

# 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

November 19, 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**

On July 16, 2024 Newfoundland and Labrador Hydro (“Hydro”) submitted to the Public Utilities Board (the “Board”) its 2025 Capital Budget Application, hereafter referred to as the “Application” or “2025 CBA”.

Hydro (Application, para. 2) “*proposes \$135.7 million in 2025 expenditures, comprised of expenditures related to single-year programs and projects proposed for completion in 2025, 2025 expenditures for multi-year programs and projects commencing in 2025, as well as those expenditures in 2025 related to multi-year programs and projects approved in previous capital budget applications. This amount includes \$1.1 million in expenditures for which approval to specifically assign the costs to certain customers is requested herein. No new leases with costs in excess of \$750,000 over the expected life of the lease are proposed for 2025.*”

Hydro notes (Application, para. 3) that the Application does not include “*the 2025 expenditures related to supplemental applications approved by or currently before the Board, or those anticipated to be filed with the Board in 2025 as supplemental applications once a full analysis of the proposed project is complete.*”

Hydro also requests the Board to approve (Application, para. 17d) “*Fixing and determining Hydro's average rate base for 2023 in the amount of \$2,329,352,000*”.

The Board has directed the parties to make final written submissions on the Application by November 19, 2024. This submission documents the Consumer Advocate's position on Hydro's 2025 CBA.

## COMMENTS OF THE CONSUMER ADVOCATE

The Consumer Advocate is particularly concerned with the extraordinarily high capital spending envisioned for 2026 to 2029, by the more than half a billion dollars for new combustion turbines (Five-Year Plan 2025-2029, Page A-13). However, Hydro is not seeking approval for those turbines in this Application, and having reviewed the Application along with Hydro's responses to two rounds of requests for information from the parties, 96 of which were submitted by the Consumer Advocate's Office, the Consumer Advocate does not take issue with the 2025 capital budget's the projects and programs for which Hydro is seeking Board approval. Nevertheless, as a result of that review process, five points of broader concern stand out and we ask the Board to give them careful consideration. They are enumerated below.

- 1) ***The Need to Finalize the Capital Budget Application Guidelines:*** As noted in our submission on Hydro's 2024 CBA, Hydro does not yet have the capability to meet the requirements set out in the Board's Provisional Capital Budget Application Guidelines. Hydro indicates that it has "*strived*" to meet the spirit and intent of the Provisional Guidelines. As stated in the 2025 Capital Budget Overview (page 5):

*"Hydro has continued to strive to comply with the evidentiary requirements set out in the Guidelines and has strived to meet the spirit and intent of the Guidelines where full adherence is not yet possible. In most instances, Hydro has fully adhered to the Guidelines. In others, data is presented to the fullest extent practical, along with insight into Hydro's interpretation and application of the Guidelines within its 2025 CBA."*

Hydro is currently assessing means for improving its asset management practices. It is stated (Capital Budget Overview, page 6) "*Hydro continues to improve its asset management systems, with an emphasis on the implementation of processes to improve and expand on asset and maintenance data. Hydro is continuing to mature its information base, with the goal of establishing a technologically-driven maintenance management system, while setting a solid foundation for potential asset management growth. This effort is an important step toward continued improvement of policy, decision-making processes, training and standardization across all areas of asset management."*

In this regard, Hydro submitted an October 20, 2023 report to the Board titled (PUB-NLH-065 pertaining to Hydro's 2024 CBA) *Asset Management Needs and Readiness Assessment*, which included a related technical report by Greeman Asset Management Solutions. Newfoundland Power has likewise embarked on a review of its asset management practices. In CA-NP-012 (pertaining to Newfoundland Power's 2024 Capital Budget Application) it is stated "*Newfoundland Power is currently undertaking a review*

*of its asset management practices to ensure its practices continue to be adequate, given the age of its electrical system, and remain consistent with industry best practices.”* Therefore, reviews of asset management practices by both utilities are well underway. As Hydro states (2025 Capital Budget Overview, page 6) *“Hydro acknowledges that the Board’s process is ongoing regarding revisions to the Guidelines based on feedback from the utilities and regulatory stakeholders, and welcomes further discussion on this matter before the finalization of the Guidelines in future.”*

The Consumer Advocate likewise welcomes further discussion in an effort to finalize the Capital Budget Application Guidelines to better inform these asset management reviews before they move further along in development. However, the last communication on the Capital Budget Application Guidelines review was issued in December 2021, almost 3 years ago. The Board has not issued any communication regarding the schedule for the review. We urge the Board to move forward with its review as the current Provisional Capital Budget Application Guidelines 1) are not being enforced, so do not ensure benefits to consumers are maximized, and 2) are not consistent with changes going on in the industry and best practices emerging in other provinces.

- 2) ***The Need for Hydro to Improve Project Execution:*** In Hydro’s *Capital Expenditures and Carryover Report for the Year Ended December 31, 2023* (page 3) it is stated *“In 2023, Hydro carried over \$21.9 million of budget to future years.”* It goes on to say *“Hydro’s 2023 carryover was lower than the average for the previous nine-year period (\$28.2 million) and was primarily driven by supply chain challenges and strategic carryover of work to future years.”* We note that supply chain issues are not new, having been a concern for a number of years now. As noted in our submission on Hydro’s 2024 CBA, such carryovers are concerning when there is significant uncertainty relating to the province’s electricity supply. Documents associated with Hydro’s Reliability and Resource Adequacy Study identify such uncertainties, including: the reliability of Muskrat Falls generation and the LIL, the reliability of Holyrood TGS as a backup source of supply, electricity demand which could increase substantially in light of government net-zero emissions efforts, and forecast generation capacity shortfalls. In light of these uncertainties, it is of vital importance that existing assets be maintained to ensure reliable performance going forward.

Hydro’s asset management practices and execution while improved, continue to be a concern. We urge the Board to encourage Hydro to address project execution issues to ensure that customers are not confronted with widespread power outages.

- 3) ***The Need for Improved Estimates:*** There are a number of projects identified in the 2025 Capital Budget Application that relate to the Bay d’Espoir Hydroelectric Generating Facility (Schedule 4) and the Holyrood Thermal Generating Station (Schedule 3). These assets are key to the delivery of reliable supply during the bridging period through 2035. Capital expenditures on Bay d’Espoir for 2025 through 2029 are forecast to total (Schedule

4, Table 10) \$623.9 million. For Holyrood, capital expenditures for 2025 through 2030 (including the synchronous condenser) are forecast to total \$127.5 million (Schedule 3, Appendix B). These expenditures are significant.

While expenditures on these assets are vital to the supply of the Island system, we are very much concerned about Hydro's estimating process. We note that Hydro has had a huge cost overrun on the project for Section Replacement and Weld Refurbishment for Bay d'Espoir. Hydro indicates in its presentation on the 2024 Resource Adequacy Plan Technical Conference #4 (October 29, 2024, slide 49) that it is taking "*significant steps to mature its cost estimating and project budget development skills*". We support such steps, and believe that the same level of attention should be paid to the cost estimation process for existing assets in order to avoid a similar problem to that experienced on the Bay d'Espoir section replacement and weld refurbishment project.

- 4) **Metering:** Hydro proposes to Purchase Meters and Metering Equipment (2025 – 2026) at a cost of \$724,600. It proposes to use Automatic Meter Reading (AMR) technology as opposed to state-of-the-art Automatic Metering Infrastructure (AMI, or smart meters). The Consumer Advocate disagrees. That funding should be for smart meters. Hydro's own expert, Util-Assist Inc., recommended adoption of AMI.

In CA-NLH-012 Hydro states (part i) "*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". Util-Assist studied four options: full-scale AMR (Option 1), full-scale AMI (Option 2), AMR-lite (Option 3), and AMI-lite (Option 4). It recommended one of the AMI options, namely, Option 4.

To gauge the importance of this matter it is worth considering key elements of the Util-Assist report.

- 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.*"
- Page 8 of 64 states "*The case for Option 1 (Appendix B) – Full-scale PLC AMR (L+G 18 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.”*

- Page 8 of 64 states *“The third case, Option 3 (Appendix D) – Full-scale Drive-by 24 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.”*
- 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.
- Page 20 of 64, Table 5 summarizes the results of the analysis of AMI-lite: net present value of 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.
- 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.”*

- 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.”*
- 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.”*
- 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.”*

In part (b) of the response to CA-NLH-086, Hydro indicates that Util-Assist Inc. was selected following evaluation of proposals received through a request for proposal (“RFP”) process. Hydro selected Util-Assist based on *“how they met certain criteria including compliance with the RFP, experience in similar work, experience of the project team, and the proposed costs associated with their service.”* Clearly, Util-Assist is qualified in this area. Yet in spite of Util-Assist’s overwhelmingly positive endorsement of AMI, Hydro selected AMR technology (CA-NLH-086(a)) *“on the basis that it was the least-cost alternative, consistent with Hydro’s statutory mandate.”*

It is important to point out that the Util-Assist analysis quantified only three benefits of AMI including “avoided costs of meter replacements”, “reduced manual meter reading costs”, and “avoided cost of meter reading vehicles”. However, there are significantly more benefits than those. New Brunswick Power filed evidence with the New Brunswick Energy and Utilities Board more than 5 years ago, on August 1, 2019 entitled “Advanced Metering Infrastructure Capital Project (<https://www.nbpower.com/media/1489724/nbp0103.pdf>). The New Brunswick Power study 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 *“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.”*

In Dunsky’s 2019 study of smart meters in NL, it assessed only (CA-NP-070b pertaining to Newfoundland Power’s 2025 CBA) *“load shifting potential of dynamic rate structures, including an estimate of the cost of AMI implementation. The consultant did not complete an overall assessment of smart meters.”* Therefore, neither Dunsky nor Util-Assist quantified all benefits of smart meters. Had these studies assessed all benefits, smart meters would likely have proven to be least cost. The New Brunswick Power study was undertaken more than 5 years ago, and justified smart meters even without quantifying the benefits from load shifting, the lone benefit quantified by Dunsky in its study of smart meters for NL.

In sum, neither Hydro nor Newfoundland Power have undertaken a fulsome review of AMI. Eight of the nine other provinces in Canada have, or are implementing, smart meters (CA-NP-248f pertaining to Newfoundland Power’s 2025 CBA). New Brunswick Power justified its smart meter program over 5 years ago. How much farther will NL fall behind other jurisdictions before Hydro and Newfoundland Power finally embark on a smart metering program? As noted by Util-Assist, AMR technology is inconsistent with the trend in Canada. Hydro’s continued use of AMR technology is likely to result in stranded assets, foregoes potential net benefits, and is not in electricity customers’ interests. The Board should approve Hydro’s funding request for meters on condition that the funds be used for smart meters as recommended by Util-Assist.

- 5) ***Falling behind other provinces.*** NL’s power sector is falling behind other jurisdictions, particularly as it relates to smart grid applications that enable optimum use of existing assets and expansion of renewable energy sources to take advantage of customer-owned generation opportunities. New Brunswick Power filed evidence with the New Brunswick Energy and Utilities Board on August 1, 2019 entitled Advanced Metering Infrastructure Capital Project 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.”* (emphasis added)

Nova Scotia Power states on its website *“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.”*

Yet Hydro and Newfoundland Power continue with a “business-as-usual” approach, committing considerable amounts of capital on “traditional utility assets” and using a planning approach at the distribution level that does not result in lowest overall costs for consumers and a cleaner environment. Hydro and Newfoundland Power must evolve their grids into “smart grids” through the deployment of smart meters and expansion of behind-the-meter opportunities such as customer-owned generation, battery energy storage systems such as those in electric vehicles, conservation, demand control and time-varying rates. Owing to an outdated distribution planning approach that does not give proper weighting to smart grid and behind-the-meter opportunities, Hydro and Newfoundland Power are not pursuing least cost energy solutions consistent with government net-zero emissions efforts, and are falling behind other jurisdictions.

Smart grid and behind-the-meter applications reduce demand and the need for spending on traditional utility assets. That is the future of electricity. Hydro, like Newfoundland Power, has been reluctant to change its approach to a planning regime that makes greater use of smart grid and behind-the-meter applications. Considering the enormous amount of capital spending being proposed over the next five years, this is not the time for status-quo and old-technology thinking.

## SUMMARY

The Consumer Advocate does not take issue with Hydro’s request for approval of \$135.7 million in 2025 expenditures. However, there are broad issues arising from the review of the Application that are concerning. In that regard, the Board ought to:

- 1) finalize the Provisional Capital Budget Application Guidelines including a plan directing the utilities to meet the requirements in a timely manner;
- 2) direct Hydro to file a plan to make further progress in reducing the backlog of project carryovers stemming from its capital budget applications;
- 3) direct Hydro to undertake to improve its project cost estimation process, particularly for assets that are critical to the reliable supply to the Island system during the bridging period to 2035, such as Bay d’Espoir and Holyrood;
- 4) require Hydro to use the requested funding for meters for the purchase on AMI technology unless Hydro can provide evidence to show that Util-Assist’s recommendation of an AMI-Lite strategy is inappropriate despite the benefits identified by Util-Assist as well as the additional benefits listed in this submission; and
- 5) direct Hydro to employ integrated distribution planning processes that de-emphasize traditional wires projects and programs in favour of smart grid and behind-the-meter applications consistent with the least cost provision of power in an environmentally responsible manner.



It is the opportune time, and indeed the necessary time, to provide consumers with greater control over their electricity consumption characteristics and their energy expenditures in a manner that will not only benefit themselves, but also the environment and the entire energy supply chain.

Please contact the undersigned if you have any questions on this submission.

Yours truly,



**Dennis Browne, KC**  
**Consumer Advocate**

/bb

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

**Newfoundland Power Inc.**  
Dominic J. Foley ([dfoley@newfoundlandpower.com](mailto:dfoley@newfoundlandpower.com))  
NP Regulatory ([regulatory@newfoundlandpower.com](mailto:regulatory@newfoundlandpower.com))

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

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