

- 1 **Q. (Reference Application Schedule B, pages 1-99 of 99) 2022 Capital Projects**
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 3 **a) For each capital project included in Schedule B, please provide the details of the**
 4 **business case used to support the selected project option, including demand side**
 5 **management and non-wires alternatives where relevant, showing:**
 6 **i) all options considered for achieving the objectives set out in the justification**
 7 **section for each project,**
 8 **ii) a schedule comparing the net present value of each option considered taking**
 9 **into account both the required capital expenditure and the impact on OM&A**
 10 **costs,**
 11 **iii) a schedule comparing the impact on NP’s total revenue requirement in each**
 12 **year for the years 2022 through 2031, and**
 13 **iv) a schedule comparing the incremental rate impact in each year for the years**
 14 **2022 through 2031.**
- 15
- 16 **A. a) Newfoundland Power’s 2022 Capital Budget Application** is filed in accordance with
 17 the 2007 *Capital Budget Application Guidelines* (the “Guidelines”). Schedule B of
 18 the 2022 *Capital Budget Application* provides the project description, justification,
 19 projected expenditures and costing methodology for each project. The Guidelines
 20 state that a utility will be expected to provide, as part of the justification, a net present
 21 value (“NPV”) calculation, levelized cost of energy and cost benefit analysis where
 22 appropriate and when available for capital projects greater than \$200,000.¹
 23
- 24 Schedule B includes information on 40 capital projects. The majority of these
 25 projects are routine programs² that are consistent from year to year. An NPV
 26 calculation, levelized cost of energy or cost benefit analysis would not be appropriate
 27 for these recurring projects.
 28
- 29 There are 6 projects where an NPV calculation, levelized cost of energy or cost
 30 benefit analysis are appropriate. These are the: (i) *Sandy Brook Plant Penstock*
 31 *Replacement* project; (ii) *Substation Refurbishment and Modernization* project for
 32 Humber Substation; (iii) *Street Lighting – LED Replacement Program*; (iv) *Electric*
 33 *Vehicle Charging Network* project; (v) *Workforce Management System Replacement*
 34 project; and (vi) *Application Enhancements* project.
 35
- 36 With respect to options including demand side management and non-wires
 37 alternatives, see the response to Request for Information CA-NP-114.

¹ *Capital Budget Application Guidelines*, page 7 of 11.

² Similar to programs, there are 3 financial related projects, *Allowance for Funds Used During Construction*, *General Expenses Capitalized* and *Allowance for Unforeseen Items*, that are recurring every year.

- 1 (i) Attachment A provides the options considered to achieve the objectives set out in
2 the justification section for each of the 6 projects where an NPV calculation,
3 levelized cost of energy or cost benefit analysis are appropriate.
4

5 In addition to the 6 projects listed in Attachment A, the *Feeder Additions for*
6 *Load Growth* project evaluates alternatives for overloaded conductor on
7 distribution feeders as part of the Company's comprehensive planning process.
8 Report 4.2 *Feeder Additions for Load Growth* identifies 4 alternatives for dealing
9 with overloaded conductor. These alternatives include feeder balancing, load
10 transfers, upgrading conductor and constructing a new feeder.³ The report
11 details how each of the 4 alternatives were evaluated for each of the distribution
12 feeders experiencing overloaded conductor.
13

- 14 (ii) Attachment A summarizes the NPV calculation, levelized cost of energy and cost
15 benefit analysis for the projects where these analyses are appropriate. These
16 economic analyses take into account both the required capital expenditure and
17 the impact on operating and maintenance costs.⁴
18

- 19 (iii) Newfoundland Power's 2022 *Capital Plan* provides a *pro forma* estimate of its
20 2022 revenue requirement as a result of the capital projects proposed for 2022.⁵
21 This is consistent with the short-term changes to capital budget applications
22 directed by the Board in 2020.⁶
23

24 The *pro forma* estimate is practically limited. It does not include potentially
25 higher revenues from customer growth projects, or the long-term effect that fully
26 justified capital expenditures have on minimizing aggregate costs and thus
27 revenue requirements.⁷
28

29 Given these practical limitations, Newfoundland Power is unable to provide a
30 schedule comparing the impact on its revenue requirement in each year from
31 2022 through 2031 for each capital project proposed for 2022.
32

33 See responses to Requests for Information CA-NP-069 and NLH-NP-035 for
34 information on the total impact of the 2022 *Capital Budget Application* on
35 revenue requirement for the years 2023 through 2026.

³ For additional information on the 4 alternatives for overloaded conductor please refer to page 2 of the report
4.2 *Feeder Additions for Load Growth*.

⁴ For example, the total cost of executing the *Street Lighting – LED Replacement Program* is estimated at
approximately \$32.8 million. The economic analysis determined the plan will reduce energy and maintenance
costs to customers by approximately \$52 million over 20 years.

⁵ See the 2022 *Capital Budget Application*, 2022 *Capital Plan*, Section 2.3.2 *Revenue Requirement Perspective*.

⁶ The Board's letter of February 27, 2020 addressed changes for the utilities' capital budget applications to be
implemented while a review of the Guidelines is ongoing. In its letter, the Board stated that information related
to the revenue requirement impact of the capital projects proposed, would be helpful. Newfoundland Power has
provided the total revenue requirement impact of its 2022 *Capital Budget Application*.

⁷ See the 2022 *Capital Budget Application*, 2022 *Capital Plan*, Section 2.3.2 *Revenue Requirement Perspective*.

- 1 (iv) Determining the incremental rate impact of each capital project proposed for
2 2022 would require the revenue requirement impact of each project. As stated in
3 part (iii), this information is not available.

Schedule Listing Options and Net Present Value

Project Summary

Capital Project	Alternatives	Economic Analysis
Sandy Brook Plant Penstock Replacement,	<ol style="list-style-type: none"> Continued operation of Sandy Brook Plant Purchase replacement energy and capacity 	Levelized cost of production is 3.22 ¢/kWh. Net capacity benefit of between 7.04 ¢/kWh and 10.21 ¢/kWh.
Substation Refurbishment and Modernization: Humber Substation	<ol style="list-style-type: none"> Like-for-like replacement of 4.16 kV infrastructure Retire 4.16 kV infrastructure and expand 12.5 kV infrastructure 	<ol style="list-style-type: none"> 6,545,000 4,961,000 The NPV results indicate that retiring the 4.16 kV infrastructure and expanding the 12.5 kV infrastructure is the least cost alternative.
Street Lighting – LED Replacement Program ¹	<ol style="list-style-type: none"> Current Approach LED replacement program 	<ol style="list-style-type: none"> 31,854,000 27,000,000 The NPV results indicate that the LED replacement program reduces costs to customers by approximately \$4.9 million over 20 years.
Electric Vehicle Charging Network ²	<ol style="list-style-type: none"> No customer electrification programs Customer electrification programs 	Customer electrification programs result in 0.5 ¢/kWh rate mitigation benefit for customers.
Workforce Management System Replacement	<ol style="list-style-type: none"> Return to paper-based dispatching Replacement with a commercially available solution 	<ol style="list-style-type: none"> 7,778,000 7,279,000 The NPV results indicate that replacing the system will provide a net benefit to customers of approximately \$500,000 over 7 years.
Application Enhancements: Digital Forms System Enhancement	<ol style="list-style-type: none"> Status quo Efficiency improvements from completing electronic forms in the field 	7-year NPV of \$19,127
Application Enhancements: Technology Service Management Solution	<ol style="list-style-type: none"> Status quo Efficiency improvements in completing Helpdesk requests 	7-year NPV of \$43,230
Application Enhancements: Dynamics GP Automation	<ol style="list-style-type: none"> Status quo Efficiency improvements from automating project creation process 	7-year NPV of \$31,623

¹ Comparison of alternatives and NPV analysis can be found in the 2021 Capital Budget Application, LED Street Lighting Replacement Plan, Section 3.

² Comparison of alternatives and NPV analysis can be found in the 2021 Electrification, Conservation and Demand Management Application, Exhibit 2, Appendix A.