

1 **Q. (Reference Application, Customer Service Continuity Plan, page 13) It is stated**
 2 **“From a technical perspective, EY assessed that a modern CIS would streamline**
 3 **Newfoundland Power’s IT environment. Of 56 essential business applications**
 4 **interfacing with CSS, 36% could be retired with the implementation of a modern CIS.**
 5 **Retiring applications provides efficiencies by reducing the overall complexity of the IT**
 6 **environment and associated support and maintenance requirements.” What operation**
 7 **and maintenance cost savings are expected in each year of operation of the proposed**
 8 **CSS?**

9
 10 **A. A. Response**

11
 12 Newfoundland Power’s evidence is that a modern Customer Information System would
 13 permit the Company to *maintain* its service efficiency over the long term.¹

14
 15 Newfoundland Power’s Customer Service System (“CSS”) is at risk of obsolescence.²
 16 Obsolete technology faces high risks of failure. Critical failure of CSS would
 17 fundamentally limit Newfoundland Power’s ability to provide efficient and responsive
 18 services to its customers. Replacement of the existing system with a modern Customer
 19 Information System is the only viable alternative to maintain current service levels for
 20 customers.³

21
 22 Newfoundland Power’s costs would change upon implementing a modern Customer
 23 Information System, but its service efficiency would be maintained. Increases in labour
 24 costs related to system support and maintenance are forecast to be offset by operational
 25 efficiencies within the Company’s customer service delivery. Recent experience and
 26 industry guidance indicates that increased hardware and software costs would be
 27 expected regardless of whether the Company’s aging infrastructure is maintained or
 28 replaced.⁴

29
 30 Additionally, a modern Customer Information System would provide functionality not
 31 possible within Newfoundland Power’s legacy system. This new functionality would
 32 provide opportunities to improve the quality and efficiency of the Company’s customer
 33 service delivery, as well as opportunities to meet customers’ evolving service
 34 expectations over the long term.⁵

¹ See the 2021 Capital Budget Application, Volume 1, Customer Service Continuity Plan, pages 16 to 17.

² For information on the increasing risks facing Newfoundland Power’s CSS, see response to Request for Information CA-NP-070.

³ See the 2021 Capital Budget Application, Volume 1, Customer Service Continuity Plan, pages 10 to 11.

⁴ See part B(i) below for additional information on increasing third-party support costs and part B(ii) for a comparison of current and future costs.

⁵ See part B(iii) for additional information on opportunities to improve the customer experience.

1 **B. Supporting Information**

2
3 **i. Current Support and Maintenance Costs**

4
5 Newfoundland Power’s CSS was implemented in 1993. The system has been supported
6 and maintained using internal expertise since vendor support ended in 1997. Internal
7 expertise has been used to complete all system upgrades, enhancements and routine
8 maintenance over the last 2 decades. This has required Newfoundland Power to maintain
9 highly specialized skills in the areas of software design and computer programming.⁶

10
11 CSS relies on various hardware and software components to operate. Hardware
12 components include servers, networking components and a storage area network.
13 Software components include programming languages and a database application. These
14 hardware and software components have third-party vendor support.⁷

15
16 The cost of supporting and maintaining CSS has increased in recent years due to higher
17 third-party support costs for hardware and software components. Over the 5-year period
18 2015 to 2020, these third-party support costs increased by approximately 30%.⁸ For
19 example, third-party support costs for the programming languages underpinning CSS
20 increased by approximately 10% annually over this period⁹ – a rate well above
21 inflation.¹⁰

22
23 This increase in costs is consistent with current industry experience for legacy systems
24 with aging infrastructure.¹¹ Several of the hardware and software components
25 underpinning CSS, including the programming languages referenced above, have reached
26 or are nearing obsolescence.¹² These technologies are experiencing declining customer
27 bases. This, in turn, increases support costs as vendors seek to recover their costs over a
28 smaller group of customers.

29
30 Based on Newfoundland Power’s experience and the assessment of EY, it is reasonable
31 to expect this increasing support and maintenance costs trend to continue into the future.

⁶ For information on the training of Newfoundland Power employees in the areas of software design and computer programming, see response to Request for Information CA-NP-074.

⁷ For information on the vendors supporting the hardware and software underpinning CSS, see response to Request for Information CA-NP-081.

⁸ Third-party support costs for hardware and software components totaled approximately \$176,000 in 2015 and \$228,000 in 2020 ($(\$228,000 - \$176,000) / \$176,000 = 0.30$, or 30%).

⁹ Third-party support costs for the PowerHouse and Axiant programming languages increased from approximately \$91,000 in 2015 to \$136,000 in 2020 ($(\$136,000 - \$91,000) / \$91,000 = 0.49$, or a 49% increase over 5 years).

¹⁰ According to the GDP Deflator for Canada, inflation over this period averaged approximately 1.7% per year.

¹¹ Ernst and Young LLP (“EY”) notes: “*Technical expertise to support aging technologies is difficult to source. Aging infrastructure increases integration and cybersecurity risks and becomes costlier to maintain as talent acquisition/retention scarcity increases.*” See the 2021 Capital Budget Application, Volume 1, Customer Service Continuity Plan, Attachment A, page 8.

¹² For example, the server infrastructure underpinning CSS is now obsolete. For more information, see response to Request for Information CA-NP-070.

1 **ii. Comparison of Future Support and Maintenance Costs**

2
3 Newfoundland Power's support and maintenance requirements would change upon
4 implementing a modern Customer Information System.

5
6 The replacement system would include third-party vendor support and vendor-driven
7 upgrade strategies. Internal expertise would no longer be required in the areas of
8 software design, computer programming or resolving software deficiencies. Rather,
9 internal labour efforts would shift to ensuring system performance, data analytics,
10 effective integration of the replacement system with other Company technologies, and
11 working with the software vendor to manage system upgrades, configurations and any
12 technical issues as they arise.

13
14 Table 1 provides forecast support and maintenance costs for the current CSS in 2022 and
15 the replacement Customer Information System upon the first full year of
16 implementation.¹³

Table 1:
Customer Information System
Comparison of Support and Maintenance Costs
(000s)

Function	Current System	Replacement System
Hardware and Software	\$248	\$508
Labour	\$588	\$770
Total	\$836	\$1,278

17 Hardware and software costs are forecast to increase by approximately \$260,000 upon
18 implementing a new Customer Information System. This is primarily attributable to
19 licensing costs for the new system that are not required for the current, internally
20 supported technology. These licencing costs are standard for commercial software
21 products, such as Newfoundland Power's SCADA System and Outage Management
22 System. Licensing costs for Customer Information Systems are generally determined
23 based on the size of a company's customer base.

¹³ The analysis shows support and maintenance costs in 2022, as this is forecast to be the last full year of operation of Newfoundland Power's existing CSS. However, forecast support and maintenance costs for 2022 do not account for any potential changes in the vendors of existing hardware and software components, including any additional increases in costs that may occur by 2022. The vendors providing existing hardware and software components have changed multiple times in recent years. For more information, see response to Request for Information CA-NP-081.

1 Internal labour costs for system support and maintenance are forecast to increase by
2 approximately \$182,000 upon implementing a new Customer Information System. This
3 increase is the equivalent of approximately 2 FTEs. This increase in FTEs is forecast to
4 be offset by operational efficiencies achieved upon implementing a modern Customer
5 Information System (see part (iii) below).
6

7 **iii. Maintaining Service Efficiency**
8

9 Newfoundland Power's existing CSS can no longer be cost-effectively upgraded or
10 enhanced to meet customers' evolving service expectations or changing regulatory
11 requirements. Limitations of the existing system have created inefficiencies in the
12 provision of service to customers. Recent examples include the requirements to manually
13 bill Net Metering customers and certain General Service customers, as well as
14 administration of the One-Time Customer Bill Credit in July 2020.¹⁴ These inefficiencies
15 will increase over time if CSS is not replaced.¹⁵
16

17 Implementing a modern Customer Information System would enable Newfoundland
18 Power to maintain reasonable levels of service efficiency.¹⁶
19

20 A modern Customer Information System has an expected service life of at least 15 years.
21 An assessment of opportunities to improve the quality and efficiency of the service
22 provided to customers necessarily requires both short-term and long-term perspectives.
23

24 Over the short term, the Company forecasts a reduction of approximately 2 FTEs within
25 its customer service function upon implementing and stabilizing a new Customer
26 Information System. This reflects the forecast elimination of manual billing processes
27 and reduced call times to respond to customers' enquiries.¹⁷ These potential efficiencies
28 are the direct result of the additional capabilities provided by a modern system. These
29 efficiencies will, in effect, offset higher labour requirements for supporting and
30 maintaining a modern system.
31

32 Newfoundland Power has assessed opportunities to improve the customer experience
33 over the longer term. The assessment shows that many of the opportunities to improve

¹⁴ For more information on the functional limitations of Newfoundland Power's CSS, see response to Request for Information CA-NP-070.

¹⁵ See the *2021 Capital Budget Application, Volume 1, Customer Service Continuity Plan, Attachment A*, page 8.

¹⁶ For information on the efficiency of Newfoundland Power's customer service delivery, see response to Request for Information NLH-NP-001.

¹⁷ A reduction of approximately 1 FTE is associated with the forecast elimination of manual billing processes. This includes the manual billing of Net Metering customers and certain General Service customers, as well as other manual data entry requirements. A reduction of approximately 1 FTE is associated with a forecast reduction in the length of time to respond to customers' calls. This is the result of Customer Service Representatives having access to improved information and a more streamlined user interface when addressing customers' service issues. For more information on the enhancements that would be provided by a modern Customer Information System, see the *2021 Capital Budget Application, Volume 1, Customer Service Continuity Plan, Attachment B*.

1 the customer experience have associated efficiency benefits through automation or
2 streamlined processes. Examples include:

- 3
- 4 (i) **Improved self-service options via the customer website.** Currently, manual
5 processes are required to update information available to customers via self-
6 service options. For example, Move In/Move Out requests completed via the
7 customer website require manual processing by a Customer Service
8 Representative. Integration to the customer website would be improved upon
9 implementing a modern Customer Information System. This would reduce
10 manual data entry and processing requirements.¹⁸
- 11
- 12 (ii) **Automated transfers of all programs and services.** Currently, when an existing
13 customer establishes electrical service at a new location, all related programs and
14 services (e.g. Automatic Payment Plan) must be transferred individually. This
15 increases the time required to complete a customer's request. A modern
16 Customer Information System would include tools to automate the transfer of
17 programs and services.¹⁹
- 18
- 19 (iii) **Proactive customer notifications.** A modern Customer Information System
20 would permit Newfoundland Power to provide customers with more proactive
21 notifications related to their services. Currently, proactive notifications primarily
22 consist of outage alerts for customers. These proactive notifications are achieved
23 through automated processes that tend to reduce the requirement for customer
24 calls. A modern Customer Information System would permit the opportunity for
25 additional proactive notifications, such as payment reminders or notifications of
26 abnormal changes in customers' usage.²⁰

27

28 These enhancements are examples of opportunities to improve both the quality and
29 efficiency of Newfoundland Power's customer service delivery upon implementing a
30 modern Customer Information System. The Company has developed a framework for
31 assessing the costs and customer benefits of these enhancements over the short, medium
32 and longer term.²¹

¹⁸ See the 2021 Capital Budget Application, Volume 1, Customer Service Continuity Plan, Attachment B, page 14.

¹⁹ See the 2021 Capital Budget Application, Volume 1, Customer Service Continuity Plan, Attachment B, page 13.

²⁰ See the 2021 Capital Budget Application, Volume 1, Customer Service Continuity Plan, Attachment B, page 12.

²¹ See the 2021 Capital Budget Application, Volume 1, Customer Service Continuity Plan, Attachment B, page 9 to 18.