2026 **M12861**

NOVA SCOTIA ENERGY BOARD

IN THE MATTER OF: **The Public Utilities Act**

- and -

IN THE MATTER OF: **Nova Scotia Power Incorporated** ("NS Power")

2026 Load Forecast Annual Report

NON-CONFIDENTIAL INFORMATION REQUESTS

To: **Jessie Wallace**

Nova Scotia Power Inc.
By e-mail: jessie.wallace@nspower.ca

From: **Synapse Energy Economics Inc.**
Board Counsel Consultant

Responses Due: **July 7, 2026**

Copies: 1 electronic copy (PDF searchable)

Contact Person: **Ben Havumaki**
Synapse Energy Economics
Phone: (617) 453-7055
E-mail: bhavumaki@synapse-energy.com

Issued at Halifax, Nova Scotia, this Monday, June 15, 2026.

Crystal Henwood, Clerk of the Board

Request IR-1:

Report Tables and Graphs

a. Please provide in electronic spreadsheet format all tables and graphs with identification of the data source(s) that appear in the load forecast report and appendices, retaining all formulas and calculations. To the extent that any tables and graphs have already been provided in electronic spreadsheet format in one of the report attachments, please provide references to the associated attachment.

Request IR-2:

System Peak

a. Refer to Table 1 in the Board Decision regarding NS Power's 2025 Load Forecast (M12349). Please explain the main factors causing the low accuracy in the peak demand forecast between 2019-2024.

b. Beyond those discussed in the 2026 Load Forecast, please note any changes in the model specification relative to the 2025 peak forecast model, and please further quantify the impact of any such changes in specification to the extent possible.

Request IR-3:

System Peak – Lagged Temperature Variables

a. Please provide the results of the "iterative testing" that determined the weightings to apply to the 12-hour and 24-hour variables.

b. Please provide the results of the sensitivity analysis of 36-hour and 48-hour lag temperature variables in the peak equation.

c. Please explain how NS Power is able to conclude that it is the duration of cold rather than the minimum temperature that resulted in record-setting peak in January 2026, given that electrification is also contributing togreater peaks.

d. In NS Power's view, are the dynamics of energy use changing in such a way that the duration of very cold conditions is now a more important factor in driving the peak than it previously was? Please explain in detail.

e. Are there alternative approaches to modeling the duration of cold as a variable in the peak equation separate from introducing different lagged variables, as discussed in the forecast? Please explain in detail.

Request IR-4:

System Peak – Bottom-up Approach

a. Please reconcile the statement that "NS Power currently forecasts system peak at the aggregate level….the system peak is disaggregated into rate class contributions based on historic load factors, losses, and load research data," on page 98 of the report, with the formal peak model specification on page 30 of Appendix D and the statement there that

"The model variables…incorporate changes in heating, cooling, and base-use energy requirements (what are derived from the class sales forecast models)…"

b. Please explain in detail any alternative approaches to class-level peak forecasting considered by NS Power, including any alternatives that:
    i. Did not apply growth factors based upon changes in sales.
    ii. Applied growth factors based upon changes in sales but adjusted for confounding factors affecting the growth and/or affecting the translatability of sales growth into peak growth.
    iii. Were not based upon a single historical peak (i.e., from 2024).

Request IR-5:

Economic Information (Section 4.4, p. 28-34)

a. Why did NS Power not consider the impact of trade tariffs in its load forecast?
b. Please explain in detail how NS Power understands the potential impacts of trade tariffs on the load forecast.
c. Refer to the statement that "the magnitude of the potential impact of economics on the long-term forecast is illustrated in Figure 75." How much of the uncertainty about future economic conditions is related to tariffs? Provide a quantitative response to the extent possible.
d. How did NS Power's projection for new customer additions in 2025 compare with 2025 actuals?
e. What is the quantitative basis for reducing the projected decline in the rate of housing completions in Signal49's forecast from 24 percent to 10 percent? Is this a judgement call based upon announcements of new housing developments, or has NS Power converted the total from these announcements, which is reported in the load forecast to be 40-50,000 units over the next 10-20 years, into a forecast rate of customer additions?

Request IR-6:

New Technologies (Section 4.5.6, p. 51)

a. Refer to Section 4.5.6 of the 2026 Load Forecast Report, which states that "[t]he 2026 Load Forecast does not assume a significant amount of distributed solar/battery storage combinations or storage only deployments." Please confirm whether NS Power assumes any distributed solar-plus-storage or storage-only deployment in the 2026 Load Forecast. If so, please provide the assumed number of customers, installed battery capacity in kW and kWh, annual energy impact in GWh, and coincident winter peak impact in MW for each forecast year from 2026 through 2036. If not, please explain the basis for excluding these resources from the forecast.

b. Please explain whether NS Power considered projected battery cost declines over the 2026–2036 forecast period. If so, please provide the assumed cost decline trajectory and explain how the projected cost reductions are reflected in the forecasted adoption of batteries. If not, please explain why not.

c. Refer to NS Power's 2025 Load Forecast Report, Figure 33, "Potential Peak Impacts from Batteries," which presented illustrative peak impacts from residential battery uptake scenarios, and to Section 4.5.6 of the 2026 Load Forecast Report, which does not include a comparable battery peak-impact sensitivity. Please explain why NS Power did not include an updated version of the 2025 battery peak-impact sensitivity in the 2026 Load Forecast Report.

d. Please explain whether NS Power has quantified the potential winter peak reduction from customer-sited batteries, solar-plus-storage, or V2G resources. If so, please provide all workpapers, assumptions, and results. If not, please explain why not.

e. Refer to the statement in Section 4.5.6 that V2G technology is "still early in commercialization" and "not widely available at the moment in Canada." Please explain whether NS Power assumes any V2G, vehicle-to-home, vehicle-to-building, or bidirectional EV charging impacts in the 2026 Load Forecast. If so, please provide the assumed annual energy and coincident winter peak impacts for each forecast year from 2026 through 2036. If not, please explain the basis for excluding these impacts from the forecast.

Request IR-7:

Heat Pumps (Section 4.5.1, pp. 36-37 and 66-67)

a. The Report provides a residential heat pump forecast, including annual cumulative new installations, the percentage installed in non-electric and electric-heat homes, overall heating saturation, and overall heating intensity. Figure 46 also provides illustrative system-level heat pump heating and cooling loads, including HP Heat increasing from 1,157 GWh in 2026 to 1,635 GWh in 2036.

    a. Please define what NS Power considers to be a "full heat pump" for purposes of the 2026 Load Forecast, including whether this term refers to non-hybrid heat pumps, all-electric heat pumps, heat pumps without retained non-electric backup, or another category.

    b. Please provide the annual forecast, from 2026 through 2036, of annual heating energy use, cooling energy use, and coincident winter peak demand associated with full heat pump customers/households, separately identifying impacts for homes that previously used electric resistance heating and homes that previously used non-electric heating.

c. Please explain how the “overall heating intensity” values in Figure 22 were developed and how they relate to the HP Heat values shown in Figure 46.
d. Please provide any AMI, billing, or other empirical validation NS Power has conducted for full heat pump annual energy and peak impacts. If no such validation has been conducted, please explain why not.

b. Refer to Figure 22. Please provide the following data for all forecast years:
   i. Total number of residential customers;
   ii. Number of customers using heat pumps, hybrid heat pumps, electric resistance heating, wood heating, and fossil fuel heating systems;
   iii. Number of customers using heat pumps as the sole heating technology. If NS Power assumes that none of the customers use heat pumps as the sole heating technology, please explain the basis for that assumption and provide any supporting evidence;
   iv. Number of customers using heat pumps as the primary heating system with supplemental electric resistance heating;
   v. Number of customers using hybrid heat pumps, with a breakdown of customers by backup heating fuel type; and
   vi. Number of customers using oil, natural gas, propane, and wood as their primary heating fuel;

c. Refer to the overall heating intensity and cooling intensity values for residential heat pumps provided in Figure 22. Please provide the following information for all forecast years:
   a. Average heating electricity consumption per household with heat pumps, excluding households that do not have heat pumps;
   b. Average cooling electricity consumption per household with heat pumps, excluding households that do not have heat pumps;
   c. Average heating efficiency of heat pumps, expressed as coefficient of performance (COP), and average cooling efficiency of heat pumps, expressed as COP. If NS Power assumes improvements in COP over time, please explain how NS Power developed those assumptions and provide all supporting evidence. If not, please explain why not;
   d. The key assumptions used to estimate heat pump energy and peak impacts, including heat pump efficiency, backup heat use, customer behavior, building shell efficiency, weather normalization, and differences between electric-heated and non-electric-heated homes; and

e. An explanation of how NS Power estimated average heating electricity consumption for heat pumps for (1) households that switch their primary heating systems from fossil fuel-based heating to heat pumps and (2) households that switch their primary heating systems from electric resistance heating to heat pumps. Please provide all workpapers supporting this analysis.

Request IR-8:

Residential Hybrid Heating (Section 4.5.2, p. 37-42)

a. Refer to the following statements in the 2026 Load Forecast Report: "The 2026 residential SAE regression model has been updated to include peak and energy reductions related to potential hybrid programs which have been modelled by NS Power," and "The modelling … is being used to assess the cost impacts of the hybrid approach as part of Department of Energy-led hybrid heating working group with Net Zero Atlantic, provincial staff and other stakeholders." (p. 37)

   i. Please provide all workpapers, reports, and other documentation associated with the analysis of the peak and energy impacts of residential hybrid heating, including all formula and key assumptions in native, machine-readable format with formulas intact.

   ii. Please provide any analysis of "the cost impacts of the hybrid approach as part of Department of Energy-led hybrid heating working group with Net Zero Atlantic, provincial staff and other stakeholders." If no such analysis is available, please explain the status of this work and when NS Power expects the analysis to be completed.

b. Refer to Figure 23, "Baseline Residential Electric Heating Load Shape and Example Hybrid Modification" and the following statement: "The modelling uses a baseline residential electric-heating load shape derived from AMI data for the year 2022."

   i. Please provide the share of the 22,130 customers identified as owning a heat pump with high confidence by the following heating system categories: (1) heat pump with electric backup heating and (2) heat pump with non-electric backup heating.

   ii. Please explain how NS Power developed the load shapes shown in Figure 23, including whether the load shape represents the average hourly load shape for the 22,130 customers.

   iii. Please describe the scope of the AMI data NS Power used for its hybrid heating analysis, including whether NS Power collected hourly load data for each of the 22,130 customers.

iv. Please provide the date, time, and duration of each Critical Peak Event reflected in Figure 23.

v. Please provide the date, time, and duration of each event reflected in Figure 23 during which the outdoor air temperature was below -10°C.

c. Refer to E3's residential hybrid peak-mitigation estimate of -48 MW by 2036 and the 20 percent to 50 percent participation range used for this estimate, as mentioned on page 40 of the NS Power 2026 load forecast Report and NS Power's assumption of a 50 percent participation rate (27,000 customers by 2036).

i. Please provide the rationale and all evidence E3 used to establish the 20 percent to 50 percent participation range.

ii. Please explain NS Power's rationale and all evidence supporting the assumed 50 percent participation rate (27,000 customers by 2036).

d. Refer to the following statement on pages 40 to 41 of the NS Power 2026 Load Forecast Report: "a comparison of energy and peak values predicted by the SAE models with and without the residential hybrid heating representation showed that the hybrid-reduction did not fully match the model results discussed above, because of differences in modelling approaches."

i. Please explain how the residential SAE model incorporates hybrid heating.

ii. Please explain in detail the "differences in modelling approaches."

e. Please explain how NS Power calculated the additional energy and peak adjustments shown in Figure 25 that were required to match the total residential hybrid heating impacts.

Request IR-9:

Commercial Hybrid Heating (Section 4.5.2, p. 42)

a. Refer to Figure 26 and the following statement on page 42: "As with previous load forecasts, the commercial energy values predicted from the commercial SAE model is higher than the E3 hybrid scenario model where some of the commercial heating requirements are handled by a secondary non-electric heat source. Adjustments are therefore applied to the commercial energy forecast to estimate the impact of the commercial hybrid scenario."

a. Please explain why the commercial energy values predicted by the commercial SAE model are higher than the E3 hybrid scenario model.

b. Please explain how NS Power developed the commercial hybrid energy adjustments shown in Figure 26 and provide all workpapers associated with this analysis in native, machine-readable format with all formulas and assumptions intact.

b. The Report states that, unlike for residential hybrid heating, there has been no provincial planning or discussion around a commercial hybrid heating program. The Report further states that the 2026 Load Forecast continues to use assumptions from E3's hybrid scenario for commercial hybrid heating, consistent with the 2025 Load Forecast, with the only modification being a change in the anticipated start date from 2026 to 2028. Figure 26 shows commercial energy adjustments of -7 GWh in 2028, -35 GWh in 2032, and -75 GWh in 2036.

i. Please provide all E3 reports, workpapers, model files, spreadsheets, assumptions, and documentation supporting the commercial heat pump and commercial hybrid heating assumptions used in the 2026 Load Forecast.

ii. Please explain how E3 developed the commercial hybrid heating energy adjustments shown in Figure 26 and provide the annual adjustment for each year from 2026 through 2036.

iii. Please provide the commercial hybrid heating peak demand impacts assumed for each year from 2026 through 2036, including where those impacts are reflected in the peak forecast.

iv. Please provide the key assumptions underlying E3's commercial hybrid scenario, including assumed building types, customer segments, fuel types, participation levels, operating conditions, and whether the scenario distinguishes between customers that previously used electric heating and customers that previously used non-electric heating.

v. Please explain whether NS Power has reviewed or validated E3's commercial heat pump and hybrid heating assumptions using NS Power AMI data, billing data, customer surveys, or other empirical information. If not, please explain why NS Power determined it was reasonable to continue using E3's assumptions in the 2026 Load Forecast.

Request IR-10:

Residential Water Heaters (WH) (Section 4.5.3, p. 43-44)

a. Refer to the following statement on page 43 of the NS Power 2026 Load Forecast Report: "This equates to an overall residential saturation of approximately 1.4 percent. This is forecast to increase to approximately 2 percent of the total residential households by 2030. The same rate of growth is assumed for the 2030s and 2040s, resulting in a forecast population share of 3.2 percent in 2036."

1. Please explain the rationale and provide all the evidence NS Power used to develop its assumption for the annual growth rate of heat pump water heater uptake.

b. Refer to the following statement on page 43 of the NS Power 2026 Load Forecast Report: "To represent the efficiency improvements of heat pump water heaters, their modelled intensity is set to 40 percent of standard electric water heaters, based on estimates provided by E1."
   1. Please provide the estimates provided by E1.
   2. Does NS Power assume energy efficiency improvements for heat pump water heaters over time? If so, please provide such assumptions in terms of Uniform Energy Factor (UEF). If not, please explain why not.

Request IR-11:

Electric Vehicles (EVs) (Section 4.5.4, p. 44-47)

a. Please provide the source data and calculations behind Figures 28-30.
b. Please specify the share of EVs in the forecast which are light-duty, non-plug-in hybrids, plug-in hybrids, and/or battery-electric.
c. Generally, please describe how the load forecast takes into account the differences between battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs).
d. Please describe how Canada's current EV mandate distinguishes between BEV and PHEVs both in 2026 and in 2035. Please describe how Nova Scotia Power's forecast accounts for this difference.
e. Please describe how the values in Figures 29 and 30 incorporated differences between BEVs and PHEVs.
f. Please describe the assumptions regarding non-PHEV ICE LDVs in forecast year 2036.
   i. For example, please describe the quantity of non-PHEV ICE LDVs and the percent of all vehicle miles that are driven by non-PHEV ICE LDVs.
   ii. Please compare these assumptions to the most recent available data.
   iii. Please also compare the assumptions regarding non-PHEV ICE LDVs in 2036 to comparable assumptions of PHEV LDVs and BEV LDVs in 2036.
g. Please provide the method for estimating the total number of EVs.
h. Please provide assumptions for federal light-duty vehicle sales incentives and state whether these changed between the 2025 and 2026 forecasts.
i. How did the cancellation of the EV Availability Standard and the revision of the federal government mandate affect the EV forecast?

j. How was the forecast adjusted to account for the higher sales figures in 2025 compared to the 2025 Load Forecast?

k. Besides the changes to sales mandates and the upward adjustment for 2025, were there any other changes driving the differences between the 2025 and 2026 EV sales forecasts?

l. Will the AMI data analysis used to estimate the effect of EV charging at home in the 2025 and 2026 load forecasts be updated for future forecasts?

m. Please confirm whether managed charging is incorporated into the EV forecast for each category, including light-duty vehicles. If it is not, please explain. If NS Power has forecasted managed charging, please provide all assumptions.

Request IR-12:

Solar Generation (PV) (Section 4.5.5, p. 47-50)

a. Please provide supporting data for the average capacity and capacity factor for the PV installations used in the forecast.

b. How was the forecast adjusted to account for the lower solar installations in 2025 compared to the 2025 Load Forecast?

c. Did NS Power use AMI data to validate its solar assumptions? If so, please provide the methodology, sample size, and key findings from this analysis. If not, please explain why AMI data was not used.

Request IR-13:

Solar Impact to Peak (Section 10.5, p. 95-96)

a. Please refer to Figure 70. Explain how the average coincidence factors were developed and provide all underlying data and calculations.

b. Please explain why updated coincidence factor data was not available for 2025.

c. Does NS Power expect to update the solar coincidence factors in the 2027 forecast?

Request IR-14:

Price Data (Section 4.6, p. 56-57)

a. Why are electricity prices forecast to increase by 5 percent in 2028 and 2029? Please describe NS Power's internal forecasting process.

Request IR-15:

Demand Side Management (Section 4.7, p. 57-60)

a. Refer to the following statement on pages 58 to 59 of the NS Power 2026 Load Forecast Report: "to introduce cumulative historical DSM savings as reported by E1 to the regression model as a load modifying variable and allow the model to determine what level of DSM is already included in other variables."

b. Please provide the cumulative historical DSM savings, expressed as both annual energy savings in GWh and peak load savings in MW, as reported by E1 and used by NS Power to adjust historical loads.

c. Please explain how E1 or NS Power developed the cumulative historical DSM savings, including whether E1 or NS Power assumed any DSM savings decays. If savings decay was assumed, please explain how E1 or NS Power determined the savings decay effects.

d. Please identify the first year included in the cumulative historical DSM savings and explain how E1 or NS Power determined the starting year for these cumulative DSM savings estimates.

Request IR-16:

Renewable to Retail (Section 4.8, p. 61):

a. Please explain the basis for the shift in this year's RTR forecast relative to last year's that increases migration for commercial and industrial customers but decreases migration for residential customers.

b. Refer to Section 4.8 Renewable to Retail. Please describe if any energy from Goose Harbour Lake Wind Farm is captured within the Renewable to Retail forecast. If not, please describe how the energy from the Goose Harbour Lake Wind Farm is treated in the broader load forecast, if at all.

Request IR-17:

Net System Requirement (Section 9.0).

a. Please provide the source data and the calculations used to produce the values in Figures 56-58.

Request IR-18:

Model Specifications (Appendix B)

b. Please note any changes in the residential model specification relative to the 2025 forecast residential model, and please further quantify the impact of any such changes in specification to the extent possible.

c. Please note any changes in the commercial model specification relative to the 2025 forecast residential model, and please further quantify the impact of any such changes in specification to the extent possible.

d. Please note any changes in the industrial model specification relative to the 2025 forecast residential model, and please further quantify the impact of any such changes in specification to the extent possible.

Request IR-19:

Sensitivity Analysis (Section 11.0 and Appendix D)

a. Please provide in electronic format the data and calculations used to create Figures 75 and 76.
b. Please provide the actual statistical distributions used for the sensitivity variables and how they were determined.
c. What other variables were considered but not chosen? Please explain.
d. Please describe if and/or how the P10/P90 probability analysis is used in decision making regarding system planning.

Request IR-20:

Appendix B: Residential Model

a. For the XHeat variable please provide the underlying factors (penetration, usage, etc.) driving the change of percentage for HP Heat.
b. For the XCool variable please provide the underlying factors (penetration, usage, etc.) driving the change of percentage for HP Cool.
c. For the XOther variable please provide the underlying factors (penetration, usage, etc.) driving the change of percentage for Other.

Request IR-21:

ELCC Study

a. Refer to the following statement from the 2025 Load Forecast: “On February 6, 2025, NS Power distributed to stakeholders for review and comment a draft study scope document for the next ELCC study.”
    i. Please describe the anticipated timeline for completion of the ELCC study.
    ii. Please indicate if NS Power expects to include the results of the ELCC study in the 2027 Load Forecast.