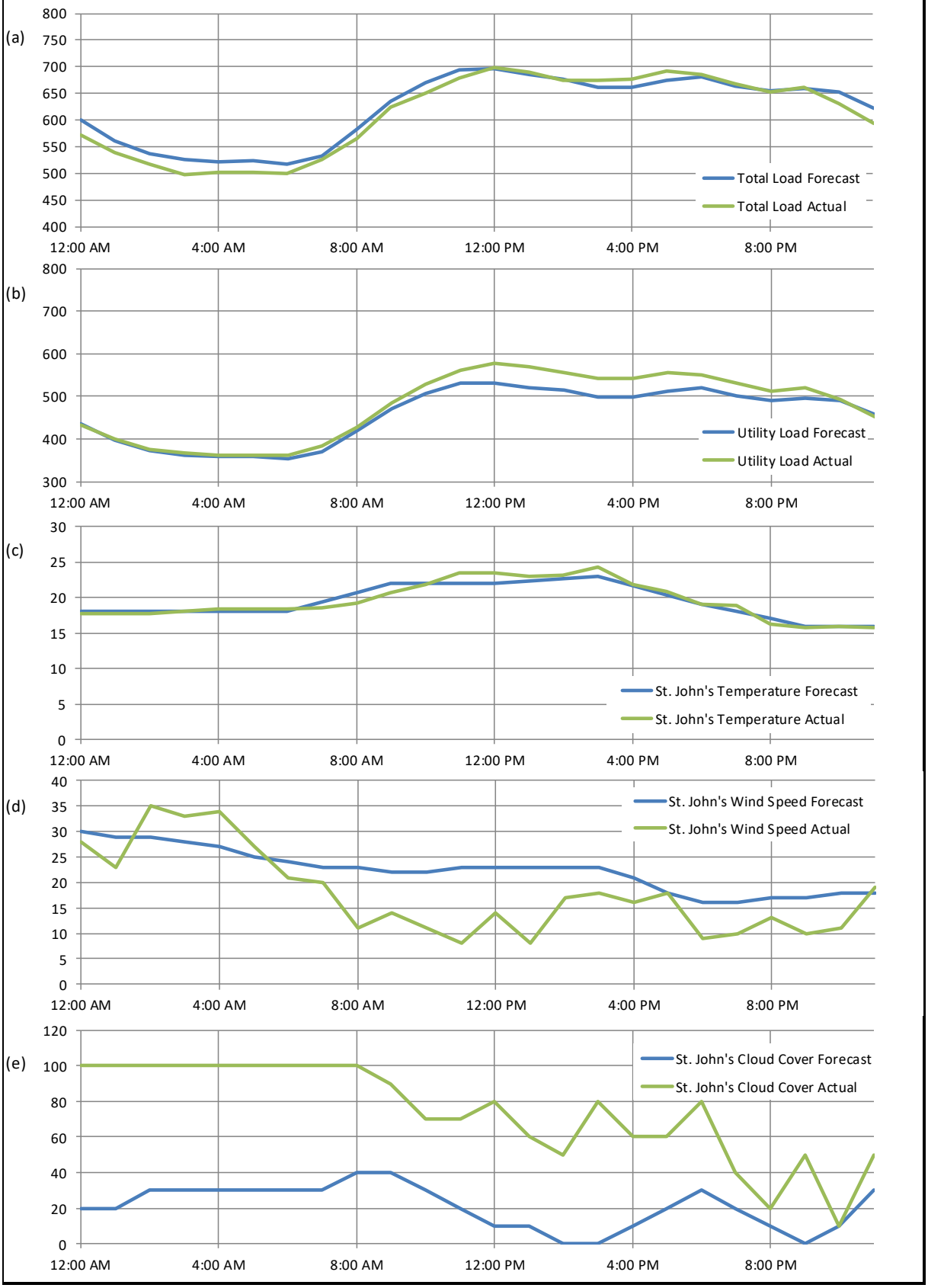

Figure 18 Accuracy Analysis - Aug 20, 2022

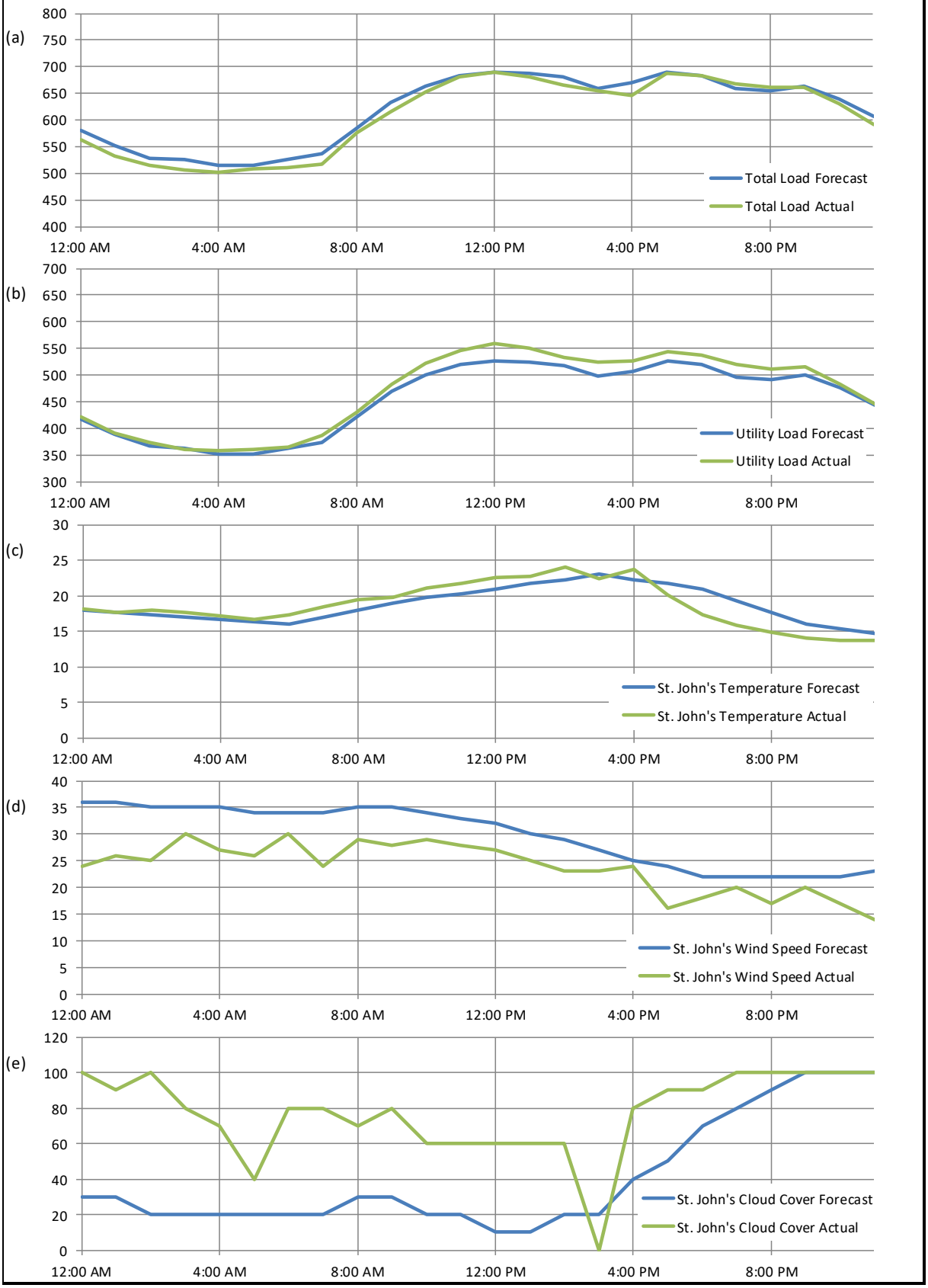

Figure 19 Accuracy Analysis - Sep 05, 2022

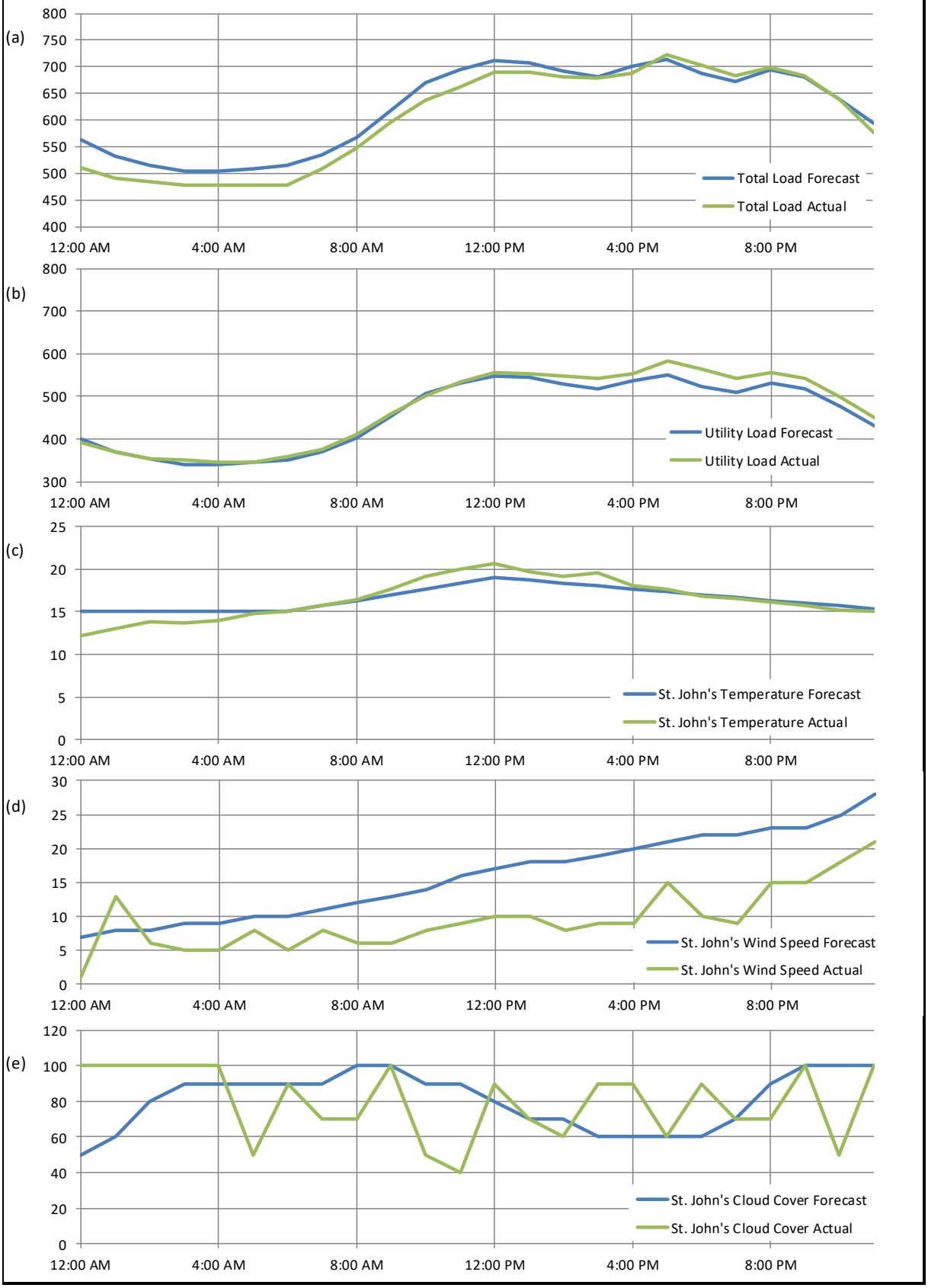

Figure 20 Accuracy Analysis - Sep 11, 2022

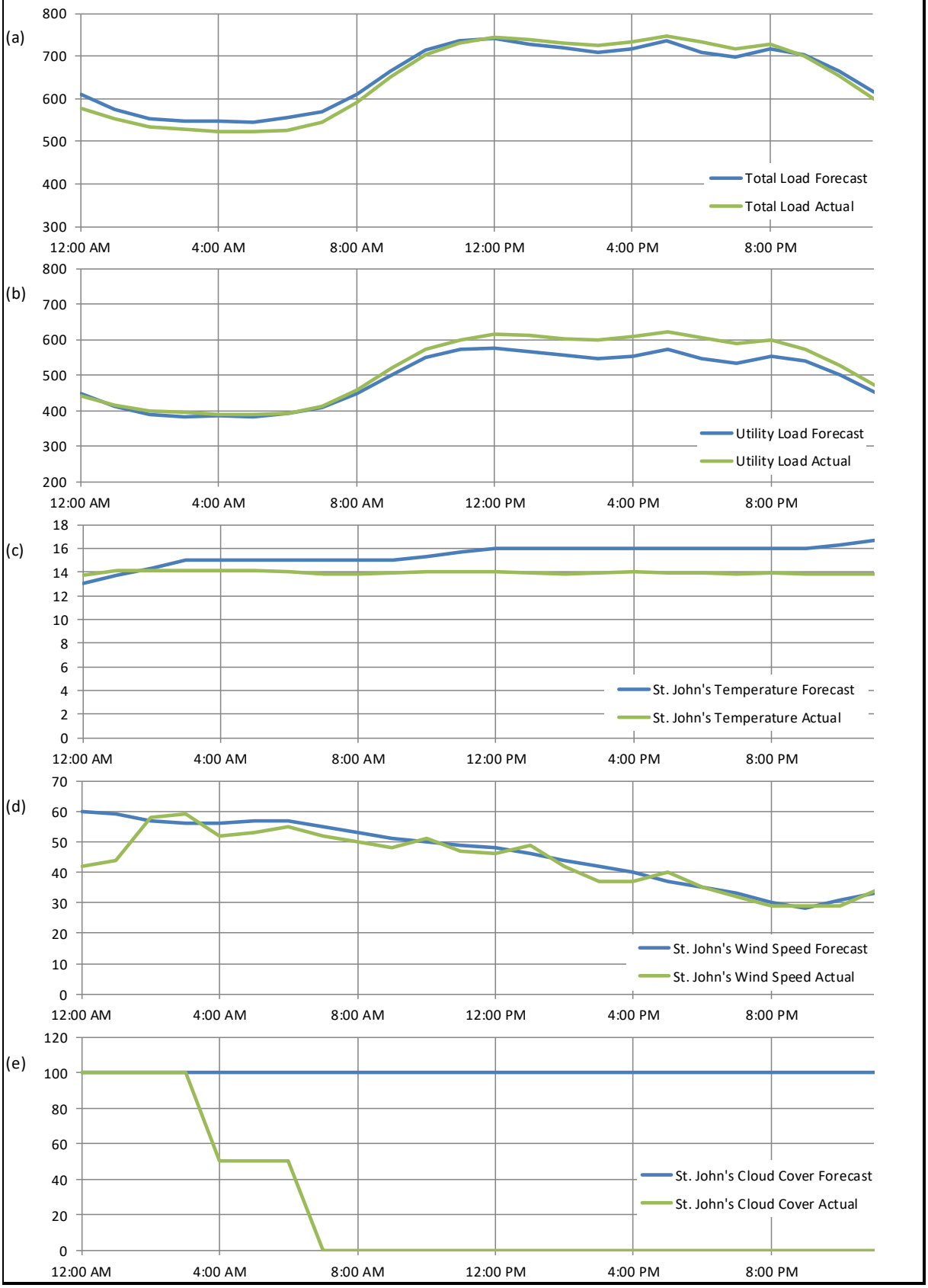

Figure 21 Accuracy Analysis - Sep 29, 2022

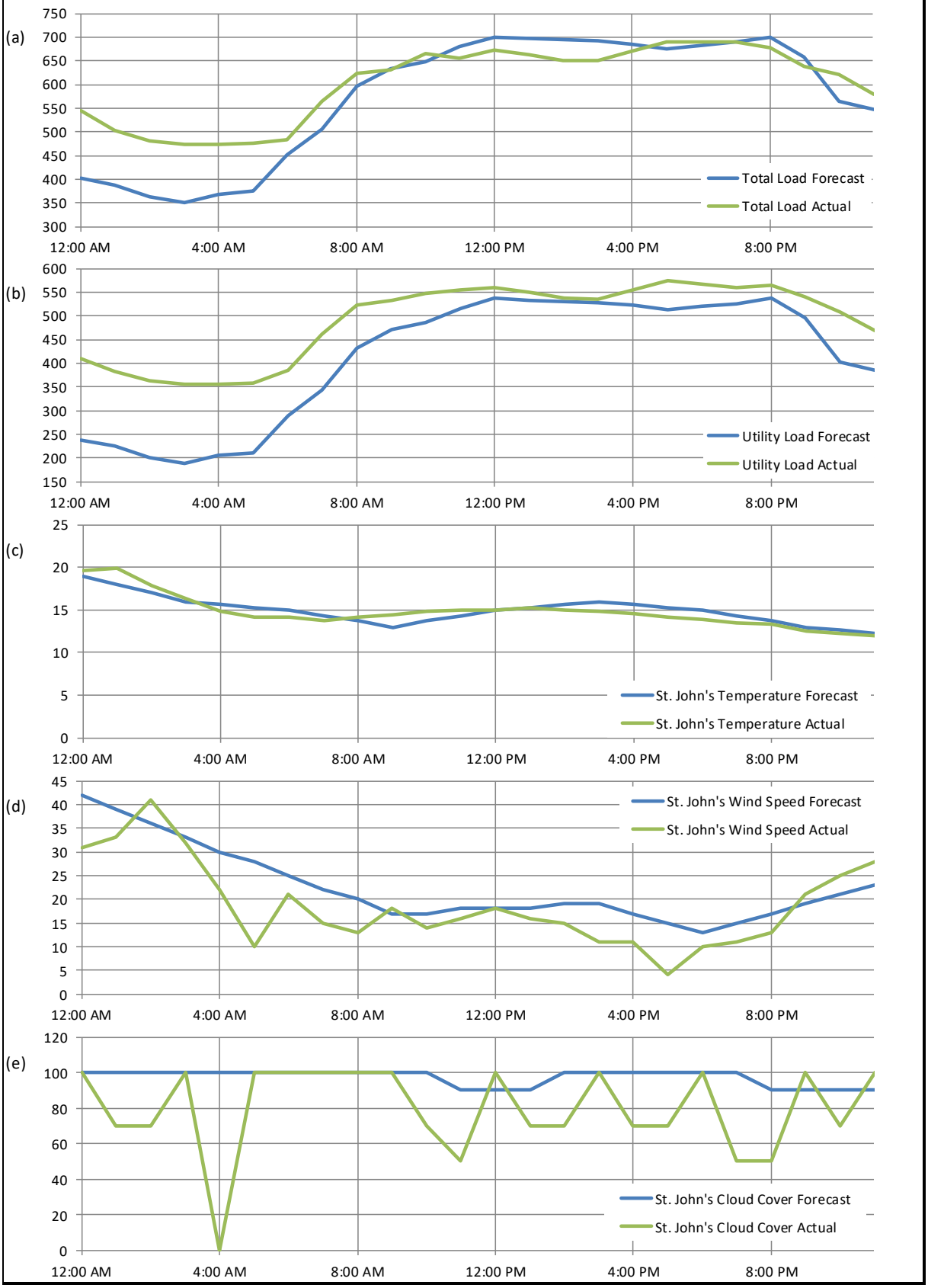

Figure 22 Accuracy Analysis - Oct 02, 2022

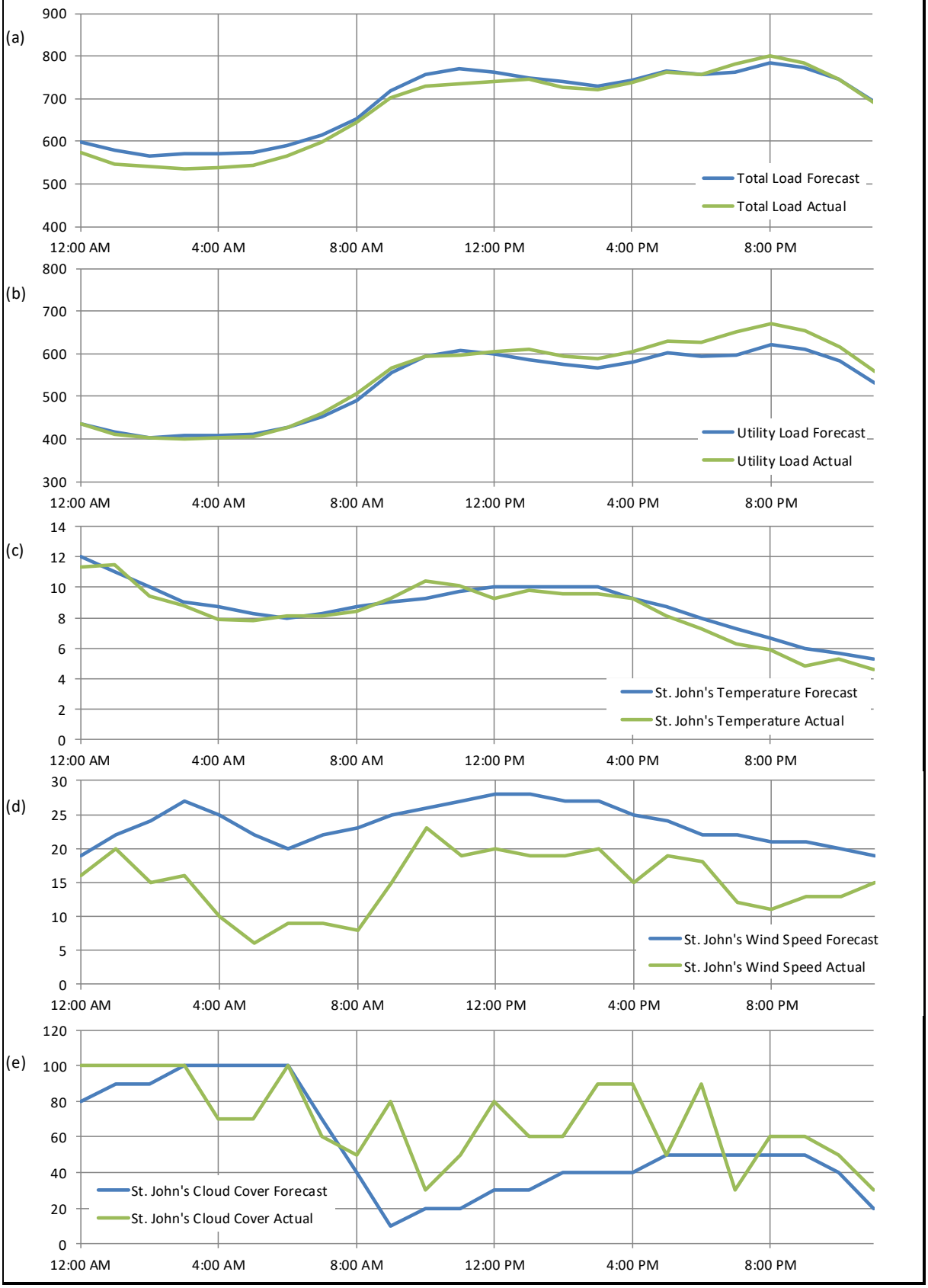

Figure 23 Accuracy Analysis - Oct 18, 2022

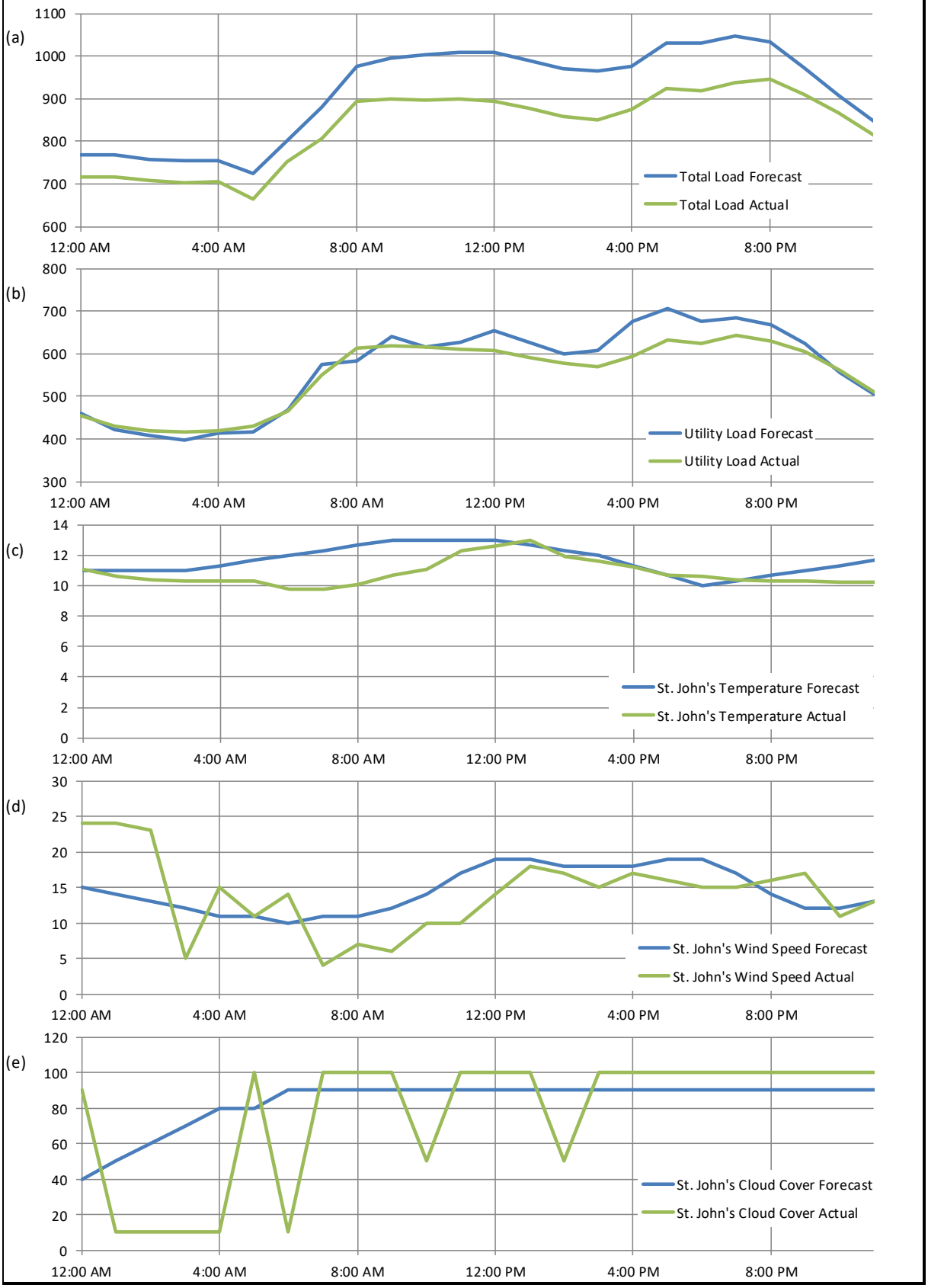

Figure 24 Accuracy Analysis - Oct 29, 2022

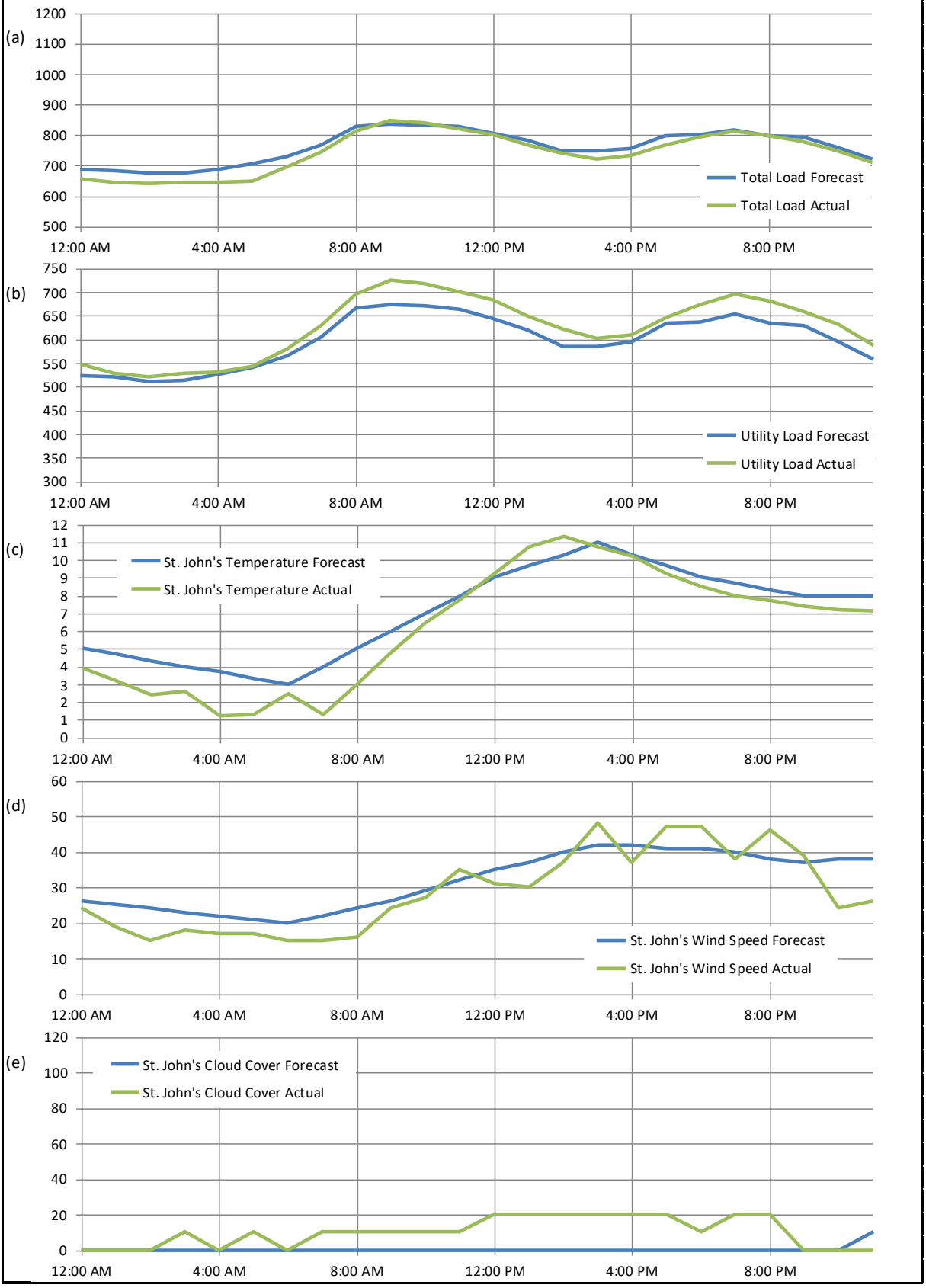

Figure 25 Accuracy Analysis - Nov 12, 2022

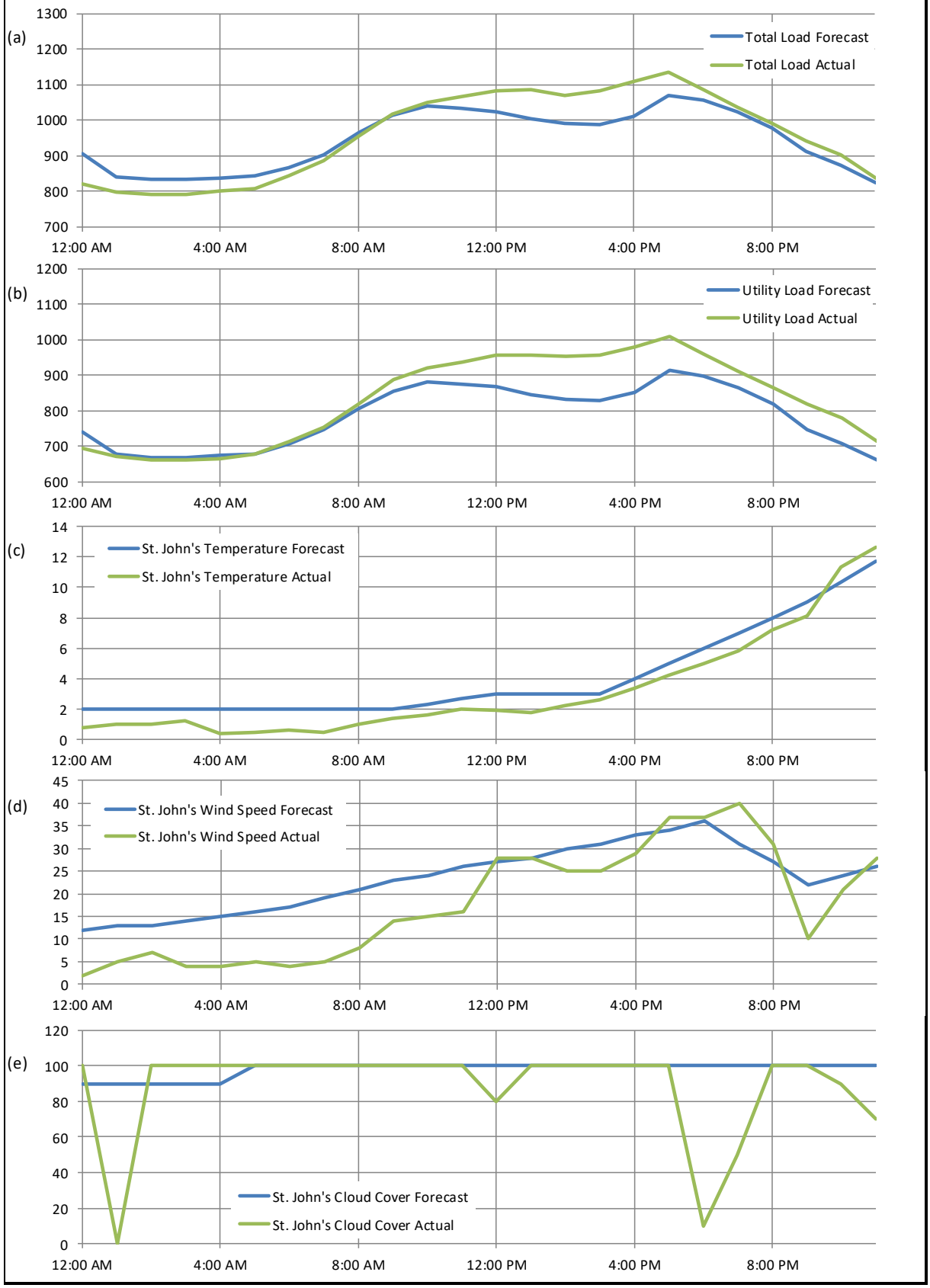

Figure 26 Accuracy Analysis - Nov 16, 2022

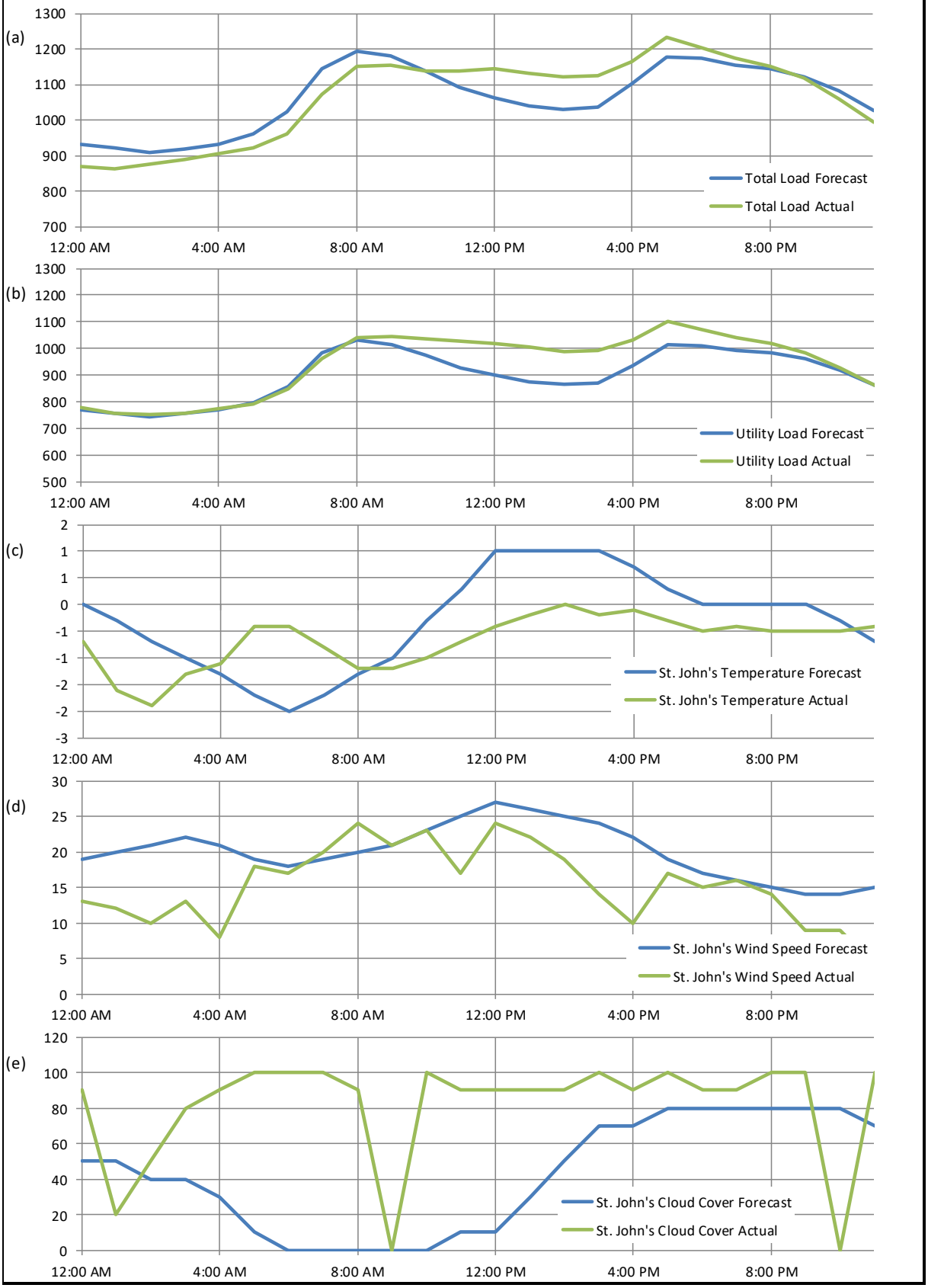

Figure 27 Accuracy Analysis - Nov 19, 2022

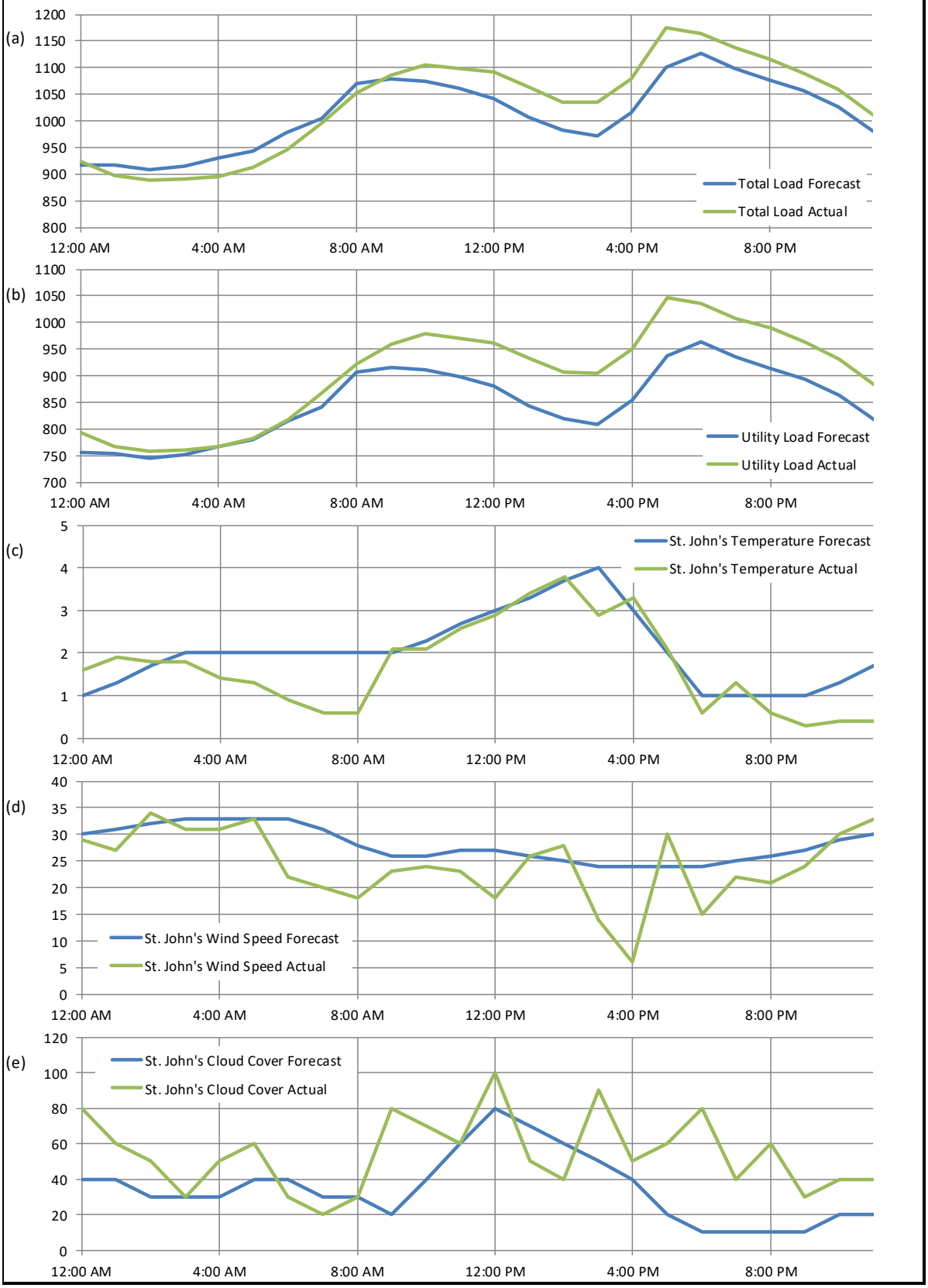

Figure 28 Accuracy Analysis - Dec 06, 2022

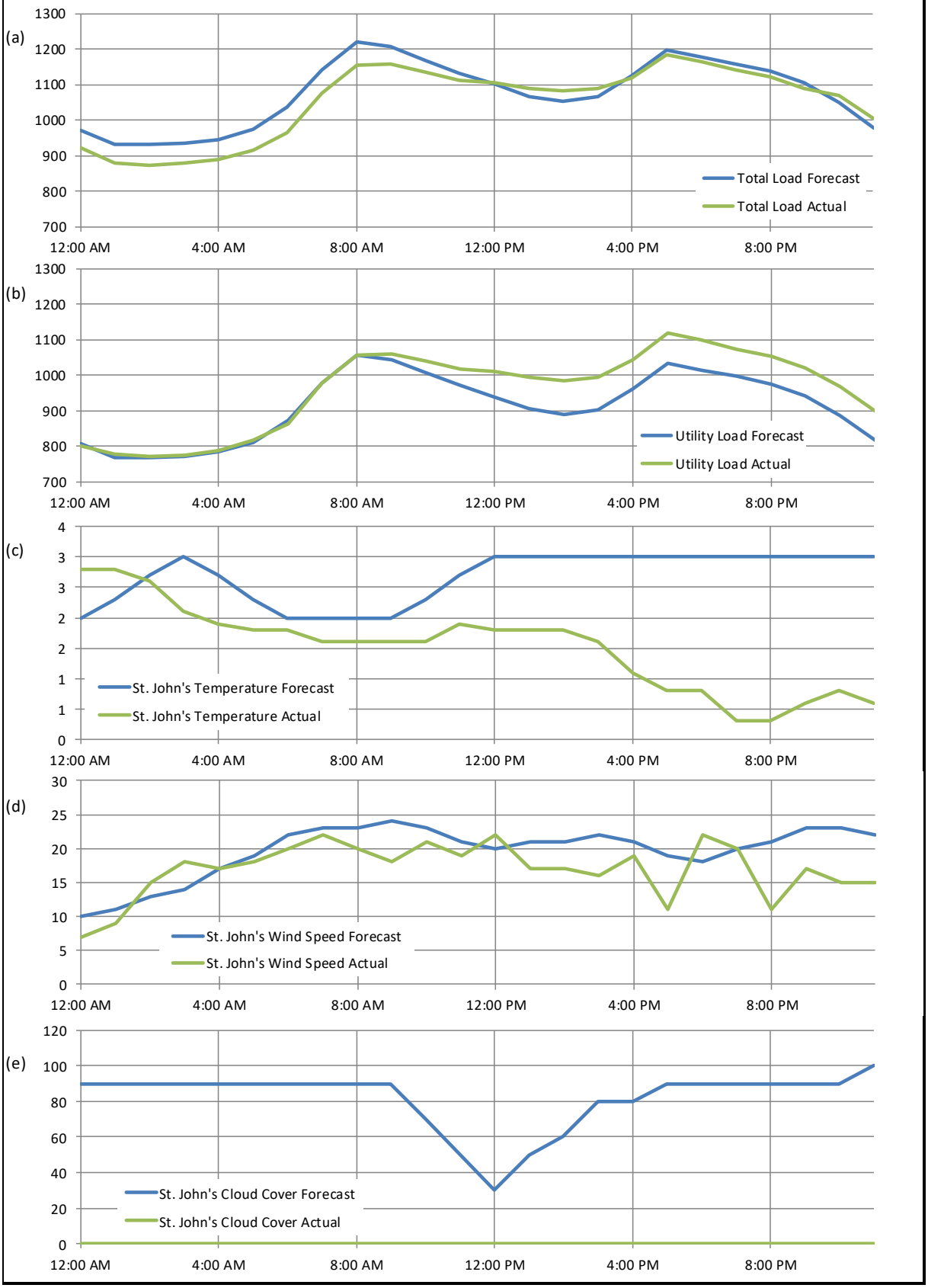

Figure 29 Accuracy Analysis - Dec 11, 2022

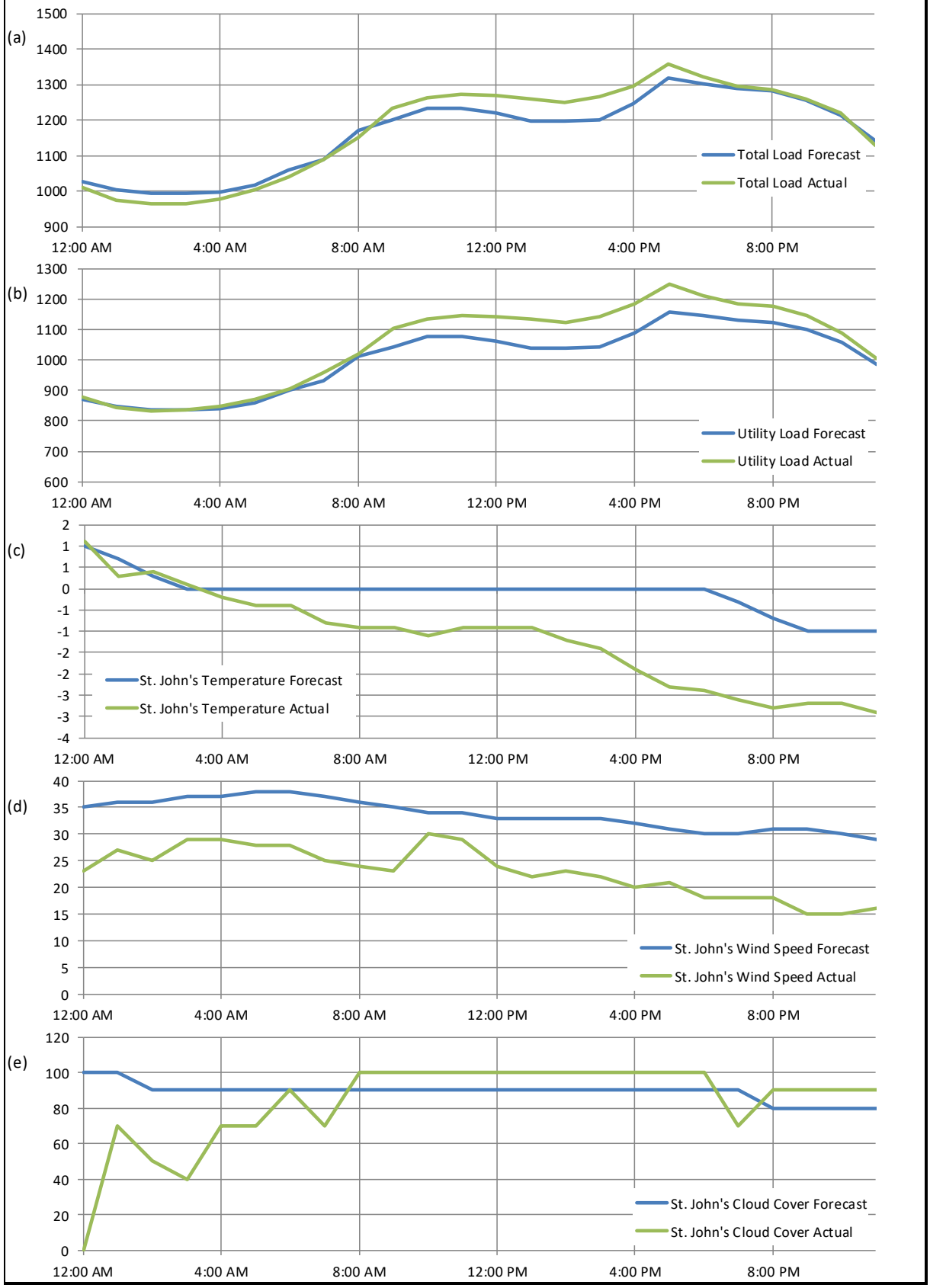

Figure 30 Accuracy Analysis - Dec 25, 2022