Q. Newfoundland Power indicates in CA-NP-153 that EY considered four broad options with respect to addressing the shortcomings of the current CSS. Please explain in detail why EY dismissed each of these options and why options to extend the life of similar CSS's implemented by other utilities are not a viable solution for Newfoundland Power.

A. As noted in our 2020 Planning and Assessment report, EY identified four modernization alternatives based on industry experience. Each alternative was assessed for viability for Newfoundland Power.

Option 1: Maintain the status quo

Maintaining the status quo would involve continuing with Newfoundland Power's practice of supporting and enhancing the CSS through approved capital and operating investments.

Maintaining the status quo would not address the functional risks within the current CSS. While implementing functional enhancements has provided positive customer satisfaction, increasing customer expectations and changes in the market require new features which cannot be provided within the current CSS. Newfoundland Power is routinely mandated to develop regulatory driven customer service functionality that a system designed nearly 30 years ago would not have anticipated, such as net metering which is currently delivered outside of CSS. Certain other functionality, if required in the future, could simply not be delivered in CSS such as time of use rates.

Maintaining the status quo would not address the technical risks within the current CSS. Vendor support in key underlying infrastructure is decreasing and future vendor investment is uncertain. 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. Additionally, several home-grown custom applications are nearing the end of their useful life and will require significant investment or replacement (e.g., Meter Equipment System, Street Light Management System, and Handheld Meter Reading Reporting).

These risks are not static and will increase over time. Maintaining the status quo will continue to increase complexity and not mitigate the technical and functional risks facing Newfoundland Power. In EY's opinion, this is an unsustainable option.

Option 2: Extend CSS with bolt-on applications

Extending CSS with bolt-on applications involves purchasing software applications that provide specific business functions and integrating them with the existing CSS. Traditionally, a bolt-on application provides missing or improved functionality that can be integrated into the existing CIS application. Common examples of bolt-on applications include complex rate engines, real-time self-service functions, and bill print capabilities.

Extending CSS with bolt-on applications would not fully mitigate the functional risks within the current application and would continue to increase the application's functional

complexity. While bolt-on applications would allow Newfoundland Power to meet specific business requirements, the ability to improve and enhance broader core CSS functionality would remain unchanged with the existing premise-based data model limiting the ability to be customer centric.

To effectively implement a bolt-on application, the CSS foundational technologies would need to support a modern integration framework. Modern bolt-on applications have a 'plug and play' capability that work seamlessly with a modern CIS. However, CSS would require a customized design integration to implement a bolt-on application, further increasing the technical complexity to implement and support as well as the overall risk of this option.

Overall, a bolt-on strategy would continue to increase the complexity of CSS, limit functional capabilities and would not address technical risks. In EY's opinion, this is not a viable modernization alternative.

Option 3: Re-platform the existing CSS

Re-platforming CSS would require automating the migration of the existing code to a modern, supported programming language. In EY's experience, this option is not standard industry practice.

Re-platforming CSS would mitigate certain technical risks. Newfoundland Power's current CSS is hosted on an Open VMS operating system and is custom developed using COBOL and Powerhouse programming languages. The hardware for CSS is from Hewlett Packard Enterprises ("HPE") and hosted on HPE Integrity Blade Servers. These components are unique to CSS and would require a technical migration expert to design a custom toolset to migrate the CSS software. Additionally, CSS is integrated with over 50 custom designed edge applications. A re-build/re-design of every edge application interface to CSS would be necessary.

While re-platforming CSS would mitigate certain technical risks, a re-platforming of this magnitude would be a high-risk option due to the unknowns associated with a new toolset creation and the complexity associated with operating CSS in this new environment. EY is not aware of any North American utilities comparable to Newfoundland Power that are pursuing this option.

Re-platforming would not mitigate any risks associated with functional obsolescence. In EY's opinion, this is not a viable modernization alternative.

Option 4: Replace the existing CSS

This option involves replacing the existing CSS application with a modern, commercial off-the shelf solution from an established software vendor.

Modern CIS solutions are designed to meet the majority of core meter to cash customer service requirements with little to no customization.

Implementing a modern CIS solution would mitigate the risk of functional obsolescence facing Newfoundland Power's current CSS. Modern CIS solutions keep pace with ever-changing markets. Modern CIS solutions have core business processes incorporated into the base packages and dedicated upgrade strategies to address changing industry and customer expectations. Functionality changes such as advanced metering infrastructure, complex rates, electric vehicles, and electrification of the grid are easily supported by configurations available in modern CIS solutions. Implementing a modern CIS would allow Newfoundland Power to meet evolving customer and industry requirements in a timely manner and mitigate risks.

Modern CIS solutions provide functionality that would allow Newfoundland Power to improve customer experience. For example, customer contact information is currently stored in multiple locations within CSS and supporting business applications. This requires contact centre agents to search for prior customer contacts across multiple applications to help resolve the query. Modern CIS solutions offer standard features that provide a 360-degree view of the customer. These features aggregate all critical customer contact information and present the information in real-time in the CIS solution. This capability would allow contact centre agents to be more responsive to customer inquiries.

Modern CIS solutions provide functionality that would allow Newfoundland Power to streamline existing processes. For example, due to current CSS limitations, customer self-service requests on Newfoundland Power's website frequently generate emails that require manual intervention by contact centre agents. When a customer visits Newfoundland Power's website to request a transfer of their electric service to a new location, an email is sent to the contact centre. A contact centre agent completes the request for transfer of service in CSS using the information that was provided via the email. Modern CIS solutions are built to fully integrate customer self-service functions, eliminating the need for manual intervention by contact centre agents.

Implementing a modern CIS solution would mitigate the risk of technical obsolescence facing Newfoundland Power's current CSS.

Modern CIS solutions support and proactively deliver technology upgrades through package releases which extend the useful life of the solution and its foundational technologies. Skills required to maintain and use a modern CIS can be readily acquired through formalized training and certification programs for technical and business employees. This increases the number of available skilled resources to support a modern CIS.

Modern CIS solutions provide an integrated platform that will streamline the IT environment and reduce complexity. Over the years, CSS has been extended with over 50 edge applications and integrations to provide the necessary functionality. Modern CIS solutions are configuration-based which would allow Newfoundland Power to incorporate the majority of its business requirements into a CIS without customization. This also removes the necessity for complex integrations, minimizes the requirements for numerous edge applications, and allows for the retirement of home-grown applications.

In EY's opinion, replacement of the CSS is the only viable option to mitigate the technical and functional risks facing Newfoundland Power.