

1 Q. **Reference: Application, Attachment 1, Page 19, Lines 2 - 5**

2 If the existing diesel generating stations in the communities of Charlottetown, St. Lewis and
3 Mary's Harbour were to be maintained as emergency and standby generation, how would this
4 affect the economic evaluation of alternatives as set forth in Section 5.0?

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7 A. Appendix C of the "Long-Term Supply Study for Southern Labrador: Economic & Technical
8 Assessment"¹ concludes that overall reliability is improved with an interconnection; therefore,
9 standby generation is not required for the proposed interconnection of southern Labrador.

10 For information purposes, Newfoundland and Labrador Hydro ("Hydro") has provided the
11 results of the analysis for a scenario whereby the existing diesel generating stations in the
12 communities of Charlottetown, St. Lewis, and Mary's Harbour were maintained as emergency
13 and standby generation.

14 In this scenario, Alternative 3a would be executed as described in Section 4.3 of the referenced
15 document, with the following additional assumptions applied:

- 16 ● The Charlottetown, St. Lewis, and Mary's Harbour Diesel Generating Stations are not
17 decommissioned and remain as emergency/standby generation;
- 18 ● The standby diesel generating stations would require capital upgrades to prolong their life
19 to the end of the 50-year study. For this sensitivity analysis, Hydro assumed a \$2 million
20 capital investment for each diesel generating station every five years. This cost would
21 include scheduled genset overhauls/replacements, fuel tank inspections, fuel tank
22 replacements, building envelope upgrades, etc. A condition assessment would be required
23 to provide an accurate estimate of future capital expenditures associated with extending
24 the life of each diesel generating station as a standby;

¹ "Long-Term Supply for Southern Labrador – Phase 1," Newfoundland and Labrador Hydro, July 16, 2021, sch. 1, att. 1.

- 1 ● A high-level cost estimate for a fixed operations and maintenance (“O&M”) cost was
- 2 assumed to be \$200,000 per year;
- 3 ● The standby diesel generating stations would not have any variable O&M costs; and
- 4 ● The standby diesels would not supply any of the energy requirements for the four
- 5 communities. Given that all of the generation sources are diesel generation (comparable
- 6 cost per kWh) and the requirement of backup supply would be a rare event, it is reasonable
- 7 to assume there would an insignificant incremental fuel cost associated with the operation
- 8 of standby generation.

Table 1: Economic Analysis – Sensitivity Case
All Diesel Generating Stations Remaining in Service for all Scenarios

Alternative	Cumulative Net Present Worth (“CPW”)	CPW Difference between Alternative and the Least- Cost Alternative
Alternative 1	\$177,400,000	\$0
Alternative 3a (Charlottetown, Mary’s Harbour, and St. Lewis - Standby Diesel Generating Stations)	\$179,300,000	\$1,900,000
Alternative 2	\$184,700,000	\$7,200,000
Alternative 3b	\$191,200,000	\$19,500,000

9 This sensitivity analysis demonstrates that if three of the existing diesel generating stations
 10 remain in service for the purpose of providing standby generation, Alternative 1 would become
 11 the preferred option by a relatively slight margin over Alternative 3a.