Request IR-1:

Reference: NS Power 2026 Load Forecast Report, page 40, lines 3-11

Based on the 2026 Load Forecast report, E1 understands that the hybrid heating participation rate is based on a 50 percent adoption of the 2026 heat pump forecast – non-all electric (NAE) component, the energy reduction is based on the median modelled result, which is approximately 50 percent adoption under the Critical Peak Pricing (CPP) scenario, while the peak demand impact is derived from the older E3 study (which reflects participation somewhere between 20 percent and 50 percent).

(a) Please provide any corrections or clarification to the above understanding.

(b) Please explain why NS Power updated the energy reduction estimates while leaving the peak demand reduction unchanged?

(c) Please confirm the participation assumptions that are inherent to (i) the peak demand reduction and (ii) the energy reduction.

(d) Did NS Power consider using per-participant energy and demand impacts from the advanced metering infrastructure (AMI) analysis and applying them to the revised participation estimate to estimate the total energy reduction and peak demand reduction? If not, why not?

(e) Please clarify what is meant by 'approximately' in the sentence "…83 GWh by 2036 is adopted, as the median modelled result; this is approximately the peak reduction achieved under the 50 percent adoption CPP scenario" (lines 9 – 10). What is the difference between the median result and the 50 percent adoption CPP scenario?

(f) Does NS Power consider hybrid heating, as modelled in the Load Forecast, to constitute a "demand-side management activity" within the meaning of sections 79A–79L of the Public Utilities Act? If not, please explain how it is distinguished from E1's existing demand response programming.

Response IR-1:

(a) NS Power has no corrections to E1's understanding of the hybrid heating participation rate. However, NS Power would like to clarify that the reference to the Critical Peak Pricing (CPP) scenario was intended to be illustrative, not determinative. The Department of Energy-funded hybrid heating working group led by Net Zero Atlantic (NZA) modelled a variety of potential hybrid programs, including a scenario in which a future hybrid heating program uses a critical peak event program design approach. This scenario was informed by information obtained through NS Power's CPP Rate Pilot. There are no existing or proposed hybrid heating programs at this time. Accordingly, the specific program design of a future hybrid heating program is not yet known.

(b) Please refer to page 40 of the Report. Because multiple scenarios and participation rates were modelled through the hybrid heating working group with NZA, there was a range of potential energy and peak reductions. The E3 peak reduction estimates used in prior load forecasts fell within the range of modelled results so these values were not updated; however, the E3 energy reduction values estimates in prior load forecasts exceeded the results from all modelled scenarios (even assuming 100 percent NAE participation), therefore the energy reduction values were updated so as to not over-estimate the potential energy reduction of a future residential hybrid heating program in the load forecast.

(c) The peak demand reduction assumes participation of between 11,000 and 27,000 customers in a hybrid program by 2036, while the energy reduction assumes enrollment of around 27,000 customers by 2036. As noted above in part (a), this represents a range of potential hybrid scenarios/participation combinations, not a specific hybrid heating program design.

(d) NS Power did not consider using per-participant energy and demand impacts from the AMI analysis and applying them to the revised participation estimate to estimate the total energy reduction and peak demand reduction for the purposes of the load forecast at this time. There is no existing or proposed hybrid heating program at this time, and the modelling; as noted above in part (a), represents a range of potential scenarios/participation combinations. It was not intended to model the participation of a specific hybrid heating program design. Given that, the 2026 Load Forecast does not adopt the energy and peak reduction from any single hybrid scenario/participation combination modelled by the hybrid heating working group with NZA and other stakeholders. Instead, NS Power opted for values that are representative of the modelled range. At such time that a hybrid heating program is proposed or established, NS Power will incorporate program forecasts provided by the program administrator into the load forecast.

(e) Please refer to part (c). The wording was intended to highlight the approximate size of program that would likely be required to achieve the forecast hybrid reduction. No assumption has been made that a future hybrid program will use a critical peak event program design. This was provided as an illustrative example only, relating to one of the potential hybrid heating scenarios modelled by the hybrid heating working group with NZA and other stakeholders.

(f) Yes, in the context of participation in an incentivized program, hybrid heating is considered a demand side management activity.

Request IR-2:

E1 has used data from the Load Forecast (total peak reduction, total energy reduction, and cumulative participants) to calculate full load hours, unitary demand reduction, and unitary energy reduction in Table 1.

Table 1: Calculated Full Load Hours, Unitary Demand Reduction, and Unitary Energy Reduction for Modelled Hybrid Heating in the 2026 Load Forecast.

Column:	*A*	*B*	*C*	*D*	*E*	*F*
Year	Total Peak Reduction (MW)	Total Energy Reduction (GWh)	Hybrid HP Cumulative Participants	Calculated Full Load Hours	Unitary demand reduction (kW)	Unitary energy reduction (kWh)
	Source: Figure 25	*Source: Figure 25*	*Source: Att 1, Tab "HP"*	*Calculation: (B)*1000/(A)*	*Calculation: (A)*1000/(C)*	*Calculation: (B)*10^6/(C)*
2028	-6	-10	3,403	1,667	-1.76	-2,939
2029	-13	-21	6,839	1,615	-1.90	-3,071
2030	-19	-31	10,284	1,632	-1.85	-3,014
2031	-26	-41	13,495	1,577	-1.93	-3,038
2032	-32	-51	16,634	1,594	-1.92	-3,066
2033	-36	-60	19,645	1,667	-1.83	-3,054
2034	-40	-68	22,335	1,700	-1.79	-3,045
2035	-44	-76	24,913	1,727	-1.77	-3,051
2036	-48	-83	27,378	1,729	-1.75	-3,032
Average	**-29**	**-49**	**16,103**	**1,656**	**-1.83**	**-3,034**

(a) Please explain why the modelled hybrid heating program has an average full-load hours reduction in electric space heating of 1,656, and whether this is consistent with the program's intended design? If the intended program design is not assuming that heat pumps will be used 1,656 less hours under the hybrid heating program, please explain what is causing this result.

(b) How many hours per year does NS Power expect hybrid heating systems to operate? Please provide assumptions for different event-calling scenarios and explain how these assumptions are reflected in load forecast modelling.

(c) Please explain why the modelled hybrid heating program has an average annual energy reduction of 3,034 kWh.

(d) What percent reduction does 3,034 kWh represent for:

(i) an average residential customer's total annual electrical consumption

(ii) an average electrically-heated residential customer's total annual electrical consumption

(iii) annual electricity use for heating (based on the baseline residential electric-heating load shape derived from 2022 AMI data, as referenced in the 2026 Load Forecast).

(e) Do the values presented in Table 1 for full load hours (column D), unit demand reduction (column E) and, unit energy reduction (column F), align with NS Power's characterization of the program? Please explain.

(f) If NS Power does not agree with the calculated full load hours, unit demand reduction, or unit energy reduction, please provide its own calculations, including formulas, methodology, and underlying assumptions.

(g) Please provide the underlying data or source studies used to derive the per-participant energy and demand impacts assumed for hybrid heating.

Response IR-2:

(a) The "full load hours" metric is not used by NS Power in the hybrid heating modelling or the load forecast. The peak reduction is not achieved every hour of a modelled hybrid event; this is just the reduction at hour of system peak. The demand reduction varies each hour, depending on the heating intensity in that hour in the baseline electric heating profile used for the modelling. Please refer to Synapse IR-8 Attachment 1 for further clarification.

(b) For customers participating in a hybrid heating program, NS Power expects that the hybrid heating system would be operational whenever heating is required. Total hours per year were not calculated for the purposes of the load forecast but can be obtained from Synapse IR-8 Attachment 1. With respect to hours where heating would be exclusively provided by the non-electric heating system, during "hybrid events," please refer to the breakdown below for the three different trigger scenarios that were included in the 2026 forecast. Notably, for all other hours where heating is required, the forecast assumes that a heat pump would be the primary heat source and the non-electric system would provide supplemental heat as required. As outlined on page 40 of the Report, no single assumption set (in terms of hybrid event trigger scenario or participation rate) is reflected in the load forecast. Currently, there is no existing or proposed hybrid heating program in Nova Scotia. Accordingly, NS Power instead opted for values that are representative of the modelled range of peak/energy reductions resulting from hybrid scenario/participation combinations considered.

Hybrid event trigger scenario	Event hours
CPP events	72
Temperature < -10ºC	225
Top 88 NSR hours	88

(c) Please refer to CA IR-1 part (f).

(d)

(i) Based on a residential average use of 10,367 kWh for 2036 (from 2026 Load Forecast Report Appendix B, page 8), 3,034 kWh represents a reduction of 29 percent.

(ii) Based on a load of 14,600 kWh for a new single-family residential home (derived from AMI data, as outlined in Section 5 of the Report), which is assumed to be electrically heated, 3,034 kWh represents a reduction of 21 percent.

(iii) Based on a total heat load of 7,294 kWh from the baseline residential electric heating load shape (Please refer to Synapse IR-8 Attachment 1, tab "Heating & hybrid shapes, 2022"), 3,034 kWh represents a reduction of 42 percent.

(e) Yes, apart from "full load hours" (Column D), as outlined in part (a).

(f) Please refer to Synapse IR-8 Attachment 1.

(g) Please refer to Synapse IR-8 Attachment 1.

Request IR-3:

Reference: NS Power 2026 Load Forecast Report, page 37, lines 11 – 14

How do the hybrid heating scenarios considered in the 2026 Load Forecast align with the Net Zero Atlantic study, and in what ways do they differ?

Response IR-3:

The scenarios considered in the 2026 Load Forecast are the same as those discussed by the Department of Energy-funded hybrid heating working group led by Net Zero Atlantic (NZA) and considered in the NZA Hybrid Heating Study. It is NS Power's understanding that there are two differences between the scenarios considered in the Report and those considered in the NZA study. Firstly, the raw number of customers per participation rate (e.g. number of customers corresponding to 50 percent of non-all-electric (NAE) heat pump installs) differs due to timing. Modelling for the NZA Hybrid Heating Study was based on assumptions from the 2025 Load Forecast. Updates were made to the forecast number of heat pump installations in the 2026 Load Forecast which are reflected in the Report. Please also refer to Section 4.5.1 of the Report. The second difference is that it is NS Power's understanding that only a subset of the hybrid heating scenarios used for the load forecast were taken forward for inclusion in the final NZA Hybrid Heating Study (both in terms of hybrid event trigger scenario and adoption rate) which is expected to be released later in 2026.

Request IR-4:

Please provide a table, similar to Figure 24, for all modelled hybrid heating scenarios.

Please include Peak Reduction (MW), Energy Reduction (GWh), and cumulative participation for each scenario and each year. For each scenario, please also include the key assumptions, such as participation rates and hybrid event trigger conditions. Include the scenarios with 20 percent, 50 percent, and 100 percent participation, as well as any additional scenarios modelled by NS Power.

Response IR-4:

Please refer to Synapse IR-8, Attachment 1.

Request IR-5:

Given the purpose of the Net Zero Atlantic report was to understand possible impacts of hybrid heating, not to propose an achievable program design, what evidence does NS Power have to support the use of:

(a) 50 percent participation for residential

(b) 2028 program launch date

(c) Please identify any jurisdiction in which a utility-administered hybrid heating program has achieved 50 percent residential participation. If no such program exists, please explain the basis for adopting this assumption in the Load Forecast.

Response IR-5:

(a-c) Participation ranges were discussed in the hybrid heating working group for the Net Zero Atlantic (NZA) Hybrid Heating Study. The ranges discussed were determined to be suitable for assessing the potential system benefits of a hybrid program and understanding whether these impacts scaled with program size. Additional details of the potential participation ranges discussed are expected to be included in NZA's Hybrid Heating Study which is expected to be released later in 2026. The 2028 start date was a working assumption intended to represent a reasonable timeline for establishment of a future hybrid heating working program. The 2028 assumption was discussed with the hybrid heating working group for the NZA Hybrid Heating Study during development of the 2026 load forecast and the most current assumption available at the time of forecasting. Future load forecasts will reflect updates to program design, timing, etc., once details about a specific hybrid heating program are available.

Request IR-6:

(a) Did NS Power consider applying a sensitivity for hybrid heating to test these participation assumptions, rather than incorporating them directly into the forecast? Explain why or why not.

(b) Did NS Power consider utilizing a lower amount of hybrid heating, particularly in the early years of the forecast? If not, why not?

(c) What risks are associated with including a hybrid heating program in the forecast when the program has not yet been proposed, designed, approved, or fully evaluated?

(d) If hybrid heating does not achieve the forecast reductions, what is the quantified impact on the Net System Requirement and system peak? Please provide the forecast with and without hybrid heating for each year from 2028 to 2036.

Response IR-6:

(a) No. The different scenario/participation modelling undertaken established the potential bounds of hybrid heating with the values adopted representing mid-points of the ranges. The peak impact is in line with hybrid assumptions in previous load forecasts, while the energy impact is reduced compared to prior load forecasts.

(b) No. A ramped uptake scenario, in terms of percent of uptake being less than 50 percent in the early years, was not considered in the hybrid modelling. However, due to the cumulative nature of the modelled participation, the amount of hybrid heating grows year over year (please refer to Synapse IR-8 Attachment 1, “HP installs” tab)

(c) Potential risks of including assumptions about potential hybrid heating programs in the forecast when the program has not yet been proposed, designed, approved, or fully

evaluated are over-estimation of load reduction, and altered trajectory of actual load reduction (due to shifts in program timing). These risks are mitigated; however, by annual forecast updates which allow for assumptions to be refined as program design progresses. The risks of over-estimation also need to be weighed against the potential risks of excluding hybrid heating program impacts from the forecast, such as over-forecasting peak demand.

NS Power also notes that hybrid scenarios have been considered in prior load forecasts. The hybrid peak reduction incorporated into the 2024 and 2025 Load Forecast Reports came from E3's Hybrid Peak Mitigation electrification scenario studied for the Evergreen IRP. The E3 scenarios represented the most current assumptions available at the time as there were no existing or proposed hybrid heating programs at the time of forecasting. The 2026 Load Forecast was informed by the E3 scenarios as well as additional information obtained through the hybrid heating working group led by Net Zero Atlantic (NZA) and considered in the NZA Hybrid Heating Study. At such time that a hybrid heating program is proposed or established, those program details will be incorporated into the load forecast.

(d) Please refer to the table below which illustrates the potential impact on the Net System Requirement (NSR) and system peak if reductions are not achieved. "With hybrid" columns correspond to the NSR and Peak values in the 2026 Load Forecast (please also refer to 2026 Load Forecast Report Attachment 4, "Graphs" tab), "Without hybrid" columns correspond to values with the hybrid impact removed.

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	NSR (GWh)				Peak (MW)			
	With hybrid	**Without hybrid**	**Hybrid impact**	**Increase without hybrid (%)**	**With hybrid**	**Without hybrid**	**Hybrid impact**	**Increase without hybrid (%)**
2028	11,525	11,536	-10	0.1	2,526	2,532	-6	0.3
2029	11,556	11,577	-21	0.2	2,549	2,562	-13	0.5
2030	11,568	11,600	-31	0.3	2,563	2,582	-19	0.7
2031	11,621	11,662	-41	0.4	2,593	2,619	-26	1.0
2032	11,689	11,739	-51	0.4	2,620	2,652	-32	1.2
2033	11,722	11,782	-60	0.5	2,652	2,688	-36	1.4
2034	11,815	11,883	-68	0.6	2,689	2,729	-40	1.5
2035	11,939	12,015	-76	0.6	2,730	2,774	-44	1.6
2036	12,097	12,180	-83	0.7	2,765	2,813	-48	1.7

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Request IR-7:

(a) How does participation in residential hybrid heating vary with incentives, customer type, technological barriers etc.? If these have not been considered, how confident is NS Power in the accuracy of the hybrid heating forecast?

(b) Please indicate how hybrid heating uncertainty is incorporated into overall forecast risk assessments.

Response IR-7:

(a) NS Power is not proposing a hybrid heating program and has not evaluated the potential impacts of incentives, customer type, technical barriers, etc. However, these impacts are being considered by Net Zero Atlantic (NZA) as part of the Hybrid Heating Study, which is expected to be released later in 2026. NS Power has used different participation rates from the hybrid heating scenario modelling completed as part of the hybrid heating working group engagement to inform the Hybrid Heating Study. The use of different participation rates is intended to account for expected participation variance in future hybrid heating program participation, given no such program currently exists or has been proposed and as such, program design details are not currently available.

(b) The hybrid impact included in the forecast model is well within the sensitivity bands presented in Section 11 of the Report (P10/P90 envelope of 488-584 GWh for energy and 352-391 MW for peak demand in the 10-year forecast period). Please refer to Synapse IR-6 part (d) for a comparison of forecast values with and without the hybrid impact. The peak impact is in line with hybrid assumptions in previous load forecasts, while the energy impact is reduced compared to prior load forecasts.

Request IR-8:

(a) Please confirm that E1's demand response (DR) programs are modelled as reductions to firm peak only, and that they are excluded from the system peak forecast (as stated on page 95 of the 2026 Load Forecast Report). If hybrid heating is modelled differently, please explain the rationale for this differential treatment.

(b) Does this modelling approach suggest that hybrid heating differs fundamentally from other demand response programs? If so, please explain the specific characteristics that determine whether a demand response program is modelled as affecting system peak versus firm peak.

(c) Does the choice of hybrid event trigger (e.g., CPP events versus a -10°C temperature trigger) affect this modelling decision?

(d) Does the differential treatment of hybrid heating (system peak reduction) versus E1's DR programs (firm peak reduction only) imply that NS Power attributes greater reliability value to hybrid heating than to E1's DR programs? If so, on what basis?

Response IR-8:

(a) Confirmed. The hybrid peak impact was included in the system peak as a conservative assumption to account for the uncertainty around the details of a potential future hybrid heating program. Actual peak impacts will depend on the hybrid heating program design. For example, a program may incorporate automated response, triggered by temperature, as was considered in one of the modelling scenarios, or may utilize a critical peak event approach.

(b) No, this was not the intent of the modelling approach. The intent was to model hybrid peak using a conservative approach to account for program uncertainty given there is not an

existing or proposed hybrid heating program at this time. As outlined in part (a), a program which includes an automated response would have system peak impacts, whereas if program design relied on customer action (for example under an event-calling scenario), then it would only have firm peak impacts.

(c) Yes.

(d) No. These modelling assumptions do not imply a relative reliability judgment between programs. Please refer to part (a) and part (b).

Request IR-9:

Reference: NS Power 2026 Load Forecast Report, page 42, lines 3 – 17

(a) What is the capacity reduction associated with commercial hybrid heating?

(b) If no capacity reduction has been modelled, does this imply there is no capacity value in a commercial hybrid heating program?

(c) What evidence does NS Power have to support a commercial hybrid heating launch date of 2028?

Response IR-9:

(a) Based on E3's model for commercial hybrid peaks, the reduction in 2036 is approximately 164 MW compared to E3's current trends scenario.

(b) Not applicable; a capacity reduction has been modeled.

(c) Please refer to EfficiencyOne IR-5.

Request IR-10:

Reference: NS Power 2026 Load Forecast Report, page 41, Figure 25

(a) Figure 25 shows that significant post-model adjustments were applied to both energy and peak demand reductions. What differences in assumptions between the Statistically Adjusted End-Use (SAE) model and the initial modelling are driving these discrepancies?

(b) Please describe how hybrid heating peak reductions were applied within the peak model (column "Included in peak model" of Figure 25). Please describe all assumptions, calculations, and methodologies.

(c) If the SAE model assumptions are considered reasonable, is there a risk that applying these adjustments could overestimate the peak and energy impacts of hybrid heating?

(d) Why is the SAE model unable to fully capture the impacts of hybrid heating endogenously, without the need for substantial adjustments?

(e) What is the risk of double counting or undercounting impacts associated with the SAE post-model adjustments?

(f) How are adjustments validated against actual system behaviour or empirical data?

(g) Will hybrid heating effects be fully integrated into the core forecast model in future filings?

Response IR-10:

(a) Please refer to Synapse IR-8, part (d).

(b) Hybrid heating peak reductions are applied in NS Power's peak model through the use of heating load from the residential energy SAE forecast model as an input (please refer to 2026 Load Forecast Report Section 10 and Appendix B). Reduced heating load in that model as a result of the hybrid treatment results in a lower peak overall. There is no additional hybrid treatment within the peak forecast model.

(c) No. The SAE model assumptions and those behind the hybrid heat modelling are both reasonable, but the model approaches are different. Please refer to Synapse IR-8 part (d). The hybrid heat modelling established potential program energy and peak impacts at a customer level. The adjustments are made to ensure this is reflected in the population level SAE models.

(d) Please refer to Synapse IR-8, part (d).

(e) Please refer to EfficiencyOne IR-6, parts (c-d).

(f) The adjustments are required in order to match realistic hybrid heating program impacts, which were estimated based on modelling using empirical customer data (the electric heating load shape, based on analysis of hourly load data from >20,000 customers).

(g) NS Power will continue to work to fully incorporate the hybrid heating impacts into the SAE models used for the load forecast.

Request IR-11:

Reference: NS Power 2026 Load Forecast Report, Section 4.2

(a) The Load Forecast describes significant data quality issues arising from the NS Power cyber incident, including the need to estimate 2025 billing data and large customer peak contributions. Please confirm whether the cyber incident affected the availability or quality of AMI data used to develop the hybrid heating analysis, including the residential electric-heating load shape referenced in the Load Forecast.

(b) The Load Forecast references a "baseline residential electric-heating load shape derived from 2022 AMI data." Has this load shape been updated or validated with more recent data? If not, does NS Power consider the 2022 data sufficiently representative given changes in heat pump penetration and customer behavior since 2022?

Response IR-11:

(a) The AMI data used to develop the residential electric heating load shape used in the hybrid heating analysis was not impacted by the cyber incident.

(b) The baseline residential electric-heating load shape is derived from 2022 AMI data and has not been updated. Yes, NS Power considers the load shape to be sufficiently representative of heat pump owners owing to the constraint that hourly heating load was only analysed for customers that were detected as owning a heat pump with the highest level of confidence available (> 90 percent), combined with the large sample size (22,130 customers). It is NS Power's expectation that heat usage behaviour will change significantly as heat pump penetration increases.