Nova Scotia Energy Board

IN THE MATTER OF *The Public Utilities Act,* R.S.N.S. 1989, c.380, as amended

M12349

2025 Load Forecast Report

NS Power
Rebuttal Evidence

November 6, 2025

NON-CONFIDENTIAL

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1.0 INTRODUCTION

In accordance with the Nova Scotia Wholesale Electricity and Renewable to Retail Market Rules[1] the Nova Scotia Power System Operator (NSPSO) is required each year to provide the Nova Scotia Energy Board (NSEB, Board) with its 10-year energy and demand forecast by the end of April for the period beginning the following January (Load Forecast Report). The requirements for preparing the Load Forecast Report are provided in Chapter 3 of the Nova Scotia Wholesale Electricity and Renewable to Retail Market Rules. Since 2007, Nova Scotia Power Inc. (NS Power, Company) has filed its annual Load Forecast Reports in compliance with this requirement. For 2025, NS Power requested, and was granted, an extension of the filing date to June 30, 2025 due to the impact of the cybersecurity incident (Incident).[2]

Following the filing of the 2025 Load Forecast Report on June 30, 2025, the Board issued a Hearing Order directing a paper hearing associated with its consideration of the Report.[3] Interventions were received from the Consumer Advocate (CA), the Small Business Advocate (SBA), counsel for the Industrial Group (IG), EfficiencyOne (E1), Eastward Energy (EE), Energy Storage Canada (ESC), and Solar Nova Scotia (SNS).

On August 19, 2025, NS Power provided responses to Information Requests (IRs) issued by NSEB staff, Synapse Energy Economics, Inc. (Synapse) on behalf of NSEB Counsel, the CA, the SBA, ESC, and SNS. Intervenor Evidence was subsequently filed by Synapse, and submissions were filed by the CA, the SBA as well as a joint submission from ESC and SNS. Synapse provided the following positive comments regarding the 2025 Load Forecast:

> Synapse has reviewed these forecasts for many years and observes overall positive trends in their expository quality. This year's iteration shows that NSPI continues to enhance the caliber of the forecast.
> //

[1] Nova Scotia Wholesale and Renewable to Retail Electricity Market Rules, effective 2007 02 01, amended 2016 06 01.
[2] NS Power Letter, Re: 2025 Load Forecast Report, May 27, 2025.
[3] M12349, Document 98347, NSEB Hearing Order, 2025 Load Forecast Report, July 3, 2025.

> We support NSPI's ongoing efforts to improve the transparency and accuracy of the load forecast. There is still more to do, but overall, NS Power's Report is very well done and satisfactorily explains the underlying factors driving the forecast.[4]

NS Power has agreed to many intervenor recommendations, as outlined in Section 2 below. The Company's responses to the Intervenors' specific recommendations are set out in this Rebuttal Evidence. Some recommendations cannot be accommodated due to time and resources constraints or are better handled in other existing processes (in particular, scenario modeling that is already part of a comprehensive Integrated Resource Plan). With respect specifically to incorporating Advanced Metering Infrastructure (AMI) data into variance analysis activities and forecasting, the load forecast model will likely see changes in the coming years as more granular data becomes available, but this is a long-term process that will require a period of assessing the available data, and either integrating it into the existing model or building a new or modified version to make use of this data.

[4] M12349, Exhibit N-8, Synapse, Direct Evidence of Kenji Takahashi, Aidan Glaser Schoff, Selma Sharaf, and Ben Havumaki, Sep 10, 2025, pages 1 and 28.

2.0 RECOMMENDATIONS

Synapse, the CA, the SBA, and SNS/ESC all provided additional recommendations for future load forecasts. NS Power's responses to those recommendations are set out below.

2.1 SYNAPSE

Synapse provides twelve (12) recommendations, which are discussed below.

2.1.1 Recommendation 1

> The impacts of trade tariffs are an ongoing uncertainty. We recommend that the 2026 forecast include an analysis of the extent that 2025 trade tariffs with the United States are incremental to the economic forecast established by the Conference Board of Canada. If the trade tariffs are not appropriately incorporated into the forecast, NSPI should develop a methodology to incorporate the tariffs into their economic forecast.[5]

NS Power Response:

NS Power agrees that impact of tariffs on economic inputs to the forecast should be considered to the extent possible and applicable in the 2026 forecast. As noted by Synapse, the Conference Board of Canada (CBoC) establishes the economic forecast, so whether tariff impacts can or would be considered is at their discretion. NS Power will confirm with the CBoC whether tariffs are accounted for in their forecast.

2.1.2 Recommendation 2

> For its residential heat pump forecast, NSPI should retain its own modeled heat pump load impacts as the foundation of the forecast and apply a scaling factor based on the difference between E3's hybrid and non-hybrid scenarios. This adjustment would allow NSPI to incorporate the mitigating effects of hybrid heating while

[5] M12349, Exhibit N-8, page 27.

> preserving its own saturation assumptions and ensuring consistency across sectors. Over the longer term, NSPI should develop the capability to model hybrid electric heating explicitly within its load forecasting framework—not only for residential forecasts, but also for commercial heating—rather than relying on simplified post-modeling corrections. This recommendation builds on the guidance we provided in our 2024 evidence and remains critical for improving the accuracy and transparency of future forecasts. In both the residential and commercial sectors, NSPI should also validate its heat pump displacement and intensity assumptions using AMI data or other empirical sources. We strongly support NSPI's new commitment to analyzing AMI data and encourage the utility to prioritize this effort as it works to refine its modeling of electric heating impacts.[6]

NS Power Response:

NS Power agrees that modeling the impact of hybrid heat pumps should be included in the underlying residential intensity calculations and will update the calculations accordingly for 2026. Where possible, AMI data will be used to validate assumptions. NS Power also agrees with developing the capability to explicitly model hybrid commercial heating in future forecasts, but this will not likely be available for the 2026 forecast.

2.1.3 Recommendation 3

> We recommend that NSPI begin modeling heat pump water heaters as a separate end-use technology in its next load forecast. This is a continuation of the recommendation we made in our previous Evidence, and it remains important because of the forecast surge in overall electric water heater saturation. While NSPI has argued that current uptake of heat pump water heaters is too low to warrant separate treatment, we disagree. Even at low adoption levels, modeling heat pump water heaters explicitly is necessary for accuracy and transparency, as they have very different load and peak characteristics than conventional electric resistance tanks. Incorporating them now also prepares the forecast to reflect their growing market presence over the next decade. Distinguishing between the two technologies will improve the precision of the forecast while aligning with Nova Scotia's broader electrification and peak management goals.[7]

[6] M12349, Exhibit N-8, page 27.
[7] M12349, Exhibit N-8, page 27.

NS Power Response:

NS Power agrees with this recommendation and will add a separate category in the intensity calculations for heat pump water heaters.

2.1.4 Recommendation 4

> NSPI should monitor the impact of the removal of the carbon levy on EV sales and adjust the forecast as needed. NSPI should also provide additional details about its managed charging assumptions in the next load forecast, particularly for light-duty vehicles. Furthermore, NSPI should develop and describe strategies to incentivize managed charging as EV adoption grows, such as through rate design or other programmatic options.[8]

NS Power Response:

The forecast for EV sales is updated annually based on available information related to historic sales, policy and incentives. Although managed charging programs will impact the load forecast, it is not the intent of the load forecast to develop these strategies; they would be developed through a separate rate design process. Any rate related developments that may impact EV charging patterns will be incorporated into the forecast as they are developed.

2.1.5 Recommendation 5

> NSPI should continue to evaluate and update its solar installation projections and coincidence factors for solar so they align with the latest data.[9]

NS Power Response:

Solar installation projections and coincidence factors are updated annually.

[8] M12349, Exhibit N-8, page 27.
[9] M12349, Exhibit N-8, page 27.

2.1.6 Recommendation 6

> NSPI should begin to incorporate the impacts of rate design and other incentives that may encourage solar-plus-battery adoption into its analysis.[10]

NS Power Response:

NS Power agrees with the recommendation to incorporate impacts into the load forecast. Consistent with the Company's response to Recommendation 4 above, incentive programs and rates would be developed as part of a separate initiative.

2.1.7 Recommendation 7

> NSPI should monitor the accuracy of its projections of housing completions, and consider changes to this methodology.[11]

NS Power Response:

NS Power will continue to monitor the accuracy of all aspects of its load forecast, including projections of housing completions and adjustments will be considered where appropriate. As described in the 2025 Load Forecast, NS Power evaluated the housing completion forecasts from the CBoC and adjusted the current forecast accordingly. The forecast for 2026 and beyond will be evaluated in the same way.

2.1.8 Recommendation 8

> We ask NSPI to explore the impacts of potential increases in industrial RTR participation.[12]

[10] M12349, Exhibit N-8, page 27.
[11] M12349, Exhibit N-8, page 28.
[12] M12349, Exhibit N-8, page 28.

NS Power Response:

The forecast provided by the current Licensed Retail Supplier (LRS) is used in the forecast, and is the best available information on expected industrial RTR participation, and customer participation in general. The RTR forecast used in the Report is the same as the publicly available RTR sales forecast submitted by the LRS to the NSEB currently under M10293. The requirement for the LRS to provide sales forecast details is established in Section 11 of the Board Electricity Retailers Regulations, which provides as follows:

> 11 A licence holder shall provide a compliance plan to the Board no later than 60 days prior to the start of each compliance period that details for the coming compliance period
>
> (a) the sales plan showing the forecasts of the sales of renewable low-impact electricity, including numbers of customers differentiated by NS Power's rate classes and forecasts of sales by customer, but not including any behind-the-meter sales;
>
> (b) forecasts of renewable low-impact electricity purchases from renewable low-impact electricity generators at the point of interconnection;
>
> (c) copies of any contractual arrangements with renewable low-impact electricity generators demonstrating that the licence holder has secured a sufficient supply to meet its forecasts in (b);
>
> (d) copies of the certification required in subsection 17(1) from each renewable low-impact electricity generator that the licence holder contracts with;
>
> (e) copies of the certification required in subsection 17(2) from each renewable low-impact electricity generation facility that the licence holder owns or operates;
>
> (f) forecasts of renewable low-impact electricity generation at the point of interconnection if the licence holder owns or operates a renewable low-impact electricity generation facility, net of any behind-the-meter sales; and
>
> (g) forecasts of transmission and distribution losses

such that the requirements set out in Section 10 are met.[13]

According to Section 12 of the Board Electricity Retailers Regulations, the NSEB will then "review the licence holder's compliance plan in order to be satisfied that the licence holder can reasonably be expected to meet its obligations as set out in Section 10."[14]

2.1.9 Recommendation 9

> We ask NSPI to differentiate how it forecasts annual energy relative to peak load for the Municipal sector, given that the Municipal load is assumed to be fully served by a third party through the entire forecast period.[15]

NS Power Response:

The peak assumptions for the Municipal sector are outlined in Section 7.4 of the report:

> Because NS Power is required to provide back-up capacity, including reserve margin, to the municipal electric utilities taking third-party supply in the near term and must continue to plan for serving these customers in the long term, the full amount of the municipal electric utilities' peak demand is included in the Load Forecast.[16]

As with other large customers, the peak forecast for the Municipal sector uses historic load factors to estimate peak load from energy. For the utilities served by a third party, their assumed total energy without third party supply is estimated based on historic total energy requirements.

2.1.10 Recommendation 10

> NSPI should timely conduct an analysis of portfolio ELCC and develop an ELCC value for demand response based on a portfolio ELCC. Furthermore, NSPI should

[13] https://novascotia.ca/just/regulations/regs/elecretailers.htm#TOC2_7
[14] https://novascotia.ca/just/regulations/regs/elecretailers.htm#TOC2_7
[15] M12349, Exhibit N-8, page 28.
[16] M12349, Exhibit N-1, NS Power, 2025 Load Forecast Report, June 30, 2025, page 72, lines 5-8.

> analyze a greater level of demand response programs, consistent with a greater level of peak loads due to electrification.[17]

NS Power Response:

Work to develop an ELCC value for demand response is underway, as outlined in Section 10 of the report. Draft ELCC study scope was developed and presented to stakeholders for their feedback and based on stakeholder feedback a final ELCC study scope was developed and circulated to stakeholders on July 31, 2025. NS Power is engaged in discussion with a consultant for execution of the ELCC study. NS Power anticipates the ELCC study will commence before the end of 2025, and results will be available by the end of Q1 or early Q2 2026.

2.1.11 Recommendation 11

> NSPI should assess the likelihood that each "other possible scenario" in Figure D8 materializes and consider adding additional analyses based on strategies for mitigated projected peak.[18]

NS Power Response:

The purpose of Figure D8 is to highlight some of the larger forecast variables and show their possible impact. The table compares those already included in the forecast (DSM, Solar PV, and EV) to several other scenarios (Hydrogen, Batteries) and inputs (weather/economics, price elasticity). Scenario development, including potential peak mitigation, is a function of an Integrated Resource Plan (IRP) rather than a load forecast, where a select number of combinations would be used to produce a representative range of possible futures.

[17] M12349, Exhibit N-8, page 28.
[18] M12349, Exhibit N-8, page 28.

2.1.12 Recommendation 12

> For the major resources and end uses that pose uncertainties about their future adoption rates, in particular heat pumps, EVs, DSM, and demand response, we again recommend that NSPI develop a few different scenarios (e.g., low case and high case) in addition to the reference case.[19]

NS Power Response:

Please refer to the response to Synapse Recommendation 11.

2.2 CONSUMER ADVOCATE

The CA's submission provides two (2) recommendations, which are discussed below.

2.2.1 Recommendation 1

> The Consumer Advocate submits that an illustrative effort at a class-specific peak load forecast would be instructive, and that the Board should direct NS Power to submit such an effort, either as a compliance filing or with next year's load forecast.[20]

NS Power Response:

NS Power agrees with the recommendation. An illustrative effort at a class-specific peak load forecast will be included in the 2026 Load Forecast Report.

2.2.2 Recommendation 2

> The Consumer Advocate would therefore request that NS Power provide further and better particulars on the information it has relied upon to date with respect to the RTR in its 2025 Load Forecast. To the extent NS Power has solely relied upon

[19] M12349, Exhibit N-8, page 28.
[20] M12349, Document 99295, 2025 Load Forecast Report, Consumer Advocate, Submission, Sep 10, 2025, page 3.

> data provided by the LRS, the Consumer Advocate would request that NS Power be directed to conduct its own independent analysis and provide an update to the Board through a compliance filing, or alternatively, at the Board's direction, in the next load forecast.[21]

NS Power Response:

Please refer to Synapse Recommendation 8.

2.3 SMALL BUSINESS ADVOCATE

The SBA's submission provides two (2) recommendations, which are discussed below.

2.3.1 Recommendation 1

> The SBA respectfully submits that the proposed 2% electricity price increase from 2030 onwards appears to be arbitrary, based on the explanation provided by NSPI. The SBA respectfully submits that, for future filings, NSPI should use additional factors, such as demand trend/load growth, generator mix shifts, transmission upgrades, etc., as part of its forecast model and not just an inflation estimate.[22]

NS Power Response:

Detailed rate modeling is outside the scope of the load forecast, and best suited under a General Rate Application (GRA) for the applicable test years such as the proceeding currently before the NSEB (M12451). The rates assumptions for 2026 to 2029 used in the Load Forecast, as noted in Synapse IR-10, are based on a robust internal forecast completed in Q2 2025 taking into account many different factors. Beyond the years studied in detail, rates will have an increasingly higher degree of uncertainty, due to the many corresponding inputs informing those rates also having a higher degree of uncertainty. NS Power maintains that under these circumstances, using the

[21] M12349, Document 99295, page 5.
[22] M12349, Document 99289, 2025 Load Forecast Report, Small Business Advocate, Submission, Sep 10, 2025, page 1.

expected rate of inflation for 2030 onward is a reasonably proxy until more certainty is achieved as time goes on. Where there is an expectation of rate changes in the near term these are included (as was done in the 2025 forecast).

2.3.2 Recommendation 2

> The SBA respectfully submits that the risk with the approach taken by NSPI is that it could be perceived as handpicking assumptions by relying on outdated data. In addition, if the reported job decline is accurate, it could result in an overstated industrial load forecast. The SBA believes that the selection of inputs to the forecast model must be done carefully and transparently.[23]

NS Power Response:

NS Power agrees that the selection of the economic inputs should be carefully considered and transparent. To that end and with respect to the industrial load forecast specifically, modifications to the manufacturing employment forecast were outlined in Section 4.3 of the report and discussed in response to NSEB IR-5. For the reasons noted under NSEB IR-5 part (b), the Company believes the assumptions used in the load forecast report are not outdated and more accurate than those provided by the Conference Board of Canada and Statistics Canada.

2.4 SOLAR NOVA SCOTIA/ENERGY STORAGE CANADA

The SNS/ESC joint submission provides two (2) recommendations, which are discussed below.

2.4.1 Recommendation 1

> We recommend that a DER Potential Assessment is undertaken to identify the growth potential of DERs, and where the grid can (or cannot) accommodate them, to inform the 2026 Load Forecast Report.[24]

[23] M12349, Document 99295, page 2.
[24] M12349, Document 99296, 2025 Load Forecast Report, Energy Storage Canada & Solar Nova Scotia, Submission, Sep 10, 2025, page 1.

NS Power Response:

SNS/ESC elaborated on their expectations of a DER Potential Assessment, providing the following:

> It is an object of the NSIESO to "[p]rior to, or as part of, conducting an integrated resource planning exercise and subsequent competitive procurements of energy resources, the IESO shall work with the holder of the franchise to supply NSPI with reasonably available, cost-effective demand-side management under the Public Utilities Act…" (More Access to Energy Act, s. 11.2). In support of this initiative, and to inform the 2026 Load Forecast Report, we recommend that a DER Potential Assessment is undertaken to identify the growth potential of DERs, and where the grid can (or cannot) accommodate them. In order to inform the 2026 Load Forecast Report and NSIESO planning and procurement activities, we expect that work on the DER Potential Assessment would need to commence soon. The Study would have refreshed assumptions for DERs capital costs and business models, and would produce a more precise forecast of the impact of DER deployment on the load profile at the provincial and sub-provincial level. The Study should prioritize identifying where the deployment of DERs could bring most value (e.g., targeting the alleviation of grid constraints as non-wires solutions).[25]

The Load Forecast considers behind the meter Distributed Energy Resource (DER) assets such as EVs, rooftop solar, and batteries in terms of their impact on load, as noted in sections 4.4.3, 4.4.4, 4.4.5, respectively, and considers what is probable. NS Power believes the data and the assumptions used in the Load Forecast are reasonable for the purpose of the Load Forecast. With respect to "identifying where the deployment of DERs could bring most value", the Company submits that this is equally outside the scope of or requirements for completion of a Load Forecast.

As suggested by SNS/ESC, the full scope of a DER Potential Assessment may be better suited in informing the next IRP study which is to be conducted by the Independent Energy System Operator of Nova Scotia (IESO-NS). On October 15, 2025 the IESO-NS advised via emailed stakeholder bulletin that they are "moving forward with developing its first Integrated Resource Plan (IRP) for Nova Scotia" and "hope to share our path forward with you early in the New Year before moving

[25] M12349, Document 99296, page 3.

into IRP assumptions, scenarios and modelling." The corresponding press release noted that "[t]o help inform the work of developing the new IRP, IESO Nova Scotia has issued a request for proposals (RFP). The company hired as a result of the RFP will be charged with obtaining stakeholder feedback and drawing from best practices across the energy industry to provide recommendations to shape IESO Nova Scotia's new independent IRP process."[26] Accordingly, the IESO-NS may wish to take into consideration feedback regarding the development of a DER Potential Assessment to inform its IRP study.

2.4.2 Recommendation 2

> We recommend that the trajectory for load growth from electrification not be revised downward in one year from the previous (in misalignment with government policy), unless a justification or evidence supports that additional electrification is not cost-effective and reasonably available.[27]

NS Power Response:

Changes to load from electrification are based on evidenced assumptions and rationale outlined in the report and are evaluated on an annual basis. While cost effectiveness and technology availability play a role in the estimated trajectories of electrification initiatives, the load forecast goes further: it takes a holistic approach and includes recent trends and government policy decisions when evaluating the likely uptake of specific technologies. For example, as outlined in Section 4.4.3 of the report, the forecast for EV sales was revised downwards in response to the end of government incentives for EVs, which is an up-to-date reflection of government policy.

[26] https://ieso-ns.ca/wp-content/uploads/2025/10/IRP-release-FINAL-1.pdf
[27] M12349, Document 99296, page 4.

3.0 CONCLUSION

NS Power has continued to refine its load forecast each year, based on input from Synapse and various stakeholders as part of the NSEB's written proceedings. Each annual Load Forecast report reflects continuous improvement in methodologies and better explanation of the inputs and models as confirmed by Synapse.

NS Power appreciates the comments and feedback on this year's Load Forecast Report. Pursuant to the Company's responses in this reply, NS Power has considered the comments and feedback received and, subject to the Board's determination in this matter, will incorporate adjustments in the next annual Load Forecast Report where appropriate.

NS Power respectfully requests that the NSEB accept the 2025 Load Forecast Report as filed.