

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

3 Page 40 of 103, lines 26-27, state that “If all six communities are interconnected into a single
4 system, there would only need to be one fully redundant unit available on the system.” Is this
5 the case if there is no centralized diesel generating station? If not, please identify the
6 communities where the redundant units would be located, the size of the redundant units as
7 well as the anticipated cost associated with the redundant units.

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10 A. *This response has been provided by Midgard Consulting Inc. (“Midgard”).*

11 Each system requires at least one fully redundant unit. If the communities are not
12 interconnected, then each community will comprise its own system, and require a backup unit
13 in every community. The most cost effective solution was anticipated to be a centralized diesel
14 station with a single redundant generator. If the communities were interconnected and retained
15 their existing local generating stations, it is likely that two (smaller) redundant generators would
16 be selected, in part because of the physical (size) limitations of the existing stations. If the
17 system is not interconnected, then a redundant unit must be installed in each community, with
18 the size and associated cost being based on the size of the community, since the redundant unit
19 would need to be equal to the size of the largest unit installed in that community. Capital costs
20 for generators (and the powerhouse bay to install them in) can be found in Table 26 (included as
21 Figure 1) of the “Southern Labrador Communities - Integrated Resource Plan”(“Midgard IRP”).¹ In
22 general, the cost for a redundant generator is \$900,000 (the incremental cost of an additional
23 powerhouse bay) plus the cost of the generator (based on capacity). More detail on a proposed
24 system configuration, including the specific sizes of generators can be found in Newfoundland

¹ “Southern Labrador Communities - Integrated Resource Plan,” Midgard Consulting Inc., March 28, 2023.

1 and Labrador Hydro’s “Technical Note: RP-TN-051– Southern Labrador - Interconnection
 2 Without Regional Diesel Plant”²

Table 26: Powerhouse Capital Costs

Cost Component	Cost (2023\$)
<u>Powerhouse</u>	
PH - Fixed	\$3,380,000 ea.
PH Bays - Variable	\$1,560,000 per bay constructed
PH Genset - Variable	\$140,000 per generation installed
Fire Suppression – Fixed	\$2,300,000 ea.
Incremental PH Cost for Natural Gas ^A	\$170,000 per bay
CNG Storage Tank - Small ^A	\$79,000
CNG Storage Tank - Large ^A	\$205,000
MSH PH Life Extension	\$810,985 ea.
Upgrade CHT Mobile Station	\$11,500,000 ea.
<u>Generators</u>	
Genset <= 600 kW	\$980,000 ea.
Genset 800 kW	\$1,140,000 ea.
Genset 910 kW	\$1,180,000 ea.
Genset 1000 kW	\$1,250,000 ea.
Genset 1833 kW	\$2,080,000 ea.
Genset 2220 kW	\$2,410,000 ea.
Genset – Variable	\$900,000 per genset installed

Figure 1: Table 26 of Midgard IRP

² “Long-Term Supply for Southern Labrador – Phase 1 - Supplemental Information,” Newfoundland and Labrador Hydro, March 17, 2023, att. 1.