Q. Regarding the consequences of LIL shortfalls:

a) Please provide a list of the ten most serious LIL shortfall-type events (i.e., bipole failures of material durations) including dates and duration of the events, and describe mitigation measures that were put in place, as well as any adverse effects on IIS customers.

b) If a six-week LIL shortfall in winter were to occur between now and 2030, (i) what plans do Hydro and Newfoundland Power have in place to minimize the impact on consumers, (ii) what would that impact be, and (iii) what, if any, lessons were learned from dealing with significant generation and transmission outage events in recent years that could be applied?

c) Is the number of IIS residential and general service utility customers with oil furnaces, propane heaters and fireplaces, and wood stoves and fireplaces considered a resource that could help manage a six-week LIL shortfall?

A. **a)** Since commissioning in April 2023, all of Newfoundland and Labrador Hydro's ("Hydro") bi-pole trip events on the Labrador-Island Link ("LIL") have been reported within its quarterly LIL update to the Board of Commissioners of Public Utilities ("Board") and are available on their website.[1] To date, none of the bi-pole trip events have had durations in excess of 12 hours.[2] Generally, when a bi-pole outage occurs that triggers an Under-Frequency Load Shedding ("UFLS") event, the system is restored within an hour when generation backup is

[1] Board of Commissioners of Public Utilities, *Labrador-Island Link Quarterly Reports*, http://www.pub.nl.ca/indexreportspages/lilquarterly.php.

[2] Prior to commissioning, following a severe weather event in February 2021, multiple monopole failures occurred as a result of turnbuckle failures and ice damage to electrode lines, which resulted in a bi-pole forced outage of more than 12 hours. Hydro reported on the investigation, the root cause of the incidents, and actions taken to mitigate, which was addressed in "*Reliability and Resource Adequacy Study Review* – Summary of Findings from L3501/2 Failure Investigations," Newfoundland and Labrador Hydro, October 4, 2023.

available. Hydro utilizes the power outage reporting guidelines to inform the Board and provides additional detail upon request.[3]

As part of the *Reliability and Resource Adequacy Study Review* proceeding, the Board provided Hydro direction on reports to file on the LIL since its commissioning.

In correspondence dated August 28, 2023, in response to Hydro's listing of Planned Reports, Studies and Analyses, the Board stated:

> The Board directs Hydro to (i) file a report in the next RRAS Update on the options available to mitigate the duration of LIL outages, including the LIL reinforcements and enhancements that are feasible, their costs and what the resulting risk of outages and their consequences remain after the reinforcement or enhancement and (ii) file a report in the first half of 2024 on the actions and activities it has undertaken or plans to undertake in response to the recommendations in the Haldar reports.[4]

On October 12, 2023, the Board gave Hydro further direction:

> Given the extent and significance of these issues and preliminary findings outlined in the report *Summary of Findings from L3501/3502 Failure Investigations* filed on October 4, 2023, the Board believes a thorough and full assessment is required and reiterates its direction on the filing of the report in the first half of 2024. This report should include an update on the further work Hydro summarized was being undertaken in its October 4, 2023 reports, including the scope and schedule for the planned work on studying potential enhancements for the LIL.[5]

Hydro provided two reports in October 2023[6] and July 2024[7] in response to the directions outlined above.

[3] On February 13, 2026, and February 27, 2026, the Island Interconnected System experienced two separate and unrelated events involving the LIL and Maritime Link, respectively, resulting in UFLS and customer interruptions. In both cases, protective measures, including UFLS, operated as designed to ensure system stability and the safe and reliable operation of the power system. At the Board's request, Hydro provided a detailed analysis report. Please refer to "Newfoundland and Labrador Hydro – Island Interconnected System Under-Frequency Load Shedding Events – Board's Request for a Detailed Report – Hydro's Reply," Newfoundland and Labrador Hydro, April 30, 2026.

[4] "Newfoundland and Labrador Hydro - Reliability and Resource Adequacy Study Review Planned Reports, Studies and Analyses," Board of Commissioners of Public Utilities, August 28, 2023, p. 5.

[5] "Newfoundland and Labrador Hydro - Reliability and Resource Adequacy Study Review Planned Reports, Studies and Analyses - Further Comments and Directions," Board of Commissioners of Public Utilities, October 12, 2023, p. 3.

[6] Please refer to "*Reliability and Resource Adequacy Study Review* –Summary of Findings from L3501/2 Failure Investigations," Newfoundland and Labrador Hydro, October 4, 2023.

[7] Please refer to "*Reliability and Resource Adequacy Study Review* – Analysis of Recommendations, Mitigations, and Enhancements of the Labrador-Island Link," Newfoundland and Labrador Hydro, July 9, 2024.

Since 2024, Hydro has included the LIL and other Muskrat Falls assets within its regular reporting to the Board. Hydro has provided three other reports to the Board on the LIL on investigations and actions taken with regard to tower component failures:

1. L3501/2 Failure Investigation OPGW[8] Tower Peaks – Central Newfoundland;[9]
2. L3501/2 Failure Investigation Ice Storm Southern Labrador;[10] and
3. LIL Strengthening Overview.[11]

In addition to reports on the tower components of the LIL, the Board ordered Hydro to file an additional report on the UFLS events as a result of trips on both the LIL and Maritime Link in February 2026. Both events resulted in a significant loss of customers; however, with backup generation available, customers were able to be restored within an hour in both cases.[12]

b) (i) When a LIL bipole outage occurs, the system can experience a UFLS event; however, provided the Holyrood Thermal Generating Station ("Holyrood TGS") is available and online, and there are no additional system issues, customers can be restored within the hour. As stated in the Reliability and Resource Adequacy Study 2022 Update, Hydro recommends maintaining Holyrood TGS, Hardwoods Gas Turbine and Stephenville Gas Turbine as backup for the loss of the LIL until additional generation can be approved, constructed, and reliability integrated into the Island Interconnected System (i.e., the Bridging Period).

(ii) Please refer to Hydro's response to part b) (i).

(iii) Newfoundland Power Inc. ("Newfoundland Power") and Hydro have an existing protocol to manage customer rotating outage events, called "Advance Notification Protocol," which was created following the January 2014 supply events on the Island. The Advanced

[8] Optical Ground Wire ("OPGW").
[9] "Quarterly Report on Asset Performance in Support of Resource Adequacy for the Twelve Months Ended March 31, 2025," Newfoundland and Labrador Hydro, April 30, 2025, att. 1.
[10] "Quarterly Report on Asset Performance in Support of Resource Adequacy for the Twelve Months Ended March 31, 2025," Newfoundland and Labrador Hydro, April 30, 2025, att. 2.
[11] "Quarterly Report on Asset Performance in Support of Resource Adequacy for the Twelve Months Ended December 31, 2025," Newfoundland and Labrador Hydro, February 5, 2026, app. B, att. 1.
[12] "February 2026 Under-Frequency Load Shedding Events – Detailed Analysis Report," Newfoundland and Labrador Hydro, April 30, 2026.

Notification Protocol is a public alert system to advise customers of the status of power supply so customers can be prepared in advance of any potential impacts. A *Power Watch* signals to customers that there is no immediate action required. The electricity system is being watched closely, and to be prepared to conserve electricity if asked. In the escalation of the Advanced Notification Protocol, a *Power Warning* signals customers to conserve electricity. This is a warning that current electricity supply is getting close to maximum capacity, and customers should be prepared for rotating power outages. The final stage is a *Power Emergency*, which signals customers to conserve electricity, and rotating power outages are in effect.

Hydro utilized this protocol during the January 2026 frazil ice event at Bay d'Espoir. In accordance with direction from the Board, Hydro filed a report to the Board following the event detailing its response and customer feedback.[13] As detailed in the report, Hydro utilized its Electricity Feedback Panel[14] in February 2026, to seek customer feedback on Hydro's response to the Bay d'Espoir frazil ice weather events. Survey results indicated that Hydro's handling of the energy conservation effort and its communications during the period were well-regarded, both receiving an average rating of 7.7 out of 10.

c) Hydro's load forecast for the Island Interconnected System takes into account primary heat sources. As such, the varying levels of energy consumption required for all-electric or non-electric space heating have already been taken into account in Hydro's planning.

Secondary heat sources such as propane fireplaces in all electrically heated homes may serve to lessen the impact on customers during a prolonged outage; however, it is unlikely that these systems are designed for whole-home heating. Even in cases where customers have two fully functional heat sources, such systems typically require electricity to power fans to effectively distribute heat throughout homes and businesses. Further, prolonged system outages may serve to deplete secondary fuel sources, as customer storage of such fuels is not likely to be designed for a long-duration event. As such, Hydro has not

[13] "Frazil Ice at Bay d'Espoir Hydroelectric Generating Station," Newfoundland and Labrador Hydro, April 30, 2026.
[14] The Electricity Feedback Panel consists of electricity customers from across the province who provide feedback to Hydro through online surveys. The panel includes 988 participants from Newfoundland and Labrador, representing customers of both Hydro and Newfoundland Power.

considered secondary heat sources as an alternative source of supply with respect to a prolonged customer outage.