Q. **Reference: Reliability and Resource Adequacy Study 2022 Update, Volume I, page 6, lines 3-5.**

Hydro states that it recommends a decision-based phased approach. Provide

a) A conceptual description of this approach,

b) An outline of key steps in this process, and details regarding the steps that are complete and the steps that remain outstanding, and

c) The results of the decision making process steps to date.

A. **a)** Throughout the "Reliability and Resource Adequacy Study – 2022 Update" ("2022 Update"),[1] Newfoundland and Labrador Hydro ("Hydro") refers to approaching the uncertainties that the Newfoundland and Labrador Interconnected System is facing in a decision-based, phased approach, given the high costs associated with resource expansion and ongoing matters that will continue to have a material impact on the resource plan. Hydro intends to ensure that it continues to provide stakeholders with a fulsome view of the impact of these matters on provincial reliability to support informed opinions and decision-making based on the best information available.

Hydro recognizes that the driver for the high planning reserve margin is an estimated Labrador-Island Link ("LIL") bipole forced outage rate in the absence of operational data post-commissioning. Hydro agrees that new resource additions are necessary; however, Hydro expects the planning reserve margin to change, as operational data becomes available. Therefore, Hydro intends to recommend resource additions in a phased incremental approach as more information becomes available in the coming years.

Subsequent updates to the Reliability and Resource Adequacy Study, which are intended to be filed on an annual basis, will include updated information on LIL reliability and the potential for load growth to help inform stakeholders of these impacts on system reliability,

[1] "Reliability and Resource Adequacy Study – 2022 Update," Newfoundland and Labrador Hydro, October 3, 2022.

and, therefore, resources that are required. This will help all parties make informed decisions on system requirements and cost impacts.

b) Hydro views the Reliability and Resource Adequacy Study filings, starting in 2018, as studies that inform the Board of Commissioners of Public Utilities ("Board") and stakeholders as to the current state of the province's electrical system and Hydro's plans and recommendations for future needs. The filings guide Hydro's decision-making to meet customer needs on an ongoing basis in consideration of load growth, cost, and reliability expectations. From the filings, including the 2022 Update and the planned Reliability and Resource Adequacy – 2023 Update, will come certain actions and steps that require approval by the Board for which Hydro will make specific applications. For example, Hydro intends to make an application for approval of new generation, for which formal approval would be required.

With respect to the filings themselves, Hydro seeks feedback from the Board and stakeholders on certain positions that will form the basis of Hydro's actions moving forward. The following principles have been developed through the filings to date:

- Hydro has defined the following phases in consideration of the transition of its generating resources:
  - 2023-2030: The Bridging Period; and
  - Beyond 2030: The Long-Term (ten-year) Planning Period.
- Hydro must be able to ensure reliable supply to meet system reliability requirements, including increases in load growth due to provincial government electrification initiatives.
  - The Newfoundland and Labrador Interconnected System is undergoing a fundamental change due to electrification and load growth. The current base forecast for the Newfoundland and Labrador Interconnected System is expected to grow by 135 MW[2] in the next decade. This forecast does not include potential customer loads not yet confirmed or updated announcements since mid-2022

[2] The forecast value excludes transmission losses and station service.

regarding national or provincial electrification. While work is ongoing to determine what additional capacity expansion needs are required, the addition of Unit 8 at the Bay d'Espoir Hydroelectric Generating Facility ("Bay d'Espoir Unit 8"), at a minimum, is a resource option that meets all of these uncertainties.

- Hydro will provide reliable service by maintaining investment in existing assets while final decisions are made about long-term supply sources. Hydro expects continued operation of all three units at the Holyrood Thermal Generating Station ("Holyrood TGS") and the Hardwoods Gas Turbine to be required for at least the first five years of the Bridging Period to ensure reliable operation for customers.[3]
    - Hydro shall develop human resourcing, capital, and operational plans for the Holyrood TGS to minimize supplemental capital budget applications and to provide clarity with respect to required investment. The capital and operational plans shall align with the condition assessment completed in 2022. The plan shall be predicated on full availability of the Holyrood TGS in at least the first five years of the Bridging Period and include various retirement scenarios throughout the balance of that phase and through to the Long-Term Planning Period.[4]
    - Hydro shall perform a similar exercise for the Hardwoods Gas Turbine. Life extension of the Hardwoods Gas Turbine will be supported by the availability of spare parts from the Stephenville Gas Turbine.
    - The Stephenville Gas Turbine will be retired in 2024 upon completion of the ongoing project at Bottom Brook Terminal Station, which will ensure reliable supply for customers in the Stephenville area.
- Reliance on and investments in the Holyrood TGS and Hardwoods Gas Turbine shall be reduced as either new generation is brought online and/or if there is conclusive evidence to demonstrate that the reliability of the LIL exceeds current expectations.

[3] Given the timelines required for the assessment of generation expansion options, regulatory approval, environmental approval, engineering, procurement, and construction, Hydro does not anticipate that any incremental generating capacity will be available in the first five years of the Bridging Period.

[4] Continued operation of the Holyrood TGS and the Hardwoods Gas Turbine in the Long-Term Planning Period may be technically viable; however, prudent utility planning would see these facilities retired earlier to avoid significant operational risk. Hydro shall plan accordingly and ensure that sufficient new generation shall be in service to meet load and reliability requirements by the start of the Long-Term Planning Period.

- Future analysis must consider:
  - The implications of the proposed federal Clean Energy Standard requirements in the analysis of all future resource options, due to the cost implications and other impacts those requirements would have on the suitability of the option;
  - Transmission constraints for all phases of system expansion. The transmission requirements to enable supply alternatives will be assessed in consideration of cost, reliability impacts, and the location of any future generation;
  - High-level engineering inputs, develop cost estimates, and perform screening and cost-benefit analyses to assess generation expansion plans[5] for a range of scenarios based on the conclusions set out herein. The analysis shall include consideration of the reliability and cost implications of the retirement of the Holyrood TGS and the Hardwoods Gas Turbine.

As noted herein, the specific timing of unit retirements will be refined as part of ongoing reliability and resource adequacy expansion planning. Plans will incorporate the time required for regulatory process, environmental approval, engineering, procurement, construction, and commissioning. These scenarios and expansion plans shall be reviewed with the regulator and Intervenors and recommendations shall be developed based on consultation with all parties. To meet customers' supply needs, Hydro anticipates filing an application for new supply in early 2024.

Hydro is hopeful that through the request for information process and next steps to be determined through discussions with the Board and parties, Hydro will receive feedback confirming their alignment and agreement with the fundamental assumptions set out herein. Alternatively, if there is substantive disagreement with any of these assumptions, the issues would be identified and Hydro would have the opportunity to address in consultation with all parties.

c) Please refer to part b) of this response.

[5] Including any necessary transmission system upgrades.