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October 24, 2023

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

Attention: Jo-Anne Galarneau
Executive Director and Board Secretary

Dear Ms. Galarneau:

**Re: Newfoundland and Labrador Hydro – 2021 Capital Budget Supplemental
Application Approval of the Construction of Hydro's Long-term Supply Plan for
Southern Labrador – Newfoundland Power's Requests for Information**

Please find enclosed Newfoundland Power's Requests for Information NP-NLH-084 to
NP-NLH-100 in relation to the above noted Application.

If you have any questions please contact the undersigned at your convenience.

Yours truly,

A handwritten signature in blue ink that reads "Dominic Foley". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Dominic Foley
Legal Counsel

Enclosures

ec. Shirley A. Walsh
Newfoundland and Labrador Hydro

Dennis Browne, KC
Browne Fitzgerald Morgan & Avis

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IN THE MATTER OF the *Electrical Power Control Act 1994, RSNL 1994*, Chapter E-5.1 (“EPCA”) and the *Public Utilities Act, RSNL 1990*, Chapter P-47 (the “Act”), and regulations thereunder; and

IN THE MATTER OF an application by Newfoundland and Labrador Hydro (“Hydro”) for an Order approving the construction of Hydro’s long-term supply plan for southern Labrador, pursuant to Section 41(3) of the Act.

**Requests for Information by
Newfoundland Power Inc.**

NP-NLH-084 to NP-NLH-100

October 24, 2023

Requests for Information

NP-NLH-084

Reference: Response to Request for Information NP-NLH-063.

Please update the tables in Attachment 1 to include Hydro's latest capital cost estimates as provided in RP-TN-089. In addition, please add Alternative 7 – 2 Community Portable Generation to the table.

NP-NLH-085

Reference: Response to Request for Information NP-NLH-080, Footnote 2.

“Assumes the average revenue to cost ratio for customers on the Labrador Isolated System in the 2019 Test Year of 24%, which represents their portion recovered through rates.”

- a) Please provide an update to the chart and table included in the response to Request for Information NP-NLH-080 that shows the annual revenue requirement and rate impact that will result from Hydro's revised Application.
- b) How much additional energy sales and revenue would be required from customers served by the Labrador Isolated System in order to maintain a revenue to cost ratio of 24% following the completion of expenditures outlined in the revised Application?
- c) Is it practical for Hydro to assume that a revenue to cost ratio of 24% can be maintained when estimating the rate impact of the revised Application on Newfoundland Power's customers? If so, why?

NP-NLH-086

Reference: 2021 Capital Budget Supplemental Application Approval of the Construction of Hydro's Long-term Supply Plan for Southern Labrador – Revision 1 – Safe and Reliable Power Supply to Charlottetown – Reply, Attachment 2, Summary of Technical Note RP-TN-089, page 4 of 25.

“...it may be necessary to extend the distribution interconnection lines to each diesel plant directly instead of the distribution feeder. This additional cost is excluded for capital cost estimates included in this technical note however could increase the cost further than is currently contemplated.”

Please provide the capital cost estimate for the extension of the distribution interconnection lines to each diesel plant directly instead of the closest point on the distribution feeder.

NP-NLH-087

Reference: 2021 Capital Budget Supplemental Application Approval of the Construction of Hydro’s Long-term Supply Plan for Southern Labrador – Revision 1 – Safe and Reliable Power Supply to Charlottetown – Reply, Attachment 2, Summary of Technical Note RP-TN-089, page 4 of 25.

“...plant auxiliary systems such as the main bus, service conductors, and substation transformers are sized based on the system’s peak load and not the full plant installed capacity.”

- a) Please confirm that Table 1, page 2 of 8, of Technical Note RP-TN-051 filed on March 17, 2022, showing the installed and design plant capacities for each of the four diesel plants in Southern Labrador, still applies.
- b) Please confirm that Table 5, page 4 of 8, of Technical Note RP-TN-051 filed on March 17, 2022, shows that there is excess firm capacity available without increasing the number of units.

NP-NLH-088

Reference: 2021 Capital Budget Supplemental Application Approval of the Construction of Hydro’s Long-term Supply Plan for Southern Labrador – Revision 1 – Safe and Reliable Power Supply to Charlottetown – Reply, Attachment 2, Summary of Technical Note RP-TN-089, page 7 of 25, Table 6.

Table 6: Capital Costs of Diesel Plant Construction (\$000)³

	Regional	CHT	MSH	PHS	SLE
Total Costs	49,010	40,384	37,413	37,296	36,546

Table 6 above provides the capital costs of diesel plant construction for each of the existing diesel plants and the regional diesel plant. In this table, the construction cost of a replacement Charlottetown diesel generating station is estimated to be \$40,384,000. In Schedule 1, Attachment 1, page 33, Table 7, the capital cost for the Charlottetown diesel generating station replacement is stated to be \$21,400,000.

- a) What is the basis of the near 100% increase in capital cost to rebuild the Charlottetown diesel generating station? In the response, please provide a table showing the cost for the major components of the Charlottetown diesel generating station that comprise the two estimates, and the reason for each increase.
- b) Has Hydro benchmarked the capital cost of a replacement for the Charlottetown diesel generating station against the cost of constructing similar stations in comparable isolated rural systems? If so, please provide the analysis completed, including the location of the system, size of the load served, and associated capital costs. If not, why not?

NP-NLH-089

Reference: 2021 Capital Budget Supplemental Application Approval of the Construction of Hydro's Long-term Supply Plan for Southern Labrador – Revision 1 – Safe and Reliable Power Supply to Charlottetown – Reply, Attachment 2, Summary of Technical Note RP-TN-089, page 7 of 25, Table 6 and the response to Request for Information PUB-NLH-045, Table 1.

Table 6: Capital Costs of Diesel Plant Construction (\$000)³

	Regional	CHT	MSH	PHS	SLE
Total Costs	49,010	40,384	37,413	37,296	36,546

Hydro's Alternative 2 includes the cost to construct a new Charlottetown diesel generating station which was destroyed by fire and new individual diesel generating stations in each of the other communities over the period 2030 to 2045 at an estimated capital cost of between \$36 million to \$40 million. In the response to Request for Information PUB-NLH-045, Hydro lists all of its 23 diesel generating stations ranging in age from 15 years (St. Lewis) to 69 years (North Plant).

- a) Given that Alternative 2 involves the construction of new diesel generating stations for Mary's Harbour, Port Hope Simpson, and St. Lewis over the 2030 to 2045 period, and also given that the St. Lewis diesel generating station is Hydro's newest, does Hydro expect that it will be constructing new diesel generating stations to replace each of its other 19 diesel stations over the same 2030 to 2045 time frame? If not, why not?
- b) The response to Request for Information PUB-NLH-045 identifies 11 isolated diesel generating stations that are 40 years or older which is beyond the planned retirement age of the Mary's Harbour, Port Hope Simpson, and St. Lewis diesel generating stations. Does Hydro anticipate replacing its 11 isolated diesel generating stations that have already been in service for over 40 years with new generating stations in the near term? If not, why not?

NP-NLH-090

Reference: 2021 Capital Budget Supplemental Application Approval of the Construction of Hydro's Long-term Supply Plan for Southern Labrador – Revision 1 – Safe and Reliable Power Supply to Charlottetown – Reply, Attachment 2, Summary of Technical Note RP-TN-089, page 7 of 25, Table 6 and the response to Request for Information PUB-NLH-045.

Table 6: Capital Costs of Diesel Plant Construction (\$000)³

	Regional	CHT	MSH	PHS	SLE
Total Costs	49,010	40,384	37,413	37,296	36,546

Hydro's Alternative 2 includes the cost to construct a new Charlottetown diesel generating station which was destroyed by fire and new individual diesel generating stations in each of the other communities over the period 2030 to 2045 at an estimated capital cost of between \$36 million to \$40 million.

- a) How does Hydro determine when it would be appropriate to refurbish an existing diesel generating station as opposed to constructing a new diesel station at an approximate cost of between \$36 million to \$40 million?
- b) Is it appropriate for Hydro's Alternative 2 to include the capital costs associated with new diesel generating stations in Mary's Harbour, Port Hope Simpson, and St. Lewis as opposed to sustaining capital expenditures that would allow for the continued operation of the existing facilities? Please explain.

NP-NLH-091

Reference: 2021 Capital Budget Supplemental Application Approval of the Construction of Hydro's Long-term Supply Plan for Southern Labrador – Revision 1 – Safe and Reliable Power Supply to Charlottetown – Reply, Attachment 2, Summary of Technical Note RP-TN-089, page 9 of 25, Table 9.

- a) Please confirm that the total cost for auxiliary equipment upgrades in Port Hope Simpson, St. Lewis and Mary's Harbour is \$34,944,000. How does this cost compare with the cost of rebuilding the Charlottetown plant?
- b) Upon the retirement of existing diesel plants and the construction of a like-for-like replacement, (2030 for Mary's Harbour, 2035 for Port Hope Simpson, and 2045 for St. Lewis) will the assets previously installed as a result of the auxiliary equipment upgrades remain in service?

NP-NLH-092 Reference: 2021 Capital Budget Supplemental Application Approval of the Construction of Hydro's Long-term Supply Plan for Southern Labrador – Revision 1 – Safe and Reliable Power Supply to Charlottetown – Reply, Attachment 1, Southern Labrador Communities - Integrated Resource Plan Response to Newfoundland and Labrador Board of Commissioners of Public Utilities Information Request Issues Aug 1, 2023, page 20 of 74, Table 6.

Please reconcile the cost estimates in Table 6 with the cost estimates provided in Summary of Technical Note RP-TN-089, page 9 of 25, Table 9.

NP-NLH-093 Reference: 2021 Capital Budget Supplemental Application Approval of the Construction of Hydro's Long-term Supply Plan for Southern Labrador – Revision 1 – Safe and Reliable Power Supply to Charlottetown – Reply, Attachment 1, Southern Labrador Communities - Integrated Resource Plan Response to Newfoundland and Labrador Board of Commissioners of Public Utilities Information Request Issues Aug 1, 2023, page 14 of 74.

“This scenario involves the construction of a Regional Plant near PHS, along with the 25 kV interconnection of the Southern Labrador communities.”

- a) Why did Midgard only consider the immediate interconnection of the Southern Labrador communities and not the phased approach (Alternative 3a) previously considered by Hydro?
- b) Please provide an assessment of Alternative 3a under the sensitivities prescribed by the Board in its letter of August 1, 2023.
- c) Please revise Table 9, page 27 of 74, Figure 3, Table 10 and Table 11, page 28 of 74 to include Alternative 3a into the analysis.

NP-NLH-094 Reference: 2021 Capital Budget Supplemental Application Approval of the Construction of Hydro's Long-term Supply Plan for Southern Labrador – Revision 1 – Safe and Reliable Power Supply to Charlottetown – Reply, Attachment 1, Southern Labrador Communities - Integrated Resource Plan Response to Newfoundland and Labrador Board of Commissioners of Public Utilities Information Request Issues Aug 1, 2023, page 33 of 74, Table 14.

Please confirm whether the items associated with PHS Plant Upgrade, MSH Plant Upgrade and SLE Plant Upgrade include the cost of upgrades to the plant auxiliary systems including the main bus, service conductors and substation transformers.

NP-NLH-095 Reference: 2021 Capital Budget Supplemental Application Approval of the Construction of Hydro’s Long-term Supply Plan for Southern Labrador – Revision 1 – Safe and Reliable Power Supply to Charlottetown – Reply, Attachment 1, Southern Labrador Communities - Integrated Resource Plan Response to Newfoundland and Labrador Board of Commissioners of Public Utilities Information Request Issues Aug 1, 2023, page 61 of 74, Figure 20.

Please confirm that the increments in net present costs beyond 2030 for the Islanded (Alternative 2) option is primarily due to the construction of new diesel generating stations to replace the Mary’s Harbour, Port Hope Simpson, and St. Lewis diesel generating stations.

NP-NLH-096 Reference: Long-term Supply Plan for Southern Labrador – Revision 2, Schedule 2, page 5, lines 7 to 9.

“The Midgard IRP highlighted several benefits of interconnecting the Southern Labrador Communities to a regional generating station, including operational savings due to reduced fuel consumption, improved system reliability, reduced capital costs, and greater potential for renewable penetration.”

Would the benefits noted above be realized in any alternative that includes interconnection of any or all diesel plants in Southern Labrador? For example, would the interconnection of existing diesel plants result in reduced fuel consumption, improved system reliability, or reduced capital costs?

NP-NLH-097 Reference: Long-term Supply Plan for Southern Labrador – Revision 2, Schedule 2, page 5, lines 19 to 21.

“Midgard conducted a cost-benefit analysis considering both direct costs, such as capital investments and operational expenses, and indirect costs, such as environmental impacts and potential economic benefits.”

In its cost-benefit analyses, how did Midgard incorporate any decommissioning costs resulting from the retirement of the existing diesel plants, including dismantling, environmental and any undepreciated value?

NP-NLH-098

Reference: Long-term Supply Plan for Southern Labrador – Revision 2, Schedule 2, page 5, line 26 to page 6, line 2.

“Midgard's assessment emphasized the importance of maintaining reliable backup generation to ensure the continuous supply of electricity for the Southern Labrador Communities should regional or community-based renewable energy solutions advance or a larger interconnection to the Labrador Interconnected System come to fruition. Regardless of the alternative chosen, Midgard notes that a dependable capacity resource, such as diesel gensets, is required to provide capacity and energy during emergencies or periods of high demand.”

Does Midgard recommend that community-based diesel generators should remain as emergency backup after the implementation of the regional diesel solution? If not, what is Midgard’s recommendation to Hydro with respect to future backup generation requirements?

NP-NLH-099

Reference: Long-term Supply Plan for Southern Labrador – Revision 2, Schedule 2, page 12, lines 3 to 7.

“While the scope change from N-2 to N-1 redundancy results in one less unit required for the regional diesel generating station, an additional unit is required for the immediate connection of all communities, which was originally planned for Phase 2. As a result, Hydro will maintain the initial design plan for the regional diesel generating station with six engine bays, to ensure sufficient footprint to accommodate future load growth, and to allow for N-2 redundancy if deemed necessary.”

- a) Given the additional unit required for the immediate connection of all communities and the construction of six engine bays, please explain the difference between the proposed configuration and an N-2 design.
- b) Please outline the future circumstances which, in Hydro’s opinion, may require N-2 redundancy.

NP-NLH-100

Reference: Long-term Supply Plan for Southern Labrador – Revision 2, Schedule 2, page 16, lines 1 to 5.

“The interconnection of the southern Labrador distribution systems and implementation of a regional diesel generating station is expected to facilitate the potential future integration and penetration of renewable energy versus an approach that features individual isolated systems. Should any such opportunities arise in the future, it is anticipated that such integration could produce further reduction in revenue requirements due to decreased fuel and maintenance costs.”

Please explain the terms of any agreements, including cost and duration, between Hydro and third-party renewable energy providers on the Labrador Isolated system. Include any terms that are based on the cost of diesel generation.

RESPECTFULLY SUBMITTED at St. John’s, Newfoundland and Labrador, this 24th day of October 2023.



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