

1 **Q. (Reference: Application, Schedule B, Footnotes 16 and 17, and NP 2023**  
2 **Capital Budget Application, 2.2 Substation Spare Transformer Inventory)**  
3

4 **In the 2023 Capital Budget Application, NP was granted approval to procure**  
5 **"a 15/20/25 MVA, 66-25/12.5 kV power transformer in 2023." It is stated**  
6 **(Report 2.2, page 14) "Newfoundland Power has determined that procuring**  
7 **power transformers specifically to serve as spares is necessary to mitigate**  
8 **increasing risks of power transformer failure over the near term." Now, the**  
9 **Supplemental Application requests funding for a 15/20 MVA, 66-12.5 kV**  
10 **power transformer because apparently the approved new spare cannot be**  
11 **used to replace MUN-T2. Specifically, footnotes 16 and 17 of the**  
12 **Supplemental Application (Schedule B) indicate that the spare power**  
13 **transformer approved in the 2023 Capital Budget Application, and the four**  
14 **existing spare power transformers that NP has in inventory are not viable**  
15 **replacements for MUN-T2.**

- 16
- 17 **a) Please provide a timeline including amounts spent for the spare**  
18 **transformer procurement approved in the 2023 Capital Budget Application**  
19 **from the date of Board approval through to delivery.**
- 20 **b) Has NP already purchased the new spare? If not, then why not direct the**  
21 **funds to a new spare with the required configuration to replace MUN-T2?**
- 22 **c) If the new spare has already been purchased, what did it cost and where**  
23 **will it be put into service?**
- 24 **d) Please provide a copy of NP's proposed procurement plan for spare power**  
25 **transformers.**
- 26 **e) How many different types of power transformers does NP own and what**  
27 **would it cost to procure a spare power transformer to back up every type**  
28 **of power transformer on NP's system?**
- 29 **f) If none of the five spare power transformers that NP has, or soon will**  
30 **have, in inventory are viable replacements for MUN-T2, which supplies**  
31 **NP's largest customer, please explain how a transformer spare**  
32 **procurement plan is a worthwhile investment for NP's customers,**  
33 **particularly when a mobile substation is available.**
- 34 **g) Please provide a cost/benefit analysis for a spare transformer**  
35 **procurement plan including quantification of: 1) the reliability benefits**  
36 **gained, and 2) the risk mitigated by the plan.**

37

38 **A. a) Approximately \$1,000 has been spent to date in 2023 to procure the spare power**  
39 **transformer approved as part of Newfoundland Power's 2023 Capital Budget**  
40 **Application. This accounts for time spent developing the specification and preparing**  
41 **a request for proposals to solicit bids from vendors.**

42

43 The request for proposals was issued February 2023. The bids will be evaluated and  
44 the contract is expected to be awarded in April 2023. The schedule of the selected  
45 vendor will dictate the remaining timeline. Generally, manufacturer drawings are  
46 received for review within two months of contract award. Factory acceptance  
47 testing follows once the transformer is constructed. The delivery date will be

1 confirmed once the contract has been awarded. Delivery times for power  
2 transformers have increased significantly in recent years. As such, the spare power  
3 transformer is currently anticipated to be delivered in 2024.

4  
5 The total project budget is \$1,500,000, as detailed in the Company's *2023 Capital*  
6 *Budget Application*.

7  
8 b) No, Newfoundland Power has not yet purchased the spare power transformer. A  
9 request for proposals to procure the power transformer is ongoing.

10  
11 From a regulatory perspective, Newfoundland Power is required to seek Board  
12 approval of additions or improvements to its property when the associated cost  
13 exceeds \$50,000.<sup>1</sup> Newfoundland Power cannot redirect funds approved by the  
14 Board for one capital project to another without seeking reapproval.<sup>2</sup>

15  
16 From an operations perspective, if the funds approved for the spare power  
17 transformer were used to replace MUN-T2, a spare unit would still be required. This  
18 is because Newfoundland Power's customers are exposed to high risks of prolonged  
19 outages due to increases in power transformer failures, the age profile of the  
20 Company's power transformer fleet and market trends in delivery times. An  
21 adequate inventory of spare power transformers is necessary to respond to  
22 in-service failures and to ensure the delivery of reliable service to customers.  
23 Newfoundland Power's existing inventory is limited and is expected to diminish going  
24 forward unless spare units are procured.<sup>3</sup>

25  
26 c) Newfoundland Power has not yet purchased the spare power transformer. The  
27 location of its eventual installation will depend on the location of future failures.

28  
29 d) Newfoundland Power's procurement plan is to assess its inventory requirements  
30 annually to determine the need for any additional spares. The Company will seek  
31 Board approval of any additional spare units through future capital budget  
32 applications.<sup>4</sup>

33  
34 e) There are several factors to consider when defining types of power transformers.  
35 These include the primary and secondary voltages, capacity, number of phases,  
36 winding configuration, and voltage regulation requirements. To provide an identical  
37 spare unit for every type of in-service power transformer would require a range of  
38 approximately 30 to 45 power transformers. Many of these would only provide  
39 coverage to a single power transformer. The approximate cost to purchase an  
40 identical spare unit for every type of power transformer could be in the range of  
41 \$45,000,000 to \$60,000,000.

---

<sup>1</sup> See section 41(3) of the *Public Utilities Act*.  
<sup>2</sup> In Order No. P.U. 38 (2022), the Board approved the purchase of a 15/20/25 MVA, 66-25/12.5 kV power transformer that could serve as an emergency backup for a significant portion of Newfoundland Power's fleet of substation power transformers. The proposed replacement for MUN-T2 differs from this project in both its scope and intent, as it has a different configuration and would not provide broad coverage for the Company's fleet.  
<sup>3</sup> See the *2023 Capital Budget Application*, report 2.2 *Substation Spare Transformer Inventory*.  
<sup>4</sup> *Ibid.*, page 14.

- 1 Newfoundland Power does not intend to procure spare power transformers to  
2 provide coverage of every unit in its electrical system. As outlined in its *2023 Capital*  
3 *Budget Application*, report *2.2 Substation Spare Transformer Inventory*, the  
4 Company plans to maintain an adequate inventory by assessing its requirements  
5 annually to determine the need for any additional spares.  
6
- 7 f) The costs and customer benefits of procuring a spare power transformer were  
8 described in detail in report *2.2 Substation Spare Transformer Inventory* of  
9 Newfoundland Power’s *2023 Capital Budget Application*. The cost of procuring a  
10 spare power transformer is \$1.5 million. The benefits include reducing the risk of  
11 prolonged customer outages by: (i) increasing the coverage provided by the  
12 Company’s inventory of spares; and (ii) reducing potential pressures on the  
13 availability of portable substations. Another benefit of this approach is that it is  
14 consistent with sound public utility practice. The spare unit approved for 2023 was  
15 selected to provide the maximum coverage for power transformers that are not  
16 already covered by existing spares.  
17
- 18 g) See part f) of this response.