



NEWFOUNDLAND AND LABRADOR
BOARD OF COMMISSIONERS OF PUBLIC UTILITIES

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2023-06-20

Shirley Walsh
Senior Legal Counsel, Regulatory
Newfoundland and Labrador Hydro
P.O. Box 12400
Hydro Place, Columbus Drive
St. John's, NL A1B 4K7

Dear Ms. Walsh:

**Re: Newfoundland and Labrador Hydro - 2021 Capital Budget Supplemental Application
Approval of the Construction of Hydro's Long-term Supply Plan for Southern Labrador -
Revision 1 - Requests for Information**

Enclosed are Requests for Information PUB-NLH-051 to PUB-NLH-090 regarding the above- noted application.

If you have any questions, please do not hesitate to contact the Board Legal Counsel, Ms. Jacqui Glynn, by email jglynn@pub.nl.ca or by telephone 709-726-6781.

Yours truly,

Cheryl Blundon
Board Secretary

CB/cj

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1 **IN THE MATTER OF**
2 the **Electrical Power Control Act, 1994**,
3 SNL 1994, Chapter E-5.1 (the “**EPCA**”)
4 and the **Public Utilities Act**, RSNL 1990,
5 Chapter P-47 (the “**Act**”), as amended,
6 and regulations thereunder; and
7
8 **IN THE MATTER OF** an application by
9 Newfoundland and Labrador Hydro for an
10 order approving the construction of Hydro’s
11 long-term supply plan for southern Labrador,
12 pursuant to section 41(3) of the **Act**.

**PUBLIC UTILITIES BOARD
REQUESTS FOR INFORMATION**

PUB-NLH-051 to PUB-NLH-090

Issued: June 20, 2023

1 **General**

2

3 **PUB-NLH-051** Hydro's proposed project is scheduled to be completed in the second half of
4 2027. Is Hydro recommending that the current arrangement in place for the
5 supply of power to Charlottetown remain as is until 2027? If so, please detail
6 the risks of doing so and the actions Hydro plans to mitigate them. If not,
7 please detail Hydro's plans until such time as Hydro's proposed project is
8 completed.

9

10 **PUB-NLH-052** Please provide a listing of all meetings held with stakeholders since April 7,
11 2022, including attendees present, dates, and associated meeting minutes
12 as well as all correspondence with stakeholders including the provincial and
13 federal governments.

14

15 **PUB-NLH-053** Hydro has stated that its proposed solution will increase the amount of
16 renewable power that can be integrated into the southern Labrador system.
17 (a) Please confirm that the interconnection of the communities, without a
18 localized diesel generating plant, would increase the amount of
19 renewable power that can be integrated into the southern Labrador
20 system.
21 (b) Is Hydro able to provide details on the amount of renewable
22 penetration that could be attributable to the interconnection of the
23 communities versus the consolidation of the localized diesel
24 generating plants into one centralized diesel generating plant? If yes,
25 please provide the analysis. If no, please explain.

26

27 **PUB-NLH-054** Please provide a breakdown of the costs of a centralized diesel generating
28 station in Port Hope Simpson?

29

30 **PUB-NLH-055** Please provide a breakdown of the costs of the interconnection of the
31 communities?

32

33 **Long-Term Supply for Southern Labrador – Revision 1 - Schedule 2 - Long-Term Supply for**
34 **Southern Labrador - Evidence Supporting the Revised Application**

35

36 **PUB-NLH-056** Hydro states, page 12, lines 7-9, that the incremental cost of an extra engine
37 bay to accommodate N-2 redundancy is approximately \$700,000, however
38 paragraph 17 of the application references an approximate incremental cost
39 of \$500,000. Please reconcile.

40

41 **PUB-NLH-057** Please confirm that the central diesel generating plant will have four
42 gensets: two 1800 kW, one 1500 kW, and one 1200 kW. If not able to
43 confirm, please detail the number and size of gensets to be installed as part
44 of this proposed project.

45

- 1 **PUB-NLH-058** Further to PUB-NLH-057 what are the roles and costs associated with the
2 two additional bays given that (i) the four diesel gensets provide the required
3 N-1 redundancy and (ii) all forecasted load growth has been accounted for
4 within the firm capacity of the fours gensets?
5
- 6 **PUB-NLH-059** Reference page 8, lines 4-8.
7 a) Please provide copies of any communication from the Government of
8 Canada acknowledging that available technologies do not enable the
9 transition to fully renewable power systems in isolated communities
10 and indicating that these systems may be exempt from the Clean
11 Electricity Regulations standards.
12 b) Please detail the anticipated CO₂-related costs to Hydro arising from
13 this proposed project in the event that isolated communities
14 associated with this project are not exempt from the Clean Electricity
15 Regulations.
16
- 17 **PUB-NLH-060** Page 10, lines 8-9, states “Hydro will continue to work with community
18 stakeholders to explore the use of alternative fuels, such as wood heat, to
19 offset electricity usage on isolated systems.” Please provide the details of
20 this work including any analysis/reports completed to date and an expected
21 date of any final analysis.
22
- 23 **PUB-NLH-061** In footnote 18, page 14, Hydro noted that the insurance claim related to the
24 2019 fire at the Charlottetown diesel generating station is ongoing and
25 should the claim result in a payment to Hydro, it will be applied to reduce
26 the revenue requirement associated with this project.
27
28 In footnote 3, page 1 of Appendix A “Capital Expenditure and Carryover
29 Report for the Year Ended December 31, 2021”, Hydro noted that as per
30 Board Order No. P.U. 13(2012), insurance proceeds are offset against the
31 cost of the capital asset and as a reduction of the rate base value of assets.
32 Hydro also noted that in 2021 it reached a settlement on the Charlottetown
33 Diesel Generating Station fire for \$4.5 million, and that \$3.6 million will be
34 applied against the planned expenditures in Labrador South.
35 a) Please reconcile the two footnotes noted above and confirm whether
36 Hydro has received the insurance proceeds related to the 2019 fire and
37 the amount received.
38 b) Please explain why Hydro has determined that the proceeds from the
39 insurance claim will be applied against the revenue requirement
40 associated with this project and not against the capital cost of the
41 project.
42
- 43 **PUB-NLH-062** Please provide a chart similar to Chart 2 on page 15, and an accompanying
44 table, showing the incremental revenue requirements for every year up to
45 2050.

- 1 **PUB-NLH-063** Please explain Hydro’s plans for its current gensets in Mary’s Harbour and
2 St. Lewis after 2027 when the proposed project is completed?
3
- 4 **PUB-NLH-064** What is the estimated 2027 net book value of the gensets in Mary’s Harbour
5 and St. Lewis?
6
- 7 **PUB-NLH-065** Hydro noted on page 7 that “unplanned deterioration of the plant at MSH
8 necessitates material capital spending to extend the life of that facility
9 through to 2030.”
10 (a) Please provide details of the work required to be completed at the
11 Mary’s Harbour diesel generating station to extend the life of that
12 facility to 2030 as well as a breakdown of the anticipated capital
13 costs.
14 (b) Does the Mary’s Harbour facility require the same, or any, material
15 capital spending to extend the life of the facility to 2027? Please
16 provide details.
17
- 18 **PUB-NLH-066** Chart 1 on page 13 outlines the cost changes from the original July 2021
19 application when compared to the current application.
20 (a) Please provide a breakdown of the \$14.1 million escalation costs.
21 (b) Please provide a breakdown of the \$22.4 million additional
22 distribution costs noting any increases from the costs identified in the
23 original July 2021 application.
24
- 25 **PUB-NLH-067** Reference page 18, lines 23-25. Please detail the reasons that Hydro is of the
26 opinion that that this project meets its mandate in an environmentally
27 responsible manner.
28
- 29 **Midgard Consulting March 28, 2023 Report - Southern Labrador Communities – Integrated**
30 **Resource Plan**
31
- 32 **PUB-NLH-068** The Board’s correspondence to Hydro dated April 7, 2022 stated that “The
33 information to be provided should include analysis with respect to reliability,
34 including the potential need for back-up generation, and the timing and
35 costs of replacing or removing the existing diesel generating stations.” The
36 Midgard Consulting report uses the same diesel generating station
37 retirement dates as Hydro used in its original application in July 2021.
38 (a) Did Midgard perform its own independent analysis as to the
39 appropriateness of these retirement dates? If so, please provide the
40 analysis. If not, please explain.
41 (b) Did Midgard conduct analysis on the considerations and risks
42 associated with not having local backup in the individual communities?
43 If so, please provide the analysis. If not, please explain.
44
- 45 **PUB-NLH-069** Midgard’ Report, page 90 of 103, Conclusion 3 states that “Use of diesel
46 gensets to provide dependable capacity to remote isolated loads remains

- 1 consistent with other like jurisdictions across Canada.” Please provide a list,
 2 including descriptions of the projects, of the utilities in Canada that are
 3 currently planning to install diesel generating plants in new locations or
 4 have done so in the past five years.
 5
- 6 **PUB-NLH-070** The St. Lewis (2006), Port Hope Simpson (1995), and Mary’s Harbour (1994)
 7 diesel generating stations were three of the last seven most recently
 8 constructed diesel generation stations in Hydro’s system of 23 such stations.
 9 a) Is it possible for Hydro to extend the operational lives of the diesel
 10 generating stations to 50 years rather than the approximate 40 years
 11 used in Hydro’s current analysis? If yes, please detail the necessary
 12 work and cost to do so. If not, please explain.
 13 b) Please provide the net present cost of all alternatives assuming that
 14 diesel generating station replacements were delayed until the diesel
 15 generating stations were in operation for 50 years.
 16
- 17 **PUB-NLH-071** Page 5 of 103, line 27, states that Midgard’s preferred approach has a net
 18 present cost that is \$5 million less than the phased approach proposed by
 19 Hydro. Please detail the reasons for the lower net present cost estimate by
 20 Midgard.
 21
- 22 **PUB-NLH-072** Please provide the summer and winter peak loads for each of the impacted
 23 southern Labrador communities for the past 10 years as well as the current
 24 forecast peaks for the next 10 years.
 25
- 26 **PUB-NLH-073** Table 35, page 84 of 103, shows that Midgard’s Scenario H (Hydro’s
 27 Alternative 4: Interconnection to Labrador Interconnected system) as being
 28 ranked last among the various scenarios and sub-variants that Midgard
 29 analysed over a 25-year study period.
 30 a) How long a study period would be required in order for Midgard’s
 31 Scenario H to be ranked first? Please provide the analysis and highlight
 32 any significant cost or savings milestones over the life of the study
 33 period.
 34 b) In the event that it is determined that Midgard’s Scenario H could
 35 never be ranked first irrespective of timeframe, please detail the
 36 primary reasons.
 37
- 38 **PUB-NLH-074** Page 39 of 103 states that “Note that both MSH and CHT have mobile
 39 gensets, which should not be used to calculate firm capacity as these are not
 40 intended for long term use.”
 41 a) Please provide and explain Hydro’s position on whether mobile
 42 gensets should be used to calculate firm capacity, including whether
 43 Hydro has at any time included mobile gensets in its firm capacity
 44 calculation.
 45 b) Is not including mobile generation as firm power consistent with
 46 industry practice. If so, please provide examples.

- 1 c) Does Hydro have concerns related to stranded assets in the event non-
 2 mobile gensets are installed to service the commercial peak load which
 3 may potentially be reduced or eliminated? Please explain.
 4 d) Please detail the costs associated with converting a mobile diesel
 5 genset in southern Labrador to a unit that Hydro considers capable of
 6 providing firm power.
 7 e) Does Hydro's decision to view mobile generators as being a source of
 8 non-firm power impact their future deployment viability within
 9 Hydro's service territory? If so, please detail. If not, please explain.
 10
- 11 **PUB-NLH-075** Did Hydro consider assigning a forced outage rate ("FOR") for the mobile
 12 generators rather than assuming that they would be unavailable 100% of the
 13 time? If so, please detail the reasons for not assigning a FOR within the
 14 analyses. If not, please explain.
 15
- 16 **PUB-NLH-076** Further to PUB-NLH-075, would the assignment of a 25% FOR with respect
 17 to the mobile generators have impacted any of Midgard's or Hydro's
 18 recommendations/conclusions? Please explain and provide any associated
 19 analysis.
 20
- 21 **PUB-NLH-077** Page 40 of 103, lines 26-27, state that "If all six communities are
 22 interconnected into a single system, there would only need to be one fully
 23 redundant unit available on the system." Is this the case if there is no
 24 centralized diesel generating station? If not, please identify the communities
 25 where the redundant units would be located, the size of the redundant units
 26 as well as the anticipated cost associated with the redundant units.
 27
- 28 **PUB-NLH-078** Midgard's IRP Scenario G on page 74 of 103 includes a regional diesel plant
 29 to provide backup in the event of a transmission outage from Site 8C to the
 30 newly interconnected Southern Labrador system; a distance of
 31 approximately 10 kilometres according to the original July 2021 application
 32 (Long-Term Supply Study for Southern Labrador: Economic & Technical
 33 Assessment, Figure 2, page 8).
 34 a) Please cost and evaluate this scenario without a regional diesel plant
 35 to provide backup.
 36 b) Hydro's proposed solution (Midgard's IRP Scenario C) involves no local
 37 backup in any of the communities yet the distances involved are
 38 significantly longer than the distance from Site 8C to the Southern
 39 Labrador interconnection (e.g., distance from Port Hope Simpson to
 40 St. Lewis is approximately 50 kilometres). Please explain why Midgard
 41 determined it was necessary to include backup generation in its
 42 analysis whereas Hydro concluded that the deployment of a mobile
 43 generator in combination with a mobile/skid-mounted 4/25 kV
 44 generator step-up transformer was sufficient to serve as backup
 45 generation for all interconnected communities within its proposed
 46 solution.

- 1 c) Please detail Hydro’s emergency response plan for each community in
2 the event of an extended outage on the distribution line
3 interconnecting the communities including the location where the
4 mobile generator and skid-mounted step-up transformer would be
5 located when not deployed for emergency purposes.
- 6 d) Would Hydro re-evaluate its no-local-backup-generation view for its
7 proposed solution if one or more of the communities was
8 disconnected from the interconnected Southern Labrador grid without
9 access to a mobile generator step-up transformer for several days
10 during a winter season? Please explain.
- 11 e) Please cost and evaluate Midgard’s Scenario C with the assumption
12 that local backup generation is present in each community.
- 13
- 14 **PUB-NLH-079** Page 76, lines 14-15, states that most of the capital costs used in Midgard’s
15 analyses were derived from cost estimates that were previously prepared by
16 Hydro and then escalated to 2023 dollars. Please identify the capital costs
17 for which previous Hydro estimates were not available and detail how
18 Midgard incorporated them into the overall cost of the project.
- 19
- 20 **PUB-NLH-080** Table 28, page 78 of 103, outlines the partial and full station
21 decommissioning costs. Please outline the difference(s) between partial
22 station decommissioning and full station decommissioning.
- 23
- 24 **PUB-NLH-081** Table 35, page 84 of 103, displays the overall final ranking of all scenarios
25 and sub-variants.
- 26 a) Please provide, in both tabular and graphical format with both formats
27 identifying when capacity and/or energy including renewables are
28 added, the net present cost for each of the 28 scenarios for every year
29 of the study period.
- 30 b) Were the energy and capacity differences in the scenarios and sub-
31 variants reconciled/made equal at the end of the study period. If so,
32 please explain the process. If not, please explain why.
- 33 c) Please explain why a 25-year study period was determined to be the
34 most appropriate timeframe.
- 35 d) Please provide similar analyses assuming a study period of 30, 40, and
36 50 years.
- 37
- 38 **PUB-NLH-082** Table 37, page 88 of 103, provides a sensitivity analysis for various factors.
39 Item 5 provides a sensitivity analysis in the event that ‘Diesel Plant Capital
40 Cost’ increases from \$19 million per plant to \$129 million per plant.
- 41 a) Would Hydro consider replacing either of the diesel generating stations
42 in southern Labrador at a cost of \$129 million per plant? Please explain.
- 43 b) Please provide the results for Item 5 in the event that “Diesel Plant
44 Capital Cost’ was \$3 million per plant rather than \$19 million.

- 1 **PUB-NLH-083** Please provide a status update on any discussions or negotiations that Hydro
2 has had with companies or groups relating to integrating renewable energy
3 sources into the southern Labrador system.
4
- 5 **PUB-NLH-084** Please provide a status update of current and potential power purchase
6 agreements available to supply power to remote communities.
7
- 8 **PUB-NLH-085** Please detail how, if at all, the recently introduced 15% Clean Electricity
9 Investment Tax Credit and the Canada Infrastructure Bank's Indigenous
10 Community Infrastructure Initiative, both of which are meant to encourage
11 the development of renewable power, impact Hydro's view on the potential
12 development of Site 8C?
13
- 14 **Technical Note RP-TN-051: Southern Labrador - Interconnection without Regional Diesel Plant**
15
- 16 **PUB-NLH-086** Table 7, page 6 of 8, provides a cost-benefit analyses of alternatives including
17 one that would interconnect the communities without the construction of a
18 central diesel generating plant and no replacement for the Charlottetown
19 diesel generating station. Table 8, page 7 of 8, provides a similar analysis
20 with a 50% reduction in the costs associated with diesel generating station
21 replacement. Please provide, in both tabular and graphical format, the
22 Cumulative Net Present Value for each alternative examined in Table 7 and
23 Table 8 for every year of the study period.
24
- 25 **PUB-NLH-087** Footnote 11, page 5 of 8, derives the \$34.5 million estimate for the
26 interconnection costs of Alternative 6 as being 54% of the estimated total
27 cost of Alternative 3B (i.e., \$63.9 million). Please detail how the 54% figure
28 was determined.
29
- 30 **PUB-NLH-088** Section 4.1, page 5 of 8, identifies the requirement to implement a control
31 system capable of managing the operation of the interconnected diesel
32 plants.
33 a) Please provide details on how the control system would operate.
34 b) Please provide a cost estimate to implement the control system.
35
- 36 **Technical Note RP-TN-054: Southern Labrador – Full Interconnection – Delayed Regional Plant**
37
- 38 **PUB-NLH-089** Section 3.3 (Auxiliary Diesel Plant Capacity), pages 4-5, outlines various
39 upgrades to each of the Mary's Harbour, Port Hope Simpson, and St. Lewis
40 diesel generating stations that Hydro states need to be completed to
41 facilitate the station to operate at full capacity. Does Alternative 6 which was
42 evaluated in Technical Note RP-TN-051 require the same upgrades to the
43 diesel generating stations? If no, please explain. If yes, please explain why
44 were they not included in the Technical Note RP-TN-051 analysis?
45

- 1 **PUB-NLH-090** Please provide, in both tabular and graphical format, the Cumulative Net
- 2 Present Value for each alternative examined in Table 11, Table 12, and Table
- 3 13 for every year of the study period.

DATED at St. John's, Newfoundland and Labrador, this 20th day of June, 2023.

BOARD OF COMMISSIONERS OF PUBLIC UTILITIES

Per



Cheryl Blundon
Board Secretary