

1 Q. **Reference: Application, Diesel Genset Replacement Program (2023-2025)**

2 a) Were alternatives that are more environmentally friendly than diesel generators
3 considered?

4 b) What is driving load growth at Hopedale?

5 c) Why was the William's Harbour community resettled?
6
7

8 A. a) Newfoundland and Labrador Hydro ("Hydro") does not consider the integration of wind,
9 solar, or run-of-the-river hydro generation to be viable alternatives as they do not provide
10 firm capacity. Rather, renewable energy sources such as wind and solar installed in isolated
11 systems are considered non-firm energy sources due to the intermittent nature of the
12 energy supply (wind/solar) which would not necessarily be available when needed. Similarly,
13 run-of-the-river hydroelectric plants generally do not provide firm capacity. Only
14 hydroelectric plants with larger storage reservoirs would provide firm capacity to the
15 system; however, the amount of capacity would be dependent on the particular site and the
16 design of the plant.

17 Further, renewable energy sources are not considered to be firm even when combined with
18 energy storage systems. This is supported by a National Renewable Energy Laboratory
19 report titled "2018 U.S. Utility-Scale Photovoltaics-Plus-Energy Storage System Costs
20 Benchmark".¹ This report includes a comparison of average energy storage durations for
21 such systems and indicates that most storage technology is limited to 10 hours in duration
22 and none exceed average energy storage duration of 100 hours.

23 For Hydro to rely on non-firm renewable energy sources such as wind, solar, or run-of-the-
24 river hydro, energy storage technologies would need to bridge extended periods of time

¹ Fu, R; Remo, T; and Margolis, R. "2018 U.S. Utility-Scale Photovoltaics-Plus-Energy Storage System Costs Benchmark," National Renewable Energy Laboratory, November 2018, <<https://www.nrel.gov/docs/fy19osti/71714.pdf>>.

- 1 where there is little wind, sunlight, or water flow. As such periods may extend for several
2 days, current energy storage solutions do not provide a viable alternative.
- 3 **b)** Hydro develops isolated systems load forecasts based on historical energy and demand
4 trends from each community. These trends are modified by specific increases or decreases
5 in energy or demand, as communicated by customers and regional or municipal governing
6 bodies or organizations. The load growth experienced in Hopedale has been driven by new
7 housing developments and funding from the Nunatsiavut Government to build or improve
8 government facilities and services. Continued housing developments and a shift in
9 residential and general service customer preference for electric heat are forecast to
10 continue, increasing the energy and demand requirements for the community.
- 11 **c)** The Local Service District of William’s Harbour in Labrador was relocated as per the
12 Government of Newfoundland and Labrador’s Community Relocation Policy. Additional
13 information is available in the news release provided by the Department of Municipal Affairs
14 and Environment.²

² “Residents of William’s Harbour Moving Forward with Relocation,” Government of Newfoundland and Labrador, Municipal Affairs and Environment, August 15, 2017, <<https://www.releases.gov.nl.ca/releases/2017/ma/0815n03.aspx>>.