Q. **Reference: Midgard Consulting March 28, 2023 Report - Southern Labrador Communities – Integrated Resource Plan**

Table 35, page 84 of 103, displays the overall final ranking of all scenarios and sub-variants.

a) Please provide, in both tabular and graphical format with both formats identifying when capacity and/or energy including renewables are added, the net present cost for each of the 28 scenarios for every year of the study period.

b) Were the energy and capacity differences in the scenarios and sub-variants reconciled/made equal at the end of the study period. If so, please explain the process. If not, please explain why.

c) Please explain why a 25-year study period was determined to be the most appropriate timeframe.

d) Please provide similar analyses assuming a study period of 30, 40, and 50 years.

A. *This response has been provided by Midgard Consulting Inc. ("Midgard").*

a) Please refer to PUB-NLH-081, Attachment 1 for the results of the requested modelling.

b) As described in the "Southern Labrador Communities - Integrated Resource Plan" ("Midgard IRP),[1] filed with the Board of Commissioners of Public Utilities on March 31, 2023[2]:

> To account for different asset lives as well as deferred capital spending that would still retain some net book value at the end of the planning period, a "Terminal Value" allowance is appended to the end of the model, which comprises the residual un-used capital life assuming a straight-line depreciation. The Terminal Value is represented as a "negative cost" in the year 2049.[3]

[1] "Southern Labrador Communities - Integrated Resource Plan," Midgard Consulting Inc., March 28, 2023.
[2] "Long-Term Supply of Southern Labrador – Phase 1 – Midgard Consulting Inc. Report," Newfoundland and Labrador Hydro, March 31, 2023, att. 1.
[3] "Southern Labrador Communities - Intergrated Resource Plan," Midgard Consulting Inc., March 28, 2023, p. 75/6–10.

c) Midgard determined this to be an appropriate study period because it was considered a reasonable balance between short- and long-term study periods. The 25-year study period is long enough to capture different investment timing yet short enough that assumed inputs remain credible. A 25-year study period is considered a typical study period for an Integrated Resource Plan.

d) The requested incremental modelling is not expected to alter the results of the Midgard IRP for several reasons.

First, long life assets that would be expected to be preferred in longer study periods have already been commensurately advantaged in the Midgard IRP because the economic model has already taken into account residual remaining life in the form of a terminal value capital cost credit in the year 2049. This is discussed in response to part b) and is further demonstrated in the cumulative cost tables provided in part a). Please refer to the response to PUB-NLH-073 of this proceeding for further discussion.

Second, the only expected material incremental capital cost for the preferred alternative that would be different from a study period of 50 years is a replacement in year 40 of the new regional generation plant. That future cost would be discounted for 40 years to a present value. Further, in year 50, the residual remaining life would be credited back to the alternative as a terminal value. Therefore, the impact is considered to be minimal on a net present value basis.

Third, it is Midgard's opinion that stretching economic modelling that relies on future forecasted costs beyond a 25-year planning period would also require the introduction of sufficiently wide uncertainty bands to the results, which would limit the reliability of any conclusion drawn therefrom.