# Office of the Consumer Advocate

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August 24, 2022

Board of Commissions of Public Utilities
120 Torbay Road, P.O. Box 2140
St. John's, NL A1A 5B2

**Attention: G. Cheryl Blundon, Director of Corporate Services / Board Secretary**

Dear Ms. Blundon:

**Re: Newfoundland and Labrador Hydro - 2023 Capital Budget Application**

Further to the above-captioned, enclosed are the Consumer Advocate's Requests for Information numbered CA-NLH-001 to CA-NLH-094.

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

Yours truly,

**Stephen Fitzgerald**
**Counsel for the Consumer Advocate**

Encl.
/bb

cc **Newfoundland & Labrador Hydro**
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**IN THE MATTER OF** the *Public Utilities Act,* RSNL 1990, (the "Act"); and

**IN THE MATTER OF** an Application by Newfoundland and Labrador Hydro ("Hydro") for an Order approving: (i) its 2023 capital budget pursuant to Section 41(1) of the Act; (ii) its 2023 capital purchases and construction projects in excess of $50,000.00 pursuant to Section 41(3)(a) of the Act; and (iii) for an Order pursuant to Section 78 of the Act fixing and determining its average rate base for 2021

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# CONSUMER ADVOCATE REQUESTS FOR INFORMATION CA-NLH-001 to CA-NLH-094

**Issued: August 24, 2022**

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CA-NLH-001 (Reference Application) Please provide a table showing regulated rate base, revenue requirement, capital budget amount proposed, capital budget amount approved, capital budget amounts expended, and year-over-year rate change for each of the last 20 years and forecast for the years 2022 through 2026.

CA-NLH-002 (Reference Application) Further to CA-NLH-001, for the years when Hydro did not spend the entire capital budget amount approved by the Board:

a) Explain why the approved amounts were not spent.
b) Did Hydro fail to meet its mandate in those years? If not, why not? If so, how, and to what extent, were customers impacted?
c) In years when Hydro underspends approved capital budget amounts that were required for it to meet its mandate, does the governing legislation provide the Board with any ability to request an explanation from Hydro for any adverse impacts upon customers arising from this underspending?

CA-NLH-003 (Reference Application) Further to CA-NLH-001, for the years when Hydro overspent capital budget amounts approved by the Board, has the Board ever failed to approve the over-spent amount, and if so, what was the Board's explanation?

CA-NLH-004 (Reference Application) Please provide a list of the dates for all hearings that the Board has held on Hydro capital budget applications in the past 25 years.

CA-NLH-005 (Reference Application) For the years 2000 to 2027 (forecasts for 2022 to 2027), please provide the values of Hydro's annual capital expenditure in nominal dollars and in inflation-adjusted terms. Also, include a graph containing both.

CA-NLH-006 (Reference Application) For the years 2000 to 2021, please provide the values of Hydro's average rate base in nominal dollars and in inflation-adjusted terms. Also, include a graph containing both.

CA-NLH-007 (Reference Application) Please provide a table identifying each project/program in the 2023 capital budget, its cost and the customers that are required to pay for the project; i.e., Island Interconnected, Labrador Interconnected and Rural/Isolated. In cases when more than one customer group is required to pay for a project/program, please identify the share of the cost paid by each.

CA-NLH-008 (Reference Application) Please provide the most recent figures available relating to amounts owed or to be credited to consumers for each of Hydro's deferral accounts.

CA-NLH-009 (Reference Application) With respect to the island interconnected system, please provide a table, starting with 2010, that contains the annual production from Hydro's hydraulic generation, Holyrood generation, other thermal generation, power purchases via the LIL, power purchases of imports via the Maritime Link, other power purchases, total island interconnected customer load, and total customer load including Maritime link exports.

CA-NLH-010 (Reference Application, 2023 Capital Budget Overview) Regarding the Holyrood plant:

a) Please provide the total capital expenditures associated with Holyrood for each of 2023 and 2024, with a breakdown, e.g., previously approved expenditure, expenditure requested in the 2023 CBA, supplemental expenditure requests, and anticipated requests in the 2024 CBA.
b) If all of these expenditures are undertaken, how many more years could Holyrood operate as a generating plant without requiring as much or more capital expenditures?
c) What is the current marginal cost of production at Holyrood TGS? What price per barrel of oil and what production efficiency is used in this calculation?
d) What is the probability that Holyrood will be needed to operate in generation mode in the upcoming winter of 2022/23 and the subsequent winter of 2023/24?
e) On page 26 Hydro states that it will maintain Holyrood as a generating facility to March 31, 2024.
    i) What is the minimum level at which its generators would operate if the LIL were to be commissioned prior to the coming winter and assuming LIL and synchronous condensers at Soldiers Pond performed without any substantive difficulty?
    ii) At what level would its generators operate if the LIL were not available for the coming winter?
    iii) At what level would its generators operate if the LIL were available at 60% of intended?
    iv) When does Hydro expect the LIL to be commissioned and what minimum performance standards must be met for that commissioning to occur? If it were to be commissioned and did operate at those minimum standards for its first few years of operation then what would be Holyrood's role in Hydro's system.

v) Based on its current state of knowledge, at what level of operation does Hydro believe would be most appropriate and prudent for the Holyrood thermal plant for the coming winter, 2022/23?

CA-NLH-011 (Reference Application) Commencing January 2016 and up to August 2022, in an Excel file please provide the monthly values of LIL deliveries to the island interconnected system, exports over the Maritime Link, imports over the Maritime Link, deliveries of Muskrat Falls energy to the island system net of exports over the Maritime Link, total island interconnected load and Holyrood generation.

CA-NLH-012 (Reference Application) Regarding the Energy and Capacity Agreement between Nalcor and Emera:

a) Has delivery of the Nova Scotia block and supplemental energy begun, and, if so, when did it start?
b) Have the agreed annual amounts been delivered on schedule or is there an accumulated amount of undelivered energy or capacity that must be delivered in the future? Please provide a table showing the scheduled amounts, the amount delivered and outstanding amounts.
c) If the LIL is not fully operational for the next few years (e.g., operating at 60% of intended) is it possible that the Holyrood thermal plant may have to be relied upon to ensure that the Nova Scotia Block and supplemental energy, including any amounts owing, are delivered?

CA-NLH-013 (Reference Application) Regarding the Energy Access Agreement with Emera and Nova Scotia Power, when will be the first year for bidding into the Nova Scotia system? In order to deliver energy under that agreement, if the LIL is not fully functional over the next few years (e.g., operating at 60% of intended), does Hydro anticipate that Holyrood might have to be relied upon to ensure delivery or meet island needs? Or is the obligation to deliver contingent on the LIL being fully operational?

CA-NLH-014 (Reference Application) Please confirm that the 2023 capital budget application includes costs for the proposed electrification program. If the Board does not approve the proposed electrification program, how much will the 2023 capital budget and the 2023 capital spend be reduced?

CA-NLH-015 (Reference Application) Will Hydro be able to meet its mandate if the Board does not approve every dollar requested in its 2023 Capital Budget Application? Specifically, what projects and capital amounts could be deferred without affecting Hydro's ability to meet its mandate?

CA-NLH-016 (Reference Application) In Order No. P.U. 16(2019) the Board directed Hydro to "file its next GRA no later than September 30, 2020 for rates based on a 2021 Test Year". Hydro requested a delay in the filing owing to uncertainties relating to Muskrat Falls and rate mitigation and the resulting inability of Hydro to "prepare a GRA filing that would reasonably reflect the costs that Hydro will incur in providing electrical service to its customers for use in determining proposed customer rates." (see April 15, 2019 letter from Hydro to the Board titled "Application to Delay the Filing of Newfoundland and Labrador Hydro's Next General Rate Application"). By Order P.U. 15 (2020) the Board approved Hydro's request to delay the filing of its next General Rate Application.

a) Please provide an update. Does Hydro now have the necessary information, and if so, when will Hydro file its next GRA?
b) Based on the information now available on the Government's rate mitigation policy (domestic island customer rate target of 14.7 cents/kWh) what is Hydro's best estimate of rates in 2022, 2023 and 2024?

CA-NLH-017 (Reference Application) Under current legislation capital budget applications must be submitted yearly. Would a change in legislation requiring capital budget application submissions every 3 years as part of a general rate application lead to a more efficient regulatory process? What are the pros and cons of such a change in legislation?

CA-NLH-018 (Reference Application) When did Hydro last complete a load research study? Does Hydro have the ability to develop typical load profiles for its customers that might be used, for example, to manage EV charger demand?

CA-NLH-019 It is understood from Newfoundland Power's 2023 Capital Budget Application that it will conduct a study on AMI (advanced metering infrastructure).

a) Is Hydro participating in this study, or alternatively, undertaking its own study of AMI?
b) Is Hydro concerned that its current metering infrastructure could soon become stranded?
c) What is the expected cost for Hydro to implement AMI infrastructure?

CA-NLH-020 (Reference Application) With respect to Hydro's distribution business, excluding isolated systems:

a) Please provide a table showing for the past 15 years Hydro's total revenue requirement broken down by generation, transmission and distribution (excluding isolated systems). Please provide this information for the Island and Labrador interconnected systems separately and combined.

b) Please provide a table showing frequency and average duration of customer outages owing to outages on each of the generation, transmission and distribution systems (excluding isolated systems) for the past 15 years. Please provide this information for the Island and Labrador interconnected systems separately and combined.

CA-NLH-021 (Reference Application) With respect to Hydro's distribution business, excluding isolated systems:

a) Please provide a comparison for each of the past 10 years of Hydro's distribution reliability in terms of SAIDI and SAIFI to that of Newfoundland Power.
b) Are the mandates of Hydro and Newfoundland Power the same when it comes to the distribution component of the business?
c) Are Hydro and Newfoundland Power subject to the same legislation and the same Provisional Capital Budget Application Guidelines?
d) What metrics and policies guide Hydro's distribution business (excluding isolated systems)? For example, in terms of reliability, does Hydro strive to: i) mirror the Canadian average, ii) exceed the Canadian average, iii) fall short of the Canadian average by a specific percentage, etc?
e) Do Hydro policies and metrics relating to distribution reliability take into consideration the impact on customers and customer willingness to pay?

CA-NLH-022 (Reference Application) What is the difference between a capital budget cap and a capital budget envelope as defined by Midgard?

CA-NLH-023 (Reference Application) Please confirm that the Board has never approved a capital budget envelope for Hydro in a capital budget application.

CA-NLH-024 (Reference Application) If the Board were to authorize a fixed amount of capital expenditure(s) by Hydro in 2023 that is less than the amount requested and if the Board were to do so without rejecting any particular proposed capital expenditure(s), would Hydro have the judgement, expertise and tools to determine what of its proposed 2023 capital expenditures can be accommodated within that fixed amount considering both work priority and execution capability? Would Hydro proceed with projects according to its prioritization plan?

CA-NLH-025 (Reference Application) What changes has Hydro made to its asset management plan and practices since its 2022 Capital Budget Application?

CA-NLH-026 (Reference Application) Has Hydro embedded productivity savings as a bottom-line adjustment in its 2023 Capital Budget Application?

CA-NLH-027 (Reference Application) The Midgard report titled Capital Budget Application Guideline Review filed with the Board on October 29, 2020 states (page 61):

"*declaring that a project went to competitive tender as evidentiary justification for meeting least cost reliable services does not address key Board questions such as "At what unit cost are system reliability and risk profile improved by the project", "Does the ratepayer value the improvement in system reliability and risk reduction more than the project cost?, and "How cost effective are the proposed improvements in system reliability and risk reduction compared to other budget items being proposed and other alternatives that are available*?"

Has Hydro provided answers to these questions in the 2023 CBA? If so, please provide all references.

CA-NLH-028 (Reference Application) How has Hydro ensured that its 2023 Capital Budget provides an appropriate balance between reliability, rate impacts, and the value customers place on service? Has Hydro conducted a customer engagement process and incorporated the results in its 2023 Capital Budget Application? If so, please provide customer surveys and documentation relating to customer feedback that Hydro has relied upon to determine the appropriate balance between reliability, rate impacts, and the value customers place on service, and please provide specific references to customer input and feedback used in the development of the 2023 Capital Budget Application.

CA-NLH-029 (Reference Application) What risk mitigation value is provided by Hydro's asset management program; i.e., the difference between baseline risk and residual risk?

CA-NLH-030 (Reference Application) Please provide a summary of all laboratory testing conducted by Hydro in the 2023 Capital Budget Application to verify the need for asset replacement.

CA-NLH-031 (Reference Application) What is the overall improvement in productivity stemming from the projects included in the 2023 Capital Budget Application? Please identify the expected cost savings and provide an estimate of the impact on rates.

CA-NLH-032 (Reference Application) Please provide Hydro's number of customers and energy demand by customer class for 2019, 2020 and 2021, and the forecasts for each of 2022 and the next 5 years, in total and by service area.

CA-NLH-033 (Reference Application, Replace Diesel Shop Building (2023–2025) – Bishop's Falls, page 4) It is stated "*In light of the current rate pressure in the province and anticipated major projects, Hydro has endeavoured to reduce its capital expenditures and, as such, decided to defer the proposed building replacement for one year.*"

a) Why did Hydro take into consideration current rate pressures in the province? Is this a requirement under current legislation, or is Hydro simply being a good corporate citizen? Is being a good corporate citizen consistent with current legislation?
b) In Hydro's opinion, does the Board have the authority to take into consideration the current economic climate in the province in its decisions and orders?
c) Does Hydro believe that it has a corporate responsibility to take into consideration the economic impacts of electricity rates on customers during poor economic conditions in the province?
d) Does Hydro believe that doing so is part of its mandate?

CA-NLH-034 (Reference Application) How do residential rates for customers on the Island Interconnected system compare to other major cities in Canada? Is there relevance in comparing rates to all other Canadian provinces, or should NL rates be compared only to those provinces where hydropower provides the bulk of electricity to customers, namely, BC, Manitoba and Quebec? If such a comparison is made, where would residential rates in NL stand?

CA-NLH-035 (Reference Application) Do most distribution companies have consistent and predictable rates, particularly those that are allowed direct pass-through of power purchase costs like Newfoundland Power, compared to generation and transmission companies like Hydro owing to very large and sporadic investment requirements? Are Hydro's operations and planning complicated by the fact that it has to deal with two larger interconnected systems, and a number of small isolated systems, compared to Newfoundland Power which deals with a single interconnected system? Are these valid reasons why Hydro's rates are less predictable than Newfoundland Power's rates? Are there other reasons as well?

CA-NLH-036 (Reference Application) Over the last decade Newfoundland Power has consistently outperformed the Canadian Electrical Association's ("CEA") reliability metrics whereas Hydro has typically underperformed in comparison to the CEA average. Is this because Hydro serves mostly rural and isolated communities which have a much higher cost of supply owing to reduced customer density and remoteness/isolation from the main power grid? Should Hydro strive for reliability metrics that outperform the CEA? Why or why not?

CA-NLH-037 (Reference Application) Could performance-based regulation (PBR) motivate larger efficiency improvements amongst utilities than traditional cost of service regulation, and if properly designed, create lower rates for customers than a cost of service regime in the long run, while rewarding utilities whose management exceeds expectations on productivity? Could PBR also reduce the regulatory burden on both utilities and regulators? Have other jurisdictions in fact implemented PBR, particularly for distribution businesses?

CA-NLH-038 (Reference Application) Midgard made recommendations for improvements in the capital budget approval process which for the most part have been incorporated in the Provisional Capital Budget Application Guidelines.

a) Did Midgard in fact recommend more than 20 near-term changes to the Capital Budget Guidelines (excluding editorial changes)?
b) In Hydro's opinion, did Midgard make these recommendations in an effort to move the province toward best practice?
c) Given that the Board issued Provisional Capital Budget Application Guidelines reflecting most of Midgard's recommendations does that not imply that the previous capital budget guidelines did not reflect industry best practice, or was it the Board's intent to move the province away from best practice?
d) In Hydro's opinion, are the Provisional Capital Budget Application Guidelines more in line with industry best practice?

CA-NLH-039 (Reference Application) Midgard states with respect to capital budget envelopes (NLH-PUB-002 relating to the Capital Budget Guidelines review):

"*Similar policy approaches have been implemented in British Columbia, Alberta, Manitoba and Ontario. Although several of these jurisdictions use Performance Based Regulation ("PBR") frameworks to set rates for one or more electric utilities, Midgard notes that the benefits that accrue to this policy approach are not restricted to jurisdictions or utilities that utilize PBR. In Midgard's opinion, it is valuable to draw from best practices followed in other jurisdictions and apply those learnings in the Newfoundland and Labrador context.*"

a) Did Midgard recommend capital budget envelopes in NL under the current cost-of-service regulation scheme?
b) Did Midgard recommend that PBR be implemented in NL?
c) Can it be concluded that the use of capital budget caps and envelopes is best practice in jurisdictions with cost of service regulation, at least in Midgard's opinion?

d) Is Midgard recommending the binding use of capital budget envelopes, or as an alternative for the Board to order a capital budget envelope when it deems appropriate, thus increasing the Board's flexibility?

CA-NLH-040 (Reference Application) With respect to the prioritization process used in the 2023 Capital Budget Application:

a) Which entity within Hydro is responsible for developing project prioritization and consistency of application across the broad range of projects included in the Application?
b) How does Hydro senior management communicate to line managers which capital projects were to be included in the 2023 CBA, and which capital projects were to be included in Hydro's planned 2024 to 2027 capital expenditures?

CA-NLH-041 (Reference Application) What is the status of Hydro's wood pole test and treat program?

CA-NLH-042 (Reference Application, para. 3) It is stated "*The 2023 Capital Budget Application request for approval does not include the 2023 expenditures related to supplemental applications approved by or currently before the Board, or those anticipated to be filed with the Board in 2023 as supplemental applications once a full analysis of the proposed project is complete.*" By how much are these supplemental applications expected to increase the 2023 capital spend? Please identify all planned and anticipated supplemental applications in 2023 along with the current cost estimates.

CA-NLH-043 (Reference Application, 2023 Capital Budget Overview, page 1) It is stated "*Hydro is committed to investing in capital in a manner which meets its obligation to provide reliable service at the lowest possible cost, and to provide service and facilities which are reasonably safe and adequate and just and reasonable.*"

a) How does Hydro define "reliable service" at the generation, transmission and distribution levels?
b) How does Hydro define "lowest possible cost"?
c) How does Hydro define "reasonably safe"?
d) How does Hydro define "reasonably adequate"?
e) How does Hydro define "just and reasonable"?

CA-NLH-044 (Reference Application, 2023 Capital Budget Overview, page 1) It is stated "*Hydro is committed to investing in capital in a manner which meets its obligation to provide reliable service at the lowest possible cost".*

a) Using this as a criterion for the provision of electricity service to customers, can most any project that improves reliability be justified

provided it is put out to competitive tender and the lowest cost bid is selected?

b) Would replacing an older feeder with a new feeder provide improved reliability? Under current legislation, could Hydro justify replacement of this feeder with a new feeder even though the existing feeder was providing reliability similar to the system average provided construction was put out to competitive tender and the lowest cost bid was selected?

c) Could Hydro improve reliability by building a second feeder to every customer in the province that would be called upon to operate when the primary feeder failed? Under current legislation, provided the second feeder were put out to competitive tender and the lowest cost bid were selected, could Hydro justify this expenditure on the basis that it would provide reliable service to customers at the lowest possible cost?

d) Can Hydro justify adding new generation beyond an accepted generation reliability criteria such as 1 day in 10 years because it would improve reliability on the system provided the project were put out to competitive tender and the lowest cost bid were selected?

e) Is a change in legislation warranted to take into consideration the value customers place on service improvements?

CA-NLH-045 (Reference Application, 2023 Capital Budget Overview, page 1) It is stated "*Hydro also seeks to engage with stakeholders and customers to inform its capital investment considerations*." Please provide examples of how Hydro has engaged customers to inform its capital investment decisions.

CA-NLH-046 (Reference Application, 2023 Capital Budget Overview, page 5) It is stated that Hydro "*has strived to meet the spirit and intent of the Guidelines where full adherence is not yet possible.*" Please provide a table listing each project in the 2023 CBA identifying its cost and indicating if the project meets the requirements set out in the Provisional Capital Budget Application Guidelines, and when the requirements are not met, identify how the project has not met the requirements and when Hydro expects to be in a position to do so.

CA-NLH-047 (Reference Application, 2023 Capital Budget Overview, page 5) It is stated with respect to the Asset Management Needs and Readiness Assessment: "*This assessment has recently concluded. Hydro offers to provide this report once internal stakeholder engagement is complete*." When does Hydro expect to provide this report? Are there economies to be gained from combining Hydro and NP efforts relating to asset management given that both utilities are subject to the same legislation and the same Provisional Capital Budget Application Guidelines?

CA-NLH-048 (Reference Application, 2023 Capital Budget Overview, Charts 2 and 4)

a) Please provide charts showing SAIDI and SAIFI owing to outages on Hydro's distribution system (excluding isolated systems) compared to customers served by the NP distribution system.

b) Please provide Charts 2 and 4 based on a rolling 5-year average of SAIDI and SAIFI.

c) Do the reliability statistics for EC Region 2 include outages owing to both transmission and distribution?

CA-NLH-049 (Reference Application, 2023 Capital Budget Overview, page 20) It is stated "*Estimates for Hydro's capital projects and programs are developed primarily by Hydro's engineering staff, with support from engineering consultants as required.*" Does Hydro's engineering staff and engineering consultants have the ability to quantify risk and impacts on reliability? If not, why wouldn't Hydro contract engineering consultants who can given that it is a requirement set out in the Provisional Capital Budget Application Guidelines?

CA-NLH-050 (Reference Application, 2023 Capital Budget Overview, page 21) It is stated "*To determine the accuracy range of Hydro's capital estimates, Hydro completed statistical analysis of project variances based on available data for projects proposed and completed since 2013. Hydro's analysis has determined that its average variance is -6%, with a standard deviation of approximately +/-38%. Therefore, Hydro's expected estimate accuracy range is approximately +30%/-40%.*"

a) Is this methodology consistent with the requirements set out in the Provisional Capital Budget Application Guidelines?

b) Does a +30%/-40% accuracy range reflect industry best practice?

CA-NLH-051 (Reference Application, 2023 Capital Budget Overview, page 22) Regarding the planned supplement request for EV fast chargers:

a) If Hydro does not succeed in obtaining federal funding, would Hydro still make a supplemental application to the Board?

b) If Hydro did not install those EV chargers but a non-utility entity did so in 2024 or 2025, would that negatively affect ratepayers in any substantial way? If so, how?

CA-NLH-052 (Reference Application, 2023 Capital Budget Overview, page 23/24)

a) Does Hydro's terminal station lighting contain PCBs?

b) Given the energy and operating efficiencies of LED lighting available in the market today, and the potential for harmful PCBs in existing lighting, why has Hydro not proposed a program to replace all station and office lighting inside and outside its buildings (similar to the LED Street Lighting Program)?

CA-NLH-053 (Reference Application, 2023 Capital Budget Overview, page 30) It is stated with respect to light-duty vehicles "*The review is ongoing.*" When does Hydro expect to complete this review?

CA-NLH-054 (Reference Application, 2023 Capital Budget Overview, Table 6) Have these plans been discussed with the relevant industrial customers?

CA-NLH-055 (Reference Application, 2023 Capital Budget Overview, Chart 20) Does the chart show all-in average rates for all end-use customers? Please show the chart with rates for only residential customers on the Island system, both all-in and energy charge only. What are the all-in and energy rates for residential customers on the Island system in 2022?

CA-NLH-056 (Reference Application, 2023 Capital Budget Overview, Tables 8 and 9)

a) If the Board were to impose a capital budget envelope, would Hydro use these tables to prioritize which projects would be completed and which projects would not be completed?
b) Is Hydro's project prioritization methodology similar to that used by NP in its 2023 Capital Budget Application? What are the primary differences?
c) It is noted that the Replace Peripheral Infrastructure (i.e., printers and display units) project has a risk mitigated per $1 million score of 32.0 while the Salmon River Spillway project has a score of only 5.3. Does Hydro believe that its prioritization methodology provides an accurate portrayal of relative risk?

CA-NLH-057 (Reference Application, 2023 Capital Budget Overview, Appendix A, page A-9) For "Allowance for Unforeseen Items," for the years 2000 to 2022 please provide the amount approved and the amount actually spent.

CA-NLH-058 (Reference Application, 2023 Capital Budget Overview, Appendix F and pages 34-37)

a) What was the rationale or precedent for the assignment of index values for likelihoods in the NLH Capital Risk Rating Matrix as 1, 2, 3, 4 and 5? The index value of 1 corresponds to a probably of less than 1 per cent while the index value of 5 corresponds to a probably of greater than 90 per cent, which is more than 90 times higher, so isn't using 5 underweighting the probably of a likely event in relative terms? Has Hydro considered using the mid-point of each of the 5 categories to reflect the probabilities associated with them, e.g., index number 4 corresponds to 50 to 90 per cent so why not use the midpoint of 70 per cent, thereby preserving the mathematical relationship among the probabilities?

b) What was the rationale or precedent for the assignment of index values for impacts in the NLH Capital Risk Rating Matrix as 1, 2, 3, 4 and 5? While there is not an exact mathematical relationship among the impacts, isn't an assigned index value of 3 for a "moderate" impact (where more than 1000 customers are affected) too low relative to a "very-low" impact event (where fewer than 100 customers are affected)?

c) Tables 8 and 9, pages 34-37, give very different priority rankings depending on whether the criterion is risk mitigation per $1 million (Table 7) or risk mitigated (Table 8), e.g., Overhaul of Unit 2 Turbine and Valves (2023) – Holyrood ranks 59 out of 62 projects/programs when the evaluated by risk mitigation per $1 million while it ranks first among the 62 according to risk mitigated. Is it possible that these very different rankings are due to a lack of proportionality in the index values used in the Rating Matrix?

CA-NLH-059 (Reference Application, 2023 Capital Budget Overview, Appendix F) Are mandatory projects also subjected to ranking using the Capital Risk Rating Matrix? If so, since they must be undertaken, why?

CA-NLH-060 (Reference Application, Five-year Capital Plan (2023-2027), page 6) It is stated "*Replace Diesel Plant (2025–2026) – Paradise River ($10 million total), which is required to replace the deteriorated diesel generating station, serving Paradise River in Labrador.*"

a) Is diesel generation consistent with government climate change initiatives?

b) What is the probability that Hydro's diesel generators will become stranded?

c) Given global, federal and provincial efforts toward a carbon-free society, is it possible that fuel for diesel generators may not be available in future years?

CA-NLH-061 (Reference Application, Five-year Capital Plan (2023-2027), page 12) It is stated *"... also reflects the downward trend Hydro has observed for new service requests."* Please provide Hydro's actual new service requests in the past 5 years, and forecast for the next 5 years.

CA-NLH-062 (Reference Application, Holyrood Thermal Generating Station Overview, page 3) It is stated "*The Holyrood TGS is necessary to meet both winter peak demand and annual energy requirements until the Muskrat Falls Hydroelectric Generating Facility and the LIL are brought online and proven reliable*".

a) What is Hydro's best estimate of when these facilities will be proven reliable?

b) What was Hydro's best estimate of when the LIL would be proven reliable when the hearing on the Muskrat Falls Rate Mitigation Options and Impacts Review was conducted in the fall of 2019?
c) What is Liberty's current view of when the LIL will be proven reliable?
d) If Holyrood is required to operate in generation mode through the winter of 2023/24 or beyond, how will this impact the economic evaluation of the proposed electrification program?

CA-NLH-063 (Reference Application, Holyrood Thermal Generating Station Overview, Chart 1) The chart shows capital expenditures in 2023 of $27.8 million. At this point, is there any way Hydro can avoid these expenditures in 2023? If so, please explain.

CA-NLH-064 (Reference Application, 2022 Capital Expenditures Overview, page 9) It is stated "*The variance in overall project expenditures plus forecast is attributed to cost escalations from vehicle manufacturers due to global supply chain impacts arising from the COVID-19 pandemic.*" Have global supply chain issues impacted delivery and cost of most every piece of equipment ordered by Hydro in 2022? Are global supply chain issues expected to continue in 2023? How has this influenced Hydro's 2023 CBA and has it resulted in any changes to the economic analyses of projects included in the 2022 and 2023 CBAs?

CA-NLH-065 (Reference Application, Circuit Breakers Renewal Program (2023-2024)) By 2025 will all of Hydro's high-voltage circuit breakers be $SF_6$? Are high-voltage air-blast and oil circuit breakers still available for purchase in the market?

CA-NLH-066 (Reference Application, Terminal Station Renewal Program (2023-2024)) Is there a way to test for PCB contamination? What needs to happen in order for PCB contamination to become a health hazard?

CA-NLH-067 (Reference Application, Terminal Station Renewal Program (2023-2024), pages 15/16) It is stated "*The service life of flooded cell batteries and valve-regulated lead-acid ("VRLA") batteries is approximately 20 years and 10 years, respectively. Battery chargers have a service life of 20 years.*" Will the batteries and chargers proposed for replacement be replaced with like battery and charger technology, or are more reliable and efficient technologies now available?

CA-NLH-068 (Reference Application, Terminal Station Renewal Program (2023-2024), Attachment 1, page 18) It is stated "*Due to their criticality, 230 kV terminal stations have a redundant station service feed, feed either through a redundant transformer tertiary, supplied from Newfoundland Power Inc.'s*

*("Newfoundland Power") electrical system where available, or by a diesel generator."*

a) Does Newfoundland Power receive compensation from Hydro for use of this equipment in this manner?

b) How many stations have diesel generators for station service backup, and are these generators used for supply to the interconnected system during system emergencies?

CA-NLH-069 (Reference Application, Diesel Genset Replacement Program (2023-2025))

a) Were alternatives that are more environmentally friendly than diesel generators considered?

b) What is driving load growth at Hopedale?

c) Why was the William's Habour community resettled?

CA-NLH-070 (Reference Application, Overhaul Diesel Units (2023)) Were alternatives that are more environmentally friendly than diesel generators considered?

CA-NLH-071 (Reference Application, Provide Service Extensions (2023)) Please provide for the record copies of Hydro's Schedule of Rates and Regulations and the CIAC Policy.

CA-NLH-072 (Reference Application, Replace Light- and Heavy-Duty Vehicles (2023-2025))

a) How many vehicles will be replaced with electric vehicles (EVs)?

b) How many EVs does Hydro currently own?

c) What are the prospects for electric heavy-duty vehicles?

d) Does the purchase of gasoline/diesel vehicles rather than EVs set back Hydro's electrification program and represent a lost opportunity?

e) How do the lifetime costs of Hydro-owned EVs compare to Hydro-owned gasoline/diesel powered vehicles?

f) What is the current lead time for purchasing gasoline/diesel light-duty vehicles? What is the current lead time for purchasing comparable EVs?

g) What is the current capital cost of a gasoline/diesel light-duty vehicle and a comparable EV?

h) Does current supply chain issues and high levels of inflation imply that the proposed electrification program should be deferred by a year or two?

CA-NLH-073 (Reference Application, Upgrade of Worst-performing Distribution Feeders (2023-2024))

a) Does Hydro consider FHD-L1 SAIFI and CHI performance of 1.9 and 1864, respectively, as poor relative to its average feeder performance of 1.68 and 1188, respectively? Are such levels of performance not somewhat normal on the distribution system?

b) Does the fact that FHD-L1 results in subsequent outages to dependant feeders FHD-L4, FHD-L5, and FHD-L6 imply that FHD-L1 is not a feeder, bur rather a distribution supply line?
c) Did Hydro consider back-up supply alternatives that are environmentally friendly?
d) Why were sections of this feeder built with ACSR given the corrosion problem?
e) How many complaints about reliability has Hydro received in recent years from customers served by this feeder?

CA-NLH-074 (Reference Application, Wood Pole Line Management Program (2023), page 9) It is stated "*The work completed varies based on the actual condition of the asset. In most cases, the work completed on any one structure is not related to the work on the next structure (e.g., one structure may require a pole replacement and the next structure may need a crossarm or an insulator replacement).*"

a) If testing determines that a wood pole requires replacement, does Hydro assume that all wood poles on the line require replacement? Does the same logic apply to all elements of a wood pole line? For example, if testing determines that a crossarm requires replacement does Hydro assume that all crossarms on the line require replacement?
b) If Hydro determined that, for example, 50% of the wood poles on a transmission line were deteriorated and required replacement, would Hydro replace the entire line or only the 50% of the poles that were deteriorated and required replacement?
c) At what percentage of wood poles requiring replacement would Hydro replace the entire line rather than only the poles that require replacement?
d) Given the limited number of transmission lines owned by Newfoundland Power, are there efficiencies to be gained from having Hydro conduct all wood pole line management for transmission lines in the province? Might Newfoundland Power contract out this activity to Hydro?

CA-NLH-075 (Reference Application, Gas Turbine In-service Failures (2023)) Hydro has a number of programs relating to in-service failures. Why are these not all lumped under a single heading such as the "allowance for unseen items account" or under the relevant preventative maintenance program?

CA-NLH-076 (Reference Application, Overhaul Pumps (2023) - Holyrood, Table 1) Why is the likelihood of failure owing to deferral of an overhaul program rated 4?

CA-NLH-077 (Reference Application, Purchase Mobile Devices (2023))
a) Do employees not have their own mobile phones?
b) What is typical utility practice with respect to mobile phones?

CA-NLH-078 (Reference Application, Purchase Personal Computers (2023)) Are supply chain issues and inflation expected to impact the Purchase Personal Computers program in 2023, and if so, how?

CA-NLH-079 (Reference Application, Update Cyber Security Infrastructure (2023)) Does Hydro conduct its own cyber security assessments or does it rely on outside expertise? Has Hydro ever had an outside expert come in to assess its cyber vulnerabilities?

CA-NLH-080 (Reference Application, Inspection Report of the Superstructure and the Access - Salmon River Spillway)
a) Was RDEnergie requested to quantify the risk of failure if the project were deferred by a year or two? Do they have this expertise?
b) Did RDEnergie provide cost estimates consistent with the requirements set out in the Provisional Capital Budget Application Guidelines? Do they have this expertise?
c) Will Hydro, in future, require its contractors to have and apply expertise to meet the risk quantification and estimate accuracy required under the provisional guidelines?

CA-NLH-081 (Reference Application, Replace Diesel Genset 1 (2023-2024) – *Ebbegunbaeg)* Could a battery bank provide a reasonable source of backup power for this control structure? Would a battery bank have reduced environmental emissions and be more consistent with government zero-carbon initiatives? What is the likelihood that diesel generators, even those used only for backup purposes, become stranded as a result of government zero-carbon initiatives?

CA-NLH-082 (Reference Application, Replace Diesel Shop Building (2023–2025) – Bishop's Falls, page 4) Was Exploits Engineering Consultants Limited requested to quantify the risk of failure if the project were deferred by a year or two? Do they have this expertise?

CA-NLH-083 (Reference Application, Upgrade Water and Fire Suppression Systems (2023–2024) – Bishop's Falls, page 3) It is stated "*In addition to the physical condition of the lines, their ductile iron construction has rendered the domestic water not suitable for human consumption, and the firewater system does not have sufficient pressure to provide protection to the main building.*" For how long has this been a problem?

CA-NLH-084 (Reference Application, Install Oil Spill Containment Transformer T1S (2023–2024) – Cat Arm)

a) Please provide a description of the primary containment system.
b) Why is a secondary containment system required for a transformer that is not in use? Is there a legislative requirement that there be a secondary containment system for a spare transformer?
c) Should a third containment system be installed? How does Hydro determine when the number of containment systems is adequate?

CA-NLH-085 (Reference Application, Purchase Meters and Metering Equipment (2023)) Are these meters compatible with time-of-use rates?

CA-NLH-086 (Reference Application, Refurbish BioGreen Sewage System (2023) – Holyrood) Is the proposed project compatible with alternative uses of the site that may come about as a result of the demand/supply adequacy study?

CA-NLH-087 (Reference Application, Replace HVAC System (2023–2024) – Bishop's Falls)

a) Specifically, what types of HVAC systems will be considered for installation and what are their efficiency ratings and annual operating costs?
a) What is the basis for the $172,000 cost estimate?

CA-NLH-088 (Reference Application, Unit 7 Condition Assessment (2023) – Bay d'Espoir)

a) Given that the inspection identifying excessive wear was conducted in 2019, why has Hydro waited until 2023 to conduct a detailed condition assessment?
b) Please explain how a ranking of 4 was determined for the likelihood of failure owing to deferment of a condition assessment.

CA-NLH-089 (Reference Application, 2022 Capital Expenditures Overview, Appendix A) Of 17 projects/programs in 2022, 13 have variances between the Board-approved budget amounts and the total budget expenditures and forecast. It is understood that the variances are in part owing to supply chain issues and inflation. On the other hand, Newfoundland Power shows 2022 capital expenditure variances in only 1 of 11 projects/programs (see Newfoundland Power 2023 Capital Budget Application, 2022 Capital Expenditure Status Report). Why is Newfoundland Power so much more proficient in dealing with supply chain and inflation issues than Hydro? Has Hydro contacted Newfoundland Power in an effort to gain insights on how it can be more effective at managing supply chain issues and very high levels of inflation?

CA-NLH-090 (Reference Application) Please provide a detailed calculation of the cost to own and operate Hydro's small hydro facilities (with capacity less than 1 MW), and the amount of money recovered annually from customers attributable to Hydro's small hydro generation facilities.

CA-NLH-091 (Reference Application) Is Hydro considering retirement of any of its small hydro generating facilities? Please file any studies Hydro has completed on its small hydro generation facilities, specifically, those with capacities that are less than 1 MW. Are these facilities expected to remain used and useful following commissioning of Muskrat Falls?

CA-NLH-092 (Reference Application) Please provide details of Hydro's approach to assessing the relative cost of non-wires alternatives (NWAs) and distributed energy resources (DERs) to the capital investment in traditional assets that are included in Hydro's proposed capital plan, including any reports or analyses that show the comparative analysis for the projects included in the 2023 Capital Budget Application. If NWAs have not been considered, please explain why they have been excluded as options without a comparison of alternatives.

CA-NLH-093 (Reference Application) What is Hydro's current estimate of the marginal value of capacity and energy over the next five years? Please provide a comparison to actual sales of capacity and energy with transmission/wheeling costs shown separately for 2020, 2021 and year-to-date 2022.

CA-NLH-094 Has Hydro received any proposals re wind generation / hydrogen production?

(a) Will any Muskrat Falls' surplus electricity be used in reference to any such proposals?

(b) Have any significant resources of Hydro been dedicated to any such projects?

**DATED** at St. John's, Newfoundland and Labrador, this 24th day of August, 2022.

Per:

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