

1 Q. **Reference: 2025 Build Application-Revision 1 and Evidentiary Update**

2 In the April 16, 2026 cover letter, Hydro reiterated that the Avalon CT and BDE Unit 8 *“Together,*
3 *these projects represent the recommended Minimum Investment Expansion Plan required to*
4 *maintain reliable service under a range of future conditions and enable the retirement of the*
5 *Holyrood Thermal Generating Station.”*

6 a) Is the retirement of Holyrood TGS in 2031 driving the need for additional capacity in
7 2031? If Holyrood TGS were to remain in service indefinitely, when would there be a
8 need for new capacity and energy additions on the IIS?

9 b) Is the need for additional capacity by 2031 being driven by Hydro’s probabilistic LOLH
10 criterion or the LIL shortfall event criterion, or both? Please provide a comparison the
11 criteria both with and without the proposed capacity additions from 2030 through 2035.

12 c) It is understood that Hydro is proposing the second capacity addition be moved forward
13 from 2034 to 2031 on the basis of the LIL shortfall event criterion. i) Is the LIL shortfall
14 event criterion “hypothetical”, or a legitimate criterion that Hydro uses to justify the
15 need for capacity additions? ii) What is the cost of moving the second capacity addition
16 forward from 2034 to 2031?

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19 A. a) The Holyrood Thermal Generating Station (“Holyrood TGS”) Units 1 and 2 were
20 commissioned in 1971 and Unit 3 was commissioned in 1979. Previously, it had been
21 Newfoundland and Labrador Hydro’s (“Hydro”) intention to maintain up to a two-year
22 period of standby operation of the Holyrood TGS during early operation of the Muskrat Falls
23 project assets. During this period, the Holyrood TGS units would be fully available for
24 generation. In correspondence dated February 4, 2022,¹ Hydro advised the Board of
25 Commissioners of Public Utilities (“Board”) of an extension to the operations of the

¹ “Reliability and Resource Adequacy Study Review – Additional Considerations of the Labrador-Island Reliability Assessment and Outcomes of the Failure Investigations Findings – Additional Information,” Newfoundland and Labrador Hydro, February 4, 2022.

1 Holyrood TGS as a generating facility to March 31, 2024, at which point Units 1 and 2 would
2 be retired, and Unit 3 would continue to operate as a synchronous condenser. During this
3 time, Hydro engaged Hatch Ltd. (“Hatch”) to conduct an assessment of the long-term
4 viability of the Holyrood TGS. Hatch’s assessment concluded in early 2022 and was filed with
5 the Board on March 31, 2022.² Through this assessment, Hatch concluded that the Holyrood
6 TGS was in generally good operating condition and, with sustained capital investment, the
7 Holyrood TGS could provide a viable supply option through 2030, at which point further
8 assessment would be required to inform the viability of operation beyond 2030. As noted in
9 the 2022 Update,³ Hydro established the need for on-Island backup generation to support
10 the Labrador-Island Link (“LIL”) until new resources are added. In addition, there is a need
11 for reliable backup generation to address the capacity shortfall on the Island Interconnected
12 System in the event of an extended (i.e., up to six weeks) LIL bipole outage. To that end,
13 Hatch’s assessment in the 2022 Update, supplemented with Hydro’s reliability analysis,
14 supported Hydro’s recommendation that all three Holyrood TGS units remain available for
15 operation until new resources can be approved, constructed, and reliability integrated into
16 the Island Interconnected System, assumed at that time to occur by 2030. This assumption
17 was carried forward in the 2024 Resource Adequacy Plan as discussed in Hydro’s response
18 to CA-NLH-003 of this proceeding.⁴

19 While Hydro requires the continued availability of the Holyrood TGS, it is recognized that
20 there is a need to accelerate the integration of new generation to reduce the dependency
21 and costs of relying on the Holyrood TGS. This is further evidenced by the Holyrood TGS
22 Capital Plan Refresh that was filed with the Board on March 7, 2025, which assessed the
23 operation of the Holyrood TGS beyond 2030 to understand the implications of operating the
24 plant beyond that date.⁵ Hydro engaged Hatch to review and update the sustaining capital
25 plan and the plant operating cost estimate prepared as part of the Life Extension Condition

² “Reliability and Resource Adequacy Study Review – Assessment to Determine the Potential Long-Term Viability of the Holyrood Thermal Generating Station,” Newfoundland and Labrador Hydro, March 31, 2022.

³ “Reliability and Resource Adequacy Study – 2022 Update,” Newfoundland and Labrador Hydro, October 3, 2022, vol. III.

⁴ “2024 Resource Adequacy Plan – An Update to the Reliability and Resource Adequacy Study,” Newfoundland and Labrador Hydro, rev. August 26, 2026 (originally filed on July 9, 2024).

⁵ On October 12, 2023, Hydro received correspondence from the Board requesting that Hydro extend the study period to assess the operation of the Holyrood TGS beyond 2030 for a reasonable time period to understand the implications of operating the plant beyond that date.

1 Assessment that was filed in 2022 (“2022 Report”), based on original equipment
2 manufacturer condition assessments and operational experience of the plant from the last
3 three years, and to extend the analysis to 2035. Capital costs for 2025–2030, inclusive, have
4 increased compared to those presented in the 2022 Report. The additional costs are
5 attributed to the increase in the costs of equipment and services due to inflation, and
6 include additional recommended projects based on findings from recent inspections.⁶
7 Despite continued significant investment, Hydro has had one out of the three Holyrood TGS
8 units unavailable during all or the majority of the winter operating periods since 2023.⁷

9 The Holyrood TGS cannot remain in service indefinitely, even if the *Clean Electricity*
10 *Regulations*⁸ were to permit it past 2035. It is an aging plant, and even with continued
11 investment, its reliability is decreasing. The need for additional capacity on the Island
12 Interconnected System is driven by system needs, as demonstrated through the various
13 filings in the 2024 Reliability and Resource Adequacy Study proceeding, and by the growing
14 inability of the Holyrood TGS to reliably meet those needs. As demonstrated in Hydro’s
15 response to part b) of CA-NLH-003 of this proceeding, from a probabilistic planning criterion,
16 there is limited opportunity to retire a Holyrood TGS unit in advance of new generation
17 being added to the system; however, it is highly dependent on the reliability of both the LIL
18 and Holyrood TGS itself. Regardless, Hydro has committed to mitigating against the loss of
19 the LIL bipole during the Bridging Period.⁹ In order to do so, all three units at Holyrood TGS
20 are required to be available.

⁶ All costs are provided in Hydro’s response to part c) of CA-NLH-003 of this proceeding.

⁷ Winter 2023–2024: Holyrood TGS Unit 2 unavailable from May 21, 2023 to May 30, 2024 due to cracking discovered on the low-pressure turbine blades. Winter 2024–2025: Holyrood TGS Unit 1 unavailable from April 12, 2024 to February 13, 2025 due to restoration of the last-stage blades and damage to the rotor journals. When the unit returned to service, it was derated to 105 MW for the remainder of the operating season. Winter 2025–2026: Holyrood TGS Unit 3 unavailable from March 20, 2025 to March 1, 2026 to complete a turbine overhaul.

⁸ *Clean Electricity Regulations*, SOR/2024-263.

⁹ Hydro considers the Bridging Period to be from the present to 2030, or until such time that sufficient alternative generation is commissioned, adequate performance of the LIL is proven, and generation reserves are met. During the Bridging Period, the system would rely primarily on existing sources of generation capacity to maintain reliability while new generation capacity is being built. The primary, readily available supply options in this period are extending the retirements of the Holyrood TGS, Stephenville Gas Turbine (“GT”) and the Hardwoods GT until their capacities can be adequately replaced.

1 **b)** As described in Appendix A of the Avalon Combustion Turbine (“CT”) Evidentiary Update, in
2 Scenario 4AE, Bay d’Espoir (“BDE”) Unit 8 and 200 MW of wind generation is sufficient to
3 meet the planning reserve margin, which is based on the probabilistic criterion, until 2033.

4 However, based on the analysis described in Appendix B, the addition of BDE Unit 8 and
5 200 MW of wind generation does not meet the shortfall criterion in 2032. As a result, the
6 advancement of the next capacity build, the Avalon CT, was required to be advanced to
7 2031. It is important to note that even with this advancement, the system exceeds the
8 shortfall criterion by 74 MW in 2032, resulting in 174 MW of generation shortfall in this
9 scenario.

10 In the 2025 Build Application and the Avalon CT Evidentiary Update, the shortfall analysis
11 was assessed for the year 2032. Beyond 2032, as load growth increases, the level of shortfall
12 will also increase unless additional generation is added to the Island Interconnected System.

13 **c)** For the Minimum Investment Required Expansion Plan, which assumes low load growth and
14 a low LIL Equivalent Forced Outage Rate (“EqFOR”), Hydro recommends advancing the
15 second major capacity addition to mitigate the risk of a LIL shortfall event. In contrast, under
16 the Reference Case (i.e., **the expected scenario**), both capacity additions—the Avalon CT
17 and BDE Unit 8—are required by 2031 regardless of whether a LIL shortfall occurs.

18 Supply expansion decisions are based on Hydro’s established resource planning criteria.
19 Since the 2018 Reliability and Resource Adequacy Study,¹⁰ these criteria have included the
20 LIL Shortfall Assessment, which requires that the Island Interconnected System maintain
21 sufficient generating capacity to limit loss of load to a manageable level during a LIL shortfall
22 event. Currently, a manageable level is defined as load rotations of 100 MW or less,
23 consistent with the amount Newfoundland Power Inc. was able to rotate during the 2014
24 loss-of-load event.¹¹

¹⁰ “Reliability and Resource Adequacy Study,” Newfoundland and Labrador Hydro, rev. September 6, 2019 (originally filed on November 16, 2018).

¹¹ “2024 Resource Adequacy Plan – An Update to the Reliability and Resource Adequacy Study,” Newfoundland and Labrador Hydro, rev. August 26, 2026 (originally filed on July 9, 2024), app. B.

1 The loss of the LIL bipole is considered a high-consequence event for the Island
2 Interconnected System. Although there is no specific planning criterion tied to this event,
3 mitigating the impacts of a prolonged LIL outage remains critical. The Bates White Economic
4 Consulting, LLC report also notes that “the LIL Shortfall Analysis is a necessary step given the
5 elevated probability of an extended outage of the LIL during winter weather conditions.”¹²

6 Hydro continues to assess the reliability implications of extended LIL outages as part of its
7 resource planning process. However, even if the LIL bipole EqFOR remains at the lower end
8 of the assessed range (1%), there is still a risk of extended outages due to factors such as
9 line icing or other failure modes. While the extended outage scenario assumes a six-week¹³
10 outage during the coldest period of the year, the actual duration could be longer or shorter
11 depending on the nature of the failure. Regardless of duration, the impact of the loss of the
12 LIL during the winter period is significant.

13 For the Minimum Investment Required Expansion Plan, the incremental Net Present Value
14 cost of advancing the Avalon CT to 2031 is estimated to be approximately \$100 million
15 (2025 CAD),¹⁴ which is the approximate annual cost of Holyrood TGS operation. As
16 discussed, under the Reference Case both capacity additions—the Avalon CT and BDE
17 Unit 8—are required by 2031 regardless of whether a LIL shortfall occurs.

¹² “Expert Addendum Report of Vincent Musco and Collin Cain,” Bates White Economic Consulting, LLC, sec. VI, item 81.

¹³ Hydro used the output of the assessments completed by Haldar and Associates Inc. in combination with the information provided in the Emergency Response and Restoration Plan as the basis for considering the potential length of a significant outage of the LIL. Please refer to “Reliability and Resource Adequacy Study – 2022 Update,” Newfoundland and Labrador Hydro, October 3, 2022, vol. III, sec. 5.2.

¹⁴ This value includes both capital and operational costs.