
Memorandum

TO: M08059 GENERATION UTILIZATION AND OPTIMIZATION STAKEHOLDERS
FROM: BOB FAGAN – SYNAPSE ENERGY ECONOMICS
DATE: JULY 9, 2018
RE: SYNAPSE REPLY SUBMISSION - RESPONSE TO STAKEHOLDER COMMENTS ON FINAL REPORT

This memo responds to the set of stakeholder comments provided in response to Synapse's May 1, 2018 Final Report, Nova Scotia Power Inc. Thermal Generation Utilization and Optimization. It also addresses the Board's request to identify any further appropriate process requirements in this Matter.

Comments were filed by NS Power on June 7, 2018, by the Industrial Group on June 20, 2018, and by EfficiencyOne, the Small Business Advocate ("SBA"), the Consumer Advocate ("CA"), and Port Hawkesbury Paper LP ("PHP") on June 21, 2018.

NS Power, the Industrial Group, the Small Business Advocate and PHP support no further hearing process in this matter.

EfficiencyOne indicates an expectation they will conduct a full DSM potential study prior to the next Integrated Resource Plan; and the CA notes two areas they believe require ongoing monitoring by the Board (DSM efforts, and capacity valuation of wind resources). The CA recommends the Board consider a proceeding to settle the valuation of wind capacity, but they do not indicate it should be part of this matter.

Synapse concurs with NS Power, the Industrial Group, the Small Business Advocate, and PHP that no further process is necessary in respect to this matter.

Synapse's primary reply comment in this matter pertains to the overall interpretation of our key analytical findings. NS Power highlights, appropriately, one of our core findings that under "reference" load levels and other reference scenario parameters (wind capacity credit, new wind installation limits, no 2nd 345 kV tie, sustaining capital amounts) retention of the thermal fleet is indicated through 2030.¹ And, NS Power also notes, properly, that these results do not reflect a "final determination as to the long-term utilization of these generation units".

¹ NS Power comments, page 4.

However, the entirety of our analysis indicates that almost all scenarios *other than* the reference scenario exhibit lower overall planning period costs,² and a number of those scenarios indicate economic retirement of a second coal unit (i.e., besides Langan 2) earlier than 2030. The three lowest cost scenarios – noted on page 2 of our report (scenarios 8, 14, and 17) – show a second coal unit retirement between 2024-2027, indicating the economic importance of carefully considering the pattern of near-term capital investment for what will be the next coal unit retirement after Langan 2. And, the high sustaining capital cost scenario (4), other wind scenarios (16, 17), and low battery cost sensitivities (1LB, 13LB) all indicate as economic an earlier second coal unit retirement. In some of those scenarios, that retirement “should” come as early as next year.³ In total, these results show that retention of the entire thermal fleet through 2030 is economic only under the reference assumptions, and the scenario analyses show that those assumptions generally do not represent the lowest-cost planning path. Most importantly, the results show that NS Power should focus on identifying the best candidate for retirement after Langan 2.

Our recommendation to not conduct hearings at this point in this matter rests on NS Power’s clear statement of support for the Final Report’s nine recommendations, including identifying candidates for the next coal unit retirement. All of the recommendations will influence critical input assumptions for the next Integrated Resource Plan. We note that some of the combinations that could critically influence assessment of coal retirement economics – e.g., high sustaining capital costs in combination with increased wind installations, a second 345 kV tie, successful peak shaving (demand response) efforts, and low battery costs – were not tested in an effort to simplify the analysis; but should be considered in the next IRP. While we note that our analysis was not an IRP, it is impossible to untangle the assessment of thermal fleet economics from resource planning assumptions, the Small Business Advocate’s comments notwithstanding.⁴

The SBA notes concern over our analysis’ reliance on long-term metrics, indicates its interest in near-term electric costs, and is concerned over our inclusion of common costs carried across the analysis.⁵ We note that our analysis was not intended to assess near-term rate effects, but we do include revenue requirements trajectories across scenarios (Figure 7, page 40) indicating a fairly narrow range of requirements (in total, not broken out by electric sectors – e.g., residential commercial, industrial) over the near term. It is our understanding that sustaining capital costs for the thermal fleet are generally recovered as capital investment assets, and thus using a longer-term metric to analyze coal fleet economics is indicated. We also note that removing common costs from the revenue requirements tabulation and focusing only on incremental costs would have the effect of showing even greater

² Final Report, Table 9a, page 36.

³ Final Report, Builds and Retirements, Table 8a and 8b, pages 28-29.

⁴ The SBA comments indicated “concerns that the study was never intended and thus not designed to provide guidance on other energy and capacity resources”, and “it was not the intention of the Report to recommend resource planning priorities for Nova Scotia”. SBA comments, page 2.

⁵ SBA comments, page 3.

relative-to-reference-case cost savings (i.e., in percentage terms) for the three lowest-cost scenarios shown – scenarios 8, 14 and 17.⁶

PHP notes its concern with our late-in-coming reporting of a post-processing error that altered the Final Report tabulation of NPV costs for the scenarios, relative to the draft report findings.⁷ We regret not catching this error earlier, which could have allowed for further discussion. As PHP indicated, it did not change any of the analytical findings on builds and retirements, though it does illustrate the relatively lower NPV costs associated with resource plans that include more wind installations in Nova Scotia.

EfficiencyOne highlights the finding that higher levels of DSM continue to be cost effective, even when considering that the next increments of DSM savings beyond EfficiencyOne’s current efforts will come at higher per-unit costs.⁸ We note that the presence of the carbon cap on emissions essentially causes marginal supply to come from non-coal resources, which on average are higher cost than the coal units. Thus, it is not surprising to see this effect, and we emphasize that the avoided costs considered in the next DSM potential study must reflect this effect.

In conclusion, we thank the Board for providing us the opportunity to conduct this assessment of the thermal fleet in Nova Scotia. We reiterate our main finding that the economics of the thermal fleet is demonstrated in our analysis, but a second unit retirement prior to 2030 is indicated under the lowest-cost scenarios we analyzed. We look forward to NS Power’s IRP process in 2019 or thereabouts.

⁶ See, e.g., Table 9a, page 36, “Change from Sc 1” percentages at the bottom of the table.

⁷ PHP comments, page 2.

⁸ EfficiencyOne comments, pages 1-2.