

1 Q. **Reference: Schedule 1 - Long-Term Supply for Southern Labrador - Phase 1: Appendix A**
2 **Stakeholder Engagement**

3 Further to the response to PUB-NLH-016, Attachment 1, page 1 of 2, first paragraph:

4 a) Has Hydro received feedback from other Labrador communities that are not in support
5 of Hydro's proposal with respect to the long-term supply for southern Labrador? If so,
6 please include details and/or documentation.

7 b) Has Hydro received feedback from Labrador communities that are in support of Hydro's
8 proposal with respect to the long-term supply for southern Labrador? If so, please
9 provide details and/or documentation.

10 c) Did Hydro respond to the correspondence from the Town Council of Mary's Harbour? If
11 so, please provide details and/or documentation.

12 d) Is Hydro aware of responses from any of the individuals copied on the correspondence
13 from the Town Council of Mary's Harbour? If so, please provide details and/or
14 documentation.

15 e) Did Hydro provide to all the parties consulted a copy of its application to the Board for
16 the approval of its proposal for the long-term supply for southern Labrador? If not,
17 please identify the parties that were not copied and explain the rationale for not
18 providing them with a copy.

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21 A. a) The only correspondence Newfoundland and Labrador Hydro ("Hydro") has received is from
22 the Mary's Harbour Town Council. As noted in its response to PUB-NLH-016 of this
23 proceeding, Hydro met with officials from each of the impacted communities of
24 Charlottetown, Port Hope Simpson, and St. Lewis earlier in 2021. The concerns raised and
25 discussed during those meetings were as outlined in the response to PUB-NLH-016. Since
26 responding to PUB-NLH-016, Hydro had the opportunity to meet with the president of the

- 1 Combined Councils of Labrador (Mr. Chad Letto, Mayor of L'Anse au Clair) on September 17,
2 2021 who also expressed that an interconnection to the Labrador Interconnected System,
3 and the associated low rates, would be preferable to the proposed solution.
- 4 b) In meetings with representatives of Charlottetown and Port Hope Simpson, their feedback
5 was positive and supportive of the proposed solution. In particular, Charlottetown indicated
6 the proposed solution would alleviate concerns about power quality and the community's
7 current reliance on mobile diesels.
- 8 c) Hydro's response to the Mary's Harbour Town Council is included as PUB-NLH-040,
9 Attachment 1.
- 10 d) Hydro has not received, and is not aware of, any other responses from those copied on the
11 correspondence from the Mary's Harbour Town Council.
- 12 e) Hydro did not provide a copy of the application itself to the stakeholders consulted, as it
13 remained in draft status at the time of the consultations. Also, out of respect for the
14 regulatory process, Hydro would not normally release a copy of a proposed application to
15 external parties prior to submitting such an application to the Board of Commissioners of
16 Public Utilities ("Board"). Hydro did provide a presentation to stakeholders highlighting the
17 key aspects of the proposal Hydro was considering; a copy of which is included as PUB-NLH-
18 040, Attachment 2. In meeting with stakeholders, it would be typical practice for Hydro to
19 provide a summary presentation such as this.
- 20 In its filing with the Board, Hydro utilized the standard distribution list for applications and
21 filing guidelines, specifically the distribution list used for the 2021 Capital Budget
22 Application, to which the proposed project is a supplemental application. The Consumer
23 Advocate, Newfoundland Power Inc., and the Labrador Interconnected Group were copied
24 as they were part of the distribution list. The other stakeholders (as listed in Appendix A of
25 Schedule 1 to Hydro's application), i.e., the towns and the government departments, were
26 not copied on the application.



Jennifer Williams
President and
Chief Executive Officer

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13 September 2021

Mary's Harbour Town Council
60 Hillview Road,
P.O. Box 134
Mary's Harbour,
NL AOK 3P0

Attention: Alton Rumbolt, Mayor

Dear Mayor Rumbolt,

Thank you for your letter dated September 2, 2021 regarding the provision of electricity to residents of Mary's Harbour and southern Labrador. Thank you as well for sharing your perspective on your community's desire for interconnection. Your frustration relating to supply from a remote diesel system is understood. With this context, please allow me to provide some additional information regarding Hydro's approach to long-term electricity supply for the southern Labrador region.

As summarized below, we are committed to the needs of Mary's Harbour, its residents, and the surrounding southern Labrador communities. Hydro's mandate and our commitment, as regulated by the Board of Commissioners of Public Utilities (Board), is to provide a safe, reliable supply of electricity in a least-cost fashion.

Legislated Requirement for Lowest Cost, Reliable Solutions

As you may well know from your experience, the generation and supply of electricity requires significant investment. The cost to supply isolated communities such as southern Labrador are significantly higher than other areas of the Province due to its remoteness, lack of any other infrastructure, and the smaller number of customers. As a result, electricity customers on the Island and the Labrador interconnected system subsidize these communities and are required to pay more than 75% of all costs to serve remote isolated communities such as Mary's Harbour and southern Labrador.

Given that the costs are shared, any investment that Hydro proposes must be demonstrated to be a least-cost solution and will be scrutinized by the Board of Commissioners of Public Utilities (PUB) and intervening parties including Newfoundland Power, the Consumer Advocate, the Industrial Customers, the Labrador Interconnected Group, and others. Any project that is not demonstrated to provide a lowest cost solution, consistent with reliable service, cannot be approved under current legislation under which Hydro must abide.

Labrador Interconnection Options Study

To assess how best to deliver on its commitment to deliver least-cost, reliable service to Mary's Harbour and southern Labrador, Hydro undertook a study to understand the requirements and therefore costs to connect communities to the existing electricity grid in Labrador (interconnection). The Labrador Interconnection Options Study, completed in late 2020, investigated interconnection options in terms of cost, opportunities for renewable integration, and opportunities for fuel displacement. The study was performed with consulting support from Hatch and funded by the Government of Canada's Department of Natural Resources through the Clean Energy in Rural and Remote Communities Deployment Program.

Hatch's study involved the assessment of seven interconnection alternatives, including interconnecting all of the southern Labrador communities. Based on the analysis, the estimated cost to interconnect all southern Labrador was approximate to be \$545 million. Further, given the significant transmission line distances and harsh climate of the region, many existing diesel plants would still be required in a backup capacity. On this basis, while there would be fuel savings, there would be a significant capital cost to interconnection and very limited operational savings for customers. As noted, this significant cost would then be materially paid for by electricity customers on the Island and the Labrador interconnected system. For the remaining cost to be recovered, there would also be significant electricity rate increases for those in Labrador on such an interconnected system.

As part of this same investigation, and as an alternative to costly full interconnection, it was found that an investment in renewables to displace approximately 50% of the fuel in Hydro's isolated systems would have a capital cost of only 10% of the full interconnection and offer the same operational savings. On this basis, it is clear that large-scale interconnected alternatives are not economically feasible and federal subsidies should be spent in support of advancing renewable electricity integration in to our isolated systems. We believe this meets many goals expected of us when we invest in our systems – least-cost, reliable, and to make steps toward significant GHG reductions.

Consideration of Renewables Solution

On the basis of the above, Hydro is looking to maximize the integration of renewable generation into its isolated systems. However, there are important considerations that must be addressed. For southern Labrador, primary considerations are that there are no viable hydroelectric options in the area and there are reliability challenges associated with wind and/or solar alternatives. The obvious first consideration that customers expect is that they can rely on the power serving them no matter the weather or time of year. Therefore, any solution we construct must be able to deliver reliable service at all times. These reliability challenges are summarized as follows:

Renewables that have "storage" can be relied upon, and the question for any renewable solution is how much "storage" do they have, meaning for how long can they supply the expected customer demand. For wind and solar, hundreds of hours of battery storage is required to reliably supply customers what they need for heat, light and ability to cook when there is not enough wind or solar being generating on demand to supply customers. For utilities, they do not use wind or solar and battery only because existing battery technology is only able to provide system support for tens of hours. Therefore, such renewables cannot be counted upon 24/7/365. Utility terminology is that these two sources are 'non-dispatchable' meaning they are intermittent and supply varies throughout the days, seasons and years.



Therefore, renewables cannot be relied upon to meet the firm supply needs of customers. This means to ensure a reliable supply of electricity for isolated communities and their residents to operate safely, we must continue to rely on diesel generation for reliable supply for the foreseeable future. However, the positive news is that with investments in infrastructure, renewables can, and are, being integrated into diesel systems to maximize fuel displacement. Over time, as storage solutions become more cost effective and reliable, the diesel engines could be more of a backup as opposed to the role they play now and in the short term. This would be similar to the role you see similar technology play on the island interconnected system and the Labrador interconnected system where there are gas turbines in place in the event there is a need for immediate generation. Certainly, both the island and the Labrador interconnected systems have hydroelectric power with vast amounts of storage and that is why gas turbines are back up as opposed to primary generation solutions.

Proposed Southern Labrador Interconnection and Single Diesel Plant

Based on the studies and investigation of alternatives as noted above, Hydro's proposed option to the Board for consideration is to connect the isolated southern Labrador communities and service customers with a single diesel generating station in Port Hope Simpson, with ensuring this station is more ready than any other plant we have constructed at accept integration of renewables such as wind and solar. This would include:

- A new plant in Port Hope Simpson to supply Charlottetown at completion of the first phase.
- 25kV distribution line interconnections to other communities as plants are decommissioned at the end of life, increasing the ability to integrate renewables to reduce GHG emissions previously generated from such facilities.

In consideration of our legislative requirement, the proposed solution provides to customers the lowest total lifecycle cost for all generating assets in the four communities. A positive rate benefit for customers would begin to be realized in approximately within ten years of project completion.

Most importantly, the centralized plant will provide a stable, reliable source of supply for the region. Also, the proposed project would be robust in its ability to accommodate incremental customer load as capacity for new fish plants or mines would be more readily available than in the current configuration.

Environmental Benefits of Proposed Alternative

The proposed interconnection of southern Labrador communities provide for the following environmental benefits:

- Fewer Diesel Units and Plants
 - From 13 units to 5 units
 - From 4 plants to 1 plant
- Reduced Fuel Consumption of 600,000 L per year due to more efficient operation of the units
- A 15% increase in the potential for renewable integration, as compared the current opportunity for the four isolated systems (9.7 GWh to 11.2 GWh).

As summarized above, the proposed regional interconnection would provide the best viable option for long term sustainability and fuel displacement through the integration of renewable energy solutions. On this basis, Hydro is aware of and is supporting renewable energy developers in Labrador, particularly Indigenous governments and organizations, and their initiatives to reduce reliance on diesel



generation and become owners of renewable generation opportunities, while demonstrating we are providing least-cost, reliable electricity for customers.

As per your letter such efforts are already underway in your community. Hydro is very happy to be working with St. Mary's River Energy by providing technical oversight and leading the regulatory process from a Public Utilities perspective. Such an arrangement effectively enables renewable integration and leads to reliable, least-cost solutions for customers.

In summary, on the basis of the analysis summarized in this letter, to ensure we can reliably provide the electricity communities and residents require, we are in a situation where the communities in southern Labrador must continue to be supplied by remote diesel systems equipped with new systems ready to accept increasing amounts of renewable supply which provide the opportunity to reduce GHGs. A full transmission interconnection is not financially viable and would not be supported by the Board. However, the proposed solution does provide numerous benefits and will provide a stable, reliable source of supply for the region. The proposed project is robust in its ability to demonstrate least-cost, accommodate load growth and importantly, accept increasing amounts of renewable integration. As a result, it is a viable solution that will support the long term economic and environmental sustainability of the region.

Sincerely,



Jennifer Williams

copy: Prime Minister Justin Trudeau, Government of Canada
Premier Andrew Furey, Government of Newfoundland & Labrador
Yvonne Jones, MP Labrador
Lisa Dempster, MHA, Cartwright to L'anse au Clair
Todd Russell, President, NunatuKavut Community Council
Chad Letto, President, Combined Councils of Labrador



SOUTHERN LABRADOR ELECTRICITY SYSTEM DEVELOPMENT

May 2021

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SAFETY MOMENT

Summary

- Numerous studies have investigated potential options for providing service to diesel communities in NL
 - Interconnecting four communities in S. Labrador shown to provide reliability benefits & cost savings over the life of the infrastructure
- Requirement to invest due to Charlottetown plant fire provides opportunity to optimize system configuration
- Recommended configuration aligns with Hydro’s mandate to deliver “lowest possible cost consistent with reliable service”
 - Also supports prevalent government policy promoting renewable generation development and reduced diesel consumption

Studies Completed to Inform Optimal Supply Solution

- Study on hydraulic potential in the area (2013)
 - Most viable option was estimated to cost >\$200 M, would have adverse environmental impacts, and would require back-up firm supply for periods of inadequate flow to meet demand
- Study on potential interconnection of Charlottetown, Port Hope Simpson, Mary's Harbour and St. Lewis (2016)
 - Concluded that a centralized plant in Port Hope Simpson with all 4 communities interconnected (potentially in phases) was least cost
- Study on interconnection options and renewables (2020)
 - Recommendation that existing systems should remain largely isolated, with integration of renewables to reduce fuel consumption
 - Connection of isolated communities on South Coast to Labrador Interconnected grid was considered, but found to be cost prohibitive (>\$400 M)

Renewable Opportunities?

- Non-firm nature of renewables means diesel infrastructure is required as firm, primary generation
- New diesel plant and larger, interconnected system in Southern Labrador would better enable renewable integration

Current Impetus for Action

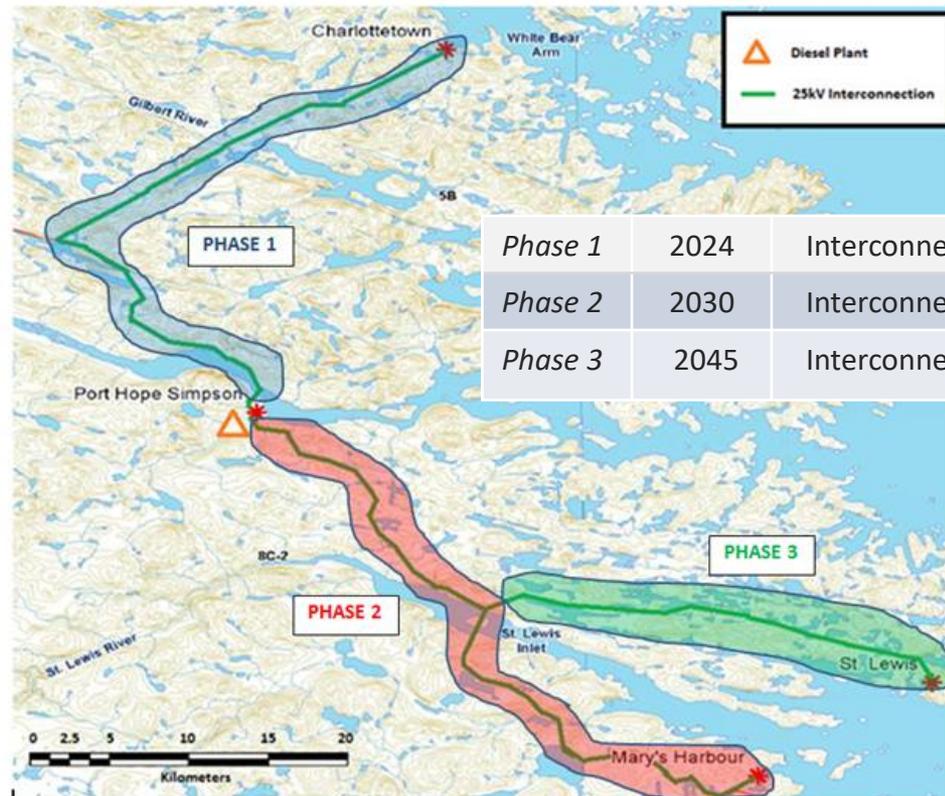
- Diesel plant in Charlottetown destroyed by fire in 2019
- Currently being supplied by 3 mobile diesel units
 - Utilization of mobile units poses long term reliability risk:
 - These units are not protected from, nor designed to operate long term while exposed to, the severe winters typical in the area
 - More challenging to operate and maintain
 - Virtually no ability to accommodate load growth on a firm basis (<100 kW) without significant investment

Options for Safe, Reliable Least Cost Supply

- The following general options were considered for Charlottetown supply:
 - Rebuild diesel plant in Charlottetown
 - Install upgrades to enable longer term operation of mobile units with lower reliability risk
 - A regional interconnection with a centralized diesel plant in Port Hope Simpson
- In all above options, the long term outlook was considered
 - Forecast capital projects in affected communities
 - Continued growth of renewable projects and conservation measures

Recommendation

- Engineering analysis shows the least-cost, reliable solution is to construct a centralized diesel plant in Port Hope Simpson, with communities interconnected in phases



**Proposed timeline*

Key Considerations

- More cost effective, less environmental risk with fewer diesel plants
 - Estimated \$49M for Phase 1 (\$72M in total)
- Overall improvement in system reliability
- Improved power quality
- Mobile units in Charlottetown become available for other uses (e.g. reducing duration/magnitude of outages)
- Increased potential for renewable integration

Next Steps for Southern Labrador Interconnection

- Consultation
- Refinement of engineering estimates
- Development and filing of supplemental capital budget application
- Environmental Assessment
 - Pending regulatory approval, initial environmental field study, geotech assessment, etc. could commence later 2021
- Construction could start in Spring 2022

Questions?

