

1 **Q. Reference: “2022 Capital Budget Application,” Newfoundland Power, May 18, 2021,**  
 2 **2022 Capital Plan**

3  
 4 **In light of the current operating environment and anticipated rate pressures, please**  
 5 **detail the efforts considered and/or undertaken by Newfoundland Power to manage**  
 6 **its capital investment levels and associated impact on customers.**

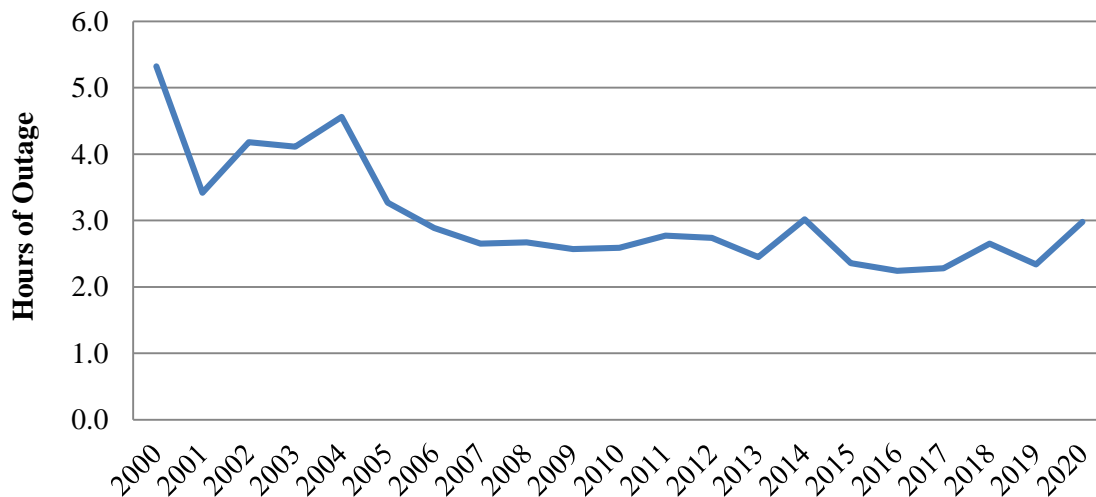
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 8 **A. A. Balancing Costs and Service**

9  
 10 Newfoundland Power manages its capital investments to ensure the delivery of reliable,  
 11 least-cost service to customers in *all* operating environments. Balancing the cost and  
 12 reliability of the service provided to customers is consistent with the provincial power  
 13 policy<sup>1</sup> and customers’ service expectations.<sup>2</sup>

14  
 15 Newfoundland Power balances the cost and reliability of its service delivery through a  
 16 comprehensive capital planning process and a focus on the overall costs borne by  
 17 customers through customer rates.

18  
 19 Figure 1 provides the duration of outages (“SAIDI”) experienced by Newfoundland  
 20 Power’s customers under normal operating conditions over the period 2000 to 2020.<sup>3</sup>

**Figure 1**  
**Duration of Customer Outages**  
**Normal Operating Conditions**  
**(2000 to 2020)**



<sup>1</sup> Section 3(b)(iii) of the *Electrical Power Control Act, 1994* requires that customers receive reliable service at the lowest possible cost.

<sup>2</sup> Quarterly surveys indicate the 2 most important issues to customers are reliability and price. For more information on customers’ service expectations, see response to Request for Information CA-NP-013.

<sup>3</sup> SAIDI indicates “System Average Interruption Duration Index.” Figure 1 excludes customer outages related to significant events and loss of supply.

1 The duration of customer outages was reduced by over 40% from 2000 to 2020.<sup>4</sup>

2  
3 Table 1 compares Newfoundland Power's total contribution to average customer rates in  
4 in 2000 and 2021.

**Table 1**  
**Contribution to Customer Rates**  
**(¢/kWh)**

	2000	2021 <sup>5</sup>	Change
Actual	3.53	4.14	17%
Inflation-Adjusted <sup>6</sup>	5.23	4.14	-21%

5 On an inflation-adjusted basis, the Company's contribution to average customer rates  
6 decreased by 21% from 2000 to 2001.

7  
8 Newfoundland Power's long-term performance demonstrates that its capital investments  
9 tend to minimize overall costs to customers, while maintaining acceptable levels of  
10 service reliability.<sup>7</sup>

### 11 **B. Managing Capital Investments**

12 Newfoundland Power manages its capital investments through a comprehensive planning  
13 process. This process determines the necessity, scope and timing of capital projects  
14 based on sound engineering, objective data, and good utility practice.<sup>8</sup>

15  
16 Approximately ¼ of capital expenditures proposed for 2022 are driven by the  
17 requirement to respond to customers' service requests. This includes connecting new  
18 customers to the electrical system, addressing customers' increased electrical system  
19  
20

<sup>4</sup> Under normal operating conditions, Newfoundland Power's customers experienced an average of 5.3 hours of outage in 2000 and 3.0 hours of outage in 2020  $((5.3 - 3.0) / 5.3 = -43\%)$ .

<sup>5</sup> Based on Newfoundland Power's 2020 test year revenue requirement which is reflected in current customer rates. The Company's base rates are not expected to change in 2021.

<sup>6</sup> Inflation adjusted based on the GDP Deflator for Canada.

<sup>7</sup> Current levels of service reliability have been viewed as acceptable for about a decade. In Newfoundland Power's 2010 General Rate Application, the Company stated it considered then current levels of service reliability to be satisfactory (see Volume 1 (1st Revision), Section 2: Customer Operations, page 2-8, Line 6). Similarly, the Company has characterized its electrical system performance as reliable in its 2013/2014 General Rate Application (see Volume 1, Section 1: Introduction, page 1-3, Line 10), its 2016/2017 General Rate Application (see Volume 1 (1st Revision), Section 1: Introduction, page 1-3, Line 11), its 2019/2020 General Rate Application (see Volume 1, Section 1: Introduction, page 1-3, Line 21), and in its 2022/2023 General Rate Application (see Volume 2, Section 1: Introduction, page 1-3, Line 21).

<sup>8</sup> For additional details on the Company's capital planning process, see the 2022 Capital Budget Application, 2022 Capital Plan, Section 2.0.

1 loads, and responding to third-party requests. These expenditures are required as part of  
 2 Newfoundland Power's obligation to serve.<sup>9</sup> The level of expenditure required in a given  
 3 year is generally dependent upon the number and scope of customer requests.<sup>10</sup>  
 4

5 Opportunities to manage expenditures are greatest for capital projects driven by plant  
 6 replacement. Plant replacement accounts for approximately ½ of capital expenditures  
 7 proposed for 2022. Newfoundland Power manages these expenditures in a manner  
 8 consistent with maintaining current levels of service reliability for customers at the  
 9 lowest possible cost. Certain practices reduce *overall* costs to customers, while other  
 10 practices reduce *capital* costs to customers.

11  
 12 Newfoundland Power uses well established economic analyses to determine whether  
 13 capital projects will reduce overall costs to customers. As examples:

- 14  
 15 (i) The replacement of existing street lights with LED fixtures is estimated to cost  
 16 approximately \$32.8 million over 6 years. This project is forecast to reduce  
 17 energy and maintenance costs to customers by approximately \$52 million over 20  
 18 years. The net present value ("NPV") of these savings is approximately  
 19 \$4.8 million. This project will provide customers with lower rates for a more  
 20 reliable service.<sup>11</sup>  
 21  
 22 (ii) The construction of an electric vehicle ("EV") charging network will enable the  
 23 delivery of customer electrification programs. An NPV analysis determined that  
 24 electrification programs will provide a rate mitigating benefit for Newfoundland  
 25 Power's customers of approximately 0.5¢/kWh by 2034.<sup>12</sup> This equates to \$100  
 26 in reduced electricity charges that year for an average residential customer with  
 27 electric heating.<sup>13</sup>  
 28  
 29 (iii) The replacement of Newfoundland Power's workforce management system will  
 30 allow the Company to continue dispatching field crews using a centralized,  
 31 technology-based process. An NPV analysis determined that replacing the  
 32 current obsolete system would reduce costs to customers by approximately

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<sup>9</sup> Section 3(b)(ii) of the *Electrical Power Control Act, 1994* requires that customers have equitable access to an adequate supply of power.

<sup>10</sup> As examples, capital expenditures for projects such as *Meters, Services* and *Extensions* are based on the number of customer requests received.

<sup>11</sup> See Newfoundland Power's *2022 Capital Budget Application, Schedule B*, page 34.

<sup>12</sup> 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.

<sup>13</sup> 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).

1 \$499,000 over 7 years in comparison to implementing manual dispatching  
2 processes.

- 3  
4 (iv) The proposed replacement of the Sandy Brook Plant penstock will ensure the  
5 continued provision of low-cost electricity to Newfoundland Power's customers.  
6 An economic analysis determined the net benefit of plant production is  
7 10.21¢/kWh for fully dispatchable and 7.04 ¢/kWh for a run of river plant. This  
8 indicates that continued operation of the plant is least cost for customers over the  
9 longer term.<sup>14</sup>

10  
11 Newfoundland Power uses a variety of measures to reduce capital costs to customers.  
12 These include:

- 13  
14 (i) An assessment of alternatives is completed for capital projects. For example, an  
15 NPV analysis determined that upgrading the deteriorated 4.16 kV infrastructure at  
16 Humber Substation to 12.5 kV would reduce costs to customers by approximately  
17 \$1.6 million over 20 years in comparison to a like-for-like replacement.<sup>15</sup>  
18  
19 (ii) Capital expenditures are targeted in the areas that provide the most benefits for  
20 customers. For example, the Company's 2022 *Distribution Reliability Initiative*  
21 targets the replacement of a relatively short, 2 km section of distribution line  
22 where customers experience among the worst service reliability in Newfoundland  
23 Power's service territory.<sup>16</sup>  
24  
25 (iii) Capital projects are coordinated, where possible, to realize productivity gains and  
26 reduce customer outages. For example, *Substation Refurbishment and*  
27 *Modernization* projects are coordinated with PCB removal projects. This  
28 coordination has achieved efficiencies in project management and reduced costs  
29 associated with the deployment of portable substations by over \$1 million.<sup>17</sup>  
30  
31 (iv) Capital projects are deferred when possible.<sup>18</sup> For example, transmission line  
32 124L was originally planned for rebuild in 2011, but was deferred to 2022  
33 through routine maintenance. The Company's 2022 *Capital Plan* outlines 2  
34 additional projects that were originally planned for 2022 and subsequently

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<sup>14</sup> See the 2022 *Capital Budget Application, Report 1.2 Sandy Brook Plant Penstock Replacement*, page 9.

<sup>15</sup> See the 2022 *Capital Budget Application, Report 2.1 Substation Refurbishment and Modernization, Appendix B*, page B-11.

<sup>16</sup> See the 2022 *Capital Budget Application, Report 4.1 Distribution Reliability Initiative*.

<sup>17</sup> See response to Request for Information CA-NP-026.

<sup>18</sup> 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.

1                   deferred.<sup>19</sup> Numerous other capital projects have also been deferred beyond the  
2                   current planning period.<sup>20</sup>  
3

4                   The *Distribution Feeder Automation* project provides another example of how capital  
5                   expenditures contribute to maintaining reliable service for customers at the lowest  
6                   possible cost. This project involves the installation of downline reclosers to sectionalize  
7                   distribution feeders.<sup>21</sup> The efficiency and reliability benefits of downline reclosers are  
8                   most pronounced during significant events.<sup>22</sup> For example, the operation of 5 downline  
9                   reclosers during a severe blizzard in January 2020 avoided approximately 3.5 million  
10                  customer outage minutes without the assistance of field crews.<sup>23</sup>  
11

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

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<sup>19</sup> These projects are: (i) the refurbishment of the Mobile hydro plant, which was deferred to allow further assessment of the condition of the plant and associated infrastructure; and (ii) the feeder load growth in the City of Corner Brook, which was deferred after a review of the load requirements and revised construction schedule for the new hospital determined that the existing distribution system in the Corner Brook area has available capacity to supply the increased load requirements until 2023. See the *2022 Capital Budget Application, 2022 Capital Plan*, page 7, Table 2.

<sup>20</sup> See response to Request for Information CA-NP-075.

<sup>21</sup> 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.

<sup>22</sup> “Significant events” refer to external events that exceed the design parameters or operational limits of the electrical system.

<sup>23</sup> See Newfoundland Power’s *2022/2023 General Rate Application, Volume 1, Section 2 Customer Operations*, page 2-30.