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October 7, 2014

**VIA EMAIL**

26872

Ms. Doreen Friis  
Regulatory Affairs Officer/Clerk  
***Nova Scotia Utility and Review Board***  
1601 Lower Water Street, 3rd Floor  
Halifax, NS B3J 3S3

Dear Ms. Friis:

***Re: Nova Scotia Power Inc. Integrated Resource Plan (“IRP”) 2014 (M05522)***

This letter sets out the comments of the Consumer Advocate responding to the September 30, 2014 draft report filed by NSPI.

The Consumer Advocate believes there are still a number of unresolved matters needing further disclosure or analysis by NSPI. The Consumer Advocate refers to the following areas.

1. There is no consensus as to the level of DSM or what criteria should apply or what alternatives should be considered.
2. The list of IRP inputs and work products that have not been revealed to the stakeholders is essentially unchanged since September 12. For example, NSPI acknowledges that the IRP “objective function is the minimization of the cumulative present worth of the annual revenue requirements,” (Appendix A at 3), but does not provide the annual revenue requirements, only annual percentage changes in a portion of revenue requirements. NSPI has still not disclosed what percentage of revenue requirements it has modeled.
3. NSPI has not provided the underlying data for the CRP results in accessible formats. Many of the tables and charts found in Appendix K present derived data (e.g., differences from reference case, percentage changes, present values), but not the underlying values (e.g., annual dollar values). Appendix L provides detailed load and resource results on CRPs, but it does not provide comparable data on costs or revenue requirements. As a result, reviewing the results provided is difficult, and performing any corrections, sensitivity analysis or supplemental calculations can be impossible.

4. NSPI has not yet explained how it determined that the Port Hawkesbury biomass plant will transition to an NRIS resource only upon the retirement of a second Lingan unit (Draft at 47). In the past, NSPI has assumed that the retirement of one 150-MW coal unit on Cape Breton (e.g., Lingan 2) would free up more than enough transmission capacity off the island for Port Hawkesbury to be counted as firm NRIS capacity. NSPI's new assumption may be reasonable, but NSPI needs to provide the basis for changes in important technical assumptions.
5. The IRP natural-gas prices generally include four components: Henry Hub Commodity; Basis to Algonquin, Transco Zone 6, or Dawn; and either tariff Transportation rates from the basis point to Tufts Cove, or a Market Premium. (Appendix B) NSPI has not disclosed these components, so its forecast of gas prices used in the IRP cannot be compared to other forecasts at any of the hubs.
6. The Draft IRP also does not provide any information on the assumed seasonal price variation for gas and market electricity purchases. The economics and dispatch of NSPI's generation varies significantly between summer and winter, due in large part to the cost of gas.
7. Further analysis is needed in estimating the capacity value of resources with ERIS transmission. While the Draft says that "ERIS wind projects considered in this study would not likely be curtailed if they are operating at 17 percent of their nameplate capacity" (Draft at 74), this does not resolve the question of how much firm capacity the ERIS wind projects can be considered to provide. If NRIS wind plants contribute ELCC of 17% of nameplate capacity, based on being available at 0% to 100% on various high-load hours, and ERIS wind plants can only be counted on for capacity up to 17% of their nameplate capacity, the ERIS wind plants would provide only about 6% of their capacity.<sup>1</sup> NSPI provides no information suggesting that Port Hawkesbury biomass has any capacity value as an NRIS facility.
8. On its face, the analysis of ERIS capacity value is only valid after the Maritime Link enters service, and provides no information regarding operation for the next few years. In addition, the analysis assumes that all wind generation—not just the ERIS capacity—is operating at less than 20% of nameplate capacity, assumes that Maritime Link and all the generation east of Onslow is on line, and does not model the COMFIT generation. If all the generation east of Onslow is on line, the ERIS generation would not be needed; the study did not examine whether the ERIS generation would contribute to capacity value when needed. Nor did the study determine whether higher generation by NRIS wind would create transmission congestion for the ERIS wind; if ERIS resources can only operate at times of low NRIS wind, they would be of limited value.

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<sup>1</sup> The average wind capacity factor at the high-load hours in Appendix C, pp. 3 and 11, is about 38%, representative of Nova Scotia wind performance. Limiting the wind output to 17% of nameplate capacity would produce an average in those hours of about 13%, or a third of the unconstrained average. NSPI does not provide any data for its broader Cumulative Frequency Analysis, which involved about 3,500 hours over four years.

9. NSPI's Action Plan appears to abandon the traditional LOLE approach and limit further study of this issue to "coincidence of wind generation with peak load" (Draft at 61), for which NSPI has not proposed any means for objectively determining the capacity value of wind. Contrary to NSPI's assertion that its Cumulative Frequency Analysis estimates an "ELCC of wind generation," the analysis ignores the rest of the generation system and cannot estimate ELCC. The only ELCC study that NSPI conducted was based on 2006 load and estimated generation (Appendix C, at 29), and ignored the reliability benefits of non-firm energy available from New Brunswick and the Maritime Link (Appendix C, at 31). While NSPI claims that "Due to time constraints, the Company was unable to complete a multi-year LOLE study in order to assess the reliability of LOLE methodology and inform a conclusive selection of ELCC of wind based on LOLE methodology (Draft at 30), it does not establish a schedule for plugging additional years' data (including actual generation patterns for recent years) into its Plexos model to perform the multi-year LOLE study.

Rather than setting a deadline to conduct the deferred LOLE analysis, NSPI proposes only that "during 2015–2016, continue to evaluate the coincidence of wind generation with peak load to better understand the Capacity Value of wind assets on the NS Power system. This should be replaced with a deadline in 2015 for a report on the LOLE results for wind and load data from 2007 to 2.

10. NSPI appears to have given itself at least to the end of 2015 to "determine the extent to which ERIS resources can count as capacity towards resource adequacy during winter peak" (Draft at 68). If NSPI intends to file a general rate application in 2015, it should endeavour to complete the ERIS capacity analysis early in 2015.
11. NSPI has not made clear the rationales for the varying retirement schedules of the Tufts Cove units in the various CRPs. Retirement of Tufts Cove capacity may require new generation in or transmission to Halifax; NSPI has not provided any analysis of Halifax supply adequacy with the assumed retirements.
12. In addition to the foregoing, NSPI further progress is needed in relation to the following:
- The benefit of reduced dispatch of Port Hawkesbury biomass.
  - Determination of realistic wind-power costs.
  - The value and likely costs of power purchase options, especially from Nalcor and HQ.
  - Options and economics for marketing excess NSPI renewable energy to New England.
  - Optimization of the aging fossil fleet, including options for cycling of coal plants, the discrepancies between historical and projected operation of marginal units (Trenton 5, Lingan) and selection of the first marginal units to retire.

The Consumer Advocate notes that other stakeholders have identified additional outstanding or unresolved issues. In the circumstances the Consumer Advocate requests that NSPI address those matters prior to finalizing the current IRP process.

Yours truly,

A handwritten signature in blue ink, appearing to read "John Merrick". The signature is fluid and cursive, with the first name "John" being larger and more prominent than the last name "Merrick".

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