

1 Q. **Reference: Attachment 1- Long-Term Supply for Southern Labrador - Economic and Technical**
2 **Assessment**

3 Table 4 shows that the Mary's Harbour diesel generating station is scheduled to be replaced
4 after 36 years of service, the Port Hope Simpson diesel generating station is scheduled to be
5 replaced after 40 years of service, and the St. Lewis diesel generating station is scheduled to be
6 replaced after 39 years of service.

- 7 a) The Mary's Harbour and Port Hope Simpson diesel generating stations were placed in
8 service in 1994 and 1995 respectively. Why is the Mary's Harbour diesel generating
9 station being retired with a service life four years less than Port Hope Simpson?
- 10 b) What is the anticipated life span of a diesel generating station before replacement is
11 required within Hydro's service territory?
- 12 c) What are the current service ages of each of the 23 diesel generating stations within
13 Hydro's service territory?
- 14 d) What are the current retirement dates for each of the 23 diesel generating stations?
- 15 e) Please confirm that the economic analysis completed on Alternatives 3A and 3B did not
16 include any provision for the replacement of the Port Hope Simpson diesel generating
17 station over the 50-year study period. If confirmed, please explain why the expected
18 service life of the Port Hope Simpson proposed diesel generating station appears to be
19 significantly longer than the service lives of other diesel generating plants. If not
20 confirmed, please identify the year the replacement occurred within the economic
21 analysis and the estimated cost of the replacement.

- 1 A. a) There are two reasons why the expected retirement date for the Mary’s Harbour Diesel
2 Generating Station will result in a shorter service life than Port Hope Simpson Diesel
3 Generating Station:
- 4 1. The Mary’s Harbour Diesel Generating Station is already beyond its design capacity
5 and requires mobile generation, whereas the Port Hope Simpson Diesel Generating
6 Station is at capacity and does not require mobile generation outside of the diesel
7 generating station. Replacement or extension would be required in the long-term to
8 install permanent generation within the diesel generating station; and
- 9 2. The Mary’s Harbour Diesel Generating Station building envelope is in worse
10 condition¹ than the Port Hope Simpson Diesel Generating Station.
- 11 b) The assumed life of a diesel generating station is 40 years, at which point many of the major
12 components of the diesel generating station have likely reached end-of-life (e.g., roofing,
13 siding, windows, doors, fuel storage system, ventilation, and heating systems).
14 Newfoundland and Labrador Hydro (“Hydro”) seeks to extend the life of its generating
15 stations through the refurbishment and upgrade of equipment and infrastructure until such
16 time as replacement becomes the least-cost option (e.g., based on overall condition of the
17 generating station or load growth requirements driving additional and/or larger units that
18 cannot fit inside an existing generating station).
- 19 c) Table 1 provides a listing of Hydro’s diesel generating station along with their respective
20 years of construction and age.

¹ For example, the Mary’s Harbour Diesel Generating Station has experienced roof leaks which require repair.

Table 1: Hydro’s Diesel Generating Stations²

Location	Year Built	Age
St. Lewis	2006	15
Nain	2002	19
McCallum	2001	20
Mud Lake	1998	23
Port Hope Simpson	1995	26
Mary’s Harbour	1994	27
Grey River	1992	29
Hopedale	1991	30
Charlottetown	1989	32
Cartwright	1987	34
Norman Bay	1986	35
Makkovik	1980	41
Black Tickle	1978	43
Postville	1976	45
Rigolet	1976	45
L'Anse-au-Loup	1974	47
Francois	1973	48
Hawke's Bay	1971	50
Paradise River	1970	51
St. Anthony	1970	51
Ramea	1997	24
St Brendan’s	1980	41
North Plant	1952	69

1 d) Hydro’s Five-Year Capital Plan (2022–2026)³ includes the replacement of the Paradise River
 2 Diesel Generating Station, currently planned for inclusion in Hydro’s 2025 Capital Budget
 3 Application. The Port Hope Simpson, Charlottetown, Mary’s Harbour, and St. Lewis Diesel
 4 Generating Stations are proposed for replacement through this application and are included
 5 in Hydro’s Five-Year Capital Plan (2022–2026). The remainder of Hydro’s diesel generating
 6 stations listed in Table 1 currently do not have a projected replacement date. As noted in

² The age noted for the diesel generating stations in St. Lewis, Nain, McCallum, and Mary’s Harbour is reflective of current age of the diesel generating station. For clarity, the age of the diesel generating station as outlined in Hydro’s response to NP-NLH-020 of this proceeding was the age of the diesel generating station at the time of replacement.

³ “2022 Capital Budget Application,” Newfoundland and Labrador Hydro, rev. September 17, 2021 (originally filed August 2, 2021), vol. I, sch. 2.

1 part b) of this response, Hydro seeks to extend the life of its diesel generating stations
2 through refurbishment and upgrades and, generally speaking, replacement is not
3 considered until either asset condition and/or load growth requirements dictate the
4 necessity. At this time, none of the remaining diesel generating stations are forecast for
5 replacement within the Five-Year Capital Plan (2022–2026) period.

- 6 e) Hydro confirms that the economic analysis performed on Alternative 3a and 3b did not
7 include any provision for the future replacement of the proposed regional diesel generating
8 station over the 50-year study period. This is also the case for Alternative 1 in which Hydro
9 did not include any provisions for the replacement of the mobile site upgrades or a new
10 Mary's Harbour Diesel Generating Station, or for Alternative 2, in which Hydro did not
11 include any provisions for the future replacement of new Charlottetown or Mary's Harbour
12 Diesel Generating Stations.

13 If Hydro were to consider the provision for replacements of proposed new diesel generating
14 stations within the 50-year study, the following would have to be added to the analysis:

- 15 ● In Alternative 1 Hydro would include the replacement of the new mobile building at
16 a cost of \$10.5 million in 2063 and the replacement of the new Mary's Harbour
17 Diesel Generating Station at a cost of \$18.9 million in 2070;
- 18 ● In Alternative 2, Hydro would include the replacement of the new Charlottetown
19 Diesel Generating Station at a cost of \$21.4 million in 2064 and the replacement of
20 the new Mary's Harbour Diesel Generating Station at a cost of \$18.9 million in 2070;
- 21 ● In Alternative 3a Hydro would include the replacement of the regional diesel
22 generating station at a cost of \$25.2 million in 2064; and
- 23 ● In Alternative 3b Hydro would include the replacement of the regional diesel
24 generating station a cost of \$29.3 in 2064.

25 Given that consideration by Hydro of future replacements of the proposed new diesel
26 generating stations over the next 50 years would result in more costs being added to
27 Alternative 1 (total of \$29.4 million) and Alternative 2 (total of \$40.3 million) than would be
28 added to Alternative 3a (total of 25.2 million), then it can be concluded that this change

- 1 would only result in additional support to proceed with the proposed alternative
- 2 (Alternative 3a).