

2026 10-Year System Outlook Report
(Nova Scotia Energy Board M12916)

Nova Scotia Independent Energy System Operator (IESO Nova Scotia)
Responses to Consumer Advocate (CA) Information Requests

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Request IR – 1

Reference: Exh. N-1, Table 4

- a) Please provide the amount of peak forecast reduction associated with a hybrid heating scenario, by year. If exact numbers are not available, please provide estimates.
- b) Please either identify the NS Power source for the data provided in response to part (a) or provide workpapers and all supporting documentation for the development of that forecast.
- c) Please provide a detailed explanation of any work that IESO-NS is aware of completed by NS Power or any other entity to advance the adoption of hybrid heating programs.
- d) Please provide details on IESO-NS participation in any studies in partnership with other organizations, including any available timelines, study scopes, contractors, or other pertinent planning information.
- e) Please provide the current IESO-NS action plan to achieve the peak forecast reduction referenced in part (a) of this question.

Response IR - 1

a-b) IESO Nova Scotia used the Nova Scotia Power Inc. (NSPI) 2026 load forecast as the foundation for the expected system peak and net system requirement in the 2026 10 Year System Outlook. For details on the load forecast, including peak forecast reduction associated with a hybrid heating scenario, please refer to the 2026 Load Forecast Report and accompanying materials filed with the Nova Scotia Energy Board by NSPI in M12861.

c) IESO Nova Scotia is aware of the following studies that have progressively advanced industry understanding of the potential system benefits of a hybrid heating program, reviewed hybrid heating programs and delivery models in Canada, the United States, and

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Europe, and assessed customer awareness, participation interest, motivations, barriers, and preferred program features:

- The Economics of Electrification in Nova Scotia¹
- The 2023 Evergreen Integrated Resource Plan²
- Mitigating the Impact of Building Electrification on Peak Demand in Atlantic Canada³
- A Review of Residential Hybrid Heating in Nova Scotia⁴

d) IESO Nova Scotia participated in the Review of Residential Hybrid Heating in Nova Scotia study led by Net-Zero Atlantic which ran from March 2025 to August 2026.

e) IESO Nova Scotia does not have a current action plan item that it is responsible for to achieve the peak forecast reduction referenced in part (a) of this question. The 2023 Evergreen IRP had an action plan item to "Further assess the value of the hybrid peak building electrification scenario based on the outcomes of the evergreen IRP..." This action plan item was met with the publication of the Review of Residential Hybrid Heating in Nova Scotia report which IESO Nova Scotia participated in.

¹ https://www.nspower.ca/docs/default-source/irp/e3_ns-power_electrification-report.pdf

² <https://www.nspower.ca/irp/document-library>

³ [Microsoft Word - 2025 Mitigating peak demand in Atlantic Canada FINAL](#)

⁴ [A Review of Residential Hybrid Heating in Nova Scotia | Net Zero Atlantic](#)

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Request IR – 2

Reference: Exh. N-1, Table 4, regarding the amount of DSM that is forecast to reduce the system peak in each year,

- a) Please either identify the source for the forecast reduction or provide workpapers and all supporting documentation for the development of that forecast.
- b) Please explain how this 10-year forecast and assessment provides a basis for planning investment in DSM.
- c) Please provide IESO-NS's expectations for developing future DSM forecasts for the 10-year outlook report.
- d) Does IESO-NS agree that future 10-year outlook reports should include a fulsome discussion of DSM, including energy efficiency and not just demand response?

Response IR - 2

- a) Please refer to the 2026 Load Forecast Report and accompanying materials filed with the Nova Scotia Energy Board by NSPI (M12861) for details on forecast system peak reductions associated with DSM in each year.
- b) The 10-Year System Outlook is not a medium for assessing varying investment levels of DSM, but rather reflects current planning assumptions and outcomes developed in other processes, such as Integrated Resource Plans, DSM Potential Studies, and DSM Plans prepared by EfficiencyOne.
- c) IESO Nova Scotia's expectation is the existing practice of using filed or approved DSM plans for near term DSM savings, and the level of DSM savings associated with the IRP preferred resource plan (which is based on DSM potential study results) for years beyond

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24 any filed or approved DSM plan, would continue to be used as the basis for the DSM
25 forecasts for future 10-Year System Outlook reports.

26 d) IESO Nova Scotia believes the fulsome discussion on DSM in the annual Load Forecast
27 Report and in EfficiencyOne's DSM Program applications is sufficient, and expanding the
28 DSM discussion contained in the 10-Year System Outlook report would unnecessarily
29 duplicate effort and content for both IESO Nova Scotia and regulatory intervenors.

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Request IR – 3

Reference: Exh. N-1, Section 5.4.1

- a) Please provide a list of all high-voltage equipment (including but not limited to transformers and circuit breakers) required for the NS-NB Reliability Intertie and the procurement status of each item. If no such list exists, please identify any such equipment that has been procured.
- b) For any item identified in the response to part (b) that has does not have a firm delivery date consistent with the target in-service date of 2028, please describe IESO-NS's understanding of any risk mitigation plan for late delivery.
- c) Please provide a brief summary of IESO-NS's contingency plan should the Intertie not be completed by Q4 of 2028 and how that would develop if the delay extends for more than a year.
- d) Will any outages of the existing 345 kV line connecting NB with NS be required to bring the Intertie into service? If so, please provide the associated risk register and mitigation plan associated with the anticipated outages.

Response IR - 3

a-b, d) Please refer all questions about the execution of the NS-NB Reliability Interconnection to the project owner, Wasoqonatl Transmission Incorporated. The NSEB has directed periodic reporting by the owner on this project, the most recent of which was filed under M13059.

c) If the NS-NB Reliability Intertie project is not completed by Q4 of 2028, IESO Nova Scotia anticipates it will be required to dispatch the power system in a manner that positions it to operate as an electrical island should the single intertie connection with New Brunswick trip, which includes having three thermal units on at all times and a minimum level of inertia. Modelling done in support of the Reliability Intertie demonstrated it is possible to meet the

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27 2030 decarbonization goals in this manner but at a higher cost than if the Reliability Intertie
28 is present.

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Request IR – 4

Reference: Exh. N-1, p. 17, regarding Trenton 5 and Langan 2.

- a) Please provide an accounting of all costs known or available to IESO-NS associated with these units being maintained in service over the past two years and those forecast through the current retirement date.
- b) Please include all available detail in the breakdown of costs as well as a summary of (a) startup costs, (b) non-fuel operating costs, (c) fuel costs during operation, and (d) shutdown costs for each of instance in which either unit was operational.
- c) Please include the generation for each instance in which either unit was operational.

Response IR - 4

a-c) IESO Nova Scotia does not have the information requested. As NSPI is the owner and operator of these assets, they would be best positioned to respond to inquiries regarding associated costs. As IESO Nova Scotia has not yet assumed responsibility for real time system operations, it does not maintain records of historical unit generation.

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Request IR – 5

Reference: Exh. N-1, Appendix A

- a) Please provide the basis for the Maritime Link energy import forecast, including decomposition into its component parts (e.g., NS Block).
- b) Please provide the quantity of wind and solar energy, by source, that is expected to be curtailed for each forecast year

Response IR - 5

- a) Maritime Link Energy includes the following contracts:

Block	Firm Capacity (MW)	Total Annual Energy (GWh)	Applicable in Period
Base Block	153	895	2027, 2028, 2030
Supplemental Block	Non-Firm	240	2027
Surplus Energy	Non-Firm	1200	2027, 2028, 2030

- b) The table below shows curtailment by source in the RES Compliance Forecast:

Source	Total Curtailed Energy (GWh)		
	2027	2028	2030
Wind	605	871	1510
Solar	0.8	1.7	10

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Request IR – 6

Reference: Exh. N-1, Appendix A

- a) Please provide a discussion of this table, with a particular focus on the forecast surplus of 3 GWh in 2030 and also a discussion of IESO-NS's expectations for 2031 and 2032 compliance.
- b) If renewable energy is below expectations due to lower wind production, drought, or other natural causes, what is IESO-NS's expectation for (i) how that energy will be made up and (ii) how any compliance deficit will be remedied?
- c) If load exceeds expectations, what is IESO-NS's expectation for (i) how that energy will be supplied and (ii) how any compliance deficit will be remedied?

Response IR - 6

a) Appendix A provides expected RES Compliance. See NSEB IR-14 for forecast RES compliance for 2027-2036. In 2030, there is limited expected surplus renewable energy generation. In 2031, additional wind procurements are expected to come online, along with BESS and fast-acting generation to support, which increases the expected surplus renewable energy.

b-c) Both the load forecast and the renewable energy generation are forecasts based on the information available at the time. In 2030, with marginal surplus renewable energy, compliance is dependent on completion of planned wind procurements. The Department of Energy has incorporated the Early Completion Incentive into the procurement for the second round of Green Choice Wind which will incentivize commercial operation dates prior to December 31, 2029, and support achieving 2030 RES Compliance. In 2031 and

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25 beyond, the increased surplus in renewable energy generation provides compliance buffer
26 for a reasonable variation in either load or renewable generation.

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Request IR – 7

Reference: Exh. N-1, Table 9, and NS Power’s 2026 ACE Plan. The 2026 ACE Plan indicates a \$13 million budget for the Michelin DVR Phase project, “for the supply, install and integration of an additional 5MVA of Dynamic Voltage Restorer (DVR) capacity at Michelin.”

- a) Please explain why this project is not included in Table 9.
- b) Please explain IESO-NS’s view of the significance of this project.

Response IR - 7

- a) Table 9 pertains to “transmission system development projects identified by IESO Nova Scotia which must be completed over the 10-Year System Outlook horizon”. IESO Nova Scotia understands that the referenced project noted in NSPI’s 2026 ACE Plan is for a project intended to comply with corresponding Provincial regulations applicable to NSPI.
- b) Please refer to part a). Whereas this is a project being proposed to meet the requirements of Provincial regulation specifically applicable to NSPI, IESO Nova Scotia does not have a position on the significance of the project.

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Request IR – 8

Reference: Exh. N-1, Table 9, and Matter M12592 regarding the ECC Dynamic Line Rating (DLR) project with a cost of \$7 million, including \$5.2 million in NRCan funding.

- a) Please explain why this project is not included in Table 9.
- b) Please explain IESO-NS's view of the significance of this project
- c) In Matter M09508, Exh. N-2, RIR-19, NS Power provided a table listing unplanned interruptions to the CBX transmission corridor caused by weather between 2015 and November 2019. Please provide a similar table for 2021 to 2025 for each transmission line included in the DLR project (L-6515a; L-6515b; L-7003; L-7004; L-7005; L-8001, and L5 8004), and identify whether the interruptions were "momentary" or "sustained."
- d) Using a specific example for momentary, and sustained interruptions, please explain the connection between DLR data and system operator actions for detecting and mitigating trips caused by ice conditions.
- e) Does IESO-NS concur that NS Power selected the best seven transmission line segments for the DLR project? Please discuss your reasoning.
- f) Does IESO-NS have any plans to conduct an evaluation of the impacts of the project on each of the seven transmission line segments? If so, please describe the evaluation, its schedule, and whether IESO-NS will submit it to the Board. If not, why not?
- g) How does IESO-NS expect to utilize data from DLRs in its own operations, as distinct from the operations of NS Power?
- h) NS Power stated in Exhibit N-2, RIR-8(a), M12592 that "any future expansion of DLR application ... [would be] based on the mitigation of risk on the transmission system," and that DLR expansion is not expected beyond the Bulk Electric System. Does IESO-NS concur that the only purpose of DLR is "mitigation of risk"?
- i) Please explain whether IESO also expects that DLR projects can provide:
 - a. Congestion relief, such as reduced line losses and wear/tear of equipment;
 - b. Renewable integration while waiting for new or upgraded transmission lines;
 - c. Cost savings by delaying or canceling new or upgraded transmission line projects; and
 - d. Safety improvements such as avoiding wildfire and other risks related to overheating and sagging too low.
- j) If the answer to the questions in part (i) is yes, please provide:

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- 33 a. A list of transmission line segments that DLR projects could potentially provide
34 the listed service;
- 35 b. The dates for which the DLR projects could provide the listed service (e.g.,
36 limited duration DLR for renewable integration); and
- 37 c. Any cost considerations that IESO-NS is aware of that might make each such
38 potential project advisable or not worthy of significant study effort
- 39 k) Does IESO-NS currently have plans to advance DLRs beyond NS Power's current
40 project or plans to study potential further expansion of those plans?
- 41 l) NS Power's application filed in M11889 (withdrawn October 22, 2024) states
42 "...currently a related project in progress (C0061525 Facility Ratings Project) to
43 implement an Ambient Adjusted Rating (AAR) solution on all Transmission lines. This is
44 in alignment with FERC Order 881...". Transmission line ratings based on AAR are
45 considered more dynamic than static and seasonal ratings. Compared to existing ratings,
46 please provide IESO-NS's understanding of the:
- 47 a. Capacity increase in MW due to AAR for each transmission corridor or line; and
48 b. Capacity increase in MW due to DLR for each transmission corridor or line.
- 49 m) The same application filed in M11889 also referred to "project synergies, including
50 necessary software solution integration." If IESO-NS has any information regarding
51 "synergies" and "software solution integration," please provide it.

52
53 **Response IR - 8**

- 54 a) Table 9 pertains to transmission projects identified by IESO Nova Scotia that must be
55 completed over the 10-Year System Outlook horizon. IESO Nova Scotia understands that
56 the ECC Dynamic Line Rating (DLR) project has been completed and is already in-service,
57 and was not identified by IESO Nova Scotia.
- 58 b) IESO Nova Scotia does not take a position on the significance of the project. The details
59 related to the expected functionality of the associated assets are noted in the project
60 application and were approved by the NSEB on March 3, 2026.

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- 61 c) The information requested is not available to IESO Nova Scotia. As NSPI is the owner of
62 this information, they would be best positioned to respond to inquiries regarding it.
- 63 d) At this time, IESO Nova Scotia is not responsible for system dispatch and real time
64 operations and can not respond to this question.
- 65 e) IESO Nova Scotia does not take a position on whether NSPI selected the best seven
66 transmission line segments.
- 67 f) No, IESO Nova Scotia does not intend to evaluate the impact of the project.
- 68 g) At this time, most utilization is with NSPI as the Transmission Operator. As that function
69 transfers to IESO Nova Scotia, it will take over those functions. In the near term, IESO
70 Nova Scotia uses the DLR increased capacity of DLR-equipped lines during operating
71 studies to inform Operating Guidelines for the Transmission Operator as well as for RAS
72 design.
- 73 h) The Nova Scotia Transmission System is in a state of rapid change due to the changing
74 generation mix, load growth, and potential for large load interconnections. As part of that
75 evolution, IESO Nova Scotia will consider DLR as an option to mitigate specific system
76 constraints.
- 77 i)
- 78 a. DLR can allow higher flows on lines to increase transfer capability. This can be
79 considered congestion relief as it allows higher transfers of energy across a
80 transmission interface as long as there are no other limiting elements present.

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- 81 b. Refer to part i)(a).
- 82 c. The determination for new transmission is made under specific criteria that requires
- 83 the Transmission System to meet a level of reliability under all credible conditions.
- 84 DLR provides relief under conditions that allow a transmission line to run at higher
- 85 load under defined conditions such as high wind, colder temperatures and seasonal
- 86 static rating, time of day, etc.
- 87 d. IESO Nova Scotia understands that DLR sensors can provide real-time
- 88 measurement of conductor sag.
- 89 j) DLR would be considered as an option, where feasible, in future transmission studies. A
- 90 comprehensive list of potential applications is not available.
- 91 k) IESO Nova Scotia anticipates it will identify transmission projects consistent with the
- 92 outcomes of specific system planning studies. As noted above, this could include DLRs if
- 93 they are identified as part of a specific study.
- 94 l) The information requested is not available to IESO Nova Scotia. As NSPI is the owner of
- 95 this information, they would be best positioned to respond to inquiries regarding it.
- 96 m) The information requested is not available to IESO Nova Scotia. As NSPI is the owner of
- 97 this information, they would be best positioned to respond to inquiries regarding it.

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Request IR – 9

Reference: Exh. N-1, Table 9, and NS Power’s 2026 ACE Plan.

- a) Please explain IESO-NS’s role in development, review, and approval of NS Power transmission projects in its ACE Plan.
- b) If IESO-NS has taken any position other than full, ongoing support for any transmission project included in Table 9 or NS Power’s 2026 ACE Plan (including subsequent submittals), please provide a discussion of each such instance, including:
 - a. Concerns raised by IESO-NS;
 - b. Whether and how IESO-NS concerns were addressed; and
 - c. Any current concerns IESO-NS may have with respect to these projects

Response IR - 9

- a) IESO Nova Scotia does not have a formal role in the development, review, and approval of NSPI’s transmission projects identified in its ACE Plan. IESO Nova Scotia notes that transmission projects in the ACE Plan may be identified by a transmission owner for reasons not directly related to system planning outcomes including (but not limited to) asset condition, operational requirements, compliance with reliability standards, reliability improvement programs, vegetation management programs, right of way alterations, or new customer connections.

IESO Nova Scotia is responsible for identifying necessary transmission investments driven by system planning requirements through its forward-looking system planning activities. These will be identified in future 10 Year System Outlook reports, or other reports as necessary.

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26 IESO Nova Scotia notes the NSEB's related direction in its Decision regarding NSPI's
27 2026 ACE Plan (M12619) which provided that "The Board directs NS Power, to the extent
28 feasible and possible, to engage and coordinate with the IESO Nova Scotia and report on
29 that coordination in future ACE Plan filings". IESO Nova Scotia anticipates NSPI will
30 engage IESO Nova Scotia on the Board's direction in the near future.

31

32 b) IESO Nova Scotia has not identified any concerns with the transmission projects listed in
33 Table 9 of the 2026 10 Year System Outlook. IESO Nova Scotia's participation in NSPI's
34 ACE Plan is described in part a) above.