newfoundland labrador hydro

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November 19, 2021

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

Attention: Ms. Cheryl Blundon
Director of Corporate Services & Board Secretary

Dear Ms. Blundon:

Re: 2022 Capital Budget Application – Hydro's Written Submission

Newfoundland and Labrador Hydro ("Hydro") filed its 2022 Capital Budget Application ("Application") with the Board of Commissioners of Public Utilities ("Board") on August 2, 2021[1] seeking approval of $84.7 million in capital expenditures. In that filing, Hydro also sought approval of its 2020 rate base in the amount of $2,310,559,000.

Legislative Framework

Section 37 of the *Public Utilities Act* ("*Act*") requires Hydro to provide electrical service and facilities that are reasonably safe and adequate and just and reasonable.[2] Section 41 of the *Act* requires Hydro to obtain approval from the Board for its annual capital budget.[3] In addition, Section 3 of the *Electrical Power Control Act, 1994* ("*EPCA*") requires that Hydro provide electrical service that is efficient, that allows for its customers to have equitable access to an adequate supply of power, and that is provided at lowest possible cost consistent with reliable service.[4]

Hydro submits that the projects included in Hydro's Application are required to meet Hydro's obligations under the *Act* and the *EPCA* to provide power and service to its customers that is safe and adequate and at the lowest possible cost consistent with reliable service. Hydro further submits, and will discuss in more detail later in this correspondence, that all projects proposed in the Application are justified through the inclusion of all necessary and applicable evidence.

Cost Management

Hydro strives to operate in a manner that results in power being delivered to consumers at the lowest possible cost consistent with reliable service. As such, cost management is an area of focus within all stages of Hydro's capital program, including planning, capital budget proposals, and execution.

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[1] "2022 Capital Budget Application," Newfoundland and Labrador Hydro, rev. September 17, 2021 (originally filed August 2, 2021).
[2] *Public Utilities Act*, RSNL 1990, c P-47, s 37(1).
[3] Ibid, s 41(1).
[4] *Electrical Power Control Act, 1994*, SNL 1994, c E-5.1, s 3(b).

Prior to beginning its 2021 capital budget planning, engagement sessions were held with various internal business units and stakeholder groups to discuss planning priorities and expectations. The impact of capital investment on rates and the requirement to balance cost management, reliability, safety, and environmental stewardship was addressed at each session.[5]

In preparing its Application, Hydro took deliberate action to ensure its proposals reflect a level of investment which appropriately balances reliability and cost concerns,[6] particularly in light of increasing rate pressures and other planned 2022 capital work.[7]

Hydro evaluated each project to determine whether deferral was an option,[8] resulting in the deferral[9] or cancellation of capital projects totalling approximately $9 million. Through this process, Hydro also reduced its investment levels related to light-duty vehicles, roads, and buildings to allow for additional examination of expenditures to confirm current investment strategies support Hydro's cost management priorities. Hydro is undertaking a review of its light-duty vehicle expenditures to ensure it is making the best use of the vehicles it currently has in inventory prior to making further investment; Hydro is also considering opportunities for further integration of electric vehicles into its fleet.[10]

Hydro revisited and refined previously-approved, multi-year budgets, resulting in reductions of $6 million and a reforecasting of an additional $0.9 million into 2023.[11] Hydro also refined its 2022 project estimates[12] based on historical experience,[13] scope clarification, vendor quotes, and refinement of contingency, often resulting in reductions in project estimates.

During execution of its capital program, Hydro continues to pursue the least-cost alternative for the required work. For example, if Hydro becomes aware that a change in circumstances has led to a modification in economic justification, it employs its internal project change management process to evaluate whether an alternate option should be explored.[14]

Capital Budget Overview

Of Hydro's proposed $84.7 million in capital expenditures for 2022, 51% ($43.2 million) is related to the 2022 portion of previously-approved, multi-year projects. The remaining 49% ($41.5 million) is related to newly-proposed projects.

[5] Attachment 1 to Hydro's response to CA-NLH-013 of this proceeding provides the presentation which was delivered in the engagement sessions.
[6] Hydro's response to CA-NLH-016 of this proceeding provides an overview of steps taken to manage costs.
[7] The Application does not reflect 2022 costs associated with three planned supplemental capital projects. Including these projects, total costs to be recovered from customers is $102.9 million. Hydro's response to PUB-NLH-005 of this proceeding reconciles the $84.7 million requested within Hydro's Application and the $102.9 million to be recovered through customer rates.
[8] Hydro's response to PUB-NLH-004 of this proceeding discusses Hydro's process for determining whether deferral of capital expenditures can occur in a given year.
[9] Hydro's response to CA-NLH-042 of this proceeding provides a listing of deferred projects.
[10] Please refer to Hydro's responses to PUB-NLH-004 (part b) and PUB-NLH-011 of this proceeding.
[11] Hydro's response to PUB-NLH-010 of this proceeding provides a summary of drivers for each project budget revision.
[12] Hydro's responses to CA-NLH-051 of this proceeding provides further details on Hydro's estimating practices.
[13] Hydro's responses to CA-NLH-016 and CA-NLH-002 of this proceeding provide information regarding the analysis undertaken by Hydro to determine the primary drivers of under expenditure and the application of its findings to identify trends and potential areas for improvement to reduce capital expenditure variances in future years.
[14] Hydro's responses to CA-NLH-033 and CA-NLH-034 of this proceeding discuss Hydro's change management process and response to changes in economic evaluation of projects post-approval of the Board.

As noted in Hydro's 2022 Capital Budget Overview,[15] Hydro's proposed 2022 capital projects reflect a reduction in expenditures related to general properties, hydraulic plant, gas turbines, transmission, rural generation, and distribution relative to Hydro's historical five-year average expenditures for each category. Hydro's 2022 capital projects reflect an increase in terminal station expenditures, primarily due to asset renewal and capacity additions in Labrador West, and in thermal generation expenditures, primarily due to the inclusion of projects required to support the continued reliable operation of the Holyrood Thermal Generating Station ("Holyrood TGS") as a generating facility until March 31, 2023.

Capital Projects

Throughout the process of preparation of the Application Overview Presentation[16] and responses to requests for information, several projects were identified as being noteworthy. These projects are highlighted herein.

Drive-By Automated Meter Reading

Hydro's Application includes a proposal for a new drive-by automated meter reading ("AMR") system ($5.4 million) which is required to replace the obsolete TS1 meters and existing manually-read meters with a reading technology that does not require manual entry. Hydro evaluated the options of transitioning from TS1 meters to manually-read meters, installation of an automated metering infrastructure ("AMI") system, and the installation of an AMR drive-by system. Hydro conducted a net present value analysis which determined that the installation of an AMR drive-by system is the least-cost alternative[17] as a result of cost savings associated with reduced labour required for meter reading and administrative efficiencies, such as reduced billing errors.[18]

Hydro's analysis has shown that implementation of the proposed metering system will generate cumulative cost savings of over $8.5 million over the next 20 years compared to the continued use of manually-read meters, with the realization of cost savings expected to begin in 2027.[19] Further, Hydro has demonstrated that the total revenue requirement for the period 2025–2041 associated with the AMR drive-by option is approximately $13 million less than the manual metering alternative and $6.6 million less than the mesh AMI alternative. Therefore, the AMR drive-by option results in projected average annual rural deficit savings of $765,000 and $389,000 when compared to the manually-read meters and AMI alternatives, respectively.[20]

Hydro submits that replacing existing TS1 and manually-read meters with an AMR drive-by solution as proposed is prudent to ensure the reliable service to customers at the lowest possible cost.

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[15] "2022 Capital Budget Application," Newfoundland and Labrador Hydro, rev. September 17, 2021 (originally filed August 2, 2021), vol. I, sch. 1.
[16] Hydro presented its Application to the Board and parties on September 10, 2021.
[17] "2022 Capital Budget Application," Newfoundland and Labrador Hydro, rev. September 17, 2021 (originally filed August 2, 2021) vol. II, Tab 15, at p. 5, Table 1. Additional information regarding Hydro's analysis was provided as Attachment 1 to Hydro's response to PUB-NLH-016 of this proceeding.
[18] Hydro's responses to CA-NLH-059, CA-NLH-075, CA-NLH-077, and PUB-NLH-016 of this proceeding provide further rationale as to why it would be premature to implement an AMI system at this point (i.e., materially in advance of the benefits of such a system becoming clearly demonstrable in serving Hydro Rural customers), including the risk of obsolescence of metering technology, uncertainty in system benefits from dynamic rates for Hydro Rural customers, and rural deficit impacts.
[19] Please refer to Attachment 1 to Hydro's response to PUB-NLH-016 of this proceeding.
[20] Hydro's response to NP-NLH-018 of this proceeding provides a comparison of yearly cost of capital, capital expenditure, and operating cost for each alternative considered.

Southern Labrador

On July 16, 2021, Hydro filed an application with the Board for the approval of Phase 1 of Hydro's plan for the long-term supply for southern Labrador, which would construct a regional diesel generating station in Port Hope Simpson and interconnect Charlottetown. The estimated cost of this project is $49.9 million.[21] Future phases to interconnect Mary's Harbour (in 2030) and St. Lewis (in 2045) would be proposed in separate future applications. On November 10, 2021, Hydro requested that the review schedule for the proposed Phase 1 of Hydro's long-term supply plan for southern Labrador be paused to allow further stakeholder consultation and engagement. On November 16, 2021, the Board agreed and suspended the review schedule.

Hydro's current capital budget application includes five proposals related to the southern Labrador communities involved in the proposed future interconnection, specifically, Mary's Harbour[22] and St. Lewis.

The "Additions for Load (2022) - Distribution System - Mary's Harbour Voltage Conversion" project is required to address voltage issues due to load growth in the community ($1.1 million). A solution to the voltage issues is required at this time regardless of whether the southern Labrador interconnection proceeds; however, the proposed alternative was determined to be the least-cost option on the basis that voltage conversion will be required in 2030 as part of the interconnection of Mary's Harbour to the regional diesel generating station in Port Hope Simpson. Hydro noted that should the southern Labrador interconnection not proceed, Hydro would reassess its approach to resolving the voltage concerns in Mary's Harbour and propose the least-cost solution.[23] Hydro's position on this project is detailed further in its response to party comments, later in this correspondence.

The scope and justification of the remaining four projects in southern Labrador are not impacted by the Boards decision on Hydro's proposal for the Long-Term Plan for Southern Labrador – Phase 1. They are summarized below.

- The "Additions for Load (2022) – Mary's Harbour Service Conductor" project[24] ($0.4 million) is required to address overload on the main service conductor due to load growth in the region. The proposed alternative is the least-cost option to resolve the issue.
- The "Upgrade Fuel Storage Tanks (2022) – Mary's Harbour" project[25] ($0.5 million) is required as the existing tanks are due for inspection in 2022 and, based on recent inspections of similar tanks, it is expected that they will need to undergo repairs to extend their service life. Hydro's evaluation of alternatives determined that replacement of the tanks is the least-cost option.[26]

[21] "Long-Term Supply for Southern Labrador," Newfoundland and Labrador Hydro, July 16, 2021.
[22] Hydro's response to PUB-NLH-003 of this proceeding provides an overview of the Mary's Harbour projects and their relationship to the various alternatives evaluated in the long-term supply in southern Labrador analysis.
[23] Please refer to Hydro's response to PUB-NLH-003 of this proceeding.
[24] "2022 Capital Budget Application," Newfoundland and Labrador Hydro, rev. September 17, 2021 (originally filed August 2, 2021), vol. II, sch. 7, at pp. 66–86.
[25] Ibid, at pp. 60–65.
[26] Hydro's response to PUB-NLH-015 of this proceeding indicates that Hydro intends to repurpose the tanks upon interconnection of Mary's Harbour to the regional diesel generating station in Port Hope Simpson (planned for 2030).

- The "Overhaul Diesel Units (2022) - Various" project[27] identifies unit 2090 in Mary's Harbour as being due for overhaul in 2022 based on forecast operating requirements and Hydro's established overhaul criteria.[28] The Mary's Harbour portion of this project is estimated at $0.2 million.[29]
- The "Diesel Genset Unit 2039 - St. Lewis" project[30] ($2.1 million) is required based on established criteria for replacement of 1,800 rpm diesel gensets. Based on forecast load, if St. Lewis is connected to the proposed southern Labrador interconnection in 2045 as planned, this unit will likely be at or near the end of its expected useful life at the time of interconnection.[31]

Holyrood Thermal Generating Station

Hydro's Application proposes expenditures of $10.7 million for the Holyrood TGS. Approximately $7.1 million of this expenditure is associated with work which is required to support the continued reliable operation of the Holyrood TGS as a generating facility until March 31, 2023. The remaining expenditures are required to support reliable and safe operation of Holyrood TGS in synchronous condenser mode.

Given the current operational outlook and schedule for the Holyrood TGS, Hydro submits that the 2022 capital project proposals related to the Holyrood TGS[32] reflect the necessary refurbishment and replacement projects to support the reliability of the Holyrood TGS and provision of service to customers.

Diesel Genset Replacements

Hydro has proposed the replacement of diesel genset Unit 2039 in St. Lewis ($2.1 million) and diesel genset Unit 2012 ($3.1 million) in L'Anse-au-Loup. With respect to the replacement of Unit 2039 in St. Lewis, the unit was installed 27 years ago (1994) and has been overhauled six times. This unit is forecast to be due for replacement in 2023[33,34] and is required to support reliable service in St. Lewis. Unit 2012 in L'Anse-au-Loup was installed 37 years ago (1984) and is now obsolete. Replacement components required to ensure the reliable operation of the unit are no longer available.[35] Therefore, replacement of this unit is required for Hydro to maintain full firm capacity at the L'Anse-au-Loup Diesel Generating Station as a standby plant.[36]

[27] "2022 Capital Budget Application," Newfoundland and Labrador Hydro, rev. September 17, 2021 (originally filed August 2, 2021), vol. II, Tab 13.
[28] Ibid. As noted in the "Overhaul Diesel Units (2022) – Various" project justification report, diesel units are overhauled based on established criteria which requires overhaul for 1,200 rpm units every 30,000 operating hours and 1,800 rpm units every 20,000 hours. Overhaul is required to ensure each engine is able to meet its expected life.
[29] Please refer to Hydro's response to PUB-NLH-003 of this proceeding.
[30] "2022 Capital Budget Application," Newfoundland and Labrador Hydro, rev. September 17, 2021 (originally filed August 2, 2021), vol. II, Tab 23.
[31] Please refer to part b) of Hydro's response to CA-NLH-063 of this proceeding.
[32] The operational outlook and schedule, as well as 2022 Holyrood TGS capital projects, are further outlined in "2022 Capital Budget Application," Newfoundland and Labrador Hydro, rev. September 17, 2021 (originally filed August 2, 2021), vol. I, sch. 3.
[33] "2022 Capital Budget Application," Newfoundland and Labrador Hydro, rev. September 17, 2021 (originally filed August 2, 2021), vol. II, Tab 23.
[34] Hydro's current asset management strategy and planning criteria calls for replacement of 1,800 rpm gensets when they approach 100,000 hours of operation.
[35] "2022 Capital Budget Application," Newfoundland and Labrador Hydro, rev. September 17, 2021 (originally filed August 2, 2021), vol. II, Tab 24.
[36] Please refer to part c) of Hydro's response to CA-NLH-063 of this proceeding.

Given the intermittent nature of renewable energy sources such as wind and solar installed in isolated systems, these resources are not considered to provide firm capacity.[37] Further, supplementation of diesel generation with wind generation is not economically feasible.[38]

As Hydro's ongoing conservation and demand management programs are inherently reflected in Hydro's load forecasting process and Hydro's experience has been that customers in isolated systems are not interested in interruptible service contracts, customer demand management is not normally a viable alternative for the provision of firm capacity in these communities.[39]

Hydro submits that replacement of Unit 2039 in St. Lewis and Unit 2012 in L'Anse-au-Loup with appropriately sized units, as proposed, is prudent to ensure sufficient, reliable firm capacity to meet the current and future needs of the St. Lewis and L'Anse-au-Loup systems.

Wood Pole Line Management Program

In its 2022 proposal for the Wood Pole Line Management ("WPLM") project, Hydro has introduced a gap year between inspections and the execution of work to allow for enhanced planning and estimating informed by the inspection results.[40] Hydro does not consider the introduction of a gap year to be a deferral of preventative maintenance activities as it will continue to complete inspections on an annual basis and address issues of immediate concern in the current year. Through its experience with the WPLM program since 2003, Hydro has developed a sound understanding of degradation rates for transmission line components and does not anticipate that its transition to a two-year cycle between inspection and planned refurbishment will negatively impact either customer reliability or cost.[41]

Party Submissions

In correspondence dated November 12, 2021, the Island Industrial Customer Group advised that it has no comment with respect to Hydro's Application.

In correspondence dated November 15, 2021, the Consumer Advocate noted that as Hydro does not currently use an asset management system that supports the quantification of risk associated with not proceeding with projects, it had not met the burden of proof requirement set out in the Capital Budget Application Guidelines.[42] However, due to Hydro's plan to review its asset management system, as well as its prioritization of its projects and efforts to manage spending, the Consumer Advocate advised that it did not take issue with Hydro's Application. The Capital Budget Application Guidelines requires that "A utility shall present its annual capital budget with sufficient detail for the Board and interested parties to understand the nature, scope and justification for individual expenditures and the capital budget overall."[43] The Capital Budget Application Guidelines further details specific types of information necessary for certain categories of expenditures. For example, expenditures under $200,000 require evidence showing that the expenditure is prudent and necessary to provide reasonably safe, adequate, just, and reasonable service. Expenditures in excess of $500,000 must be supported with more comprehensive and detailed documentation than other expenditures, including, where appropriate, a report/analysis by a qualified engineer or other appropriate expert. Hydro submits that it has provided

[37] Please refer to Hydro's response to CA-NLH-036 of this proceeding.
[38] Please refer to part d) of Hydro's response to CA-NLH-063 of this proceeding.
[39] Please refer to Hydro's response to PUB-NLH-021 of this proceeding.
[40] Please refer to Hydro's response to PUB-NLH-008 of this proceeding.
[41] Hydro's response to NP-NLH-002 of this proceeding provides Hydro's rationale for adopting the gap year in the WPLM program.
[42] "Capital Budget Application Guidelines," The Board of Commissioners of Public Utilities, rev. October 2007 (originally issued June 2, 2005).
[43] Ibid, s 2, at p. 4 of 11.

detailed and in-depth information through its Application, Application Overview Presentation, and responses to requests for information, which has certainly met the requirements set out in the Capital Budget Application Guidelines to allow the Board and interested parties to understand the projects proposed and the budget overall.

Newfoundland Power Inc. ("Newfoundland Power") submitted that it is premature for the Board to approve the Mary's Harbour voltage conversion project at this time due to Hydro's proposed pause in the review schedule for the long-term supply plan application. Hydro understands Newfoundland Power's position and agrees that it may be premature for the Board to approve this project at this time. Hydro therefore requests that the Board defer its decision on the proposed "Additions for Load (2022) Distribution System - Mary's Harbour Voltage Conversion" project until such time that it has rendered its decision on the "Long-Term Supply for Southern Labrador – Phase 1" application.

Conclusion

Hydro submits that the capital work for which Hydro has sought approval in the Application is necessary to ensure that Hydro can continue to provide service which is reasonably safe and adequate and just and reasonable as required by Section 37 of the *Act*. Hydro further submits that, as illustrated through the information provided in the Application and the process that followed, the proposed projects are necessary to enable its customers to have equitable access to an adequate supply of power and that the proposed projects are the lowest possible cost options, consistent with reliable service as required by the *EPCA*. Hydro respectfully requests that the Board approve the Application as submitted with the exception of the deferral of the "Additions for Load (2022) Distribution System – Mary's Harbour Voltage Conversion" project as noted above.

Should you have any questions, please contact the undersigned.

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO

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