

- 1 **Q.** (Reference 2022 Capital Expenditure Report, Appendix A, Transformers, page
 2 4 of 8) It is stated "*For 2022, the actual expenditure required for transformer
 3 purchases was \$1,349,000, or 23%, higher than the budget estimate. This
 4 increase is largely due to supply chain issues resulting in material cost
 5 increases and the requirement to ensure an adequate supply of inventory. In
 6 addition, actual customer connections were 30% higher than plan, which
 7 resulted in increased transformer requirements.*"
- 8 a) Was NP not aware of supply chain issues when it prepared the budget
 9 estimate for this project?
- 10 b) Please explain how these supply issues have been addressed or if current
 11 budget proposals will result in similar increases.
- 12 c) Please provide details as to the source of the supply chain issues and how
 13 that has been remedied.
- 14 d) Please elaborate on the "requirement to ensure an adequate supply of
 15 inventory".
- 16 e) How much of the overage was due to supply chain issues and how much
 17 was due to underestimating the number of new customer connections?
 18 Please provide a breakdown of the costs incurred for the project compared
 19 to actuals.
- 20 f) Does a 23% cost overrun indicate that NP needs to change its estimating
 21 process?
- 22
- 23 **A.** a) Newfoundland Power was aware of supply chain issues when it prepared the *2022*
 24 *Capital Budget Application* in the first half of 2021. However, the magnitude of the
 25 impact of supply chain issues on individual project budgets was not fully understood
 26 until later in 2021 as suppliers communicated the difficulty they were having fulfilling
 27 their commitments.¹
- 28
- 29 b) The supply chain issues are related to higher material costs and increased delivery
 30 times. Higher material costs are being driven by increased prices related to base
 31 metals such as steel, copper and aluminum. The limited supply of base metals to
 32 manufacture transformers is resulting in increased delivery times. The Company has
 33 adapted to the supply chain issues by incorporating the extended lead times into
 34 project schedules. In the case of transformers, the Company has adjusted inventory
 35 levels to ensure an adequate supply of transformers for planned work, in-service
 36 failures and storm damage. With respect to price increases, actual expenditure
 37 increases experienced in 2021 and 2022 are incorporated into the historical average
 38 methodology used to establish the 2024 capital budget estimate.
- 39
- 40 c) See part b) and the response to Request for Information CA-NP-141.

¹ The Board acknowledged the uncertainty of the impacts the Covid-19 pandemic could have on costs. In its approval of the *2022 Capital Budget Application*, the Board noted in Reasons for Decision for Board Order No. P.U. 36 (2021), "*Board does not believe that it is possible at this stage to know the course of the Covid-19 pandemic and how this may impact the actual costs of the approved projects. The Board accepts that the proposals are based on the best information available at the time and does not believe that there should be changes on the basis that the pandemic may ultimately result in differences which could not have been anticipated.*"

- 1 d) The requirement to ensure an adequate supply of inventory of transformers is
2 rooted in the number of units required each year to supply new customers, replace
3 rusty transformers and to provide storm response.² In recent years annual
4 transformer requirements have ranged between 1,700 and 2,000 units.
5
- 6 e) The *2022 Capital Expenditure Report*, Appendix A, statement identifying causes for
7 the variance from budget for transformers identified two causes, supply chain issues
8 and actual customer connections. While both causes had an impact on actual 2022
9 expenditures, the Company cannot quantify the contribution of each cause.
10
- 11 Transformers are purchased and placed into inventory. When transformers are
12 required to supply a new customer, or to replace an existing transformer, they are
13 released from inventory to complete the work. Therefore, upon purchase it is not
14 possible to determine where the transformer will ultimately be used.³
15
- 16 f) No, the 23% cost overrun in the 2022 *Transformers* program does not indicate that
17 Newfoundland Power needs to change its estimating process. Newfoundland Power
18 has a long-standing practice of using inflation-adjusted historical expenditures for
19 estimating its transformers requirements. These estimates can be impacted by the
20 number of new customers requesting service in a given year, and the mix of pole top
21 and padmount transformers required to serve these new customers. In addition, the
22 number of replacement transformers will vary depending upon the results of the
23 annual distribution feeder inspections, and whether or not there is significant storm
24 damage.

² Storms can damage transformers in multiple ways. If high winds and ice buildup cause distribution structures to collapse, some structures will have pole top transformers that will be damaged. In lightning storms, lightning strikes can damage the transformer windings on both pole top and padmount units.

³ Over the last five years, approximately 44% of transformers installed were required for new customer connections.

1 Table 1 provides the *Transformers* program budget and actual expenditures,
 2 variance from budget in dollars and percentage of approved budget for the decade
 3 ending in 2021.

Table 1 Transformer Program Variances 2012 to 2021				
Year	Approved (\$000s)	Actual (\$000s)	Variance (\$000s)	Variance
2012	6,565	7,944	-1,379	-17%
2013	6,710	7,983	-1,273	-16%
2014	7,106	6,995	111	2%
2015	7,462	6,778	684	10%
2016	4,956	5,759	-803	-14%
2017	5,835	6,103	-268	-4%
2018	5,782	6,084	-302	-5%
2019	5,696	6,716	-1020	-15%
2020	5,628	6,581	-953	-14%
2021	6,332	5,945	387	7%

4 Over the decade prior to 2022, variances from budget for the *Transformers* program
 5 averaged 7% under budget. This was largely attributed to the 42% decline in new
 6 customer connections over the period from 2012 to 2021.⁴ As a result, fewer
 7 transformers were drawn from inventory to connect new customers, and the annual
 8 expenditure decreased.

⁴ The average of new customer connections from 2012 to 2016 was 4,438. The average of new customer connections from 2017 to 2021 was 2,588. $1 - 2,588/4,438 = 42\%$.