

1 **Q. Re: Application for Exemption to Regulation 17 — Wabush Airport**

2 **Citation (page 5 pdf):**

3 8. In response to the Board’s query regarding the status of Regulation 17 post
4 approval of the Policy, filed on April 7, 2021, Hydro recommended that the
5 existing restrictions remain in place while the system expansion needs for
6 reliable service to customers in Labrador West and Labrador East were
7 determined. This is due to the continued system capacity restrictions that exist
8 in the region.

9 a. Please provide a copy of Hydro’s response to the Board dated April 7, 2021.

10 b. Have the updated system expansion needs for reliable service to customers in Labrador
11 West and Labrador East referred to in the Citation been determined? If so, please provide
12 the relevant documentation. If not, please describe the progress that has been made
13 toward doing so, the steps remaining, and the anticipated timetable thereof.

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16 A. a. Newfoundland and Labrador Hydro’s (“Hydro”) correspondence to the Board of
17 Commissioners of Public Utilities (“Board”) dated April 7, 2021, regarding the status of
18 Regulation 17 post Network Additions Policy approval, is attached as LAB-NLH-001,
19 Attachment 1.

20 b. The updated system expansion needs for reliable service to customers in Labrador West and
21 Labrador East have not yet been determined. On February 3, 2022, Hydro filed
22 correspondence with the Board that provided an overview of Hydro’s plans to determine
23 the necessary expansion requirements. A copy of this correspondence is attached as
24 LAB-NLH-001, Attachment 2.



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April 7, 2021

Board of Commissioners of Public Utilities
Prince Charles Building
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St. John's, NL A1A 5B2

Attention: Ms. Cheryl Blundon
Director of Corporate Services & Board Secretary

Dear Ms. Blundon:

Re: Restriction on Load Additions on the Labrador Interconnected System –Update

On March 23, 2021, the Board of Commissioners of Public Utilities (“Board”) requested that Newfoundland and Labrador Hydro (“Hydro”) provide an update as to whether the load restrictions currently in place in Labrador East and West continue to be necessary and appropriate and whether Hydro plans to apply for any changes with respect to Regulation 17.

It is Hydro’s position, at this time, that the load restrictions for both Labrador East and Labrador West should remain in place; however, Hydro believes some modification may be appropriate in the future under specific circumstances, as detailed within.

Background

In May 2018, Hydro applied for, and was granted, a temporary restriction on load additions above 100 kW in Labrador East for the 2018–2019 winter season. This request was necessary due to system capacity restrictions and was intended to limit load growth and ensure the provision of reliable service to customers for that time period. In April 2019, Hydro requested that the temporary restriction be extended to allow for completion of the regulatory process relating to the Labrador Network Additions Policy and the Labrador Expansion Study. The Board approved this request in May 2019.

In September 2019, Hydro applied to the Board to extend the restriction to Labrador West. Hydro noted that the baseline forecast for Labrador West contained in the Labrador Expansion Study indicated that demand in Labrador West was likely to exceed the system’s 350 MW capacity in 2019. Hydro believed that limiting load growth on the Labrador West system was necessary to enable the provision of reliable service to customers pending completion of the review of the Labrador Network Additions Policy and further order of the Board. At that time, Hydro also requested that the restriction threshold be raised from 100 kW to 200 kW for both Labrador East and West. Hydro’s requests were approved in Board Order P.U. 34(2019) on October 29, 2019.

Since that time, the Labrador Network Additions Policy has been approved by the Board, subsequent to the filing of a settlement agreement between Hydro and the Labrador Interconnected Group with respect to the terms of the Policy; the Labrador Network Additions Policy is effective as of April 1, 2021.

Although incremental load requests above the restriction threshold have been denied since the implementation of the load restriction, Hydro has maintained a record of those requests. In order to determine system expansion needs and to identify any new transmission infrastructure necessary to

meet these needs, Hydro is in the process of confirming and formalizing customer requests for incremental load, both from the customers whose applications were denied as well as any customer who had yet to formally apply.¹ As a first step in this determination, customers were asked to submit their interconnection requirements, including technical details that will be needed for system impact studies.² As of March 31, 2021, Hydro had received customer service requests totalling approximately 6,185 MW for Labrador East and 555 MW for Labrador West.³ As the current transmission system capacity in Labrador East is 76 MW in Labrador East and 350 MW in Labrador West, Hydro is reviewing these applications and completing the assessment necessary to determine next steps and inform customers of potential costs.

Labrador East

Although the Labrador Network Additions Policy is now in place, the Muskrat Falls to Happy Valley Interconnection project has not yet come online.⁴ Once it does, the interconnection will provide system transmission capacity of up to 104 MW. Hydro is concerned that without the continuation of a load restriction, the additional system capacity provided by the interconnection could be promptly exhausted by a number of customer requests for large load additions. As noted above, in its process with respect to the Labrador Network Additions Policy, Hydro has received customer requests for Labrador East and West totalling approximately 6,730 MW. Hydro believes that it may be reasonable to adjust the threshold, once the interconnection is in service, to allow for some additional growth in the area while ensuring the system is not overwhelmed to the point that it impacts the delivery of reliable service. If Hydro determines that there is a new threshold that will balance these interests, it will apply to the Board for an adjustment once the in-service date of the interconnection is confirmed.

Labrador West

The existing capacity in Labrador West is 350 MW; however, this is not firm service. In its 2021 Capital Budget Application, Hydro proposed transmission system additions for the Wabush Terminal Station. Hydro explained in its application that the transfer capability of the existing Labrador West transmission system is insufficient to meet both current load requirements and the baseline forecast for existing customers. Without these upgrades, customers in Labrador West are subject to curtailment. Currently, any necessary curtailment is of the power supplied to the existing industrial customer and does not directly impact Hydro's Rural customers. However, this is only due to contractual arrangements between Hydro and the industrial customer, which may be subject to change to ensure the equitable access to an adequate supply of power to all customers. With the proposed capital investments in place, the available firm transmission capability will increase; however, the amount of available capacity will

¹ In addition to reaching out to the Labrador towns, and to parties who had previously expressed interest in service in Labrador, Hydro posted a notice regarding "Requests for Power in Labrador" on its website on March 5, 2021, in which it advised that it is seeking to identify business developers and operators who anticipate a requirement for electrical power service in Labrador.

² To determine expansion requirements, once Hydro confirms and formalizes customer requests, Hydro plans to perform a high level system impact analysis to calculate high level costs associated with providing service to the cumulative requested load and then provide estimated costs for each applicant to proceed with their request for service. Following completion of that preliminary costing and communication process, for those applicants that remain interested in proceeding, Hydro will complete a customer funded system impact study which will determine the necessary system upgrades so that a more accurate estimate of the required upstream capacity charge can be developed for each customer

³ Applications were also received for Central Labrador for approximately 1,145 MW.

⁴ On September 30, 2020, Hydro filed correspondence with the Board indicating that, due to the time frame associated with the in-service of the Muskrat Falls generating units, Hydro was unable to complete the interconnection of the six kilometre transmission line extension ("L1303") and will continue to supply Labrador East using the 138 kV interconnection to Churchill Falls via transmission line L1301/1302. Hydro anticipates completing the interconnection in the late spring/early summer of 2021 when an outage for the interconnection can be accommodated with minimal customer impact and subject to the availability of generation at Muskrat Falls.

only be adequate for the firm supply of existing customers in accordance with baseline load forecasts.⁵ On the basis of the above, modifications to the restriction should not be made at this time. Rather, Hydro will continue to process customer requests for incremental load in western Labrador and will perform analysis to determine the transmission expansion solutions necessary to accommodate them. It is Hydro's expectation that detailed system impact study work will be complete in late 2021.

Conclusion

As noted, Hydro is in the process of determining the system expansion needs for reliable service to customers in Labrador West and Labrador East. Due to limited system capacity, Hydro recommends that existing restrictions remain in place for western Labrador. In eastern Labrador, a modification of restrictions may be requested once the new interconnection is in service.

Hydro continues to work with customers to confirm incremental load requirements and expects that the detailed system impact studies will be complete in late 2021.

As system analyses progress, Hydro will further review the restriction and, where appropriate, update the Board as required.

Should you have any questions, please contact the undersigned.

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO



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⁵ The baseline load forecast includes existing industrial customers at current capacities and the normal uptick of Hydro Rural retail load at a rate of 200 kW to 600 kW per year. The P90 baseline load forecast is expected to reach 383 MW by the winter of 2045–2046.

Application for Exemption to Regulation 17 and Approval of an Upstream Capacity Charge

Ms. C. Blundon
Public Utilities Board

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February 3, 2022

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 St. John's, NL A1A 5B2

Attention: Ms. Cheryl Blundon
 Director of Corporate Services & Board Secretary

Dear Ms. Blundon:

Re: Network Additions Policy – Implementation Update

On March 17, 2021, the Board of Commissioners of Public Utilities (“Board”) approved Newfoundland and Labrador Hydro’s (“Hydro”) Network Additions Policy for the Labrador Interconnected System, effective April 1, 2021.¹

Firm Loads

Following approval of the Network Additions Policy, Hydro formalized customer requests for incremental firm load in Labrador. This process included reaching out to customers whose applications were previously denied, as well as those that had informally advised of interest in obtaining service in Labrador but had yet to formally apply.² Customers were asked to submit their interconnection requirements, including firm load and region requirements to allow Hydro to proceed with a High Level System Impact Analysis; Hydro received requests for approximately 8,000 MW of firm load on the Labrador Interconnected System. Hydro did not study the impact of the 8,000 MW requested as it does not have adequate information available to provide reasonably reliable cost estimates for serving 8,000 MW of additional load; however, to provide reasonable cost estimates for the provision of firm service, Hydro completed a high-level impact analysis to determine cost estimates for the transmission and generation additions that would be required to serve incremental loads of 300, 650, and 1,000 MW for each of the three regions in Labrador. Table 1 provides a summary of the results of this analysis.

Table 1: Summary of High-Level Impact Analysis

Total Incremental Load (MW)	Cost of Generation Upgrades (\$ Million)	Cost of Transmission Upgrades to Supply Incremental Load in Each Region		
		Labrador East Region (\$ Million)	Labrador Central Region (\$ Million)	Labrador West Region (\$ Million)
300	764	113	43	347
650	3,360	132	86	480
1,000	5,976	160	93	821

¹ Board Order No. P.U. 7(2021).

² Hydro also provided information regarding the approved Network Additions Policy and Hydro’s steps to determine load requirements in Labrador to town representatives for Happy Valley-Goose Bay, Labrador City, and Wabush, as well as the Labrador West Chamber of Commerce and the Labrador North Chamber of Commerce. Hydro further posted this information on its website.

Hydro communicated the results of this analysis to applicants in the fall of 2021 and requested confirmation of interest from those wishing to proceed with detailed system impact studies for firm service as well as a deposit of \$1,000 per MW to be applied to the cost of such studies. Hydro received confirmation from 25 customers for service totalling approximately 2,000 MW as of February 1, 2022. Table 2 provides a summary of firm capacity initially requested and subsequently confirmed by region.

Table 2: Firm Capacity Requested and Confirmed by Region

	Initial Requests		Requests Confirmed	
	Capacity Requested (MW)	Number of Applicants	Capacity Requested (MW)	Number of Applicants
Labrador East	551	15	882	13
Labrador Central	1,141	6	527	5
Labrador West	6,227	31	581	7
Total	7,919	52	1,990	25

The capacity requested on the Labrador Interconnected System exceeds the amount of generation currently available (approximately 50 MW) and would require material investment in incremental supply resources if the current level of applicant interest is fully realized.

Study Requirements – Firm Loads

Prior to applying applicants' deposits to advance the system impact studies, Hydro believes it is appropriate to communicate to applicants the magnitude of generation investment anticipated to be required to serve the total requested firm load and the projected cost of supply and associated rates for the applicants. It is Hydro's expectation that being transparent with such costs and offering the opportunity for applicants to once again confirm their interest will result in a more reliable indication of firm capacity requirements, enabling the system impact studies to produce meaningful results.

Following confirmation from applicants, Hydro will begin the system impact studies which will identify the transmission system upgrades required.

Firm Load Implications to the Reliability and Resource Adequacy Study Review

Hydro acknowledges the significant impact of load additions in Labrador to the ongoing *Reliability and Resource Adequacy Study Review* ("RRA"). Additional sources of capacity and energy within the provincial power system, particularly if located within the Island Interconnected System, could help to improve the reliability of supply for customers in consideration of potential risks associated with the Labrador-Island Link. Hydro also acknowledges that it is not acceptable to delay the advancement of the RRA while awaiting the outcomes of the detailed system impact studies and facilities studies described above. To ensure the effective progression of the RRA toward a conclusion, Hydro will take the following action:

- (i) Generation planning analyses that will be completed as part of the RRA will include sensitivity cases where incremental customer load is added to forecasts. These cases will be established on the basis of ongoing discussions with the firm load applicants described above.
- (ii) The sensitivity cases will be developed and assessed such that requirements for incremental energy and capacity will be determined on the basis of planning criteria and parameters that will be presented and reviewed as part of study outcomes. All analysis, results and planning

considerations will be presented in Hydro's RRA report that is scheduled to be filed on August 31, 2022.

- (iii) In parallel to the above, Hydro will advance engineering efforts associated with options for additional generating sources for the provincial power system. This includes the completion of the detailed condition assessment for the Holyrood Thermal Generating Station, to be submitted to the Board in the first quarter of 2022, and continued efforts associated with new sources of generation in support of the planning analysis described above.
- (iv) Hydro will continue to progress discussions with firm load applicants throughout the system impact study process. As applicants are provided with detailed estimates of transmission expansion and supply costs, interconnection agreements would be established. If interconnection agreements reflecting material load additions are executed, Hydro would proceed to seek Board approval for additional generation. Such an application would be founded on the expansion plans, planning criteria, and parameters presented and reviewed as part of the August submission.

Non-Firm Rate Option

On June 30, 2021, Hydro filed with the Board a report with respect to the feasibility of the addition of a non-firm rate option to the Network Additions Policy outlining the capacity which could potentially be made available on a non-firm basis as well as considerations regarding the required attributes of potential non-firm service.

In the fall of 2021, Hydro solicited applications from interested customers and received 17 requests for total capacity which exceeded available non-firm capacity for all seasons in both Labrador East and Labrador West. Table 3 compares non-firm capacity requested to non-firm capacity available.

Table 3: Non-Firm Capacity Requested vs. Available

	Winter December to March	Spring April to June	Summer July to September	Fall October to November
Labrador East				
Total Available	28	42	58	38
Total Requested	199	224	236	217
Labrador West				
Total Available	20	50	50	50
Total Requested	121	211	211	211

As interest in the non-firm option exceeded the available non-firm capacity in both regions, applicants were allocated non-firm capacity on an equal basis for each season. Hydro communicated the potential allocated non-firm capacity and requested deposits from applicants to enable Hydro to complete the assessments required to estimate the cost of connecting each customer to the transmission system. At that time, several customers withdrew their request for non-firm capacity. Hydro then reallocated the potential non-firm capacity amongst the remaining applicants.

Study Requirements – Non-Firm Loads

There is no existing transmission infrastructure near applicants' facilities in Labrador East. As such, non-firm applicants have been advised that they will be required to fund new infrastructure required for

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Ms. C. Blundon
Public Utilities Board

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interconnection. High-level preliminary estimates indicate the required infrastructure could cost in the range of \$6–\$10 million, with potential to exceed the \$10 million noted. Applicants will also be required to fund any terminal station costs, if required. Given the magnitude of these costs, prior to advancing interconnection studies in Labrador East, Hydro will prepare a design concept and more refined cost estimates to share with applicants. From there, applicants will be required to confirm their desire to proceed with the interconnection study.

In Labrador West, Hydro will proceed directly to interconnection studies as there are existing 46 kV transmission lines near the applicants' facilities. Applicants will be provided with an estimate of the cost to connect their facilities to the 46 kV system upon completion of the interconnection study.

Hydro anticipates that all non-firm studies will be complete by the end of the second quarter of 2022.

Future Regulatory Requirements

Hydro anticipates filing an application for approval of the non-firm rate option on the Labrador Interconnected System following completion of the necessary studies. Additionally, prior to construction of any interconnection facilities for firm or non-firm service, Hydro will apply to the Board for approval of (i) capital projects and (ii) customer contributions associated with interconnection costs. Any requirement for incremental supply would also be subject to Board approval.

Should you have any questions, please contact the undersigned.

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO


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