

1 **Q. (Application Volume 1, page 2-40) It is stated “Capital expenditures are forecast to**
2 **average approximately \$107 million annually from 2021 to 2023. This compares to an**
3 **average of approximately \$97 million per year in 2019 and 2020.”**
4

5 **a) Why are capital cost increases of over 10% proposed in the 2021 to 2023 time-**
6 **frame?**
7

8 **b) What approach was followed by NP to minimize capital expenditures during this**
9 **time of economic distress in the Province?**
10

11 **c) What controls does NP senior management place on line managers during the**
12 **preparation of capital budgets?**
13

14 **d) Does NP prioritize its capital budget projects?**
15

16 **e) Did NP incorporate any of the Midgard recommendations in its 2022 capital**
17 **budget, or did NP decide that none of the Midgard recommendations were**
18 **worth pursuing in its 2022 capital budget?**
19

20 **A. a) Capital cost increases of over 10% proposed in the 2021 to 2023 timeframe are**
21 **primarily the result 3 projects: (i) the construction of a new substation near the**
22 **St. John’s International Airport in 2021;¹ (ii) the once-in-a-generation project to**
23 **replace the Company’s Customer Service System (“CSS”);² and (iii) the first 3 years**
24 **of a 6-year plan to replace all high pressure sodium (“HPS”) street lights with LED**
25 **street lights.³**
26

27 Excluding these projects, capital expenditures are forecast to average approximately
28 \$97 million annually from 2021 to 2023. This is consistent with 2019 and 2020
29 average annual expenditures.
30

31 **b) Newfoundland Power manages its capital investments to ensure the delivery of**
32 **reliable, least-cost service to customers in *all* operating environments. Balancing the**
33 **cost and reliability of the service provided to customers is consistent with the**
34 **provincial power policy⁴ and customers’ service expectations.⁵**

¹ Expenditures for the new substation are forecast to be \$4,997,000 in 2021. See Newfoundland Power’s 2022 *Capital Budget Application, 2021 Capital Expenditure Status Report*, page 5.

² Expenditures for the replacement of the Company’s CSS are forecast to be \$9,903,000 in 2021, \$15,826,000 in 2022, and \$5,917,000 in 2023. See Newfoundland Power’s 2022 *Capital Budget Application, Schedule C*, page 1.

³ Expenditures for the replacement of HPS street lights with LED street lights are forecast to be \$5,402,000 in 2021, \$5,428,000 in 2022, and \$5,452,000 in 2023. See Newfoundland Power’s 2021 *Capital Budget Application, Volume 1, LED Street Lighting Replacement Plan*, page 14.

⁴ Section 3(b)(iii) of the *Electrical Power Control Act, 1994* requires that customers receive reliable service at the lowest possible cost.

⁵ Quarterly surveys indicate the 2 most important issues to customers are reliability and price.

1 Newfoundland Power manages its capital investments through a comprehensive
2 planning process. This process determines the necessity, scope and timing of capital
3 projects based on sound engineering, objective data, and good utility practice.⁶
4

5 For example, approximately ¼ of annual capital expenditures are typically driven by
6 the requirement to respond to customers' service requests. This includes connecting
7 new customers to the electrical system addressing customers' increased electrical
8 system loads. These expenditures are required as part of Newfoundland Power's
9 obligation to serve. The level of expenditure required in a given year is generally
10 dependent upon the number and scope of customer requests.⁷
11

12 Opportunities to manage expenditures are greatest for capital projects driven by plant
13 replacement. Plant replacement typically accounts for approximately ½ of annual
14 capital expenditures. Newfoundland Power manages these expenditures in a manner
15 consistent with maintaining current levels of service reliability for customers at the
16 lowest possible cost. Certain practices reduce *overall* costs to customers, while other
17 practices reduce *capital* costs to customers.
18

19 Newfoundland Power uses well established economic analyses to determine whether
20 capital projects will reduce overall costs to customers. Examples from the
21 Company's *2022 Capital Budget Application* include:
22

- 23 (i) The replacement of existing street lights with LED fixtures is estimated to cost
24 approximately \$32.8 million over 6 years. This project is forecast to reduce
25 energy and maintenance costs to customers by approximately \$52 million over
26 20 years. The net present value ("NPV") of these savings is approximately
27 \$4.8 million. This project will provide customers with lower rates for a more
28 reliable service.⁸

⁶ For additional details on the Company's capital planning process, see Newfoundland Power's *2022 Capital Budget Application, 2022 Capital Plan, Section 2.0*.

⁷ As examples, capital expenditures for projects such as *Meters, Services* and *Extensions* are based on the number of customer requests received.

⁸ See Newfoundland Power's *2022 Capital Budget Application, Schedule B*, page 34.

- 1 (ii) The construction of an electric vehicle (“EV”) charging network will enable
2 the delivery of customer electrification programs. An NPV analysis
3 determined that electrification programs will provide a rate mitigating benefit
4 for Newfoundland Power’s customers of approximately 0.5¢/kWh by 2034.⁹
5 This equates to \$100 in reduced electricity charges that year for an average
6 residential customer with electric heating.¹⁰
7
- 8 (iii) The replacement of Newfoundland Power’s workforce management system
9 will allow the Company to continue dispatching field crews using a
10 centralized, technology-based process. An NPV analysis determined that
11 replacing the current obsolete system would reduce costs to customers by
12 approximately \$499,000 over 7 years in comparison to implementing manual
13 dispatching processes.
14
- 15 (iv) The proposed replacement of the Sandy Brook Plant penstock will ensure the
16 continued provision of low-cost electricity to Newfoundland Power’s
17 customers. An economic analysis determined the net benefit of plant
18 production is 10.21¢/kWh for fully dispatchable and 7.04 ¢/kWh for a run of
19 river plant. This indicates that continued operation of the plant is least cost
20 for customers over the longer term.¹¹
21
- 22 Newfoundland Power uses a variety of measures to reduce capital costs to customers.
23 Examples from the Company’s 2022 *Capital Budget Application* include:
24
- 25 (i) An assessment of alternatives is completed for capital projects. For example,
26 an NPV analysis determined that upgrading the deteriorated 4.16 kV
27 infrastructure at Humber Substation to 12.5 kV would reduce costs to
28 customers by approximately \$1.6 million over 20 years in comparison to a
29 like-for-like replacement.¹²
30
- 31 (ii) Capital expenditures are targeted in the areas that provide the most benefits
32 for customers. For example, the Company’s 2022 *Distribution Reliability*
33 *Initiative* targets the replacement of a relatively short, 2 kilometre section of

⁹ An NPV analysis assessed the net revenue impact of increased energy sales through customer electrification programs to 2034. The net revenue impact was then divided by projected Company energy sales, including energy sales from electrification, to determine an indicative customer rate impact. Planned electrification programs will provide additional net revenue of approximately \$123 million over the period 2021 to 2034. On an NPV basis, this equates to approximately \$62 million in additional net revenue over this period. See Newfoundland Power’s 2021 *Electrification, Conservation and Demand Management Application, Volume 1, Evidence*, pages 18 to 19.

¹⁰ The average annual usage of an all-electric residential customer was 17,412 kWh in 2019 ((17,412 kWh x 0.5¢/kWh) * 1.15 HST = \$100).

¹¹ See Newfoundland Power’s 2022 *Capital Budget Application, Report 1.2 Sandy Brook Plant Penstock Replacement*, page 9.

¹² See Newfoundland Power’s 2022 *Capital Budget Application, Report 2.1 Substation Refurbishment and Modernization, Appendix B*, page B-11.

1 distribution line where customers experience among the worst service
2 reliability in Newfoundland Power’s service territory.¹³

3
4 (iii) Capital projects are coordinated, where possible, to realize productivity gains
5 and reduce customer outages. For example, *Substation Refurbishment and*
6 *Modernization* projects are coordinated with PCB removal projects. This
7 coordination has achieved efficiencies in project management and reduced
8 costs associated with the deployment of portable substations by over \$1
9 million.¹⁴

10
11 (iv) Capital projects are deferred when possible.¹⁵ For example, transmission line
12 124L was originally planned for rebuild in 2011, but was deferred to 2022
13 through routine maintenance. The Company’s *2022 Capital Plan* outlines 2
14 additional projects that were originally planned for 2022 and subsequently
15 deferred.¹⁶ Numerous other capital projects have also been deferred beyond
16 the current planning period.¹⁷

17
18 The *Distribution Feeder Automation* project provides another example of how capital
19 expenditures contribute to maintaining reliable service for customers at the lowest
20 possible cost. This project involves the installation of downline reclosers to
21 sectionalize distribution feeders.¹⁸ The efficiency and reliability benefits of downline
22 reclosers are most pronounced during significant events.¹⁹ For example, the
23 operation of 5 downline reclosers during a severe blizzard in January 2020 avoided
24 approximately 3.5 million customer outage minutes without the assistance of field
25 crews.²⁰

26
27 Overall, Newfoundland Power’s capital planning is consistent with its objective of
28 maintaining reliable service for its customers at the lowest possible cost.

¹³ See Newfoundland Power’s *2022 Capital Budget Application, Report 4.1 Distribution Reliability Initiative*.

¹⁴ See Newfoundland Power’s *2022 Capital Budget Application*, response to Request for Information CA-NP-026.

¹⁵ Newfoundland Power’s capital plan is updated annually based on new data and information. This includes: (i) updated customer, energy and demand forecasts; (ii) updated condition assessments of equipment; and (iii) updated assessments of potential customer benefits. This process may result in the development or deferral of capital projects.

¹⁶ These projects are: (i) the refurbishment of the Mobile hydro plant; and (ii) the feeder load growth in the City of Corner Brook. See Newfoundland Power’s *2022 Capital Budget Application, 2022 Capital Plan*, page 7, Table 2.

¹⁷ See Newfoundland Power’s *2022 Capital Budget Application*, response to Request for Information CA-NP-075.

¹⁸ Downline reclosers are pole-mounted devices that are controlled remotely to: (i) isolate a fault so only a portion of customers on a feeder experience an outage, instead of all customers; and (ii) systematically restore power to customers following a prolonged outage.

¹⁹ “Significant events” refer to external events that exceed the design parameters or operational limits of the electrical system.

²⁰ See the *2022/2023 General Rate Application, Volume 1, Application, Company Evidence and Exhibits, Section 2: Customer Operations*, page 2-30.

- 1 c) Newfoundland Power controls its annual capital expenditures through a
2 comprehensive planning process. The annual capital planning process is a
3 collaborative effort between managers and senior management to determine the
4 nature, scope and timing of capital projects. Through this process, managers and
5 senior management routinely identify opportunities to reduce capital costs to
6 customers and to reduce overall costs to customers. See part b) for more information.
7
- 8 d) Yes, Newfoundland Power prioritizes its annual capital budget projects.
9

10 Prioritization within Newfoundland Power's annual capital budget applications is
11 essentially a matter of determining which capital expenditures are required to meet its
12 statutory obligations in a given year. The overall level of capital expenditures
13 required in a given year is principally driven by: (i) system growth, including new
14 customer connections and localized areas of load growth; and (ii) the condition of
15 electrical system assets and requirements for replacement or refurbishment.
16

17 As described in part a), approximately $\frac{1}{4}$ of the capital expenditures in a given year
18 are typically driven by system growth. These expenditures are required annually to
19 meet Newfoundland Power's obligation to serve and are prioritized on that basis.
20 Options to defer these capital expenditures are limited and generally relate to
21 assessments of alternatives, such as whether overload conditions can be addressed by
22 transferring load from one feeder to another.²¹
23

24 Approximately $\frac{1}{2}$ of the capital expenditures in a given year are driven by the
25 requirement to replace deteriorated, deficient and failed plant. Capital expenditures
26 for plant replacement are generally prioritized based on plant condition.
27

28 Transmission and distribution capital expenditures are prioritized based on the
29 Company's inspection and maintenance practices.²² These practices establish
30 classification priorities for transmission and distribution infrastructure based on the
31 condition observed in the field. For both transmission and distribution, high-priority
32 deficiencies and in-service failures are prioritized for the year in which they are
33 identified. Other deficiencies are tracked and planned for execution during the
34 following year.²³ This permits a structured, condition-based approach to maintaining
35 over 12,000 kilometres of distribution and transmission line.

²¹ See, for example, Newfoundland Power's 2022 *Capital Budget Application, Report 4.2 Feeder Additions for Load Growth*.

²² See, for example, response to Request for Information NLH-NP-009 as part of Newfoundland Power's 2022 *Capital Budget Application* for information on the classification priorities assigned to wood poles on transmission lines.

²³ As examples, the Company's *Reconstruction* project addresses in-service failures and high-priority deficiencies on the distribution system during the year in which they are identified. Other deficiencies are addressed the following year under the *Rebuild Distribution Lines* project. See response to Request for Information CA-NP-033 as part of Newfoundland Power's 2022 *Capital Budget Application*.

1 Substation and generation capital expenditures are also condition-based. Capital
2 expenditures for these asset classes are prioritized to respond to in-service failures
3 and equipment at imminent risk of failure. This includes, for example, the
4 replacement of equipment at the Petty Harbour Plant in 2022 that has failed and is
5 being held in place with nylon strapping.²⁴ Major refurbishment projects at
6 substations and generating plants are often prioritized based on the condition of major
7 plant components, such as the condition of transformers²⁵ or penstocks.²⁶ This
8 reflects the criticality of these components to the safe and reliable operation of
9 substations and generating plants.

10
11 Information technology capital expenditures are prioritized based on a number of
12 factors, including: (i) the criticality of a software application in providing service to
13 customers; (ii) vendor requirements, including the expiration of vendor support and
14 necessary cybersecurity patches; and (iii) equipment failures or observed performance
15 issues.²⁷ For example, the replacement of Newfoundland Power’s workforce
16 management system was prioritized for 2022 as the existing system has been
17 discontinued and will no longer be supported by its vendor.²⁸

18
19 Certain other capital expenditures are prioritized based on mandatory requirements or
20 cost reductions that would be provided to customers.²⁹ As examples, the 2022 *PCB*
21 *Bushing Phase-out* is a mandatory project that is prioritized in order to meet
22 Government of Canada regulations.³⁰ The *LED Street Lighting Replacement* project
23 is prioritized in order to provide customers with lower rates for a more reliable
24 service.³¹

²⁴ See, for example, response to Request for Information CA-NP-022 as part of Newfoundland Power’s 2022 *Capital Budget Application* for information on the criteria used to prioritize the *Hydro Facility Rehabilitation* project.

²⁵ See, for example, response to Request for Information CA-NP-026 as part of Newfoundland Power’s 2022 *Capital Budget Application* for information on the criteria used to prioritize the *Substation Refurbishment and Modernization* project.

²⁶ See, for example, response to Request for Information CA-NP-024 as part of Newfoundland Power’s 2022 *Capital Budget Application* for information on the criteria used to prioritize the *Sandy Brook Plant Penstock Replacement* project.

²⁷ See, for example, response to Request for Information CA-NP-049 as part of Newfoundland Power’s 2022 *Capital Budget Application* for information on the criteria used to prioritize 2022 projects related to information technology infrastructure.

²⁸ See, for example, response to Request for Information CA-NP-054 as part of Newfoundland Power’s 2022 *Capital Budget Application* for information on the criteria used to prioritize the *Workforce Management System Replacement* project.

²⁹ Newfoundland Power’s capital expenditures are informed by a variety of regulations, including regulations under the *Occupational Health and Safety Act* and *Electricity and Gas Inspection Act*.

³⁰ See response to Request for Information CA-NP-028 as part of Newfoundland Power’s 2022 *Capital Budget Application* for information on the *PCB Bushing Phase-out* project.

³¹ See response to Request for Information CA-NP-032 as part of Newfoundland Power’s 2022 *Capital Budget Application* for information on the *LED Street Lighting Replacement* project.

- 1 When capital projects must be prioritized, Newfoundland Power assesses all viable
2 alternatives to ensure the least cost alternative is proposed.³²
3
4 Overall, this approach to prioritizing capital expenditures is consistent with meeting
5 the Company’s obligation to provide customers with safe and reliable service at the
6 lowest possible cost.
7
8 e) No, Newfoundland Power did not incorporate any of the Midgard recommendations
9 its *2022 Capital Budget Application*. Midgard’s recommendations have not been
10 adopted by the Board. Accordingly, the Company’s *2022 Capital Budget Application*
11 was developed to comply with the Board’s existing *Capital Budget Application*
12 *Guidelines*.

³² See response to Request for Information NLH-NP-042 as part of Newfoundland Power’s *2022 Capital Budget Application*.