July 14, 2021

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

Dear Ms. Blundon:

Re: Newfoundland and Labrador Hydro – Application for Approvals Required to Execute Programming Identified in the Electrification, Conservation and Demand Management Plan 2021-2025

Further to the above-noted matter, please find enclosed the Island Industrial Customers Group's Requests for Information numberedIIC-NLH-001 to IIC-NLH-036.

We trust you will find this to be in order.

Yours very truly,

Denis J. Fleming

DJF/js
Encl.

c.c. <u>Newfoundland and Labrador Hydro</u>
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<u>Newfoundland Power Inc.</u>
NP Regulatory
Kelly Hopkins
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IN THE MATTER OF the *Electrical Power Control Act*, R.S.N.L. 1994, Chapter E-5.1 (the "*EPCA*") and the *Public Utilities Act*, R.S.N.L. 1990, Chapter P-47 (the "*Act*"), as amended, and regulations thereunder;

AND IN THE MATTER OF an application by Newfoundland and Labrador Hydro ("Hydro"), pursuant to Sections 58, 71 and 80 of the *Act*, for the approval of an economic test and deferral of Electrification, Conservation and Demand Management ("ECDM") program costs in the proposed ECDM Cost Deferral Account for future recovery through the proposed ECDM Cost Recovery Adjustment;

AND IN THE MATTER OF an application by Hydro, pursuant to Section 41(3) of the *Act*, for the approval of supplemental 2021 capital expenditures related to the construction of an electric vehicle ("EV") charging network.

REQUESTS FOR INFORMATION OF THE ISLAND INDUSTRIAL CUSTOMERS GROUP

IIC-NLH-001 to IIC-NLH-036

Issued July 14, 2021

IIC-NLH-001 Hydro's June 16, 2021 cover letter notes that the Application seeks "*approvals required for the execution of programming identified in the Electrification, Conservation and Demand Management ("ECDM") Plan 2021–2025 ("2021 Plan").*"

On Application page 5, Part F, Paragraph 22 Hydro notes that it requests that the Board make an Order as follows:

(i) Approving the economic evaluation of customer electrification programs by use of an mTRC test;

(ii) *Approval, pursuant to Sections 58 and 80 of the Act, of the ECDM Cost Deferral Account to provide for the deferral of costs related to the implementation of Hydro's ECDM programs for all systems, including CDM programs for the Labrador Interconnected System;*

(iii) *Approval, pursuant to Section 71 of the Act, of the ECDM Cost Recovery Adjustment to provide for recovery of costs charged to the ECDM Cost Deferral Account; and*

(iv) *Pursuant to Section 41(3) of the Act, supplemental 2021 capital expenditures associated with the expansion of Hydro's EV charging network.*

Please clarify the scope of approvals sought by Hydro by this Application. In particular, with the exception of the capital expenditures associated with the expansion of the EV charging network specified in the Application, none of the four requested approvals above appear to seek approval for capital expenditures or recovery of costs for other ECDM programs as outlined in Schedule 3 Electrification, Conservation and Demand Management Plan 2021-2025. If Hydro does intend that approvals sought by this Application include present or future recovery of costs other than the capital expenditures associated with the expansion of the EV charging network specified in the Application, please clarify which other ECDM programs, at what cost, and over what period, Hydro is seeking approval to by this Application. If Hydro does not consider that approvals sought by Application to include present or future recovery of costs other than the capital expenditures associated with the expansion of the EV charging network specified in the Application, please clarify by what future processes does Hydro contemplate seeking approval for other ECDM programs as outlined in Schedule 3 Electrification, Conservation and Demand Management Plan 2021-2025. If Hydro believes previous Board orders to be relevant to its response to the foregoing, please specify each such Board order and specific Board approvals given by those orders which Hydro believes to be of relevance.

IIC-NLH-002

On page 2 of the Application [paragraph 5] Hydro notes "*[i]n consultation with the provincial government, the Utilities have developed a comprehensive and coordinated plan for the delivery of customer CDM and electrification programs for the period of 2021-2025 ("2021 Plan"). The 2021 Plan is included with this application as Schedule 3.*"

Is Hydro requesting the Board to review and approve the 2021 Plan? If so, please indicate the scope and scale of activities expected to be authorized by this approval (i.e., is it all programs noted through 2025).

IIC-NLH-003

On page 2 of the Application [paragraph 6] Hydro notes that the 2021 Plan "*continues longstanding, cost-effective customer CDM programs. These programs will generally be delivered in a manner consistent with past orders of the Board, as outlined in Paragraph 3 of this application. However, in addition, Hydro is seeking recovery of CDM program costs relating to the Labrador Interconnected System.*" [underlining added]

Does the statement by Hydro mean the program costs included in the 2021 Plan have already been reviewed and approved by the Board "in past orders of the Board, as outlined in Paragraph 3"?

IIC-NLH-004

On page 3 of the Application [paragraph 7] Hydro notes that the 2021 Plan "*includes the following electrification programs for the Island Interconnected System* [underlining added]:

(i) Programs to promote use of EV and electrification of other end uses;

(ii) Customer education and research relating to the electrification of end uses, including transportation electrification; and

(iii) Utility investment in EV charging infrastructure.

On page 4 [paragraph 14] Hydro notes that the "*application requests that the Board approve the revisions to Hydro's CDM Cost Deferral Account to allow deferral of costs associated with the delivery of the electrification programs on the Island Interconnected System and the deferral of CDM costs incurred for customers on the Labrador Interconnected System.*"

a) Please confirm that the only capital costs incurred for the electrification program are those associated with the EV charging stations, and any other ECDM activities do not involve investment in new capital?

b) With respect to the EV capital investment, the PUB has previously found that EV charging services are not public utility investments (P.U. 27 (2020)). Why is Hydro not making this investment on the basis that the costs of the EV network will be recovered from the users who charge at the noted charging stations, as a non-regulated service?

c) Hydro indicated (Schedule 1, page 6) that it will credit revenues from charging services against the program costs. If these revenues serve to offset costs that are otherwise proposed to be paid by regulated customers, how are these charges not a rate that must be considered by the Board?

d) Please provide a full schedule of the revenues anticipated, by year, including the rate charged for the services, how this rate was established, how the rate is anticipated to change over time and why a full cost recovery rate was not implemented.

IIC-NLH-005

On page 3 of the Application [paragraph 8] Hydro notes that "*the mTRC test is consistent with sound utility practice and tests previously approved by the Board for customer CDM programs*" and that "*Consistent with the TRC test, a result of 1.0 or greater indicates that a program is cost-effective from both a customer and a utility perspective.*" (Schedule 1, page 2)

a) Please provide all inputs used to calculate an mTRC ratio and indicate the basis for Hydro's derivation of those values (e.g., how does Hydro estimate the customer benefits of owning an EV, or other energy efficiency improvement?).

b) Please confirm that an mTRC test does not in fact calculate whether the measure is beneficial for the customer and for the utility individually, but only whether the measure is beneficial for the customer and utility collectively? Specifically, confirm that a program that had exceptionally good customer cost profile, but poor utility economics could still pass with an mTRC of above 1.0 (or even 2.0).

c) For each TRC and mTRC quoted, please also provide the metrics for utility economic perspective (PACT), for participating customers (PCT) and for ratepayers overall including non-participants (RIM) (e.g., for Schedule L, Table L-6 and L-7).

d) Please confirm that programs which have a positive mTRC will not necessarily lead to lower rates for non-participants in any given year, or even in all future years. If not confirmed, please provide a detail description supporting the answer, including calculations.

IIC-NLH-006 Please indicate how the Island Interconnected System capital costs in Table 2 [$1.810 million] in Schedule 1 of the Application reconciles to Table 1 [$1.054 million]?

IIC-NLH-007 Please provide the underlining assumptions for incremental revenues (including whether the baseline forecast or high forecast was used for number of EVs, energy/demand sales, rates and marginal costs) and incremental system costs by year used in Appendix A of Schedule 1.

IIC-NLH-008 Please explain why Isolated Diesel System costs are proposed to be included in the modified Electrification, Conservation and Demand Management Cost Deferral Account [Schedule 1, Appendix B] but no recovery mechanism was provided.

IIC-NLH-009 Hydro is proposing to add the following sentence to the Electrification, Conservation and Demand Management Cost Deferral Account [Schedule 1, Appendix B] "*as well as operating and maintenance costs associated with Hydro-owned electric vehicle charging stations on the Island Interconnected System.*" How is Hydro proposing that operating and maintenance costs be separated between utility general costs and costs to be charged to the deferral account [for example, billing clerk salaries, etc.]. Also, does "operating and maintenance costs" for EV charging stations include the retail value of the power consumed? If not, why not? If yes, please indicate the assumed power rates used in the analysis.

IIC-NLH-010 On page 1 of the Electrification, Conservation and Demand Management Plan 2021–2025 [Schedule 3] it is noted that the electrification programs are forecast to increase energy usage by 47.1 GWh over the duration of the 2021 Plan. How much of this is related to the (i) energy use at the EV charging stations themselves, (ii) energy use away from the charging stations by EVs that are assumed to be purchased as a result of the presence of Hydro's charging stations, (iii) other EV programs run by Hydro (if any)? Does the estimate for EV charging stations reconcile to the incremental revenue estimate in Appendix A of Schedule 1?

IIC-NLH-011 On page 1 of the Electrification, Conservation and Demand Management Plan 2021–2025 [Schedule 3] it is noted that over the duration of the 2021 Plan "*CDM programs are forecast to provide energy savings of 1,610 GWh and 82 MW in peak demand reduction. Combined, these energy savings and peak demand reductions are forecast to lower system costs by approximately $113 million.*"

How is this consistent with the rate mitigation options related to the Muskrat Falls Project, which sought to maximize domestic load in order to increase revenues to offset Muskrat Falls Project costs?

IIC-NLH-012 How much of the 1,610 GWh energy savings are during peak hours (e.g., hours with peak loads within 5% of the highest projected hour)?

IIC-NLH-013 Is 1,610 GWh the total savings for 2021-2025 years? If yes, please provide savings by year and by program showing energy savings during peak period and non-peak period.

IIC-NLH-014	Please explain and provide a detailed calculation by demand versus energy and by program of what is included in $113 million system cost reductions (Schedule 3, page 1).
IIC-NLH-015	Please indicate the estimated revenue loss from the 1,610 GWh of lost sales and estimated total impact to the revenue requirements and rates [revenue loss less cost savings].
IIC-NLH-016	On page 2 of the Electrification, Conservation and Demand Management Plan 2021–2025 [Schedule 3] it is noted that "*System costs have been reduced by $142 million since 2009*" as a result of the CDM programs. Are these all fuel costs related to 985.8 GWh estimated energy savings noted on the same page? If not, please provide details.
IIC-NLH-017	Further to IIC-NLH-16, please estimate the revenue loss related to the 985.8 GWh energy savings.
IIC-NLH-018	On page 6 of the Electrification, Conservation and Demand Management Plan 2021–2025 [Schedule 3] Hydro notes approximately 41,000 EVs on the road and 266 GWh increase in sales [or 6,488 kWh/EV] under baseline compared to 145,000 EVs and 720 GWh sales under upper scenario [or 4,966 kWh/EV].
	Why is there a 30% difference in average usage per EV under the baseline versus upper scenario?
IIC-NLH-019	Further to IIC-NLH-18, please explain if the noted EV sales assumptions require additional charging stations or other infrastructure. If yes, please detail the cost and timeframe for the additional charging stations or infrastructure and confirm who will be responsible for the costs?

IIC-NLH-020 Appendix A of Schedule 1 shows no further capital costs after the year 2024. Does this confirm that the utility customers will not be responsible for any additional charging stations after 2024?

IIC-NLH-021 On page 6 of the Electrification, Conservation and Demand Management Plan 2021–2025 [Schedule 3] Hydro provides "*the baseline scenario forecasts EV adoption without any additional utility intervention*". The expectation is that 10% of annual vehicle sales in 2034 will be EV without the noted program (baseline scenario), and 40% will be EV with the program (upper scenario). Footnote 12 indicates a federal target of 100% EV in 2040.

a) Given the Federal Government has now mandated 100% EV sales by 2035, please provide an update to the penetration at 2034 baseline scenario and upper scenario.

b) Please update Figure 1 for the new Federal Mandates.

c) Please recalculate the mTRC, PACT, PCT and RIM associated with the EV program, as well as the estimate of energy sales, given the new Federal mandates and the impact these will have on uptake.

IIC-NLH-022 Page 6 of the Electrification, Conservation and Demand Management Plan 2021–2025 [Schedule 3] notes that under the baseline scenario the forecast increase in retail electricity sales would be 266 GW.h and under the upper scenario the forecast increase in retail electricity sales would be 720 GW.h. Are the added peak demands during peak periods for these two scenarios 106 MW [Schedule C, page 101 or page 135 of 325] and 281 MW [Schedule C, page 113 or page 147 of 325] respectively?

IIC-NLH-023 Further to IIC-NLH-22, please confirm if the NPV analysis in Appendix A of Schedule 1 uses EV peak scenarios at 106 MW and 281 MW for lower and upper scenarios. If confirmed, please explain how the negative NPV shown in Table 1 on page 10 of Schedule 3 reconciles to the positive NPV in Appendix A of Schedule 1. If not confirmed, please explain which peak numbers were used to achieve positive NPV in Appendix A of Schedule 1.

IIC-NLH-024 Figure 3 in Schedule 3 shows three scenarios for electricity consumption in the province. Footnote 18 on page 9 of Schedule 3 notes that "in 2034, the baseline is 9,895 GWh. In the upper scenario, the forecast energy consumption is 9,131 GWh. 9,895 GWh - 9,131 GWh = 764 GWh in the upper scenario. Likewise, in the lower scenario, the forecast energy consumption is 9,555 GWh. 9,895 GWh - 9,555 GWh = 340 GWh.

How do the EV sales forecast scenarios interact with Figure 3 scenarios? The EV upper scenario added sales at 720 GW.h and CDM energy savings under upper scenario is 764 GW.h – does this mean that without EV the sales would drop by 1,484 GW.h [720 GW.h + 764 GW.h]? Please explain.

IIC-NLH-025 Please explain how the "energy savings" and peak demand reductions are consistent with the Muskrat Falls mitigation measures, which recommended to maximize domestic sales revenues, reduce peak demands and increase export sales as well as focus on peak reduction CDM?

IIC-NLH-026 Further to IIC-NLH-24 and IIC-NLH-25, what are the lost revenues from 340 GWh and 764 GWh "energy savings" and estimated impact to the rates?

IIC-NLH-027 Page 7 of the Electrification, Conservation and Demand Management Plan 2021–2025 [Schedule 3] notes that "*the results of the Study show there is limited potential for electrification of space and water heating in homes and buildings. The limited potential is due to unfavorable customer economics.*"

How is the forecast in the 2021 Plan comparable to the forecasts/estimates during the Muskrat Falls rate mitigation review. For example, Synapse Energy Economics, Inc. Phase 1 report [Findings on Muskrat Falls Project Rate Mitigation] noted the following:

- The low scenario assumes that 0.4 percent of oil-heated homes convert to heat pumps per year, reaching 5 percent of homes by 2030; the high scenario assumes that 2 percent of oil-heated homes convert to heat pumps per year, reaching 24 percent by 2030 [page 27].
- Low scenario assumes that 0.4 percent of oil-heated commercial buildings convert to heat pumps each year, reaching 18 percent of those buildings by 2030; the high scenario assumes that 4 percent of oil-heated commercial buildings convert to heat pumps each year, reaching 60 percent by 2030 [page 28].
- Figures 9 and 10 of the Synapse report estimated that the added sales from heating electrification would be between 121 GW.h and approximately 300 GW.h for the commercial class; and between 13 GW.h and 58 GW.h for the residential class.

Please explain the difference in conclusion and whether this arises primarily as a result of a difference in assumptions, of input data, or of modelling approaches. If due to difference in assumptions or data, please provide a comparison table showing the key input data and assumptions.

IIC-NLH-028 Please provide the backup details of each energy and capacity marginal cost estimate in Schedule H to the Electrification, Conservation and Demand Management Plan 2021-2025, including updated marginal cost studies from April 2020.

IIC-NLH-029 Further to IIC-NLH-28, please provide marginal capacity cost estimates in the format provided in Figure 7 of CA Consulting Marginal Cost Study Update – 2018 [November 15, 2018], which was Appendix A to the Hydro's November 15, 2018 application on Marginal Cost Study and Rate Structure Review.

IIC-NLH-030 Further to IIC-NLH-28 and IIC-NLH-29, please compare energy and capacity marginal costs in Schedule H to the marginal costs in the November 15, 2018 CA Consulting Marginal Costs Study update and explain any variances.

IIC-NLH-031 The CDM potential study indicates at page 53 (Schedule C) that the study is based on baseline with no carbon taxes on heating oil, a mid scenario with the federal government carbon levy increasing from $10/tonne to $50/tonne, and a high scenario based on the "social cost of carbon".

a) Please provide the values used for the social cost of carbon.

b) Please confirm that the potential study did not assess the CDM needs in an environment where $170/tonne carbon pricing was imposed. If confirmed, please re-run the potential study on the basis of a $170/tonne carbon price as has now been adopted by the federal government. Please include the mTRC, PACT, PCT and RIM by program, including providing the inputs used to derive and calculate the ratios.

c) Please provide the CDM potential study and resulting mTRC, PACT, PCT and RIM based on the carbon levy applying to home heating fuels.

IIC-NLH-032 Re: Section 3.1.2 of Schedule 3, please indicate the degree of subsidy and the uptake expected under the following scenarios:

1) TRC and mTRC are ignored, Hydro pursues the program at a scale and to the extent PACT remains in the range that is beneficial to the utility, and heating fuels remain carbon levy exempt.

2) TRC and mTRC are ignored, Hydro pursues the program at a scale and to the extent PACT remains in the range that is beneficial to the utility, and heating fuels face a carbon levy at $170/tonne.

IIC-NLH-033 Please provide a version of Table L-3 that only includes incremental energy changes in the year.

IIC-NLH-034 Please provide a version of Table L-3 that shows the lost revenue from each program for each year.

IIC-NLH-035 In Schedule 1, at page 7, lines 14-15, Hydro states that "A 2019 survey indicated that approximately 60% of utilities fund EV programs either solely through customer rates or through a combination of rate payer recovery and government funding." Please provide Hydro's information, or if it does not have direct information then its understanding, as to how the other 40% (approximately) of utilities canvassed by the referenced survey fund EV programs.

IIC-NLH-036 With reference to IC-NLH-35, did Hydro investigate or consider whether, in the jurisdictions where the approximately 60% of utilities fund EV programs either solely through customer rates or through a combination of rate payer recovery and government funding, there is legislation or other governmental direction which mandates recovery of EV program costs from the rate payers? Does Hydro consider that there is any legislation or other governmental direction applicable in this Province which mandates the recovery of EV program costs from rate payers?

DATED at St. John's, in the Province of Newfoundland and Labrador, this 15th day of July, 2021.

POOLE ALTHOUSE

Per: ______________________

For Dean A. Porter

STEWART MCKELVEY

Per: ______________________

For Paul L. Coxworthy

COX & PALMER

Per: ______________________

Denis J. Fleming

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