

1 Q. At Section 5 on page 17 of Schedule 2, Hydro states the following:

2 Both Hydro and Midgard have assessed the use of renewable energy sources for
3 the provision of firm capacity on isolated systems and have each concluded that
4 transmission connections to interconnected systems do not meet the criteria of
5 least cost. Additionally, due to the distance (over 400 kilometres) of the line
6 required to interconnect the Southern Labrador Communities with the Labrador
7 Interconnected System, backup generation would be required in the form of
8 diesel generation. Finally, renewable Long-Term Supply for Southern Labrador –
9 Evidence Supporting the Revised Application energy resources with Battery
10 Energy Storage Systems are technically and economically prohibitive and are
11 expected to remain so for the foreseeable future. The use of diesel generation
12 remains the only viable solution that is consistent with Hydro’s legislated
13 mandate.

- 14 a) Should energy storage, renewable energy generation technologies, and combinations
15 thereof progress to a level of sufficient firm capacity and reliability required by Hydro,
16 how will Hydro account for this in the regional diesel design considerations, particularly
17 if a sufficient level of capacity and reliability is achieved before the end life of the asset?
18 b) Does Hydro share the end goal of fully displacing diesel generation?

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

22 Energy Storage and renewable generation technologies have already theoretically
23 progressed to a level that they can provide the required capacity and reliability required;
24 however, this is dependent on the renewable resource availability in any given locale.
25 Regardless, these technologies are expected to remain significantly more expensive
26 (particularly for capacity) than comparable thermal (fossil fuel) generation systems for the
27 foreseeable future.

28 Renewable-only scenarios with battery energy storage systems were modelled, including
29 “wind and battery” and “solar and battery”, and these scenarios were materially more
30 expensive than scenarios based upon diesel generation. If renewable and battery
31 technologies continue to decrease in price, as part of its ongoing planning processes,

1 Newfoundland and Labrador Hydro (“Hydro”) anticipates that it would utilize these systems
2 as other assets are retired.

3 Further, the “Southern Labrador Communities - Integrated Resource Plan” (“Midgard IRP”),¹
4 filed with the Board of Commissioners of Public Utilities on March 31, 2023,² already
5 considers integration of renewable generation in its preferred configuration, which would
6 displace some thermal generation and offset fuel cost. The sensitivity analysis presented in
7 the Midgard IRP confirms that future adoptions of up to 50% renewable energy diesel
8 displacing generation would have no impact on the capital investment plan confirmed in the
9 Midgard IRP.³

10 **b)** Hydro’s 2023–2025 Strategic Plan, states that “Hydro’s goal is to use renewable resources to
11 provide maximum value for the people of the province and support economic prosperity in
12 local communities.”⁴ In partnership with Indigenous governments and interested
13 organizations, Hydro will advance initiatives to increase the development and integration of
14 renewable resources in communities that rely on isolated diesel systems and support the
15 integration of independent power producers in isolated diesel systems.⁵

16 Hydro has a legislated mandate of providing least-cost, reliable service in an
17 environmentally responsible manner. As these very priorities can compete with each other,
18 Hydro must balance these criteria as it evaluates infrastructure and operational planning in
19 order to meet its obligation for the provision of least-cost electricity to its customers.

20 While Hydro is committed to the integration of renewables across its electrical system,
21 renewable options for the provision of reliable, firm capacity on isolated systems remain
22 technically and economically prohibitive. The use of fossil fuel generation on isolated
23 systems remains consistent with other like jurisdictions across Canada, as detailed in
24 Hydro’s response to PUB-NLH-069 of this proceeding. The Government of Canada has also

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 - Integrated Resource Plan,” Midgard Consulting Inc., March 28, 2023, p. 88, table 37.

⁴ “Enabling Sustainable Growth – Goal 8: Support Growth of Renewable Energy Supply,” Newfoundland and Labrador Hydro, <<https://nlhydro.com/about-hydro/our-strategic-goals/growth-of-renewable-energy/>>.

⁵ “Enabling Sustainable Growth – Goal 11: Integrate Renewable Energy Resources in Local Communities,” Newfoundland and Labrador Hydro, <<https://nlhydro.com/about-hydro/our-strategic-goals/renewables-in-isolated-systems/>>.

1 acknowledged the limitations of renewable energy for the provision of firm supply in
2 isolated areas, as discussed in Hydro's response to PUB-NLH-059 of this proceeding.

3 Hydro believes the long-term supply for southern Labrador project, as outlined in its revised
4 application, is a key step in moving toward a future with increased renewable energy, as it
5 supports the reduction of diesel consumption while allowing for the potential integration of
6 renewable generation sources in the future.