

1 **Volume 2: Cost of Service Study**  
2

3 **Q. With respect to the BIG and MUN Substations:**

- 4 a) **Does it generally cost the same to supply Memorial University load served from**  
5 **the MUN Substation as it does to serve the General Service Rate #2.4 customer**  
6 **served from the BIG Substation? How do costs differ?**
- 7 b) **Does Newfoundland Power believe that the connection facilities for Memorial**  
8 **University at the MUN Substation are comparable to the connection facilities**  
9 **that supply the Rate #2.4 customer served from the BIG Substation which serves**  
10 **a total of 1,334 customers from the distribution system? Please elaborate from**  
11 **the perspectives of reliability, cost and fairness. In addition, please explain what**  
12 **Newfoundland Power does in practice and why.**
- 13 c) **Newfoundland Power has proposed a capital spend of about \$6 million at the**  
14 **MUN Substation equating to an expenditure of about \$6,000,000 per customer.**  
15 **If Newfoundland Power were to spend a similar amount on the BIG Substation,**  
16 **would the expenditure equate to about \$450 per customer (\$6 million divided by**  
17 **1334 customers)?**

- 18
- 19 A. a) Memorial University is a General Service Rate #2.4 customer. The *Retail Rate*  
20 *Review* conducted in 2010 (the “*Retail Rate Review*”) specifically evaluated cost  
21 recovery of Memorial University in relation to the other General Service Rate #2.4  
22 customers. The evaluation found that cost recovery associated with Memorial  
23 University was comparable to cost recovery of other General Service Rate #2.4  
24 customers.<sup>1</sup>
- 25
- 26 b) The cost to serve each Newfoundland Power customer is typically different. For  
27 example, the cost of serving a Domestic Service customer that is close to a substation  
28 is less than the cost to serve a Domestic Service customer that is located at the end of  
29 a distribution feeder.<sup>2</sup> Since it is impractical to design a specific rate for each and  
30 every customer, Newfoundland Power, and other utilities, develop customer rate  
31 classes to group customers according to their size and cost of serving those classes as  
32 a whole. Rates charged to a specific class of customers are designed to recover the  
33 cost of serving that particular class of customer.

34

35 Newfoundland Power’s current customer rates largely reflect the recommendations of  
36 the *Retail Rate Review*.<sup>3</sup> In accordance with the *Retail Rate Review*, Newfoundland  
37 Power maintains three separate General Service rate classes:

---

<sup>1</sup> See the response to Request for Information PUB-NP-105 for additional detail.

<sup>2</sup> This is due to the fact that the cost to serve a customer located further along a distribution line involves, for example, costs associated with a greater amount of distribution line than a customer located near the substation.

<sup>3</sup> The *Retail Rate Review* consisted of a comprehensive review of Newfoundland Power’s Domestic and General Service rates and an evaluation of alternative rates. The review commenced following Newfoundland Power’s *2008 General Rate Application* and was completed in 2010. Recommendations from the review were implemented, as appropriate, in subsequent years. Proposals approved by the Board in Order No. P.U. 2 (2019) concluded implementation of the recommendations outlined in the *Retail Rate Review*.

1 Rate #2.1 General Service 0-100 kW (110 kVA);  
2 Rate #2.3 General Service 110 kVA (100 kW) – 1000 kVA; and  
3 Rate #2.4 General Service 1000 kVA and Over.  
4

5 Rate #2.4 General Service 1000 kVA and Over serves approximately 60 of  
6 Newfoundland Power’s largest customers. These customers are served by various  
7 configurations throughout Newfoundland Power’s electrical system. For example,  
8 Rate #2.4 General Service 1000 kVA and Over customers are either served by  
9 transmission voltage, primary distribution voltage, or secondary distribution voltage.  
10 These customers are also located throughout the Company’s service territory and can  
11 be served directly from a substation, or at various locations along a transmission line  
12 or distribution feeder.  
13

14 Newfoundland Power does not design its customer rates based on the reliability  
15 experienced by one particular customer versus another. The reliability experienced by  
16 any customer is dependent on a number of factors.<sup>4</sup>  
17

18 Newfoundland Power assesses the fairness of its customer rates by comparing the  
19 revenue collected from each customer rate class with the cost to serve that class as  
20 determined through an embedded cost of service study (the “revenue-to-cost ratio”).<sup>5</sup>  
21 The revenue-to-cost ratios provided in the Cost of Service Study filed with the Board  
22 as part of the Company’s *2025/2026 General Rate Application* for the Rate #2.4  
23 General Service 1000 kVA and Over customer rate class is 105.8%.<sup>6</sup> This means the  
24 revenue collected from the rate class was in excess of the costs of serving the rate  
25 class.  
26

27 As stated in Newfoundland Power’s response to the Consumer Advocate’s request to  
28 re-hear the MUN-T2 application, Newfoundland Power observes that the load profile  
29 of Memorial University is expected to change substantially in the coming years due to  
30 the planned installation of electric boilers, the addition of new buildings, and the  
31 potential establishment of a capacity assistance agreement. In the Company’s view, a  
32 review of the rates charged to Memorial University would be appropriate when these  
33 changes materialize to ensure the University continues to pay rates that are consistent  
34 with the cost of providing it with electrical service. Newfoundland Power is also

---

<sup>4</sup> Service reliability for all of Newfoundland Power’s customers at their particular supply point is dependent on a number of factors including: (i) weather conditions in one service location versus another; (ii) the configuration of the transmission system supplying the customer; (iii) the length of the distribution line serving the customer and the location of the customer on the distribution line; and (iv) the age and condition of the equipment delivering service to the customer.

<sup>5</sup> Maintaining revenue-to-cost ratios for each class within a range of 90% to 110% has been an accepted approach to achieving fairness in rate design by avoiding undue cross-subsidization among the various rate classes. This is consistent with the views of the Board as expressed in Order No. P.U. 7 (1996-97), which states: “*The Board agrees with the philosophy that it is not necessary to achieve a 100% revenue to cost ratio for all classes and takes no exception to a variance of up to 10%.*”

<sup>6</sup> See Newfoundland Power’s 2025/2026 General Rate Application, Volume 1, Company Evidence, Section 5: Customer Rates, page 5-7, Table 5-5.

1 completing an updated rate design review, similar to the *Retail Rate Review*  
2 completed in 2010.<sup>7</sup>

- 3  
4 c) Comparing capital costs associated with the Memorial (“MUN”) Substation with Big  
5 Pond (“BIG”) Substation on a per customer basis is illogical and impractical.

6  
7 *MUN Substation*

8  
9 Newfoundland Power serves Memorial University’s St. John’s campus directly from  
10 the MUN Substation. The University campus includes over 35 buildings, including  
11 the Health Sciences Centre and the Janeway Children’s Hospital. Memorial  
12 University distributes power from the MUN substation throughout the St. John’s  
13 campus at its own cost using its own distribution equipment. Newfoundland Power  
14 does not incur any distribution costs to serve Memorial University.

15  
16 The capital expenditures that comprise the \$6,000,000 referenced in this request for  
17 information include: \$1.6 million associated with the MUN-T2 transformer which  
18 failed after 47 years of service;<sup>8</sup> and \$4.4 million associated with equipment at MUN  
19 Substation ranging in age from 47 to 57 years and that has reached the end of their  
20 useful service lives.<sup>9</sup> Following completion of the associated capital work, MUN  
21 Substation will be positioned to reliably serve Memorial University, and the 66 kV  
22 transmission network serving customers in the St. John’s area, for many years to  
23 come, as it has in the past.

24  
25 *BIG Substation*

26  
27 Newfoundland Power serves 1,334 customers from two feeders originating from BIG  
28 Substation. This includes one General Service Rate #2.4 customer and customers  
29 representing other customer rate classes in the Goulds and Bay Bulls areas. Most of  
30 these customers are Domestic Service customers with residential homes. In addition  
31 to BIG Substation, and the equipment therein, the Company is required to provide all  
32 of the necessary distribution infrastructure to serve these customers.

33  
34 The distribution infrastructure used to provide service to the 1,334 customers supplied  
35 from BIG Substation include approximately 35.0 km of distribution line, 260  
36 distribution transformers, over 500 street lights, and all the necessary customer  
37 metering equipment.<sup>10</sup> Capital expenditures associated with BIG Substation and the  
38 distribution infrastructure are necessary for the provision of service to the 1,334  
39 customers. Given the number of customers and the varying age of the distribution

---

<sup>7</sup> The updated *Rate Design Review* formed part of the Settlement Agreement associated with Newfoundland Power’s 2022/2023 General Rate Application.

<sup>8</sup> See Order No. P.U. 14 (2023).

<sup>9</sup> See Newfoundland Power’s 2024 Capital Budget Application, Report 2.1 2024 Substation Refurbishment, June 2023, Appendix C: Memorial Substation Refurbishment and Modernization, page 11, Table C-1. The capital expenditures were approved by the Board in Order No. P.U. 2 (2024).

<sup>10</sup> Distribution line includes poles, crossarms, insulators, conductors, switches and related hardware that delivers electricity from a substation to customers.

1 assets in service, such capital expenditures are likely to occur gradually over time as  
2 the assets reach the end of their useful service lives. Should these expenditures all  
3 occur at roughly the same time, in a similar manner as the equipment at MUN  
4 Substation, the capital expenditures associated with the BIG Substation and its two  
5 distribution feeders would be significant.

6  
7 *Cost Per Customer*

8  
9 The request for information asks if Newfoundland Power were to spend a similar  
10 amount on the BIG Substation as it is spending on MUN Substation, would the  
11 expenditure equate to about \$450 per customer (\$6 million divided by 1,334  
12 customers).

13  
14 No. \$6 million divided by 1,334 customers equates to approximately \$4,500 per  
15 customer. Nevertheless, the calculation is of no value as: (i) it attempts to draw a  
16 comparison between the cost of serving a single customer comprising of hospitals and  
17 other large buildings to a group of customers that are mostly residential homes; and  
18 (ii) the calculation gives no consideration to distribution costs.