

1 **Q. The Ernst and Young 2018 Report, page 11, lists Customer/1 installations in North**
 2 **America and shows that nine utilities will continue to have such systems still in place**
 3 **in five years. Has Newfoundland Power communicated with these utilities on their**
 4 **plans to continue to use such systems? If yes, provide details and if no, why not?**

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 6 **A. A. Response**

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 8 No, Newfoundland Power has not communicated with utilities continuing to use
 9 Customer/1.

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 11 Customer/1 systems throughout North America are highly customized and unique to each
 12 utility.¹ The highly customized nature of these systems means the specific technical and
 13 functional risks facing each utility vary. As such, a comparison of Newfoundland
 14 Power's Customer Service System ("CSS") to that of other utilities operating Customer/1
 15 is of limited value.

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 17 Ernst and Young LLP ("EY") assessed the prevalence of Customer/1 in the industry as a
 18 means of assessing overall market trends. EY provided an update on the continued use of
 19 Customer/1 in 2020. It shows utilities are continuing to move away from this legacy
 20 system.

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 22 Additional detail is provided below.

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 24 **B. Supporting Information**

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 26 ***Overview of Customer/1***

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 28 Customer/1 was a billing solution implemented by Andersen Consulting in the late 1980s
 29 and 1990s. Customer/1 was a meter-to-cash system that provided billing, accounts
 30 receivable and other basic customer service functions. It was developed using a code
 31 base that was customized to fit the specific requirements of each utility. Unlike modern
 32 solutions, this resulted in highly customized systems for each utility.²

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 34 As noted by EY:

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 36 *"While implementation methodologies certainly existed, the patchwork of*
 37 *regulations and customized business processes essentially created software*
 38 *systems that were more bespoke than standardized. CSS is such a system."*³

¹ For example, Newfoundland Power's CSS includes a unique technology stack (i.e. underlying hardware and software), over 2 decades of customized enhancements, and integrations with over 50 internally developed applications.

² The customization of billing systems in the 1980s and 1990s differs from modern systems. For modern systems, the majority of required functionality is delivered through the base product and standard configuration of pre-existing features. This minimizes the need for any system customization. Customization generally results in more complex and costly systems to maintain.

³ See the 2021 Capital Budget Application, Volume 1, Customer Service Continuity Plan, Attachment A, page 10.

1 The highly customized nature of Customer/1 systems limits the comparability of these
2 systems. The specific risks facing each utility's system and reasons for replacement vary.
3 For example, Hydro One replaced its Customer/1 system commencing in 2012. Hydro
4 One's replacement was driven by functional limitations, including smart metering
5 requirements, rather than technical risks.⁴ This differs from the circumstances of
6 Newfoundland Power.

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8 Newfoundland Power implemented its Customer/1 system in 1993 ("CSS"). Following
9 the expiration of vendor support, CSS was technically migrated to a new OpenVMS
10 operating system in 1998 using the PowerHouse and Axiant programming languages.
11 This technical migration allowed the system to be supported and enhanced internally.⁵
12 The technologies implemented in 1998 are now facing risk of obsolescence. This is one
13 of the drivers of Newfoundland Power's proposed replacement project.⁶

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15 Newfoundland Power's CSS faces functional limitations comparable to other utilities
16 operating Customer/1. However, the Company is not aware of any other utility operating
17 a Customer/1 system with this specific, obsolete technology base used by Newfoundland
18 Power.⁷ As such, the combination of risks facing Newfoundland Power's system is
19 reasonably unique.

20 21 **Current Market Trends**

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23 EY completed a survey of Customer/1 systems throughout North America as part of the
24 2018 technical risk assessment for CSS. The survey showed that, of 29 utilities operating
25 Customer/1, only 9 were likely to be operating the system within 5 years.⁸ This compares
26 to, for example, over 1,000 utilities operating modern systems provided by either SAP or
27 Oracle.⁹

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29 EY provided an update to its survey in 2020. The updated survey shows that, within the
30 last 2 years, an additional 1/3 of these utilities have developed plans to move away from
31 Customer/1. Virginia Power, Dominion commenced a replacement project in 2019 to be
32 completed by 2022. Brooklyn Union and Niagara Mohawk, which are now part of
33 National Grid, have filed plans with their regulator to move to a modern system.

⁴ Hydro One commenced a replacement project for its Customer/1 system in 2012. Examples of the drivers noted by Hydro One for system replacement included: (i) frequent changes to the system prompted by government and other initiatives; (ii) an updated system to handle smart metering; and (iii) scalable processes and systems to handle distributed generation. See Hydro One's Application *Non-Typical Capital – Customer Information System*, filed June 15, 2012, pages 1 to 2.

⁵ CSS has since undergone over 2 decades of customized enhancements to deliver the necessary requirements to serve customers. Enhancements include introduction of the Equal Payment Plan and administration of the RSP Surplus Refund.

⁶ For additional information, see response to Request for Information PUB-NP-014.

⁷ The obsolete technology base underlying Newfoundland Power's CSS affects both the vendor and support risks for this system. For more information, see response to Request for Information PUB-NP-014.

⁸ See EY, *CSS Technical Risk Assessment*, June 2018, page 12.

⁹ SAP currently has over 800 installations of its Customer Information System. Oracle currently has over 230 installations of its Customer Information System.

1 This update was based on information available to EY. Updated information on the other
2 6 utilities operating Customer/1 was not available at the time of providing this response.

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4 This updated survey confirms that Newfoundland Power’s proposed replacement of its
5 CSS is consistent with current industry experience.