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October 4, 2024

VIA EMAIL

Crystal Henwood
Regulatory Affairs Officer/Clerk of the Board
Nova Scotia Utility and Review Board
3rd Floor Summit Place
1601 Lower Water Street
Halifax NS B3J 3S3

Dear Ms. Henwood:

Re: M11764 - Nova Scotia Power Inc. - 10-Year System Outlook Report - 2024 Submissions

These are the submissions of the Consumer Advocate regarding Nova Scotia Power's 2024 10-Year System Outlook Report (the "2024 System Outlook Report"), prepared in consultation with the Consumer Advocate's consultant, John Wilson of Grid Strategies LLP.

The 2024 System Outlook Report follows Nova Scotia Power's Evergreen IRP Report of August 2023, the Province of Nova Scotia's 2030 Clean Power Plan, Nova Scotia Power's "The Path to 2030 Report" and Nova Scotia Power's 2024 Load Forecast Report. These four planning updates along with updated data on existing progress towards placing new generation resources in service inform the 2024 System Outlook.

The scale of changes described in the 2024 System Outlook can hardly be overstated. In the near term, Nova Scotia Power will be placing new generation resources into service, notably wind resources procured by the Province, battery storage and new gas combustion turbine units (also referred to as "fast acting generation"). Nova Scotia Power will also be converting several generators from coal to either gas or fuel oil. Finally, Nova Scotia Power will be building a major new transition facility to New Brunswick.

In consultation with Mr. Wilson, the Consumer Advocate wishes to bring the following matters to the Board's attention:

- <u>Progress on Evergreen IRP:</u>

  On review of the materials filed, it would appear that two aspects of the Evergreen IRP do not appear to progress at a pace consistent with meeting the 2030 targets.

First, although the 2024 Outlook System base scenario does not include the “hybrid peak” concept, it is clear that in every relevant proceeding, Nova Scotia Power (and Eastward Energy for that matter) assumes that this scenario is the preferred approach. The Consumer Advocate would therefore request that the Board provide some direction to the NS Power on the criticality of developing a detailed understanding of the “hybrid peak” scenario, developing implementation plans for the scenario, or (if implausible) an alternative, and proceeding with timely implementation.

Second, it would also appear that NS Power has decided not to pursue engagements with other participants to undertake a study of regional joint dispatch by a single system operator, as directed by the Board in its 2020-2021 FAM Audit decision. Instead of engaging with other utilities on regional joint dispatch as directed by the Board, Nova Scotia Power has focused its efforts on the creation of an independent system operator for Nova Scotia. The Consumer Advocate is concerned about NS Power’s position on this issue. While we acknowledge that the creation of the NSIESO will have an impact on the role NS Power may play, the utility will continue to have a keen interest in the outcome of any discussions concerning regional joint dispatch, as an owner of generation and transmission assets that are to be dispatched. In this regard, we do not agree that the two imperatives of (1) engaging with other utilities on regional joint dispatch and (2) supporting the formation of the Nova Scotia Independent Energy System Operator are contradictory.

Finally, it is also worth noting a discrepancy between NS Power’s 2024 ACE Plan filing in Matter No. M11458 and its energy storage application in Matter No. M11539. In its 2024 ACE Plan, NS Power describes the Province’s 150 MW of energy storage projects prescribed under Section 4D of the *Electricity Act* as “in addition to NS Power’s 150 MW ECEI BESS.”[1] However, its recent application for capital work order CI C0045132 in Matter No. M11539 presents the ECEI and Section 4D projects as one and the same. This discrepancy was not addressed by NS Power in its 2024 ACE Plan Rebuttal Evidence.[2]

It is unclear whether the merging of the ECEI and Section 4D projects into a single 150 MW project application represents a reduction in the anticipated energy storage projects through 2029, or whether more applications or Provincial prescriptions may be forthcoming. The Board may therefore wish to obtain clarification from NS Power this issue.

- <u>Reliability Tie Risks:</u>

  A major component of Nova Scotia Power’s System Outlook is the Reliability Tie. NS Power summarizes the Reliability Tie as follows:

  > The Reliability Tie is a second 345 kV AC transmission line between Onslow, NS and Salisbury, NB. It will improve the reliability of Nova Scotia’s transmission link to the New Brunswick Power system and the broader Eastern Interconnection, enabling the integration of additional variable renewable generation on the Nova Scotia system. The Reliability Tie is not anticipated to provide incremental access to firm capacity or energy.

[1] Exhibit N-2, *The Path to 2030*, Matter No. M11458, p. 20, lines 24-26.
[2] Exhibit N-16, *2024 ACE Plan Rebuttal Evidence*, Matter No. M11458, p. 11.

> NS Power is developing the Reliability Tie in collaboration with NB Power with a target in-service date of 2028.
>
> … Progressing the Reliability Tie also facilitates future expanded Regional Interconnections to electricity systems beyond Nova Scotia, including a potential extension to Point Lepreau, NB.[3]

The Reliability Tie is essential to maximizing the use of planned increases in wind resources.

For the most part, the Consumer Advocate does not have many concerns regarding NS Power's efforts to plan for risks during the construction of the Reliability Tie. That being said, we do wish to note the following:

- According to Nova Scotia Power, purchase orders for necessary high voltage equipment were issued in the spring of 2024, and the delivery dates have been confirmed within the plan scheduled and project end service date. However, it is notable that Nova Scotia Power has not included delays in any supplies or equipment on its risk register, and thus has no clear contingency plan for any such delays that may occur.

- In addition, there have been four sustained unplanned outages for the existing 345 kV line between NS Power and NB Power (L-8001), including three due to icing that lasted between four and nine hours. Considering that L-8001 and the Reliability Tie will travel paths that are likely to experience similar weather conditions, there is a good possibility that the lines could be similarly affected by icing, resulting in no net gain in reliability with respect to icing events.

Further action should be taken by NS Power to mitigate these risks, including the development of operating guidelines that ensure its system can ride through a dual-outage event during periods with icing of both the L-8001 and the Reliability Tie transmission connections with New Brunswick.

- <u>Geothermal System Resources:</u>

In CA RIR-1, NS Power gave a very general response to a series of specific questions about Nova Scotia Power's views on enhanced geothermal system resources. As acknowledged by Nova Scotia Power, Fervo Energy has recently demonstrated a successful production scale enhanced geothermal system project in Nevada. NS Power considers enhanced geothermal system resources to be an emerging technology that it will "monitor" along with small modular nuclear reactors, which have not been demonstrated at production scale.

Respectfully, Nova Scotia Power appears to have misapprehended the limited evidence that it has reviewed in "monitoring" this technology. It is entirely plausible that enhanced geothermal system projects could be widely deployed by 2030. By 2035, geothermal could be as significant to the electric sector and shale gas is to the natural gas sector today.

The Board should therefore encourage Nova Scotia Power to take greater initiatives in the evaluation of enhanced geothermal systems.

[3] Exhibit N-1, *2024 Outlook*, p. 57-58.

Given the above, we would respectfully ask the Board to consider the following:

- Provide direction to NS Power on the development of the "hybrid peak" scenario, as well as regarding its engagement on regional joint dispatch;
- Request that NS Power clarify whether the merging of the ECEI and Section 4D battery storage projects into a single 150 MW project application represents a reduction in anticipated energy storage projects through 2029;
- Obtain assurances from NS Power that it has or will soon develop operating guidelines that ensure its system can ride through a dual-outage event during periods with icing of both the L-8001 and the Reliability Tie transmission connections with New Brunswick; and
- Encourage NS Power to take greater initiative in the evaluation of enhanced geothermal systems.

We thank the Board for the opportunity to provide these submissions.

Yours truly,

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David Roberts,
On behalf of the Consumer Advocate