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January 16, 2025

Board of Commissioners of Public Utilities
Prince Charles Building
120 Torbay Road, P.O. Box 21040
St. John's, NL A1A 5B2

Attention: Jo-Anne Galarneau
Executive Director and Board Secretary

Re: Newfoundland and Labrador Hydro – 2021 Capital Budget Supplemental Application Approval of the Construction of Hydro's Long-term Supply Plan for Southern Labrador – Revised Project Cost Estimate and Project Schedule – Hydro's Reply

On July 16, 2021, Newfoundland and Labrador Hydro ("Hydro") submitted an application for the approval of the construction of Hydro's long-term supply plan for southern Labrador ("Application"). On May 31, 2023, Hydro filed a revision to its Application that incorporated the recommendations made in Midgard Consulting Inc.'s ("Midgard") "Southern Labrador Communities – Integrated Resource Plan ("Midgard IRP"),"[1] and on October 5, 2023, Hydro filed a second revision to the Application, updating the costs and schedule. On December 18, 2023, Hydro filed its submissions to party comments on the Application. On December 6, 2024, Hydro provided a copy of correspondence to Jennifer Williams, Hydro's President and CEO, from the NunatuKavut Community Council ("NCC"), in which the NCC advised that they did not object to Hydro proceeding with a request to the Board for full approval of the Application, without any conditions that would require the duty to consult to be met prior to that approval. Due to the passage of time, Hydro prepared a revised schedule and related costs for the proposed construction of a regional plant with a 25 kV interconnected system as the recommended solution for the long-term supply of southern Labrador ("Project") and provided that to the Board of Commissioners of Public Utilities ("Board") in its December 6, 2024 correspondence. At that time, Hydro requested that the Application be approved, without the previously proposed conditions.

On December 17, 2024, the Board set a schedule for the filing of comments related to Hydro's December 6, 2024 filing. Party comments were due January 9, 2025, with Hydro's reply to be filed by Thursday, January 16, 2025. The NCC filed comments on January 9, 2025 as did the Mary's Harbour Town Council. Additionally, two researchers, one of whom is an Associate Professor at Queen's University in Kingston, Ontario, Canada filed a jointly-authored letter with comments and recommendations regarding Hydro's proposal. No other comments were received from any parties, including Newfoundland Power Inc., who had previously provided submissions throughout the process.

Hydro's Response

Mary's Harbour Town Council

Consistent with its previous submissions, the Mary's Harbour Town Council expressed their objection to the proposed Project. They detailed their objection to the continued supply of power from a diesel

[1] "Southern Labrador Communities - Integrated Resource Plan," Midgard Consulting Inc., March 28, 2023.

source, particularly in light of the Memorandum of Understanding ("MOU") between Hydro and Hydro-Québec recently announced by the Government of Newfoundland and Labrador ("Government"). The Mary's Harbour Town Council submits that the supply of power to the southern Labrador communities should be an issue for consideration in the MOU, and subsequent energy developments. The Mary's Harbour Town Council expresses that the residential and commercial customers want to heat their homes and businesses with affordable electric heat, but notes that "*NL Hydro wants to continue providing coastal Labrador with diesel generated power*."

As Hydro has noted previously, the total cumulative net present cost of an interconnection of the southern Labrador communities to the Labrador Interconnected System would be approximately $300 million, and would not be the lowest cost solution. From a reliability standpoint, Midgard again considered a transmission interconnection in its Midgard IRP filed with the Board on March 31, 2023, but noted that **even if such an interconnection was put in place, a local diesel generating plant would still be required** to provide backup to the four systems for loss of the interconnection. Midgard's findings confirmed that the interconnection to the Labrador Interconnected System would remain the highest capital cost of any of the alternatives, even if redundant generation had no additional cost.[2] For the southern Labrador communities to access power from the existing Churchill Falls plant or from any of the projects contemplated in the MOU, an interconnection to the Labrador Interconnected System would be necessary. The MOU and the projects contemplated therein do not change the conclusion that the interconnection is not the least-cost solution for reliable service for the southern Labrador communities; the MOU does not have any impact on the proposals made in Hydro's Application.

Dr. Jordan T. Carlson and Dr. Robert G. Way

Dr. Jordan T. Carlson of Kyushu University, Fukuoka, Japan, and Dr. Robert G. Way of Queen's University, Kingston, Ontario, Canada, submitted comments regarding Hydro's consideration of renewable energy in its evaluation of the lowest cost option for the provision of additional electrical generation capacity in southern Labrador. Hydro notes that Dr. Carlson and Dr. Way are not Intervenors in this Application, and have not participated in the process to date. It is unclear as to their direct interest in this particular Application. Further, their submission provides opinions and references to studies and reports that have not previously been introduced to the record nor tested by the other parties to the Application. However, Hydro makes the following reply to their submissions.

In their analysis, Dr. Carlson and Dr. Way expressed concerns that renewable-based energy generation was excluded from initial consideration and suggested this exclusion was influenced by political or social, rather than technological, factors.

While renewable energy sources such as wind and solar offer significant potential for reducing carbon emissions, they are inherently intermittent. In isolated systems, such as those serving southern Labrador, this intermittency prevents them from being considered firm capacity and energy sources without significant energy storage solutions. As outlined in Hydro's Long-Term Supply Study for Southern Labrador, firm capacity and energy are essential to ensure consistent and reliable electricity supply, particularly in remote areas. Midgard's analysis followed this established principle, which Hydro considers a prudent approach to system planning in line with good utility practice.

Dr. Carlson and Dr. Way did not address the limitations posed by the intermittent nature of renewable energy in their analysis, which significantly impacts the feasibility of using these sources as a primary supply, especially in remote areas. The critique did not provide arguments to demonstrate why Hydro's

[2] Please refer to Hydro's response to NP-NLH-069 of this proceeding.

approach to prioritizing firm capacity and energy is inappropriate or imprudent. Hydro has an obligation under the *Electrical Power Control Act, 1994* to supply customers with power at the lowest possible cost, in an environmentally responsible manner, consistent with reliable service. Dr. Carlson and Dr. Way's analysis did not address how the installation of intermittent generation would meet the statutory requirement for reliable service.

Other Renewable Examples Support Hydro's Approach

Dr. Carlson and Dr. Way reference the Qulliq Energy Corporation report, Potential for Wind Energy in Nunavut Communities, which identifies communities suitable for integrating wind turbines with existing diesel systems. However, this study does not advocate for the replacement of diesel plants with renewable energy sources. In fact, the report highlights renewable energy penetration levels of 22% to 30%, reinforcing the necessity of a firm capacity source to complement renewables in such systems. Hydro further notes that Dr. Carlson and Dr. Way drew comparisons between Hydro's approach in southern Labrador with that of the Nain Wind Microgrid Project, which also does not displace the need for diesel-fired firm capacity.

Capital Cost Estimates

Additionally, Dr. Carlson and Dr. Way cite Midgard's capital cost estimate of $87 million for 14 MW of wind energy. However, the analysis omits consideration of the substantial cost of energy storage required to support extended periods of low renewable resource availability. For instance, providing just 24 hours of energy storage—a duration insufficient for sustained periods with insufficient wind speeds—would result in a Net Present Cost of $188 million. Midgard's simplified cost model, while not a detailed analysis, was an appropriate screening-level resource for assessing whether hybrid systems are financially viable as firm energy sources, and the results clearly demonstrated the cost-prohibitive nature of this option. Dr. Carlson and Dr. Way's analysis, considering only the levelized cost of energy, does not appropriately consider the costs of providing firm capacity in all hours solely from renewable energy sources.

It is also important to clarify that the southern Labrador interconnection project **does not preclude** the future development, interconnection, or integration of renewable energy sources. In fact, the project would create greater potential for renewable energy development by enabling the reduction of diesel consumption over time, as outlined in Hydro's response to PUB-NLH-001 and section 4.4.4 of the Midgard IRP. Hydro's planned approach to integrate renewable energy sources through power purchase partnerships with Indigenous and Community groups allows Hydro to ensure it is focused on meeting its mandate for the safe and reliable provision of electricity in an environmentally responsible manner while building on partnerships with local and Indigenous stakeholders and leveraging the tax and financial incentives that may be available to these groups.

NunatuKavut Community Council

The NCC's January 9, 2025 submission was brief. In it, they confirmed their position regarding the Project was unchanged and reiterated that they do not oppose the application or object to Hydro's intention to seek full approval.

The NCC did reference the MOU recently announced by the Government, and queried whether there would be any expected impact or implications of the MOU and its related projects on this Application's proposals. As Hydro noted above, the MOU does not impact Hydro's recommendation of the Project as the least-cost, environmentally responsible solution to provide safe, reliable power to the southern

Labrador communities. The projects contemplated within the MOU will bring additional power to the Labrador Interconnected System; however, an interconnection would be necessary for southern Labrador to access that power. As noted above, an interconnection was determined to have the highest capital cost of any of the alternatives, even if the necessary backup generation had no additional cost.

Hydro is conscious of the potential implications the projects associated with the MOU could have if the Project timelines overlap as a result of further schedule delay. Hydro stresses the importance of maintaining the current schedule to avoid overlap with the MOU-related projects, as potential cost pressures arising from both economic and resource-related challenges in the event of the overlap of timelines will result in material cost increases.

Summary

The analysis prepared by Hydro and Midgard and filed throughout this Application process since 2021 consistently supports the proposed Project as the prudent alternative. However, delay in implementation of the Project has substantial risks. These risks are in the reliability of supply, particularly to the Town of Charlottetown which has been served by mobile generation units since 2019, and in the increase in costs with the passage of time. The estimated costs for the Project grew by approximately $22.9 million between Hydro's filing of Revision 2 of its Application on October 5, 2023, to update the costs and schedule, and Hydro's updated request to proceed filed on December 6, 2024.

Further delay could result in additional cost escalation, and as noted above, if the delay resulted in schedule overlap with those projects contemplated in the MOU, there would be substantial additional cost implications. The initial schedule for the in-service date of Hydro's proposal was 2027, the update in October 2023 had the in-service date adjusted to 2028. The most recent update, as of December 6, 2024, is 2029, resulting in a decade of reliance on temporary mobile generation for the Town of Charlottetown.

Hydro feels strongly that a long-term supply solution is necessary to address the concerns associated with the continued use of mobile generation in Charlottetown. These concerns include the ongoing appreciable risk of a failure of generation, despite Hydro's continuous efforts to support reliable operation. The loss of appreciable generation during a period of fish plant operation would materially impact the economy of the region. The risks of such outcomes will persist as long as mobile generation is employed.

Hydro's mandate is to provide reliable service at the lowest possible cost, in an environmentally responsible manner. Hydro has this mandate top of mind when considering how best to serve its customers, whether on the island or in Labrador, whether part of the interconnected system or in an isolated community. Hydro's analysis included sensitivity analysis of over 600 scenarios, taking into account the entire lifecycle cost of each alternative, and concluded with full confidence that the regional diesel generating station is the least-cost solution for reliable supply for the southern Labrador region, and is in accordance with all federal and provincial environmental legislation. Hydro's proposal is based on the best available information that is consistent with Hydro's mandate.

Hydro continues to firmly believe that the fulsome evidence provided through Hydro's analysis, the Midgard IRP, and the substantial filings in response to requests for information and other correspondence from the Board, continues to support Hydro's proposal of the construction of a regional plant with a 25 kV interconnected system as the recommended solution for the Project. The implementation of a long-term supply solution as soon as possible is critical to ensure the provision of safe, adequate, reliable, least-cost service in an environmentally responsible manner.

Hydro respectfully requests that the Board approve Hydro's Application as submitted.

Should you have any questions, please contact the undersigned.

Yours truly,

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