

1 Q. **Reference: Application, Schedule 3, Holyrood Thermal Generating Station Overview**

2 Is battery storage a viable alternative to operating Holyrood in standby mode? What is the
3 current status of utility-scale battery systems in terms of technical viability, availability and cost?

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6 A. Newfoundland and Labrador Hydro (“Hydro”) assessed the role of Battery Energy Storage
7 System (“BESS”) technology within its *Reliability and Resource Adequacy Study Review*
8 proceeding.¹ Hydro engaged a third-party consultant to complete a study that includes updated
9 information on the feasibility of BESS technology as it pertains to capacity constraints on the
10 Avalon, including updated cost information for modelling purposes, with both short- and long-
11 duration BESS considered. Short-duration BESS technology can be used to store surplus energy
12 generated from wind, solar, and hydro, which can then be used to provide short-duration
13 backup as well as firm up intermittent renewable sources, such as wind generation. Long-
14 duration energy storage can be used to provide multi-day power backup, with 17 major energy
15 storage manufacturers contacted to assess the technical and commercial details of their
16 products.²

17 Hydro has included BESS solutions in its analysis underlying its Expansion Plan as filed in its 2024
18 Resource Adequacy Plan update;³ this analysis determined that BESS is not the least-cost option
19 to enable the retirement of the Holyrood Thermal Generating Station (“Holyrood TGS”) and
20 address the growing load on the Island Interconnect System. Furthermore, as detailed in the
21 2024 Resource Adequacy Plan update, the relatively short supply duration associated with
22 battery storage can limit their effectiveness on Hydro’s system. For example, the short supply
23 duration of BESS limits their effectiveness during extended capacity shortfalls, such as in the

¹ “Battery Energy Storage System Report – Overview,” Newfoundland and Labrador Hydro, September 29, 2023.

² A summary of the long-duration technologies and associated parameters, such as battery chemistry, power capacity, storage capacity, module sizes, land requirements, operating temperature range, existing installations, current phase of development, planned future projects, and product life that were gathered can be found in Wood Canada Limited’s “Long Duration Battery Energy Storage System Report 258259-000-DF00-STY-0001,” filed in the “Battery Energy Storage System Report – Overview,” Newfoundland and Labrador Hydro, September 29, 2023, att. 2, pp. 16–17 of 86.

³ “2024 Resource Adequacy Plan – An Update to the Reliability and Resource Adequacy Study,” Newfoundland and Labrador Hydro, rev. August 26, 2024 (originally filed July 9, 2024).

1 event of an extended Labrador-Island Link outage. This reliability consideration would need to
2 be addressed before the broad incorporation of battery solutions could be considered a viable
3 capacity alternative. At this time, there are no proven installations for long-duration storage
4 batteries and, while promising, uncertainties remain with this technology. As such, BESS
5 technology is not a viable alternative to operating the Holyrood TGS in standby mode at this
6 time.

7 Hydro will continue to seek updates on any emerging technology trends for both short- and
8 long-term battery storage technologies.