Office of the Consumer Advocate

PO Box 23135
Terrace on the Square
St. John's, NL Canada
A1B 4J9

Tel: 709-724-3800
Fax: 709-754-3800

October 11, 2024

Via Email

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

Attention: Jo Galarneau
Executive Director and Board Secretary

Dear Ms. Galarneau:

Re: Newfoundland and Labrador Hydro - 2025 Capital Budget Application – Requests for Information CA-NLH-086 to CA-NLH-096

Further to the above-captioned, enclosed are the Consumer Advocate's Requests for Information numbered CA-NLH-086 to CA-NLH-096.

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

Yours truly,

Dennis Browne, KC
Consumer Advocate

Encl.
/jm

cc **Newfoundland & Labrador Hydro**
Shirley Walsh (ShirleyWalsh@nlh.nl.ca)
NLH Regulatory (nlhregulatory@nlh.nl.ca

Newfoundland Power Inc.
Dominic J. Foley (dfoley@newfoundlandpower.com)
NP Regulatory (regulatory@newfoundlandpower.com)

Island Industrial Customers Group
Paul Coxworthy (pcoxworthy@stewartmckelvey.com)
Dean Porter (dporter@poolealthouse.ca)
Denis Fleming (dfleming@coxandpalmer.com)

Board of Commissioners of Public Utilities
Jacqui Glynn (jglynn@pub.nl.ca)
Colleen Jones (cjones@pub.nl.ca)
Katie Philpott (kphilpott@pub.nl.ca)
Board General (board@pub.nl.ca

IN THE MATTER OF the *Public Utilities Act* (the *"Act"*); and

IN THE MATTER OF an Application by Newfoundland and Labrador Hydro ("Hydro") for approval of (i) its capital budget for 2025 pursuant to Section 41(1) of the Act; (ii) its proposed capital purchases and construction projects for 2025 in excess of $750,000.00, pursuant to Section 41(3)(a) of the Act; (iii) contributions by certain Customers for contributions towards the cost of improvements to certain property, pursuant to Section 41(5) of the Act, and (iv) for an Order, pursuant to Section 78 of the Act, fixing and determining its average rate base for 2023.

CONSUMER ADVOCATE
REQUESTS FOR INFORMATION
CA-NLH-086 to CA-NLH-096

Issued: October 11, 2024

CA-NLH-086 (Reference CA-NLH-012) The response (part i) states "*Through the development of its 2022 Capital Budget Application "Replace Metering System" ("Metering Application"), Hydro commissioned a study on various metering technology alternatives which was prepared by a third party, Util-Assist. The results of this study are consistent with Hydro's Metering Application, that drive-by AMR was the least-cost alternative to address its metering requirements, particularly in the context of the Conservation Potential Study's findings on dynamic rates. A copy of this study is provided as CA-NLH-012, Attachment 1.*" Attachment 1 is a June 15, 2020 report by Util-Assist Inc. entitled "Business Case Report for Next Generation Metering (NGM) - Newfoundland and Labrador Hydro". Following are excerpts from the report.

Attachment 1, page 8 of 24 indicates that the study considered 4 options, including: full-scale AMR (Option 1), AMR-lite (Option 3), full-scale AMI (Option 2) and AMI-lite (Option 4).

Attachment 1, page 8 of 24 defines the AMI-lite option as "*representing the full deployment of AMI meters and network infrastructure, paired with NLHs current head end software solution, Command Center without the data management software and integration that typically accompanies AMI deployments.*"

Attachment 1, page 8 of 64 states "*The case for Option 1 (Appendix B) – Full-scale PLC AMR (L+G PLX), returned a positive $10.2M NPV over a 21-year system lifecycle with all meters being deployed in year one. From a technical perspective, there were several concerns with recommending this option to NLH including a higher cost, technology limitations and a potential issue with the viability of the solution through the system lifecycle over which the finances were based.*"

Attachment 1, page 8 of 64 states "*The third case, Option 3 (Appendix D) – Full-scale Drive-by AMR "lite" with NL Power's Itron Drive-by solution over a 21- year system lifecycle was reviewed next. While a viable solution financially ($17.6M NPV), like that with Option 1, the technological limitations to a drive-by solution are too great. As noted in Section 2: Technology and Trends, the trend amongst utilities in Canada and really across North America is toward the deployment of AMI. Drive-by AMR meter reading is something that electric utilities are moving away from and not towards. As the utility industry is searching for ways in which to improve Customer Experience, drive-by metering does the opposite in that it improves the utility's experience while preventing any meaningful impact to the customer. Regardless of technology solution selected, the most significant cost by far to the utility is the replacement of meters, at upwards*

of 75% of the capital cost. With this in mind, understanding that money is going to have to be spent, NLH must consider what the best investment is for their customers and their utility. Drive-by metering is enticing due to relative cost in comparison to AMI, but when viewed in the current climate of where the industry is with more advanced AMI solutions and the fact that this will be a 20-year investment, the risk to move forward with Drive-by metering is too great and is not recommended."

Attachment 1, page 20 of 64, Table 6 quantifies three AMI-Lite benefits including: avoided costs of meter replacements ($13.7 million), reduced manual meter reading ($84 million) and avoided cost of meter reading vehicles ($1.0 million). It does not quantify other benefits of AMI identified in CA-NLH-012d including: real-time information concerning usage, remote disconnect/reconnect or power limiting, an improved knowledge of the distribution system bettering responses to outages, and the ability to implement dynamic rate structures such as time-of-use rates or critical peak pricing. Neither does it quantify other benefits of AMI such as: monitoring power quality, enablement of distributed energy generation, the ability to provide customers personalized energy-saving tips and recommendations and the ability to provide outage and power restoration notifications to customers.

Attachment 1, page 20 of 64, Figure 2 shows benefits of the AMI-lite strategy exceeding $30 million by 2043. Table 5 summarizes the results of the analysis, and shows with respect to the AMI lite strategy: Net present value benefits (benefits less costs) of $13.4 million, an IRR (internal rate of return) of 21%, a benefit to cost ratio of 2.39 and breakeven in 6 years.

Attachment 1, page 26 of 64 states "*Pursuing a Drive-by AMR "lite" or PLX-based solution creates significant risk for NLH and could very well put the utility in the same position as they are currently, with an obsolete metering system that is not capable of meeting future requirements due to its limited function and expected roadmap as of today. Understandably, the chosen strategy must protect the utility from being back in this same position of an obsolete system within the 20-year system life cycle.*"

Attachment 1, page 26 of 64 states "*Understanding that the business case for full AMI does not pan out, and that proceeding with the currently deployed L+G PLX solution carries too many risks, it is recommended that NLH adopt an AMI "lite" strategy, utilizing the L+G RF mesh AMI solution that has a positive payback but limited in scope, i.e., meters, collectors, and installation, in order to achieve a positive business case. This approach takes advantage of the Command Center software already in place at the utility.*"

Attachment 1, page 26 of 64 states "*This is a strategy of migration that enables NLH to confidently move forward into the future with a solution that resolves the current system obsolescence challenges while simultaneously protecting their investment by providing the utility with an out of the box solution that provides significantly more value in terms of function and future-proofing, e.g., future AMI use cases, than currently deployed systems.*"

Attachment 1, page 26 of 64 states "*The recommendation is based on it being the better investment, proven out both technically and financially, in both the near and long-terms and it represents the best path forward for Newfoundland and Labrador Hydro.*"

a) Please confirm that Hydro chose the drive-by AMR strategy contrary to the recommendation in the report even though: 1) the assessment did not quantify all of the benefits of AMI identified above, 2) it is a technology that utilities are moving away from and not towards, 3) it prevents any meaningful positive impact on customers, 4) regardless of technology solution selected, the most significant cost by far to the utility is the replacement of meters, at upwards of 75% of the capital cost, so money is going to have to be spent regardless of the option chosen, 5) when viewed in the current climate of where the industry is with more advanced AMI solutions and the fact that this will be a 20-year investment, the risk to move forward with drive-by metering is too great, and 6) it continues the current system obsolescence challenges without protecting the investment.

b) Was Util-Assist Inc. chosen to undertake this study via a competitive bidding and request for proposals process? Was Util-Assist Inc. chosen to undertake the study by Hydro owing to its superior proposal based on its independence, qualifications and price?

c) CA-NLH-012i states "*Hydro's most recent Conservation Potential Study assessed the forecast cost and benefits associated with dynamic rates (i.e., smart meters). This analysis indicated that broad deployment of smart meters would not be cost effective until the mid-2030s.*" Did this study assess smart meters from the perspective of load shifting/dynamic rates only, or did it quantify all benefits of smart meters including those outlined in the Util-Assist Inc. report and CA-NLH-012d?

CA-NLH-087 (Reference CA-NLH-012) The response (part i) states "*Through the development of its 2022 Capital Budget Application "Replace Metering System" ("Metering Application"), Hydro commissioned a study on various metering technology alternatives which was prepared by a third party, Util-Assist.*

New Brunswick Power filed evidence with the New Brunswick Energy and Utilities Board on August 1, 2019 entitled "Advanced Metering Infrastructure Capital Project (https://www.nbpower.com/media/1489724/nbp0103.pdf). The New Brunswick Power study of smart meters quantified the following benefits of smart meters relative to AMR: i) Reduced Manual Meter Reading and Meter Service Orders; ii) Avoided Meter Replacement Costs; iii) Conservation Voltage Reduction; iv) High Bill Alert Service; v) Distribution Network Losses; vi) Meter Accuracy Losses; vii) Avoided Cost of Load Research Program; viii) Avoided Cost of Net Metering Program; ix) Avoided Cost of Meter Services Manager Salary; x) Avoided Cost of Meter Reading Vehicles; xi) Outage Restoration (Crew management); xii) Reduced Customer Inquiries; xiii) Avoided Cost Of Handheld System; xiv) Unbilled/Uncollectable Accounts; xv) Avoided Cost of Meter Reading Supervisor; and xvi) Reduced Overtime for Meter Service Orders. It also identified 12 additional customer and societal benefits of AMI that were not quantified such as (page 32) "*time-varying rates, which can provide significant benefits to customers and NB Power by providing more efficient price signals, and geographically-targeted demand-side management (DSM) programs, which can avoid or defer costly transmission & distribution ("T&D") investments based on AMI-derived visibility into grid needs and patterns.*" The 12 additional benefits that were not quantified were identified by Dunsky (page 32). Dunsky also reviewed the list of quantified benefits (page 32).

a) Does Hydro agree with the list of benefits owing to smart meters relative to AMR identified in the New Brunswick Power study? If not, which of these benefits are not relevant to Hydro's system and why?
b) What was the basis for the load shifting benefits used in the 2019 Dunsky study for NL, and how did the load shifting benefits compare to costs of AMI implementation in the net present value analysis?
c) Why did Hydro not request Dunsky to identify and quantify benefits of smart meters other than load shifting given that Dunsky had participated in a similar study for New Brunswick Power at roughly the same time?
d) Of the 9 other Canadian provinces, do 8 of the provinces have, or are in the process of, installing smart meter programs including British Columbia, Alberta, Saskatchewan, Ontario, Quebec, New Brunswick, Nova Scotia and Prince Edward Island?
e) What is the probability that the AMR meters being installed by Hydro will become stranded before the end of their useful life?

CA-NLH-088

(Reference CA-NLH-012) The response (part i) states "*Through the development of its 2022 Capital Budget Application "Replace Metering System" ("Metering Application"), Hydro commissioned a study on*

various metering technology alternatives which was prepared by a third party, Util-Assist.

The Nova Scotia Utility and Review Board's decision (M08349 issued in 2018) on Nova Scotia Power's proposed AMI (smart meter) project (https://nsuarb.novascotia.ca/sites/default/files/M08349%20Decision.pdf) notes (pages 9 and 10) that the largest benefit of the AMI project related to a reduction in meter reading and field work. Nova Scotia Power determined that AMI would eliminate 99% of manual meter reading costs and 55% of other meter related service order field work, resulting in annual cost savings of $4.6 million which on a net present value basis offset roughly one-third of the total lifecycle cost of the AMI project.

a) What is the comparable figure included in Hydro's study of smart meters?
b) What were Hydro's meter reading costs in 2023?

CA-NLH-089 (Reference CA-NLH-058)

a) Please provide the breakdown summarized in Table 1 of the cost and each benefit associated with the AMT Drive By System and the Mesh AMI System alternatives.
b) Table 1 shows a difference in net present value of about $2.1 million in favour of the AMT Drive By System over the Mesh AMI System. How much is this in percentage terms relative to the total net present value of costs of the AMT Drive By System, and the total capital cost of the AMT Drive By System?
c) Did Newfoundland Power participate in this analysis, or did Hydro rely on information produced by, or on behalf of, NP? If so, please provide the information.
d) Is Hydro aware of any collaborating studies of AMI undertaken by, or on behalf of, Newfoundland Power?

CA-NLH-090 (Reference CA-NP-031g) It is stated "*The rate mitigation plan limits the rate increase to domestic customers on the Island Interconnected System attributable to Hydro's costs to 2.25 per cent per year. This limits the Island Interconnected costs recovered through rates but is not an annual revenue cap on all Hydro costs to provide service to its customers.*" Is the rate mitigation plan best described as a cap on rates charged Island customers?

CA-NLH-091 (Reference CA-NLH-037 and NP-NLH-002)

a) Does Hydro have a connection policy that would apply to wind generation applicants? If so, please file a copy. If not, does Hydro have a plan to develop a connection policy for new customers on the Island?
b) Does Hydro have a connection policy for new customers in Labrador?

CA-NLH-092 (Reference CA-NLH-042e) It is stated "*Currently, subsection 14.1(2) of the Electrical Power Control Act, 1994 ("EPCA") prohibits a retailer or an industrial customer from developing, owning, operating, managing or controlling a facility for the generation and supply of electrical power or energy for its own use or for supply directly or indirectly to the public or an entity on the island portion of the province. This includes wind energy generation.*"

a) Does this mean that an industrial customer would not be allowed to install a facility to meet a portion of its electricity requirements such as non-wires alternatives even though the Island system is forecast to soon be short both electrical capacity and energy?
b) Does this clause also apply to General Service and Domestic customers?
c) In CA-NP-065 pertaining to NP's 2025 CBA, it is stated that the Greenhill, Wesleyville and Port aux Basques thermal generation facilities will provide "*system support to ensure reliability during times of renewable generation shortages.*" (i) Is NP allowed to own and operate these facilities under the Electrical Power control Act, 1994? and (ii) How is Hydro involved in the re-purposing of these facilities and how are they being accounted for in the ongoing Reliability and Resource Adequacy Study?

CA-NLH-093 (Reference CA-NLH-050) The proposed $10.5 million heating system for the Holyrood Thermal Station.

a) Under the proposal, would the heating system be available for first use in Winter 2027/28 or Winter 2028/29?
b) Until the proposed heating system is available for use, can Holyrood be heated according to current practice and is that Hydro's intention?
c) Please clarify the statement regarding Holyrood's three units: "*All three have not been simultaneously unavailable to date.*" Specifically, does "to date" mean since the third unit was installed? What is the number of years associated with "to date"?
d) Regarding the statement (CA-NLH-050(d)) "*a failure of one or more units while the remaining units are on standby is also a potential issue*", could this potential issue be avoided by running at least two units during times when heating of the Holyrood Station is required?
e) Once Units 1 and 2 are taken out of service, would a less extensive and expensive heating system be sufficient to enable continued operation of just Unit 3 as a synchronous condenser?

CA-NLH-094 (Reference CA-NLH-078) It is stated (page 3 of 4) "*In 2017, Hydro introduced the net metering service option for customers who generate electricity from small-scale renewable sources to offset their own usage.*"

a) Does Hydro have any net metering customers with battery storage?
b) Please provide a table identifying each of Hydro's net metering

customers including the technology, capacity and energy production.

c) In a November 1, 2022 News Release by the Nova Scotia government (https://news.novascotia.ca/en/2022/11/01/new-program-commercial-net-metering) it is stated "*In the spring, our legislation cleared the way for homeowners to go green and lower their energy bills without any extra charges," said Tory Rushton, Minister of Natural Resources and Renewables. "Now, regulations are in place to create a new commercial net-metering program that will help businesses pay less for power, support our green economy and take us another step closer to achieving our climate change goals.*" It is understood that as of January 2022, there were around 4100 net metering customers in Nova Scotia most of which are residential customers with solar panels. How does this compare to the number of net metering customers on the Island and what is Hydro proposing to do to increase the share of net metering customers under its Reliability and Resource Adequacy Study?

CA-NLH-095 (Reference CA-NLH-079) Hydro indicates that it is not necessary for the parties and the Board to know the marginal value of capacity and energy in order to gain a satisfactory understanding of the matters to be considered in the 2025 CBA. However, this information is necessary if the parties are to understand the value of generation and non-wires alternatives relative to traditional wires projects and programs. Please provide the information requested.

CA-NLH-096 (Reference PUB-NLH-015) It is stated "*The Technical Report – Asset Management Needs and Readiness Assessment ("Report") was informative and validated Newfoundland and Labrador Hydro's ("Hydro") current approach. Hydro's practical approach is very much in line with the Report's high-level findings and is aimed at making foundational improvements that will have a lasting impact on the way Hydro manages its assets and determines the priority of future capital investment.*"

New Brunswick Power filed evidence with the New Brunswick Energy and Utilities Board on August 1, 2019 entitled "Advanced Metering Infrastructure Capital Project (https://www.nbpower.com/media/1489724/nbp0103.pdf) which states (page 5) "*The pace of technological change has been increasing and will continue to increase. NB Power believes that continuing to plan on the basis of making investments in traditional utility assets in the face of such change may not be prudent and reasonable.*"

Nova Scotia Power states on its website (https://www.nspower.ca/cleanandgreen/innovation/smart-grid-nova-scotia) "*Globally, the electrical grids that have served us over the past century are evolving through new*

technology into "smart grids." Smart grids offer a future in which individual pieces of the electrical system — including "smart devices" in customers' homes and businesses — can communicate with one another, so that the entire electrical system works together to use energy more efficiently. This means lower overall costs for customers and a cleaner environment."

a) Does Hydro agree or disagree with the statements made by New Brunswick Power and Nova Scotia Power? If not, why not?
b) Please file documentation produced by, or on behalf of, Hydro that supports or refutes these statements.
c) What is Hydro doing to make its grid smarter so that the entire electrical system works together to use energy more efficiently?
d) How is Hydro's asset management approach taking into consideration technological change and investing in traditional utility assets in the face of such change that may not be prudent and reasonable?

DATED at St. John's, Newfoundland and Labrador, this 11th day of October, 2024.

Per: _____

Dennis Browne, KC - Consumer Advocate
Terrace on the Square, Level 2, P.O. Box 23135
St. John's, Newfoundland & Labrador A1B 4J9
Telephone: (709) 724-3800
Telecopier: (709) 754-3800
Email: dbrowne@bfma-law.com