

1 Q. **Reference: Reliability and Resource Adequacy Study – 2022 Update, Volume III: Long-Term**
2 **Resource Plan, October 3, 2022, page 48, lines 4-8.**

3 To date, Hydro has not secured any capacity support from external markets for
4 a duration longer than one month and does not have a basis to assume that
5 such solutions would be available to meet long-term planning requirements. On
6 this basis, market purchases were not included in the analysis. Hydro will
7 continue to work with neighbouring utilities to explore the availability of firm
8 supply solutions that could support reliability in the event of a LIL bipole outage.

9 Please describe the transmission, capacity, and market constraints that hinder Hydro’s ability to
10 contract firm electricity imports from the Maritime Link to mitigate an extended outage to the
11 LIL.

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14 A. When considering the long-term firm import of electricity across the Maritime Link to meet the
15 reliability of the Newfoundland and Labrador Interconnected System there are two main
16 components to consider— firm transmission and firm capacity.

17 **Transmission and Market Access**

18 There is access to three potential markets when considering firm imports via the Maritime
19 Link—Nova Scotia, New Brunswick, and New England. A summary of these options from a
20 transmission perspective follows.

21 **1.** Nova Scotia: To acquire energy from Nova Scotia, Newfoundland and Labrador Hydro
22 (“Hydro”) requires only its existing Maritime Link transmission access as Nova Scotia
23 Power Inc. (“Nova Scotia Power”) has the ability to deliver energy to the Nova Scotia-
24 Newfoundland and Labrador border, resulting in limited curtailments.

25 **2.** New Brunswick: To acquire energy from New Brunswick, two transmission paths need to
26 be considered, being New Brunswick and Nova Scotia transmission. The transmission
27 path inside New Brunswick to deliver energy to Nova Scotia is also the transmission path
28 to Prince Edward Island. New Brunswick has firm contracts to supply firm energy and
29 balance the load in Prince Edward Island. The transmission path limit is 300 MW and the

1 firm transmission has historically been utilized by New Brunswick to meet their
2 contractual obligations to Prince Edward Island. The interface between the New
3 Brunswick/Nova Scotia transmission paths are typically congested. In a January 2022
4 integrated resource plan update from Nova Scotia Power, it discussed firm imports on
5 this interface

6 Discussions with NB Power^[1] have identified that firm
7 transmission capacity over the existing NS^[2]/NB^[3] interface
8 continues to be unavailable in significant quantities at the
9 present time; NS Power⁴ will continue to pursue technical
10 solutions in collaboration with NB Power.⁵

- 11 **3. New England:** To acquire energy from the New England market there are the two
12 transmission paths that need to be considered, New Brunswick and Nova Scotia, with
13 the limitations noted herein. The export path from the New England market to New
14 Brunswick is normally limited to 200 MW; typically this is not a concern as normally
15 there is energy flowing from New Brunswick to New England. Additional risk is
16 presented when New Brunswick has had generator outages, as they have had in the
17 past, and reliance is placed on imports from New England, which could congest this path
18 and potentially lead to curtailments.

19 Newfoundland and Labrador: There are also interprovincial transmission constraints in
20 delivering imported energy via the Maritime Link to the Avalon Peninsula. The Off-Avalon to On-
21 Avalon transmission constraints are being reviewed in 2023 and will be discussed further in the
22 Reliability and Resource Adequacy Study – 2023 Update (“2023 Update”).

¹ New Brunswick Power Corporation (“NB Power”).

² Nova Scotia (“NS”).

³ New Brunswick (“NB”).

⁴ Nova Scotia Power (“NS Power”).

⁵ “Integrated Resource Plan Action Plan Update,” Nova Scotia Power Inc., January 2022,
<<https://irp.nspower.ca/files/key-documents/action-plan-updates/IRP-Action-Plan-Update-April-2022.pdf>>.

1 **Firm Energy Availability**

2 The other consideration is firm energy availability from each of the markets detailed above, a
3 summary follows.

- 4 • Nova Scotia: Nova Scotia Power does not have surplus capacity in their system to export
5 according to their 2022 ten-year system plan. Nova Scotia Power heavily relies on coal
6 to meet their capacity requirements in the winter and they are looking to replace their
7 coal plants (approximately 1,050 MW) by 2030 to meet federal government regulations.
8 At this time, Hydro has not had discussions with Nova Scotia Power regarding acquiring
9 firm capacity, a reliability solution in the event of a LIL bipole outage.

- 10 • New Brunswick: NB Power filed a ten-year Integrated Resource Plan in 2020, at which
11 time they did not have any significant surplus capacity. It is reasonable to assume that
12 any firm contract with New Brunswick would be contingent on their major generating
13 units being in service, which would include Belledune Generating Station (467 MW) and
14 the Point Lepreau Nuclear Generating Station (660 MW). The forced outage rate of
15 these units would have to be considered in any firm capacity agreement. At this time,
16 Hydro has not had discussions with NB Power regarding acquiring firm capacity as a
17 reliability solution in the event of a LIL bipole outage.

- 18 • New England: The market in New England has an annual forward capacity market
19 auction; each auction determines the capacity market for the fourth year out in the
20 future. Considering the long lead time to build required capacity in Newfoundland and
21 Labrador, an annual auction four years in advance is insufficient to plan for the reliability
22 of the Island Interconnected System.

23 **Conclusion**

24 Hydro is currently in the process of analyzing potential resource options including On-Avalon
25 transmission constraints to determine appropriate backup requirements for the LIL. All three
26 potential markets and constraints will need to be assessed further in the 2023 Update. This does
27 not preclude opportunities on a short-term basis for firm capacity or non-firm energy to meet
28 any capacity or energy requirements for the Island Interconnected System.