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June 25, 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's 2021 Capital Budget Supplemental Application for Approval of the Construction of Hydro's Long-Term Supply Plan for Southern Labrador – Request for Reconsideration Under Section 28(1) of the *Board of Commissioners of Public Utilities Regulations, 1996*

Newfoundland and Labrador Hydro ("Hydro") respectfully submits this request for reconsideration of the Board of Commissioners of Public Utilities ("Board") Order No. P.U. 12(2025), pursuant to Section 28(1) of the *Board of Commissioners of Public Utilities Regulations, 1996*. Hydro believes that the Board's decision includes findings of fact that do not take into account important evidence and that materially impacted the outcome of the application for the long-term supply plan for Southern Labrador.

Background and Context

On March 31, 2025, the Board issued Order No. P.U. 12(2025) denying Hydro's application. The Board directed Hydro to review its plan for the continued provision of reliable service for Charlottetown and Pinsent's Arm while it develops a new long-term plan for Southern Labrador. Hydro has been actively engaged in the review and planning for long-term reliable service for the region since October 2019, and remains committed to delivering safe, reliable, and cost-effective service to all communities in Southern Labrador. Further information regarding the ongoing work is contained in separate correspondence.

Legal Basis for Reconsideration

Section 28(1) of the *Board of Commissioners of Public Utilities Regulations, 1996,* allows for a rehearing after a final Order where errors were made in findings of fact or law. Hydro has filed an appeal under Section 99 of the *Public Utilities Act* with respect to questions of law.

Hydro submits that the Board's conclusions were based on certain factual inaccuracies or misinterpretations of the evidence presented, warranting a reconsideration of the decision. The within request pursuant to Section 28(1) of the regulations addresses certain findings of fact.

Given the extensive and detailed record developed over several years, Hydro believes that a reconsideration at this stage—while work continues as outlined in separate correspondence—offers the most expedient path to delivering reliable service improvements to customers in Southern Labrador.

Key Issues for Reconsideration

Hydro has identified four particular areas where the Board's findings of fact do not take into account or give appropriate weight to important evidence that is on the record:

1) Increase in Project Costs to $110.9 million;

2) Replacement of Diesel Generating Stations;

3) Renewable Generation; and

4) Interconnection with the Labrador Interconnected System.

Each of these is addressed in detail below.

1) Increase in Project Costs to $110.9 Million

Board's Finding

The Board characterized the revised project costs estimate of $110.9 million, submitted on December 6, 2024, as being a 26% increase from the cost estimate that had been provided 14 months earlier. The Board concluded that the absence of revisions to the application or updated evidence from Hydro's external expert Midgard Consulting Inc. ("Midgard") undermined the least-cost nature of the proposal.

The Board further relied on Midgard's initial Integrated Resource Plan ("IRP")[1] to find that the costs of the interconnection of the communities with a regional plant ("Regional Interconnection") would only need to increase by 54% to alter the outcome of the alternatives analysis.

The Board wrote that the significant increase in costs as of the December 2024 update meant that it was now likely that the proposed project would not be the least-cost alternative until much later than the year shown in the analysis, and that there would be even more scenarios where it would not be least cost at all. Based on these assumptions, the Board stated that it did not believe it was reasonable to conclude that the revised costs are least-cost based on the sensitivity analysis previously conducted by Midgard.

Application Evidence

In its December 2024 correspondence to the Board providing the cost update, Hydro confirmed that the increased project cost was within the sensitivity ranges previously considered by Midgard. Hydro's emphasis that the revised estimate still fell within those ranges indicated that Hydro's proposed supply solution remained the least-cost option for delivering reliable service on a life cycle basis.

Hydro proactively filed updated cost estimates throughout the regulatory process to reflect evolving project conditions as time progressed from the original application date. In May 2023, in response to the Board's direction to engage a third party to complete a detailed study and provide supply alternatives, Hydro submitted a revised application incorporating the recommendations of the independent expert.

[1] "Southern Labrador Communities – Integrated Resource Plan," Midgard Consulting Inc., March 28, 2023, filed with the Board as Attachment 1 of "Long-Term Supply for Southern Labrador – Phase 1 – Midgard Consulting Inc.," Newfoundland and Labrador Hydro, March 31, 2023.

Given the time that had passed since the original application, Hydro also provided updated cost estimates which reflected the third party's recommended approach and were projected at $86.4 million. This revised estimate accounted for a broader project scope completed earlier than originally planned, as well as the effects of inflation and extended timelines.

Subsequent updates were filed in October and December 2024, increasing the estimate to $110.9 million. These updates reflected the impact of schedule delays while the regulatory process continued, which delayed the start of construction and contributed to further cost escalation. Hydro considered it prudent and transparent to provide these updates to ensure the Board and all parties had clear visibility into the evolving cost profile associated with the revised project timeline.

In its Order the Board stated, "*with the significant increase in costs, it is now likely that the proposed Project would not be the least-cost alternative until much later and there would likely be even more scenarios where it would not be least-cost.*"[2]

In drawing this conclusion, the Board appears not to consider that cost increases (e.g., due to aging infrastructure or inflation) would eventually affect all options, not just the selected alternative in isolation.

Additionally, the Board's conclusion appears inconsistent with other determinations detailed in the Order. Specifically, the next least-cost alternative considered in Midgard's IRP, following a 54% cost increase to the Regional Interconnection option, relied on the continued exclusive use of mobile generation which the Board itself agreed was inappropriate. In its Order, the Board acknowledged that it "*. . . accepts the evidence that the use of mobile generation exclusively to supply the Charlottetown load is not an acceptable long-term solution*."[3,4] In Hydro's view, this context diminishes the weight of the cost increase as a determining factor in this conclusion as the continued exclusive use of mobile generation should not be considered a viable alternative in the decision-making process.

Further, the more robust analysis completed by Midgard in its report "Analysis of Additional Southern Labrador Scenarios Requested Through Information Requests NP-NLH-093 and PUB-NLH-099," dated November 5, 2023 and filed as Attachment 1 of Hydro's response to PUB-NLH-097 ("November Report"), supersedes the initial March 2023 sensitivity analysis and confirms that Hydro's proposed solution remained the least-cost option on a life cycle basis even with higher up-front capital costs. As per the Board's provisional Capital Budget Application Guidelines, a full life cycle cost evaluation is required to support capital expenditure applications, and this updated analysis fulfills that requirement.[5]

The November 2023 analysis was prepared to address the Board's request in August 2023 for a more comprehensive sensitivity analysis involving multiple variables. Midgard conducted a multivariate analysis using updated Class 4 cost estimates for the alternatives, and considered several factors, including fossil fuel prices.

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[2] Order No. P.U. 12(2025), p. 10/24–26.
[3] Order No. P.U. 12(2025), p. 25/19–20.
[4] "Southern Labrador Communities – Integrated Resource Plan," Midgard Consulting Inc., March 28, 2023, p. 91; and PUB-NLH-051 of this proceeding.
[5] "Capital Budget Application Filing Guidelines (Provisional)," Board of Commissioners of Public Utilities, January 2022, p. 16 of 18.

The November 2023 analysis, including the updated cost estimates and the multivariate analysis, showed that the Regional Interconnection remained the least-cost option in all scenarios—except in extreme cases where Regional Interconnection costs increased to 300%, or increased to a minimum of 150% with all other capital costs decreasing or remaining the same, which was certainly not the case with the proposed project.

Midgard's November Report noted that:

> The vast majority of scenarios that demonstrated sensitivity are deemed to be unreasonable (exceedingly unlikely to happen) as they either require interconnection costs drastically increase (300% of current values) or to significantly increase (200% increase) while other capital costs stay stable or decline. **The only scenario that has an interconnection cost escalation that is viewed as possible in the near future (150%) requires that all other cost parameters (capital cost, fuel cost and load growth) be negative, which is very improbable given the prevailing levels of inflation**.[6]

Summary

The Board's conclusion did not fully consider the updated analysis completed by Midgard or the improbability of the small number of sensitivity cases that favored alternative scenarios. The evidence supports that the project remains least cost even with the cost increase to $110.9 million.

2) Replacement of Diesel Generating Stations

Board's Finding

The Board questioned the assumption in the application of a 40-year life for the existing diesel plants in the region and stated that the filed evidence does not address the assumption in any detail. The Board also referenced Midgard's acknowledgement of the possibility of extending the operational lives of the existing generation stations, noting only that Midgard suggested it may be more costly. The Board further suggested that extending the life of the existing diesel plants beyond 50 years could alter the least-cost analysis significantly.[7]

Application Evidence

Midgard's analysis, prompted by the Board's request and to address the specific concern raised by Newfoundland Power Inc., included a scenario which assumed plant replacement is extended to 50 years in service which Midgard refers to as the "Islanded Life Extension" scenario. Midgard's November Report stated:

> Review of the 50-year sensitivity instances reveals the following:
>
> - The "Regional Plant" scenario remains the top-ranked scenario in the majority (264 of 300) of sensitivity instances.
> - The "Islanded Life Extension" scenario is the top-ranked scenario in 36 instances.

[6] "Analysis of Additional Southern Labrador Scenarios Requested Through Information Requests NP-NLH-093 and PUB-NLH-099," Midgard Consulting Inc., November 5, 2023, sec. 3.1, pp. 9–10.
[7] Order No. P.U. 12(2025), p. 16/21–25.

> . . .
>
> The scenarios that demonstrated sensitivity are deemed to be unreasonable (exceedingly unlikely to happen) as they require [Regional] interconnection costs to dramatically increase over any other cost increases.[8]

Hydro's evidence addressed a life cycle scenario greater than 40 years. The 50-year life sensitivity demonstrated that with extension of plant replacement to 50 years, Hydro's proposed Regional Interconnection remained the least-cost option in 88% of the sensitivities. The evidence also demonstrated that in the remaining 36 of 300 (12%) scenarios where the Regional Interconnection is not the favoured option, it is because the cost of Regional Interconnection increases dramatically compared to the costs of the other alternatives; this is a scenario that Midgard concludes is highly unlikely.

Hydro further notes that each sensitivity case does not have equal probability of occurrence; and sensitivity cases involving high transmission cost variances are particularly unlikely. As stated in Hydro's correspondence of December 18, 2023, this magnitude of increase would be highly improbable given the accuracy of the Class 3 estimate used,[9] and Hydro's project execution performance for transmission projects. The project variance for Hydro's transmission projects averaged 11.9% over the previous five years, highlighting Hydro's estimate accuracy for transmission projects. Hydro's historical performance in estimating and executing transmission projects demonstrates that a variance of 300% on the regional transmission interconnection is highly unlikely.

The Board's requests regarding use of the operational lives of the diesel generating stations in its analysis specified extension to 50 years. The updated analysis was completed with that time frame in mind; no analysis was completed for an extension exceeding that time frame. Hydro notes that extending the operational life of the diesel generating stations did not change the recommended development option. Further, there was no evidence presented that indicated that extending the operational life past 50 years would impact the recommended development option, particularly when considering that life extension of an asset has associated costs and that cost increases over time generally impact all options.

Summary

The Board's conclusion did not account for the low probability of the scenarios in which the extension of the service life of the existing diesel plants resulted in the proposed project no longer being the least-cost solution. The evidence supports the reasonableness of Hydro's assumptions and the continued support for the viability of the proposed project as the least-cost option.

3) Renewable Generation

Board's Finding

The Board emphasized stakeholder concerns about the impacts of a large diesel plant and questioned the value of increased renewable potential without a clear plan. The Board stated that the "*environmental impact of the proposed Project was the overriding issue in [the] proceeding*."[10]

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[8] "Analysis of Additional Southern Labrador Scenarios Requested Through Information Requests NP-NLH-093 and PUB-NLH-099," Midgard Consulting Inc., November 5, 2023, sec. 4.2, pp. 13–14.
[9] AACE Class 3 estimates are considered accurate to -20%/+30%.
[10] Order No. P.U. 12(2025), p. 18/14–15.

However, the Board, while acknowledging that the proposed project would increase the potential for renewable generation, stated that the evidence did not show "*. . . that this increase would be of value given the unused potential now available and the lack of a plan or timeline for the addition of renewable generation."*[11]

Application Evidence

Renewable Energy as Firm Supply

Hydro remains committed to integrating renewable energy through partnerships with Indigenous and Community groups. However, as Midgard's analysis shows, renewables cannot currently provide the firm capacity required for reliable service.

Hydro and Midgard evaluated renewable options, including battery storage, and found they did not present a reasonable balance between cost, reliability, and environment, and therefore were not technically or economically appropriate as firm capacity alternatives.[12]

In Midgard's IRP, Midgard stated:

> Resources that are viable for economical energy generation but that do not provide firm capacity are not suitable for deployment as stand-alone supply for remote systems and must be coupled with some form of dependable capacity.
>
> The technologies that were found to provide dependable capacity are thermal resources and storage hydro.[13]

Hydro's evidence further indicated that while the integration of renewable generating sources presents an opportunity to reduce operating costs by displacing diesel-fired generation, it would have no impact on Hydro's proposed regional diesel plant as a firm capacity solution. Potential reduction of operating costs arising from renewable integration within the regional plant would serve to further strengthen the least-cost proposal already demonstrated by the evidence.

Midgard further concluded that "*the financial analysis confirms that regardless of the storage period, a large-scale battery installation to convert wind energy to dependable capacity on an isolated system remains uneconomical*"[14] and that "*it is not anticipated that renewable systems with battery firming will be cost competitive in the next decade, although some battery systems may prove useful for grid stability in the case of higher penetration of renewables.*"[15]

This information further supports that diesel generation remains the only economical source of firm long-term capacity for Southern Labrador; investment in renewable resources for the provision of energy would be an incremental cost in addition to the cost of the Regional Interconnection. However, it appears the Board has not considered this conclusion in its Order.

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[11] Order No. P.U. 12(2025), p. 28/14–16.
[12] "Southern Labrador Communities – Integrated Resource Plan," Midgard Consulting Inc., March 28, 2023, sec. 5 and 6, pp. 48–68.
[13] "Southern Labrador Communities – Integrated Resource Plan," Midgard Consulting Inc., March 28, 2023, p. 62/3–6.
[14] "Southern Labrador Communities – Integrated Resource Plan," Midgard Consulting Inc., March 28, 2023, p. 67/7–8.
[15] "Southern Labrador Communities – Integrated Resource Plan," Midgard Consulting Inc., March 28, 2023, p. 69/4–6.

Integration of Renewable Energy

Hydro committed to integrating renewable projects post-approval and noted this throughout its application including its final correspondence on January 16, 2025, prior to the close of the proceeding, wherein Hydro stated:

> 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.[16]

As Midgard concluded that renewable sources with storage remain uneconomical, the integration of renewables has no impact on Hydro's proposed solution for firm capacity, and any costs associated with the integration of renewables would be incremental.

Hydro had also indicated in its correspondence to the Board on March 17, 2022, that it had committed to work with Nunacor Development Corporation to support the development of sustainable energy solutions for their communities.

Hydro's response to NCC-NLH-008 of this proceeding indicated its commitment to ensuring that the regional plant would be designed and built to allow for integration of renewable energy developments, and the NunavuKavut Community Council had acknowledged in their correspondence dated December 7, 2023, that they were confident in the advancement of its relationship with Hydro in this regard.

Additional Environmental Benefits of Proposed Project

In addition to the increased potential for renewable generation, but independent from the inclusion of renewable generation, Hydro indicated that the proposed project would reduce diesel fuel consumption[17] and reduce greenhouse gas emissions by serving the communities of Southern Labrador with a more efficient generator configuration. In its IRP, Midgard noted that:

> Four small, isolated systems require (at least) four small gensets to be run most of the time. With a networked system the overall load could be served by one (or two) larger genset(s) for much of the year, which would save fuel, reduce greenhouse gas emissions, and require less overall maintenance than would four smaller gensets.[18]

Hydro further noted in its correspondence to the Board on March 19, 2024, and January 16, 2025, that the project is in accordance with all federal and provincial environmental legislation.

These points were not referenced by the Board in its Order.

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[16] "Newfoundland and Labrador Hydro – 2021 Capital Budget Supplemental Approval of he Construction of Hydro's Long-term Supply Plan for Southern Labrador – Revised Project Cost Estimate and Project Schedule – Hydro's Reply," Newfoundland and Labrador Hydro, January 16, 2025, p. 3.

[17] LAB-NLH-015, rev. 1, att. 3, pp. 124–125 of 189.

[18] "Southern Labrador Communities – Integrated Resource Plan," Midgard Consulting Inc., March 28, 2023, p. 42.

Summary

The Board stated that ". . . *the [Electrical Power Control Act, 1994] was recently changed to require that power be delivered at the lowest possible cost, in an environmentally responsible manner, consistent with reliable service.*"[19] However, the Board appeared to focus its attention on the preference of stakeholders for renewable generation without consideration of the environmental benefits of the proposed project nor the primary requirement for firm supply which renewables do not currently provide economically or technically.

The Board did not fully consider Hydro's expressed commitments, the technical limitations of renewables, or the other environmental benefits provided by the proposed project.

4) Interconnection with the Labrador Interconnected System

Board's Finding

The Board stated that the interconnection with the Labrador Interconnected System had not been the subject of a comprehensive engineering analysis. The Board stated that the details were not clear, including whether the construction of a Regional Interconnection would be necessary following a larger scale interconnection with the Labrador Interconnected System, or whether continuation of the community diesel generating stations was studied.

Application Evidence

Hydro had repeatedly detailed, both in its evidence[20] and in responses to request for information ("RFI"),[21] that the total cumulative net present cost of an interconnection of the Southern Labrador communities to the Labrador Interconnected System would be in excess of $300 million, and as a result, was screened out, as with a cost of this magnitude it would still not be viable in comparison to other alternatives. This is substantially in excess of the estimated $110.9 million for the proposed project. The evidence made clear the $300 million estimate was for the transmission line alone and did not consider additional backup plant costs, whether regional or continued islanded community-based backup plants, which would be additive to the $300 million estimate.

Additionally, Midgard's consideration of a transmission interconnection in its IRP, noted that even if an interconnection to the Labrador Interconnected System was put in place, a local diesel generating plant would still be required to provide backup for loss of the interconnection.[22] Throughout the course of the proceeding, Hydro and its consultant Midgard consistently indicated that a backup plant would be required for reliable service in the scenario of a transmission interconnection. Midgard concluded that interconnection to the Labrador Interconnected System had a net present value life cycle cost over $127 million higher than the regional plant alternative.

[19] Order No. P.U. 12(2025), p. 20/24–25.
[20] Please refer to "Long-Term Supply for Southern Labrador," Newfoundland and Labrador Hydro, rev. October 5, 2023 (originally July 16, 2021), sch. 1, p. 7; and "Southern Labrador Communities – Integrated Resource Plan," Midgard Consulting Inc., March 28, 2023, p. 74, IRP Scenario H, Table 25.
[21] Please refer to NP-NLH-004; PUB-NLH-010; and PUB-NLH-073 of this proceeding.
[22] "Southern Labrador Communities – Integrated Resource Plan," Newfoundland and Labrador Hydro, March 28, 2023, p. 70.

Midgard's findings confirmed that the interconnection to the Labrador Interconnected System would remain the highest cost alternative of any of the alternatives, on the basis of both capital cost and life cycle costs, even if redundant generation had no cost.

Summary

The Board's finding overlooks the comprehensive evidence provided that demonstrates that interconnection with the Labrador Interconnected System is not a viable least-cost alternative.

Conclusion and Request

Hydro filed its initial application with its proposed solution for supply to Southern Labrador in July 2021. After completion of two rounds of RFIs and submissions from certain parties, the Board advised on May 16, 2022, that it had considered Hydro's initial application and determined that an independent expert should be engaged to assist in the analysis of the options and approach for the provision of service in Southern Labrador.

Hydro developed a request for proposal ("RFP") to identify and hire a consultant to conduct the independent analysis requested by the Board. Following the issuance of the RFP, Hydro selected Midgard to perform the analysis. Based on Midgard's comprehensive IRP, Hydro submitted a revised application on May 31, 2023, seeking approval for the full Regional Interconnection. This interconnection had originally been proposed in phases in the initial application.

Through the application's review process, Hydro has responded to all inquiries of the Board and the various intervenors to the file. This resulted in more than 2,300 pages of evidence on the record, including 237 RFIs, 101 of which were from the Board specifically with respect to Hydro's initial application and subsequent revisions. Hydro, as noted above, retained a third-party expert as requested by the Board, and had that expert file an independently developed IRP, as well as a further independent analysis of the additional alternatives for reliable supply to Charlottetown and Pinsent's Arm that were posed by the Board.

Hydro's submission herein highlights certain evidence that was placed on the regulatory record that appears to have been overlooked or misinterpreted in the Board's decision.

Hydro believes that the conclusions reached by the Board in Order No. P.U. 12(2025) are based, in part, on interpretations of fact that Hydro respectfully asserts are unsupported by the record or incomplete, and therefore justify a rehearing under Section 28(1) of the *Board of Commissioners of Public Utilities Regulations, 1996.*

Midgard has also reviewed the Board's Order and has provided correspondence regarding how their analysis, findings, and recommendations were considered and referenced in the Order. Midgard stated that while the Board did not explicitly discount Midgard's evidence, Midgard believes certain aspects of its evidence may have been overlooked or misinterpreted. Midgard's findings are provided with this correspondence as Attachment 1.

Hydro respectfully submits that a rehearing is in the best interest of customers, as it may lead to a more timely and effective resolution based on the existing evidentiary record and so limits continued cost increases and schedule delay for customers currently service by mobile diesel generation. Hydro requests that the Board initiate a process to address this request at its earliest convenience, including

opportunity for the intervenors and Hydro to make further submissions. Hydro is available to discuss a potential process for review at the Board's convenience.

Should you have any questions, or should the Board require any clarification or additional material, please contact the undersigned.

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO

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Senior Legal Counsel, Regulatory
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June 18, 2025

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ATTENTION: Scott Henderson, Team Lead, Rural Planning

SUBJECT: Application for Approval to Construct a New Regional Diesel Generating Station and Interconnection in Southern Labrador

Dear Scott,

1 Introduction

We write in connection with the recently released order from the Newfoundland and Labrador Public Utilities Board ("Board") relating to Newfoundland and Labrador Hydro's application to construct a new regional diesel generating station and interconnection in Southern Labrador (Order No. P.U. 12(2025)).

Midgard Consulting Incorporated ("Midgard") was engaged by Newfoundland and Labrador Hydro ("Hydro") to prepare an Integrated Resource Plan ("IRP") for the Southern Labrador Communities[1]. Midgard's IRP determined that the least cost system and resource configuration capable of providing reliable, economic and environmentally responsible power to the six southern Labrador communities of Charlottetown, Lodge Bay, Mary's Harbour, Pinsent's Arm, Port Hope Simpson, and St. Lewis with presently available technology, while simultaneously facilitating the development of renewable power resources to offset diesel emissions, is to construct a 25 kV interconnection system between the communities supported by a new regional diesel generating station. Hydro submitted Midgard's IRP in its Application in support of the proposed Southern Labrador development plan.

In its Order, the Board has rejected this Application citing four rationales as follows:

i) The revised project costs of $110.9 million are not supported;
ii) The assumed replacements of the community diesel generating stations are not justified;
iii) Hydro has not sufficiently prioritized the development of renewable generation; and
iv) There was inadequate study of the potential interconnection with the Labrador Interconnected system.

In addition, the Board has directed Hydro to:

v) v) Take immediate steps to reevaluate solutions to ensure access to safe and reliable power for the communities of Charlottetown and Pinsent's Arm.[2]

[1] Reference: Southern Labrador Communities - Integrated Resource Plan, Midgard Consulting Incorporated, March 28, 2023.

[2] Note: Charlottetown and Pinset Arm have been served by temporary portable diesel generation for over five years.

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Several other direct or implied instructions are given to Hydro within the Order. These include:

> *"Given the criticality of the issues for Charlottetown and Pinsent's Arm, Hydro should revisit its plan for the continued provision of reliable service to these communities while it develops and implements a new long-term plan for Southern Labrador."*

> *"The Board believes that more could and should be done by Hydro to ensure the development of alternatives which are more consistent with community and government objectives in this developing area."*

and

> *"Hydro should also take immediate steps to ensure the early development of renewables in the region, either on its own or in partnership with others. This work should be done in concert with the stakeholders in the region, and should fully address all reasonable alternatives, including the potential interconnection with the Labrador Interconnected system. All of this work should proceed alongside renewed efforts by Hydro to ensure that it fulfills its duty to consult."*

There is also the implied direction:

> *"Given the importance of this matter for the region and the clear stakeholder preference for interconnection with the rest of Labrador, the Board is not satisfied that the interconnection to the LIS was adequately explored as part of a comprehensive long-term plan for Southern Labrador. The Board notes that with the recent signing of a Memorandum of Understanding with Quebec for further hydroelectric development in Labrador there will likely be continued interest in an interconnection."*

While the Board in its Order does not explicitly find fault with Midgard's IRP, Midgard believes certain aspects of its IRP and subsequent submittals may have been overlooked or misinterpreted.

These include items relating to:

1. The Midgard sensitivity analyses as they relate to the subsequent cost estimate increase to $110.9 million as reported by Hydro in December 2024.
2. The planning life of existing Hydro's diesel generation stations.
3. The integration of renewable generation resources within the Southern Labrador System.
4. The economic feasibility of interconnecting the Southern Labrador Communities with the Labrador Interconnected System ("LIS").

The material referenced for this letter comprises the following reports and memos which have been previously filed and are part of the application record:

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1. Report – P0643-D026-RPT-R00-EXT – Integrated Resource Plan, Mar 28, 2023
2. Memorandum – P0643-D042-MEM-R00-EXT - Review of Potential Impacts of 2023 Federal Budget, March 30, 2023
3. Report – P0643-D045-RPT-R01-EXT - 2023-08-01 PUB IR Response, August 1, 2023
4. Report P0643-D051-RPT-R01-EXT – Analysis of Additional Southern Labrador Scenarios Requested Through Information Requests NP-NLH-093 and PUB-NLH-099, November 7, 2023

2 Cost Estimate Increase and Midgard Sensitivity Analyses

On December 2, 2024, Hydro submitted a letter which detailed forecast cost increases for its May 31, 2023 capital application to construct a regional 25 kV system for the Southern Labrador communities. Hydro stated:

> *"Due to the passage of time, the project schedule previously filed with the Board and the related costs of the project required updating."*

Hydro further stated:

> *"Hydro has considered the increased Project cost in the context of the sensitivity ranges considered by Midgard and notes that the revised estimate falls within those ranges. Therefore, Hydro's proposed long-term solution for electricity supply in southern Labrador remains the least-cost alternative for reliable service."*

In its published decision, the Board states:

> *"The Board notes that Hydro concluded that even with the increase in costs to $110.9 million the proposed Project continues to be the least-cost option based on Midgard's sensitivity analysis. Midgard's analysis showed that the proposed Project continued to be least-cost with interconnection cost increases of up to 50%. The Board notes that the estimated interconnection costs are approaching this level as they have increased by 34%, even without considering the potential range of costs. Given that Midgard's sensitivity analysis showed that small changes in assumptions can have a significant impact, the Board has concerns as to such a significant change in costs being considered in isolation from other potential changes. The sensitivity analysis showed that changing certain assumptions significantly decreased the number of scenarios where the proposed Project was the favoured alternative. Based on Midgard's sensitivity analysis the proposed Project becomes the least-cost alternative in year 19 of the analysis and there were a number of scenarios where it is not least-cost. With the significant increase in costs, it is now likely that the proposed Project would not be the least-cost alternative until much later and there would likely be even more scenarios where it would not be least-cost. The Board does not accept that it is reasonable to conclude that the revised costs are least-cost based on the sensitivity analysis previously conducted by Midgard."*

Midgard carried out several sensitivity analyses associated with the IRP itself or in responses to the RFI process of this proceeding.

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The first sensitivity analysis, detailed in Section 8 of the IRP[3], was a single variable analysis which individually tested the range of certain parameters which would result in a change of conclusion of the preferred alternative based on a least cost metric (the other metrics of reliability and environmental responsibility having already been established).

As noted in Table 37 of the IRP, it would have taken a capital cost increase of 54% on the 25 kV interconnection system, in the absence of any generation asset cost increases[4] to change the result of the preferred alternative to a continued reliance on individual isolated generating stations (Alternative A in the IRP). Table 37 notes that incurring a cost increase for the interconnection facilities of 54% without an attendant increase in generating station costs would be unlikely.

The Board, in its decision notes:

> *"…that the estimated interconnection costs are approaching this level as they have increased by 34%, even without considering the potential range of costs. Given that Midgard's sensitivity analysis showed that small changes in assumptions can have a significant impact, the Board has concerns as to such a significant change in costs being considered in isolation from other potential changes."*

The referenced 34% increase in Interconnection Capital Costs is taken from Hydro's December 6, 2024, letter, Table 4.[5] That table, however, also references a 20% increase in other costs. A multivariate sensitivity analysis, which assessed increases in interconnection system costs and generating station costs at the same time was not carried out in the original IRP. However, the parallel increase in generating station costs of 20% renders moot reliance on the single variable 54% increase of interconnection costs discussed in the IRP.

The fact that forecast cost increases for the interconnection system are accompanied by forecast increases in non-interconnection asset capital costs stands to reason, given that it is expected that many of the cost drivers for the interconnection cost increase, such as material supply, labour, interest and contingency (as noted in Table 2 of Hydro's December 6, 2024 letter) would be common elements of each development component.

Subsequent to completion of the original IRP, Midgard undertook separate multi-variate sensitivity analyses for a 25-year and a 50-year planning horizon. The first was presented in Midgard report "Response to Newfoundland and Labrador Board of Commissioners of Public Utilities Information Request"[6] and the second, which captured updated timing for capital spend on certain scenarios, in Midgard Report "Analysis of Additional Southern Labrador Scenarios Requested Through Information Requests NP-NLH-093 and PUB-NLH-099" [7].

[3] Reference: P0643-D026-RPT-R00-EXT - Integrated Resource Plan, pages 87 to 89

[4] Reference: IRP page 87 lines 16 and 17: "Changes in the capital cost of interconnection work (overhead wires and voltage conversion) against no increase in generation capital costs."

[5] Reference: 2024-12-06_NLH_LT Supply for S. Lab_Req for Full Approval_Confidential, page 7

[6] Reference: P0643-D045-RPT-R01-EXT - 2023-08-01 PUB IR Response, September 28, 2023

[7] Reference: P0643-D051-RPT-R01-EXT - Oct 25 IR Scenario Analysis, November 7, 2023

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Those multi-variate analyses, the detailed results of which are presented in Appendices A and B of the Midgard November 7, 2023, report, compared the results of the IRP while varying:

1. Transmission Capital Costs – which is the capital cost of the 25 kV interconnection system;
2. Capital Costs – which is balance of the capital costs of the proposed alternatives;
3. Fuel Costs; and
4. Load Change

Reference to Appendix A (the 25-year planning horizon results) shows the following:

1. There was no change in ranking until scenario 121 – which represented a 50% increase in interconnection system costs combined with a 25% reduction in other costs, a 25% percent reduction in forecast fuel costs and a 2% forecast load reduction.
2. Scenarios 181 through 219 resulted in a change to the preferred scenario – however, these all required a 200% increase in interconnection system costs with no increase to the balance of costs.
3. Scenarios 241 through 300 also reported a change in preferred alternative. These required an increase of 300% in the interconnection system costs.

Similar results are shown in Appendix B for the 50-year planning horizon results; however, in this analysis there were more scenarios that favoured the regional plant owing to the anticipated long life of the interconnection system.

At the time, Midgard concluded:

> *"The vast majority of scenarios that demonstrated sensitivity are deemed to be unreasonable (exceedingly unlikely to happen) as they either require interconnection costs drastically increase (300% of current values) or to significantly increase (200% increase) while other capital costs stay stable or decline. The only scenario that has an interconnection cost escalation that is viewed as possible in the near future (150%) requires that all other cost parameters (capital cost, fuel cost and load growth) be negative, which is very improbable given the prevailing levels of inflation."* [8]

Midgard was not engaged by Hydro to aid in the development of the updated cost estimates and did not correspondingly update its sensitivity analyses. However, Midgard notes that the higher costs identified in the December 2, 2024 cost estimate do in fact fall within the bounds of its previous sensitivity analyses.

3 Diesel Generation Station Retirement Timelines

The Board identifies that the diesel genset service life assumptions used in the IRP do not appear to reflect actual NL Hydro practice.

[8] Reference: P0643-D051-RPT-R01-EXT - Oct 25 IR Scenario Analysis, section 3.1, page 9

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The Board states:

> *"Midgard's reports do not address the assumed 40-year useful life of the diesel generating stations in any level of detail. Midgard subsequently clarified that it had reviewed the diesel generating stations in service and found that Hydro's maintenance program and retirement dates were generally consistent with other similar utilities and was prudent in retention of units. This appears to be a very high-level review and does not include a condition assessment or associated engineering work. Midgard also did not address Hydro's practice with respect to diesel generating station replacement. Midgard acknowledged that it was possible to extend the operational lives of the existing generating stations but suggested that it may be more costly and noted that the proposed Project with the early retirement of the stations was found to be the lowest cost scenario."*[9]

Subsequent to preparing the IRP and in response to IR PUB-NLH-070, Midgard evaluated consequences of using both 40-year and 50-year service lives for the individual generating stations. This modelling did not change the recommended development option nor alter the IRP's conclusions [10]. In its response prepared for Hydro for PUB-NLH-070, Midgard noted:

> *"The costs for service life extension will vary, but in general, the dominant cost for thermal (diesel) power plants is fuel cost. The savings in fuel provided by servicing the load from a centralized facility using larger, more efficient generators more than offsets the additional capital costs."*

In its decision, the Board stated:

> *"The Board believes that it is probable that it would be economic to maintain one or more of the community diesel plants for some time beyond 40 years, particularly the St. Lewis and Port Hope Simpson plants."*[11]

In support of this, the Board, citing pages 7 to 10 of Midgard report P0643-D051-RPT-R01-EXT - Oct 25 IR Scenario Analysis as attached to Hydro's response to IR PUB-NLH-97, states:

> *"The Board notes that the life extension of the diesel generating stations to 50 years had a significant impact on the sensitivity analysis"*

Midgard does not believe that this is the conclusion to be drawn from our analysis. In that report, Midgard concluded:

> *"In general, the sensitivity results are similar to those provided in the previous sensitivity investigations. Due to deferred capital costs, the "Islanded Life Extension" scenario is always a lower net present cost than the "Islanded" scenario, so instances that formerly favored "Islanded" now favor "Islanded Life Extension". A significant factor that results in an increase to the number of*

[9] Reference: Order No. P.U. 12(2025), page 11, lines 33-35 and page 12, lines 1-7.

[10] Reference: P0643-D045-RPT-R01-EXT - 2023-08-01 PUB IR Response, Appendices D and E

[11] Reference: Order No. P.U. 12(2025), page 16, lines 19-21.

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> *instances that no longer favor the "Regional Plant" is the "Islanded Life Extension" scenario pushing the replacement of the SLE powerhouse (2056) out past the end of the financial evaluation window (2048). As a result, "Islanded Life Extension" does not carry the cost of this powerhouse at all when the 25-year financial horizon is used. The results of the 50-year evaluation horizon are somewhat different, with only 34 instances favouring the "Islanded Life Extension" scenario."*[12]

The sensitivity analysis showed that the Islanded Life Extension alternative was preferred over the Islanded alternative – but not over the regional plant alternative, as was originally concluded in the IRP.

Results for the analysis was shown in "Updated Table 17" as reproduced below.

Updated Table 17: Sensitivity Results

Interconnection Cost Change	Capital Cost Change	Fuel Cost Change	Load Change	Sensitivity Instances Included	New Lowest Cost Scenario
150%	75%	75%	-2%	1 of 300	Islanded Life Extension
200%	75%	All	All	20 of 300	Islanded Life Extension
200%	100%	All	All but +2%	19 of 300	Islanded Life Extension
300%	Any	Any	Any	60 of 300	Islanded Life Extension

The analysis shows that the Islanded Life Extension alternative only becomes least cost with a 150% to 200% increase in the cost of the 25kV interconnection system with changes in other sensitivity factors, or 300% in isolation.

The Board also states:

> *"While there was no analysis extending the service life of the diesel generating stations beyond 50 years, this would push the replacement of both the St. Lewis and Port Hope Simpson plants beyond the analysis period which could change the least-cost analysis significantly."* [13]

Simply deferring the replacement cost of a fully depreciated asset until beyond the planning period does not infer that that asset can continue to operate ad infinitum. Assuming that a plant can last until 1-year past a planning period will simply render a fully depreciated asset one-year past the planning period.

Regardless, we believe that the Board has misunderstood the nature of the Midgard financial model which accounts for unequal treatment of different asset lives with the inclusion of an undepreciated terminal value at the end of the model run. This was noted on page 75 of the Midgard IRP which states:

> *"To account for different asset lives as well as deferred capital spending that would still retain some net book value at the end of the planning period, a "Terminal Value" allowance is appended to the*

[12] Reference: P0643-D051-RPT-R01-EXT - Oct 25 IR Scenario Analysis, page 9

[13] Reference: Order No. P.U. 12(2025), page 16, lines 22-25.

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> *end of the model, which comprises the residual un-used capital life assuming a straight-line depreciation. The Terminal Value is represented as a "negative cost" in the year 2049."*[14]

In Midgard's opinion, it is inappropriate to make optimistic asset retirement assumptions in a planning exercise, just as utility operators often make decisions to keep the lights on in real time which would be inappropriate for planners to assume when developing long-term integrated resource plans. And although the condition of individual assets or asset portfolios is an important consideration in planning short term (one to five year) asset renewal programs for revenue requirement applications, asset condition is seldom a primary consideration in preparing resource and system development plans for planning horizons that extend beyond the expected service lives of many existing assets.

4 Integration of Renewables

The Board stated:

> *"The Board believes that more could and should be done by Hydro to ensure the development of alternatives which are more consistent with community and government objectives in this developing area. While the proposed Project would increase the potential for renewable generation, the evidence does not show that this increase would be of value given the unused potential now available and the lack of a plan or timeline for the addition of renewable generation."*[15]

At the time of preparing its IRP, Midgard understood that Hydro was open and amenable to entering into supply agreements in partnership with Indigenous and community organizations provided the contracted energy cost was below its marginal cost of diesel generation. We are advised that this policy remains in effect today.

Midgard discussed this approach in Section 6.1.2 of its IRP. Midgard noted:

> *From the perspective of this IRP, the second approach has been assumed for the following reasons:*
>
> 1. *This is the status quo approach – NLH has systems in place to utilize this approach.*
> 2. *This approach insulates NLH from development risks and costs – Small independent development entities are more suited to small scale renewable development than are large, regulated utilities.*
> 3. *Current Federal incentives and financial supports may enhance cost competitiveness of developments by specified groups wishing to undertake these projects.*
> 4. *Pursuing a policy of issuing PPA's to local developers and Indigenous groups aligns with NLH's policy goals of community and Indigenous engagement.*[16]

[14] Reference: P0643-D026-RPT-R00-EXT - Integrated Resource Plan, page 75, lines 6-10

[15] Reference: Order No. P.U. 12(2025), page 28, lines 11-16.

[16] Reference: P0643-D026-RPT-R00-EXT - Integrated Resource Plan, page 63, lines 24-27 and page 64, lines 1-4

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In terms of the enhanced support for renewable development derived from the 25 kV interconnection and regional diesel plant, the following was noted in the IRP:

1. The non-coincident community load profiles as shown in Figure 3 of the IRP allow for a more levelized load. If combined, an increased minimum monthly demand will allow for higher installed capacity of renewable projects without requiring either a) the renewable projects be subject to dispatch down during light loads, or b) requiring Hydro to enter into a take or pay agreement and pay for power it does not need to serve loads during light load periods.
2. Minimum turn-down and operational constraints for a hybrid diesel system are ameliorated for a larger system, as discussed in conclusion #8 in Section 9 of the IRP.

The bottom line is that diesel generation will be needed to provide dependable capacity and reliable service to the South Labrador Coast communities in all alternatives. The LIS option would require 100% (N-1) diesel backup. Wind and/or solar resources, even if combined with battery backup, still need 100% (N-1) diesel backup to provide reliable service through extended periods of low renewable production. Even large storage Hydro projects typically need diesel backup when serving isolated communities – for example, the Ocean Falls hydro plant provides service to Bella Bella, BC, but BC Hydro still maintains N-1 diesel backup to serve the community for loss of hydro supply.

Diesel gensets are ubiquitous in Canada's isolated communities as noted in Figure 2 of the IRP[17], not because everyone wants to use diesel or doesn't care about emissions, but because it is the most economically feasible technology to provide reliable electric service in these locations. High penetration levels of inverter-based resources ("IBRs") such as battery, solar and asynchronous wind resources can pose system stability and frequency control problems for both large, interconnected grids and small isolated communities, due to both the lack of rotating inertia and the interaction complexity of IBR control systems from different manufacturers.

5 Interconnection to the Labrador Integrated System

The Board identifies that:

> *"It was not clear whether the construction of a regional diesel generating station would be necessary following transmission line construction and whether the continuation of the community diesel generating stations was studied."*[18]

Midgard also notes that even entirely removing the cost of the regional diesel generating station from the LIS option would not change the relative ranking of the LIS option due to its significant upfront capital cost. Based on the original 2023 financial model the Net Present Cost of the LIS alternative would be $266 million, more than $100 million (2023) higher than the preferred alternative. Being based on a proposed single radial

[17] Reference: P0643-D026-RPT-R00-EXT - Integrated Resource Plan, page 30, line 4

[18] Reference: Order No. P.U. 12(2025), page 22, lines 26 - 28

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interconnecting line between the LIS and the communities' microgrid, this option would not, in Midgard's opinion, provide service reliability consistent with Hydro's mandate, and consistent with good utility practice.

The Board comments in its decision that *"there was little discussion of transmission line design, for example whether 138 kV or 69 kV construction was required."*[19] As noted in the IRP, Midgard did not develop its own estimate for the LIS interconnection costs, instead utilizing cost estimates extracted from an existing report by Hatch that evaluated LIS interconnection options [20]. The Hatch report included estimated costs to construct 300 km of new 138 kV transmission from Happy Valley/Goose Bay to Muskrat Falls junction, a 138 kV to 69 kV substation at Muskrat Falls Junction, 115 km of 69 kV from Muskrat Falls Junction to Port Hope Simpson and a new 69 kV to 25 kV substation at Port Hope Simpson, at which point the LIS would be connected to the South Labrador Coast 25 kV microgrid [21]. Midgard considered the associated cost estimates (escalated to account for inflation) to be adequate for the purposes of ranking IRP options and did not attempt to optimize this configuration further (for example, by upgrading the 69 kV segment from Muskrat Falls Jct. to Port Hope Simpson to 138 kV, and eliminating the Muskrat Falls Jct. substation), as the associated estimate reduction would not have changed the evaluation outcome. Midgard also notes that transmission costs in Canada have been escalating faster than CPI inflation over the past 5 years due to (among other drivers) COVID-19 pandemic-driven disruptions in the global supply chain and an ongoing global transformer shortage. However, an increased cost estimate for the LIS interconnection option would not change the ultimate IRP option recommendation, since the LIS option was already eliminated early due to its very high capital costs.

In the specific case of the LIS option evaluated in the IRP, the present value of the option is so far out of the money that estimate accuracy is not a material factor. Midgard also notes that both the recommended option and the LIS option share substantial common costs, since all the communities must be connected into a micro-grid to enable either option, and a reliable source of capacity (which practically means diesel generation) must be made available for either option, since service to the communities must be maintained during LIS interconnection outages. The main difference between the recommended option and the LIS option is the net present value of diesel fuel vs. constructing 400 km of new transmission and the associated new substations.

In Midgard's opinion, the accuracy of the prior engineering estimates that were available to evaluate the costs of the LIS interconnection option in preparing the South Labrador Coast IRP was appropriate and typical of project cost accuracy normally used in such studies.

[19] Reference: Order No. P.U. 12(2025), page 22, lines 29 & 30

[20] Reference: Labrador Interconnection Options Study Final Report H-362861-00000-200-066-0001, Hatch Ltd., November 10, 2020

[21] Note: Other facility costs in the Hatch report that were not relevant to the IRP evaluation were not used.

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All of which is respectfully submitted,

Sincerely,

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