

1 **Information Systems**  
2

3 **Q. Reference: "2025 Capital Budget Application," Newfoundland Power Inc.,**  
4 **June 28, 2024, Supporting Materials, Information Systems: 6.2.**

5 **a) Has the project budget been based on a cloud or on-premise solution?**

6 **b) Please provide a copy of the Request for Information.**

7 **c) Please confirm that the proposed Request for Proposals ("RFP") is**  
8 **intended to be for the selection of a solution and contractor. If not,**  
9 **identify the purpose of the RFP.**

10 **d) What are the related operating costs associated with the implementation**  
11 **of this system? Please provide an estimate and details of any associated**  
12 **post-go-live support costs and the related time period covered.**

13 **e) What software is Newfoundland Power currently using, and what**  
14 **reasoning did the developer give for not being able to provide support**  
15 **post-January 1, 2027? Did Newfoundland Power engage with other**  
16 **companies in similar situations in its exploration of all potential**  
17 **alternatives? If not, why not?**

18  
19 A. a) The budget for the *Asset Management Technology Replacement* project was  
20 developed with consideration for both cloud and on-premise solutions. Responses to  
21 the Request for Information ("RFI") were received from vendors offering either or  
22 both types of solutions. The project costs were estimated based on the RFI results  
23 and the Company's experience with similar projects in the past.

24  
25 b) See Attachment A for a copy of the *Request for Information Asset Management*  
26 *Solution*.

27  
28 c) Newfoundland Power confirms that the RFI is intended to select both the asset  
29 management technology solution and the contractors.

30  
31 d) The preliminary project and post implementation-operation stages of the asset  
32 management technology implementation will incur operating costs. These activities  
33 will include: (i) evaluation of vendor software; (ii) final selection of a software; and  
34 (iii) training.<sup>1</sup>

35  
36 Post-go-live support costs will include ongoing support and maintenance costs, or  
37 annual subscription fees. Based on the RFI responses, the estimated yearly  
38 post-go-live support costs average \$530,000 per year in 2024 dollars.

39  
40 e) Newfoundland Power currently utilizes AVEVA Enterprise Asset Management as its  
41 asset management technology. The vendor has announced that this software sunset  
42 date will be after December 31, 2026. This decision applies to all of its customers  
43 and was made following a review of the asset management technology market, its  
44 product suite, and a company-wide shift towards cloud solutions.

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<sup>1</sup> See *Accounting Standards Codification 350-40 Internal-Use Software*, subparagraph 55-3.

1 Newfoundland Power engaged in discussions with its current asset management  
2 technology provider and determined that no equivalent replacement was available.  
3 To ensure due diligence, the Company also consulted with Gartner, Asset  
4 Management Consulting Limited, and other utilities to identify alternatives.  
5 Subsequently, Newfoundland Power issued an RFI to further explore potential  
6 market options.

## **ATTACHMENT A:**

Request for Information Asset Management Solution

# Request for Information Asset Management Solution



Newfoundland Power Inc.  
November 24th, 2023

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## 1.0 Overview of Newfoundland Power

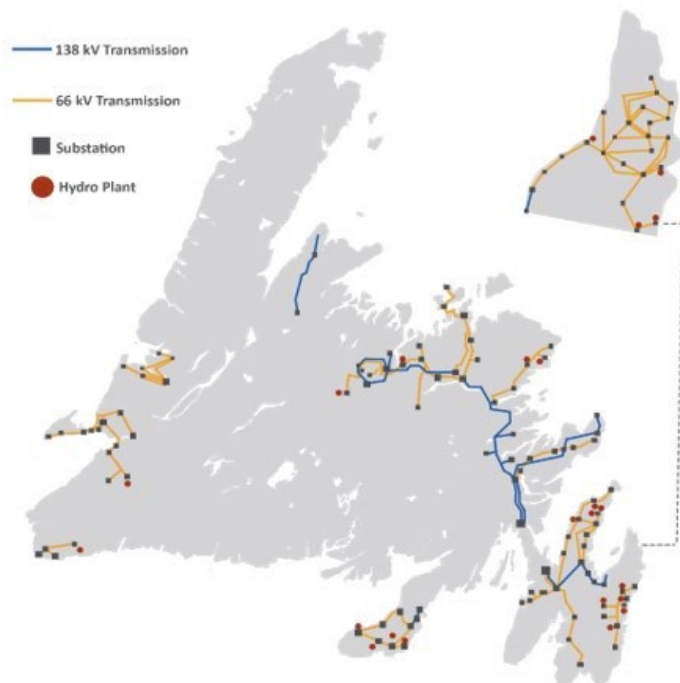
Newfoundland Power Inc. (“Newfoundland Power”, or the “Company”, or the “Owner”) is the primary distributor of electricity in Newfoundland and Labrador, serving over 260,000 customers in the province. The Company operates an integrated generation, transmission and distribution system throughout the island portion of Newfoundland and Labrador. For over 130 years, the Company has provided customers with safe, reliable electricity in the most cost-efficient manner possible. Newfoundland Power’s vision is to be a leader among North American electric utilities in terms of safety, customer service, reliability and efficiency.

All common shares of Newfoundland Power are owned by Fortis Inc. (TSX: “FTS”), the largest investor-owned distribution utility in Canada, which serves approximately 3.3 million gas and electric customers, and has assets exceeding \$50 billion. Newfoundland Power is regulated by the Board of Commissioners of Public Utilities, Newfoundland and Labrador which has jurisdiction over rates, policies, capital expenditures and the issue of securities.

The Company owns and operates approximately 9,500 kilometers of distribution line, 2,100 kilometers of transmission line, and 131 substations to serve its customers. The Company’s fleet of generating assets is relatively small, consisting of 23 hydro plants and six thermal generating plants that provide emergency backup and system support.

Figure 1 is a map of Newfoundland Power’s transmission, substation, and hydro plant assets.

**Figure 1: Newfoundland Power Electrical System Assets**



Newfoundland Power manages its electrical system assets through a combination of inspections and maintenance programs, and long-term asset management strategies. Asset management at Newfoundland Power is organized by asset class, with separate practices and strategies applied to each of the asset classes: distribution, transmission, substation, generation and general properties<sup>1</sup>.

Substations are inspected eight times annually to identify deficiencies and required maintenance. Equipment that fails or is at imminent risk of failure is addressed through corrective maintenance. Major refurbishment projects are implemented in accordance with the Company's longstanding *Substation Refurbishment and Modernization Plan*. Annual projects also exist to modernize specific types of substation equipment, such as obsolete protection and control equipment and ground grids.

Generating plants and equipment are inspected at regularly scheduled intervals by plant operators to identify deficiencies. Equipment that fails or is at imminent risk of failure is addressed under corrective maintenance programs for hydro plants and thermal assets, as well as rehabilitation projects for civil works. Major plant refurbishment projects, such as penstock replacements, are accompanied by economic analyses to confirm that continued operation of a hydro plant is least-cost for customers.

The majority of Newfoundland Power's transmission lines operate at 66 kV and 138 kV. Transmission lines are inspected annually to identify deficiencies. Deficiencies on the transmission system are prioritized for correction based on severity. The condition of the transmission system is also maintained through re-build projects. These projects target the Company's oldest and most deteriorated transmission lines and are completed in accordance with its longstanding *Transmission Line Rebuild Strategy*.

The Company operates approximately 300 distribution feeders. Each of these distribution feeders are inspected on a seven-year cycle with deficiencies prioritized for correction based on severity as part of corrective or preventative maintenance. The distribution system is also maintained through the longstanding *Distribution Reliability Initiative* that targets capital investments on the Company's worst performing feeders. Capital additions and upgrades are also required annually to connect new customers to the distribution system and respond to system load growth.

Newfoundland Power owns and operates 38 buildings and associated infrastructure that are considered as "General Properties" across the island portion of Newfoundland and Labrador. These buildings and infrastructures are mainly used for planning and operating of the assets and services provided by the company. General Properties are inspected to identify deficiencies and prevent asset failure. Equipment that fails or at imminent risk of failure is addressed through corrective maintenance or capital investment. Major replacement or refurbishment projects, such as constructing new

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<sup>1</sup> The Company's Asset Management practices and strategies are presented in Newfoundland Power's annual *Capital Budget Application*. This can be viewed on the Board of Commissioners of Public Utilities website at <http://www.pub.nf.ca>.

buildings or major renovations, are accompanied by an assessment of alternatives to confirm that continued operation of General Properties asset is least-cost for customers.

There are some asset class components within each asset class that have additional requirements. Some examples include: street lights; and third-party attachments. These additional requirements are captured within the requirements in Appendix A - Requirements. Street lights were recently incorporated into our Asset Management System, primarily as a means to standardize tracking of street light data similar to other assets within the company. Having street lights and associated data in the Asset Management System and our Geographical Information System ("GIS") allows for a modern user experience when reporting street light outages, as well as consistency and accuracy when creating and issuing street light related work orders.

There are three third-party communications companies that may attach communications equipment to poles within Newfoundland Power's service territory. Poles may be governed by a joint use agreement between Newfoundland Power and Bell Aliant. Newfoundland Power is responsible to inspect all poles included in this agreement, regardless of ownership.

More information on Newfoundland Power is available at [www.newfoundlandpower.com](http://www.newfoundlandpower.com). Fortis information can be viewed at [www.fortisinc.com](http://www.fortisinc.com).

## 2.0 Definitions

"**RFI**" means this Request for Information.

"**Vendor**" refers to any person or entity that is invited to participate in this RFI.

"**Owner**" and "**the Company**" refers to Newfoundland Power Inc.

"**Response**" means the documentation submitted by a Vendor that incorporates all of the requirements outlined in this RFI.



## 3.0 RFI Process

### 3.1 Purpose and Guidelines

The purpose of this request for information (“RFI”) is to identify qualified Vendors who can supply, provide, and implement (on their own, or in partnership with a third party implementor) an Asset Management Software. Responses shall be used to identify the software solution alternatives that are available to Newfoundland Power, and to help define a strategy for its Asset Management System replacement. Responses will also provide the level of effort and the cost of system replacement. This RFI will provide Vendors an opportunity to highlight their unique abilities and in-depth knowledge to assist the Company with this project, or to suggest or recommend additional items to be considered.

Any costs incurred by the Vendor in preparing a response including all work and/or travel expenses and materials provided by the Vendor, are the sole responsibility of the Vendor and will be at no cost to the Owner.

All Responses and supporting material submitted in response to this RFI shall become the property of the Owner. This RFI is for information purposes only and shall not be construed as either a solicitation or obligation on the part of the Owner.

### 3.2 Submission of Responses

Responses will be received up to **3:00:59 p.m.** Newfoundland local time on **January 11, 2023 (Closing Time)**. However, the final Closing Time shall be determined by the Bidding System web clock, and that determination shall be FINAL. For this reason, it is strongly recommended that Vendors allow ample time in advance of the Closing Time to complete their submission and resolve any issues that may arise.

**ONLY ELECTRONIC SUBMISSIONS WILL BE ACCEPTED.** Submissions must be completed in the Bidding System (bids&tenders), and must comply with all requirements of the Bidding System. **Hardcopy submissions are not permitted.** Submissions must be made on or before the Closing Time indicated on the Bidding System. **Late Responses are not permitted by the Bidding System.**

Bidding System: <https://newfoundlandpower.bidsandtenders.ca/module/tenders/en>

Vendors are cautioned that the time of their submission is determined based on when the submission is RECEIVED by the Bidding System, and not when it is submitted. This is because transmission can be delayed due to file transfer size, transmission speed, etc.

The Bidding System will send a confirmation email advising that the submission has been successfully submitted. If Vendors do not receive a confirmation email contact bids&tenders support at [support@bidsandtenders.ca](mailto:support@bidsandtenders.ca) or 1-800-594-4798 immediately. Vendors should contact bids&tenders support as soon as possible if they encounter any other difficulties in transmitting Responses.

All Vendors are required to have a Bidding System Vendor account and be registered as a Plan Taker for this RFI. This will enable the Vendor to download all documents and to receive Addenda/Addendum notifications and other updates via email. The onus is on the Vendor to create a Bidding System Vendor account and register as a Plan Taker for the opportunity.

Newfoundland Power Inc. is not responsible or liable whatsoever for misdirected notices of solicitations or for misdirected addendums which may result from the failure of registered vendors to update their contact information.

### **3.3 Questions and Inquiries**

Questions are to be submitted through the BIDDING SYSTEM ONLY by clicking on the "Submit a Question" button for this specific opportunity by the date indicated in the Bidding System.

The Owner will determine the appropriateness of supplying a response given to one Vendor, to other Vendors.

### **3.4 Owners Request for Clarification of Response**

The Owner may, in its sole discretion, request clarifications, corrections and/or new information relating to any response submitted by a Vendor and use such information to evaluate the response.

### **3.5 Confidentiality of Information**

The Owner reserves the right to use any or all concepts presented in any Response, whether the Response is accepted or rejected. Proprietary information identified as such by the Vendor will be reasonably safeguarded from copy. However, the Owner accepts no responsibility for exposure of proprietary information. This RFI is a confidential document and will remain the property of the Owner while in the hands of the Vendor. The contents of this document are to be used only by the Vendor's personnel or the Vendor's third-party subcontractor(s) working on the development of the Response. The contents of this document are not to be disclosed to any other third parties.

## 4.0 Scope of Work

### 4.1 Overview

Since 2003, Newfoundland Power's strategy for managing its assets has been supported by its existing Enterprise Asset Management System. The Company has been able to prolong the service life of its Asset Management System through the use of an extended support contract with the Vendor. This has allowed Newfoundland Power to defer system replacement.

The Company's existing Asset Management System contract is expiring and the Vendor is discontinuing support of the technology in 2026. With the upcoming retirement of the Company's existing Asset Management System, Newfoundland Power is in the market for a new system. Although the Company is not targeting certification with ISO 55001, strategic alignment with the standard where feasible to allow best practice is desired.

Newfoundland Power recognizes that the market for Asset Management Software is broad and supplier capabilities are diverse, therefore seeking to clarify supplier capabilities for a new system. This RFI is intended to build Newfoundland Power's understanding of the respondent's capabilities and provide budgetary guidance for cost and effort, not to solicit a formal proposal for software and services at this stage.

Information gathered from this RFI will inform a future request for proposal ("RFP") whereby the respondent would be the responsible party to implement a commercial-off-the-shelf ("COTS") Asset Management product that is fully integrated with all other modules described within<sup>2</sup>. This includes but is not limited to project activities such as: (i) software development; (ii) integration development; (iii) data conversion; (iv) testing; (v) training; (vi) change management; (vii) implementation; and (viii) professional services to successfully implement Newfoundland Power's new Asset Management Software.

The respondent will provide a list of resource requirements that will be included as part of the implementation of the Asset Management System, this includes project resources that will also be required from the Newfoundland Power team. Newfoundland Power also recognizes that the services to implement an Asset Management Software may be in partnership with a 3<sup>rd</sup> party supplier and not necessarily to be solely provided by the Respondent. All Responses will clearly articulate 3<sup>rd</sup> party involvement and past experience in implementing projects of similar nature and scale.

Requirements for the new solution can be found in Appendix A - Requirements.

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<sup>2</sup> This RFI does not restrict, or limit, the Company from requesting proposals from Vendors who are not "RFI" recipients.

## 4.2 Background

Newfoundland Power's approach to Asset Management has delivered sound outcomes for its customers, including reasonable levels of service reliability and customer satisfaction.

Since 2000, Newfoundland Power reduced both frequency and duration of customer outages by over a half. The service reliability experienced by customers has been reasonably stable since 2011, averaging approximately 1.9 outages and 2.6 hours of outage annually. The average duration of outages to Newfoundland Power's customers has been half the Canadian average over the last decade and the average frequency of outages has been consistent with the Canadian average.<sup>3</sup>

While historical results have been sound, the context within which the Company manages its assets is changing. A large portion of Newfoundland Power's assets were constructed during the same period in order to provide the province with electricity and are now approaching end of life. At the same time, the Company is experiencing a demographic transition within its workforce due to retirements, an evolving regulatory landscape, and an upcoming obsolescence of its Asset Management Technology.

The Company's Asset Management System serves as an Asset Registry, storing data on each of its asset classes, and asset components identified above.

The current system manages preventative maintenance regimes and provides both work request and work order functionality for any preventative work on assets we maintain and inspect. As well, work orders for reactive work are created to capture a complete work history.

The system supports on average 6,200 work requests and 17,000 work orders each year. Inspection work orders for all asset classes are prioritized, planned, and sent to mobile field applications for inspectors to work. These mobile applications can provide access to work requests and/or work orders while off line in the field and provide sync capabilities when in cellular or Company WIFI areas.

The Company's Asset Management System integrates with many technologies within the company including, but not limited to:

- Outage Management System;
- Geographical Information System ("GIS");
- Mobile Workforce Management System;
- Customer Services System;
- Financial Enterprise Resource Planning ("ERP") System;

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<sup>3</sup> The Canadian average for SAIDI and SAIFI is based on Region 2 utilities of Electricity Canada, which are utilities that serve a mix of urban and rural areas. The Canadian average SAIDI was 5.2 from 2011 to 2021 and the average SAIFI was 2.1.

- Power DB;
- Technical Work request (“TWR”);
- Mobile Applications for accessing work orders and/or requests in the field; and
- Web Work Request.

## 5.0 Vendor Response

Vendors are requested to provide the information outlined below and any additional information that may be helpful to the Owner in assessing the Vendors ability to perform the scope of work. This would include any partners or subcontractors required to implement the solution.

### 5.1 Project Approach and Methodology

Newfoundland Power requires the Vendor to comment on or confirm the suggested major implementation phase milestones and the budgetary timeline i.e.: (i) initiation, (ii) design, (iii) development, (iv) testing and training, and (v) implementation.

Attach as Schedule A.

### 5.2 Core Business Requirements

Vendors are requested to provide a response to core business requirements, indicating how the requirement is met by the Vendor solution.

- Replacement of all existing Enterprise Asset Management (EAM) system functions, with special attention given to the critical business requirements outlined in Appendix A - Requirements;
- Highly configurable and flexible Commercial off the Shelf (COTS) system;
- Enhanced maintenance and inspection functionality to meet electrical utility industry good practices;
- Queue management to efficiently organize work;
- Workflow management to minimize paper-based processes;
- Reporting and data visualization;
- Mapping capabilities – the Asset Management Software must provide detailed mapping integration capabilities directly into the current GIS;
- Mobile solution(s) – currently the Company uses a combination of Windows and iPhone Operating System (iOS) devices as field devices, a new solution must support multiple mobile field devices providing offline capabilities; and,
- Optimization and automation based on Asset whole life costs.

Vendors must complete the attached table in Appendix A - Requirements, by responding to each requirement indicating how it is met by the Vendor. The Vendor shall indicate if the requirement is:

- Fully Met – functional requirement met with no modifications;
- Modification – functional requirement met with modification or customization to current module
- Add Module – functional requirement met with the purchase of additional module; or,
- Not Met – functional requirement not met; Vendor may state whether functional requirement will be available in a future release.

Where applicable, additional notes and comments should be included in the space provided.

Attach as Schedule B.

### 5.3 Understanding of the Work and Cost Structure

Vendors are requested to provide conservative, all-in cost estimates for software, system design and implementation (as detailed below), including ongoing support (both maintenance and recommended upgrades). This will assist Newfoundland Power in providing a baseline estimate for regulatory financial approval of the Asset Management Replacement Project. Some of the roles Newfoundland Power expect the respondent to provide include:

- Project management and project methodology, including project initiation and planning, communications, issue management, risk identification and mitigation;
- Implementation for the project in coordination with Newfoundland Power’s project team;
- Technical scoping, including system integration and architecture services and design to implement a high availability (“HA”) environment with disaster recovery. Please indicate if cost is based on number of assets, or number of licenses and whether licenses are concurrent or named, and include associated scaling of bulk licenses. Please also describe the technical and hardware environment that will be needed to support proposed production, training and testing environments.

This can be based on the following:

- Number of assets:
  - Distribution – 12,700;
  - Transmission – 18,030;
  - Substation and Generation – 17,225;
  - Street Lights – 436,869;
  - General Properties – 14,000;

- An average of 17,000 work orders yearly; and,
- Up to 100 users.
- Work closely with Newfoundland Power staff, interface development, with testing support and implementation;
- Work with Newfoundland Power to determine industry good practice and processes in the electrical utility space, such as, but not limited to, how the Asset Management Software will integrate with the Company’s GIS;
- Work closely with Newfoundland Power staff, to set up a separate conversion environment and convert historical data to the format required by the proposed system; validate it to confirm the conversion was done correctly, and load the data into the new database. It is expected that this will be an iterative process and will require close work between the Respondent’s project staff and Newfoundland Power’s staff. Each iteration should be documented with summary information showing conversion goals, conversion degree of success and a plan to remediate unsuccessfully converted data. The converted data must be validated against reports in the current production system;
- Work closely with Newfoundland Power staff, functional, integration and performance testing; with test script and test plan design, supporting User Acceptance Testing;
- Assist with development of reports;
- Train Newfoundland Power staff, with classes and documentation tailored to Newfoundland Power business processes;
- Work closely with Newfoundland Power staff, support production Go Live and Post Go-Live Stabilization;
- Available Support and Maintenance options on a yearly basis for minimally five years; and
- Recommend frequency and level of effort of upgrade cycle.

Please use a table similar to the table below for a cost estimate. Include additional detail as you see fit.

<b>Costs</b>	<b>Low</b>	<b>High</b>
Software	\$	\$
Services	\$	\$
Licenses (based on number of assets/users identified above)	\$	\$
Estimated Travel and Expenses	\$	\$
Ongoing Support and Maintenance	\$	\$
Total	\$	\$

Attach as Schedule C.

#### **5.4 Optional Interviews/Demonstration**

Vendors may be invited to provide a product demonstration using a requirements script provided by Newfoundland Power to demonstrate the Asset Management Software. The demonstration script is to be followed strictly and will be provided upon invitation. Demonstrations are expected to be completed between January 22-26, 2024.

Presentations can be held via video conference.

#### **5.5 Competitive Advantage**

The Vendor may include any other information they deem relevant, including additional recommendations (functional components and/or implementation alternatives) by the Vendor that demonstrates their unique ability and depth of experience.

Attach as Schedule D.

#### **5.6 Support and Maintenance**

Vendors are requested to provide support and maintenance information as follows:

- Do you offer 24/7 help desk support with your basic Asset Management Software maintenance and support agreement?
- Which time zones and what are the hours of normal operation that the help desk support cover? What are the hours of operation?
- To support your Asset Management Software, do you have a dedicated staff operating in North America? Are there partners you use to offer support capabilities?
- Do you support an online user community to facilitate the exchange of experiences and best practices?
- Do you have a user group and/or user conferences that meet regularly and updates clients on technical developments with your Asset Management Software?
- Describe the expected future frequency of keeping the proposed solution current (patches, service packs and upgrades) under a standard maintenance contract and provide a percentage figure on the clients that renew their maintenance contracts for these services?



- Describe the vision and strategy for the future of the proposed Asset Management Software including a description of the product enhancements that are in the planning or design stage, including but not limited to, On-Premise vs Cloud solutions. Provide an estimated release schedule for these product enhancements.
- Over each of the last three years, what percentage and dollar amount of the research and development budget were dedicated to the proposed Asset Management Software of the company unit which is offering the software?
- If there are any 3rd party products involved with the Asset Management Software, please provide maintenance and support agreements for these 3rd party products.
- Availability of System User Guides.
- Provide details on available user training and recommendations for training delivery methods, channels and formats and cost.
- What support models and services are available both during implementation and post project and costs of different models?

Attach as Schedule E.

## 5.7 Vendor Viability

Vendors are requested to provide vendor viability information as follows:

- For the company's last fiscal year, please list separately for North America, Latin America, Europe/Middle East/Africa, Asia/Pacific, Rest of World:
  - Software license revenue;
  - Software license revenue specifically generated by sales of your Asset Management Software;
  - Subscription revenue;
  - Subscription revenue generated by specific Asset Management Software;
- State any ownership changes or significant reorganizations in your company;
  - The company unit which is offering the software:
    - In the past 24 months with the reason for change(s);
    - Any pending ownership changes;
- Briefly describe all divestitures during the past 24 months;
- Provide, in percentages, year-over-year growth or decline in customer counts, user populations and revenue attributed to your Asset Management Software;
- Describe any pending, contemplated or ongoing administrative or judicial proceedings material to Proposer's business, finances or products; and
- Describe any recent project cancelled or terminated within the last 5 years.

Attach as Schedule F.

## 5.8 Business Experience and Qualifications

Vendors are requested to provide business experience and qualifications as follows:

- Provide years in operation with an overview of the Asset Management Software product's evolution, by major release, from the first release of the product to present;
- Provide list of the successful implementations in the North American electrical utility industry with special attention shown to Newfoundland Power peer utilities (electric utility, 150K to 400K customers with mobile solution) and/or other Fortis utilities. For those utilities state:
  - Name and version number of the Asset Management Software to two digits (e.g., version 4.3);
  - The name of the organization, city/state/province in which located;
  - Implementation Year/Month;
  - The type of utility it is in terms of its manner of organization (private company, public special district, department of some level of government); and
  - On premise or cloud installation
- List of all implementations of the proposed Asset Management Software that were won as net-new customers of your Asset Management Software in past five years;
- List of all implementations of the proposed Asset Management Software currently in progress and their planned completion dates;
- Provide information about the relationship between the Respondent and subcontractors, if any, focusing on the length of the partnership and the projects they have mutually worked on;
- Please describe the top three formal partnerships you have established with third-party consulting organizations to deliver technical consulting resources to clients in support of your Asset Management Software;
- Number of employees, in categories, in the company unit which is offering the software ("categories" are Development, Sales/Marketing, Installed Customer Support, Implementation, etc.);
- Special resources available (e.g., business partners or unique expertise);
- Briefly define your target buyers, and explain who or what role typically considers your products; and
- Briefly describe your strategy for acquiring new Asset Management Software customers during the next three years (as opposed to selling into established accounts).

Attach as Schedule G.

## 5.9 Technology

Vendors are requested to provide information on their ability to meet the Owners' technology requirements as follows:

- Cyber Security Approach;
- Recommended server hardware requirements (VMware virtualization support);
- Recommended workstation hardware and operating system;
- Recommended mobile hardware and operating system;
- Recommended network prerequisites or configurations;
- Relational database requirements (and options);
- Licensing model (e.g. named user, concurrent user) options;
- Deployment alternatives (including on premise, hosted, cloud service);
- Warranty;
- Versatility, configurability, scalability, and integration capabilities for integrations requirements identified;
- Ability to utilize middleware software to connect to other corporate systems; and
- Approach to delivering security updates for operating systems and applications.

Attach as Schedule H.

- The Cloud Assessment outlined in Appendix B should be completed if the Asset Management Software presented is a cloud-based solution. Support from IT Solution Delivery Enterprise Architecture group is available if required.

Attach as Schedule I.

## 5.10 Business Continuity

The Vendor's ability to continue operations under adverse conditions that could impact operations is important due to loss of or damage to critical infrastructure (severe storms) and disruptions due to pandemic or labor dispute.

Vendors are requested to provide appropriate details for prevention, preparedness and response to such adverse conditions, including reference to the COVID-19 pandemic.

Attach as Schedule J.

## 5.11 Other Information

The Vendor may include any other information they deem relevant, including additional recommendations (functional components and/or implementation alternatives) by the Vendor that demonstrates their unique ability and depth of experience.

Attach as Schedule K.

## **Appendix A – Requirements**

**Documentation**

Request for Information

Asset Management System

Replacement

**References,  
Constraints**

**Requirements**

		Fully Met	Modification	Add Module	Not Met	
	<b>Asset Expenditure Planning</b>					
1	Perform lifecycle cost analysis for assets at any level of the hierarchy, including costs such as initial and ongoing capital, preventive and corrective maintenance and parts cost)					
	<b>Asset Performance Management</b>					
2	Provide microservice supports the numeric aggregation methods such as sum, average, min and max (provide capability)					
3	Support calculation and tracking of standard reliability data such as Failure rates, P-F Intervals, MTBF, MTTR based on the asset failure and maintenance history					
4	Provide the ability to automatically create condition-based work order based on the asset condition or inspection result					
5	Define asset health parameters such that asset health can be determined through data held in the asset management software system or received from external systems such as asset sensors					
6	Graphically present historical and current asset health and flag when current health has exceeded certain configurable thresholds					
7	Provide the ability to user defined master inspection form/template per assets type/class or for specific assets					
8	Automate creating work order using inspection template for a specific asset or group of assets based on configurable inspection policies (e.g. time-based or condition-based)					
9	Allows users to identify the order they want to inspect the assets					
10	Provide a view that displays active condition alerts on the asset hierarchy. The view shall provide pre-defined filters that user can use to filter sets of alerts. It shall also provide ability to create user-defined custom filters.					
11	Ability to manage condition alerts by variety of actions to resolve it such as creating a corrective work order, follow up investigation/inspection work order, assigning it to a specific user/role, adding evidence such as photo, video or notes.					
12	Ability to automate the response to a condition alert such as automatically creating work order based on a pre-defined task template.					
13	Ability to analyze alerts by using pre-defined or creating user-defined charts, reports or analytics and reviewing notes and follow up tasks and works associated with each alarm.					
14	Ability to send emails or alerts when issues are found with ability for user to subscribe to alert notifications for the assets or areas that they are responsible for with option to select desired email frequency.					
15	Provide the ability to perform advanced data analysis on asset failure and activities historical data and real-time data from PI or other sources including ability to create forecasting models					
	<b>Asset Register</b>					
16	Record an asset's useful life benchmark, or anticipated design life					

Request for Information

Asset Management System Replacement

17	Define the replacement schedule for an asset, at any level of the asset hierarchy				
18	Record configuration information about an asset at any level of the hierarchy, such as asset type, make, model and settings (including for out of service and decommissioned assets), and flag when work will change (or has changed) that configuration				
19	Represent a logical hierarchy of assets (including plant, mobile, linear and building assets) on the basis of location, physical configuration, function, and/or systems with the search from above and below of a selected asset (drilldown / drill up).				
20	The solution shall be able to support multiple asset groups - Distribution, Transmission, Substation, Generation				
21	Define and maintained linear structures in a dynamic and flexible way, including offsets and intersects and integration with GIS				
22	Present a full history of changes to the asset hierarchy and register, including asset moves and swaps.				
23	Hold typical "name plate" data for assets such as manufacturer, make, model, key characteristics, etc.				
24	Record the current location of an asset at any level of the hierarchy. A complete history of asset locations is to be retained.				
25	Create custom fields for all assets				
26	Create new asset register record(s) based on existing asset register records i.e. copy from an existing asset register record				
27	Hold generic "master templates" of commonly used assets and asset hierarchies for use in creating new assets.				
28	Apply information and actions to assets or locations at any level of the hierarchy and propagate those information or actions down through the asset or location hierarchy				
29	Create a performance indicator with target for an asset and track actual performance at any level of the asset hierarchy. A full history of performance targets and actuals is to be retained.				
30	Attach documents (such as manuals) to all equipment of specific manufacturer/model				
31	Track pictures and notes of asset				
32	Configure various views for equipment and locations				
33	Record asset health information at any level of the asset hierarchy. A full history of asset health is to be retained.				
34	Support creating user defined asset health index calculation based on asset condition data, automatically update asset health index values based on user defined rules (time-based or based on inputs changes) and track changes over time.				
35	Provide a color-coded graphic representation of all asset health indexes				
36	Raise a flag or generate a notification to user defined contact based on the change in asset health index				
37	Create report of asset health index of a specific asset or selected group of assets based on a user defined rule (e.g. based on changes or time-based)				
38	Record utilization data against assets on user-definable frequency, such as daily, weekly or monthly. A full history of utilization is to be retained.				
39	Flag unresolved work orders, asset faults or potential asset health/performance issues prior to an asset being marked as available for service				

Request for Information

Asset Management System Replacement

40	Define the operating hours of assets, at any level of the hierarchy, with the ability for child assets to inherit the operating hours of their parent assets				
41	Record the capital costs of an asset, at any level of the hierarchy				
42	Record the status of an asset, such as under construction, ready for commission, in service, out of service, decommissioned, disposed, etc.				
43	Associate organizations with assets including the legal owner of the asset, the entity responsible for managing it (including point of contact), and the principal point of contact for the asset. A full history of organizational associations is to be retained.				
44	Associate internal and/or third-party service providers to assets and indicate the preferred or principal provider in the cases where there are multiple providers for the same service				
45	Record safety hazards and risks against assets and locations at any level of the hierarchy				

46	Record the condition rating of an asset in accordance with defined condition standards. A full history of condition ratings is to be retained. The condition rate can be descriptive or numeric value.				
47	Record condition data for linear assets at the segment level including the geographical/spatial limits of the segments (and corresponding condition data)				
48	Record the criticality of an asset(s) or location at any level of hierarchy in accordance with defined criticality rules based on probability of asset failure and consequence of its failure.				
49	Support as internal catalog of replacement parts linked to assets and components that is used for managing single-location and multilocation inventory records of spare parts				

**Costs & Time**

50	Assign a unit cost rate (i.e., daily or hourly rate), including defining any applicable labor mark-ups, to internal and external resources for performing work. The rate should be adjustable on the basis of defined business rules, such as base or overtime, certain locations, job codes and pay classes				
51	Record personnel working time against different time categories (such as working time, travel time, paperwork, waiting for materials, training, compensatory time), by different locations or shifts, by regular time or overtime, and by different personnel dimensions (such as job code, pay class, trade/craft or apprenticeship) by asset				
52	Ability to report on timesheet captures, exceptions, summary of hours worked, etc. for employee/work order/asset				

**Data Conversion / Import / Export**

53	Import records from another asset management system, such as assets or work order, work requests, preventative maintenance etc.				
54	Manually import selected system data sets in a user defined format (xml, xls, csv, etc.), in accordance with pre-defined information standards without requiring vendor interaction				
55	Receive and store bulk uploads of structured and unstructured information. Such as new asset records arising from capital projects and real estate acquisitions, asset register attribute data such as condition survey results, along with materials/inventory, standard tasks, work schedules, documents and photos associated with asset records.				

Request for Information

Asset Management System Replacement

56	Flag when imported records contravene defined information standards, providing a user-friendly mechanism for reviewing and addressing such contraventions				
57	Manually export selected system data sets in a user defined format (xml, xls, csv, etc.) without requiring vendor interaction				
58	Export search results, value lists, domains etc., to common office formats, including XLS, CSV and PDF				
59	Automatically import or export data using a time-based trigger (including scheduled actions) and event-based trigger without requiring vendor interaction				
60	Ability to provide an administrative interface for importing/exporting data from/to other applications.				
<b>Data Lifecycle Management</b>					
61	Create, replace, update and deactivate system records and associated attributes (such as assets, work orders, materials/inventory, resources, tools, equipment, failures, defects, service requests) in accordance with user permissions				
<b>Document Manager</b>					
62	Upload and store documents in the asset management software system, associate them with records in the asset management software system (such as assets, work orders, and standard tasks), and launch those documents directly from the asset management software system in the appropriate native viewer (when available).				

63	Identify documents held in the asset management software system that may require update when the configuration of a record in the asset management software system changes (such an asset record or standard task)				
<b>Failures / Service Requests</b>					
64	Record failures, defects and service requests and enable them to be initially prioritized, classified and associated with an asset or location. A full history of faults, defects and service requests is to be retained, including those that do not result in work.				
65	Classify failure, defect, or service requests in accordance with defined failure code classification standards.				
66	Record the status of failures, defects or service requests (such as not yet reviewed, under investigation, resolved etc.)				
67	Automatically communicate (such as via email and/or text) with the originator of a failure, defect, or service request as it progresses through its work flow, including changes to its status or workflow stage.				
<b>Integration</b>					
68	Provide standard REST for creating APIs to share data through HTTPS and BI tools support through inbuilt adapters or connectors and use the extracted condition and data for reporting purpose.				
69	Create, configure and control interfaces with external systems, including through multiple communications modes (such as web services, HTTP, JMS etc.) and different data formats (such as XML, database interface tables, CSV, JSON etc.). Including the configure real-time and batch information exchange based on a time-triggered, event-triggered and manual basis.				
70	Identify associated records in a document repository that may require update when the configuration of a record in the asset management software system changes (such an asset record or standard task)				



Request for Information

Asset Management System Replacement

71	Receive asset health and utilization information (including notification of potential failures and defects) from field systems, automatically associate with relevant asset records in the asset register and trigger workflow as necessary (such as raising notifications or initiating a work request) in accordance with business rules					
72	Establish and maintain associations between technical asset register records in the asset management software system (at the appropriate level of the asset hierarchy) and financial asset register records in the finance system, such that reconciliation between the two registers can occur and identification of the technical assets that comprise a single financial asset can occur.					
73	Receive approved Purchase Orders from the Finance System (Purchasing), including Purchase Orders originating solely in the finance system (purchasing) without a corresponding Purchase Requisition in the asset management software system.					
74	Receive geospatial information from a GIS system and associate it with records in the asset management software system, such as assets (point and linear), locations, work orders and failures / service requests, such that those records can be viewed on map view in the asset management software system					
75	Send information to external reporting tools in commonly read formats, such as xml, xls, csv etc.					
76	Receive information from telematics systems (such as date, time, lat/long positions, hour-meter and odometer readings, asset utilization, faults, health or performance data) associate with relevant asset records in the asset register and trigger workflow as necessary (such as raising notifications or initiating a work request) in accordance with business rules					
77	Receive notifications of faults, defects and service requests from Third Party Operational Incident Response & Investigation systems, automatically associate with relevant asset records in the asset register and trigger workflow as necessary (such as raising notifications or initiating a work request) in accordance with business rules.					
78	Send information (such as status of work orders resulting from reported service requests) to Third Party Operational Incident Response & Investigation systems					
79	Receive and respond to work requests from third-party asset management software systems					
80	Send and receive work orders assigned to external resources to third-party asset management software systems					
81	Receive information such as real-time prices, availability and forecast delivery time for parts and services from a third-party materials system					
82	Record the employment status of personnel, such as employed, no longer employed, contractor.					
83	Assign a displayed name to personnel job description categories received from the HR system.					
84	Provide ability to integrate with or retrieve data from OSisoft PI Historian					
85	Receive personnel records from the HR system, such that corresponding personnel records can be created in the asset management software system.					
86	Receive personnel job description categories from the HR system, and create corresponding personnel job description categories in the asset management software system.					

Request for Information

Asset Management System Replacement

87	Ability to integrate with a Geographic Information System (GIS). Two-way information flow in near real time for creating, updating, and retiring assets, creating, updating and viewing work requests and work orders					
88	Integration with the Outage Management System to capture emergency repairs per asset					
89	Integrate with email, message in systems to allow required notifications					
90	Log Integration messages - required to log details of messages exchanged between various applications to facilitate troubleshooting					
91	Ability to support one-way or two-way (bi-directional) Describe the methods currently provided in your system to integrate with Newfoundland Power's systems (GIS, Outage Management System, DotNet Applications with Sql or Oracle backend etc.)					
92	Interface with external systems - Ability to communicate with modern presets, controls, and devices with published or open protocols.					
93	Integrate with existing materials/inventory system to issue parts, either singly or in batch, to a work order					
94	Integrate with existing materials/inventory system to issue parts, either singly or in batch, to non-work order destinations, such as locations, organizational groups or assets					
95	Integrate with existing materials/inventory system to assign the cost of parts to work orders, locations, organizational groups or assets and perform the applicable financial transaction based on the part classification (such as expensing a part to the applicable budget code and reducing the stock value by the same amount etc.)					
96	Integrate with existing materials/inventory system to accept returned unused or unserviceable parts back in to stock, and reverse any associated financial transactions.					
97	Integrate with existing materials/inventory system to transfer parts between locations (including from/to other organizations, both internal and external)					
98	Integrate with existing materials/inventory system to take full and partial receipt of parts received against a purchase order, including ability to mark faulty or incorrect parts as requiring return to the vendor for repair or credit					
99	Integrate with existing materials/inventory system to confirm receipt of parts against a purchase order from a pre-populated list of expected parts for that purchase order					
100	Integrate with existing materials/inventory system to indicate parts for which an inspection or testing on receipt is required					
101	Integrate with existing materials/inventory system to prevent parts requiring inspection or testing from entering the inventory before such inspection or testing has occurred					
102	Integrate with existing materials/inventory system to record the status of serialized assets, components and parts as they pass through their repair lifecycle, (such as removed from service, awaiting repair, undergoing repair, awaiting return to stock, and returned to stock), including when repairs are performed by a third-party. A full repair history will be retained.					
103	Integrate with existing materials/inventory system to accept a serialized asset, component or part back into service or stock following third-party repair.					
104	Integrate with existing materials/inventory system to record the cost (labor and parts) of rebuilding or repairing assets, component or parts					

Request for Information

Asset Management System Replacement

105	Receive rebuilt or repaired parts back into inventory at the rebuilt/repaired cost, with the spread the cost across multiple parts, either specifically or on average				
106	Integrate with existing materials/inventory system to separately record the cost of rebuilding vs repairing assets, component or parts				
107	Receive approved parts and services from the Finance System (Purchasing), and create corresponding records in the asset management software system				
<b>Notifications</b>					
108	Configure notifications for any system event, such as failures, work orders being assigned, changes in warranty status, parts becoming available to perform work orders. Configurable notification parameters to include the notification recipient (including non-system users), notification routing and escalation paths, method of notifying (system alert, email, SMS, etc.), notification content and notification response options.				
109	Send and route notifications in accordance with configured notification parameters				
110	Present notifications and configure the notification presentation to avoid 'notification fatigue', such as filtering or suppressing certain types of notifications, with variation allowable between user role.				
<b>Reporting</b>					
111	Provide pre-defined reports to fulfill typical or common user queries, that can be accessed based on user role				
112	Ability for appropriately authorized users to design new static reports in an intuitive, user-friendly manner				
113	Ability for appropriately authorized users to develop dynamic reports that enables direct user interaction for data manipulation and analysis				
114	Save user-designed reports in a report library for later re-use (and modification when required), that can be accessed based on user role				
115	Populate and present reports within a native report viewer				
116	Export reports to typical office desktop formats (DOC, XLS, PDF, CSV etc.), and print reports				
<b>Resource manager</b>					
117	Assign work locations and supervisors to personnel.				
<b>Standard Tasks</b>					
118	Define standard tasks for repetitive work, including detailed descriptions of how the work is to be performed (including task checklists), along with the labor (including types/trades/crafts, required qualifications or certifications and typical person-hours), materials and tools required to perform it, any required permits, access requirements and associated safety hazards/risks				
119	Define standard tasks against assets, plant, tools and equipment				
120	Categorize standard tasks by type, such as inspection, preventive maintenance, corrective maintenance of recurring faults/defects, or other services				
121	Present the associated costs of a standard task based on defined labor, materials and tools, allowing for variability between locations and/or divisions as required.				
122	Assign a status to standard tasks (such as in preparation, available for use, obsolete, etc.) and apply version control, including retaining a full version history and the revert to previous versions when required				

Request for Information

Asset Management System Replacement

123	Save standard tasks in a task/activities library for later re-use (and modification when required)				
124	Automatically create a work order from a standard task if asset condition hits a user-defined trigger/warning level				
<b>System admin/config</b>					
125	Configure the asset management software system without requiring system vendor support, such as creating or amending work flow, user interface screens, data record attributes and statuses and values of drop-down menus				
126	Present and update permissions for user access and system actions, with enable or restrict user access based on permissions				
127	Automatically perform system actions based on the employment status of personnel in the asset management software system, such as preventing access to the asset management software system itself				
128	Flag potentially duplicative asset records and associated attribute data based on defined data governance rules				
<b>User Interface (Misc.)</b>					
129	Provide ability for collecting inspection data for specific asset or group of assets based on inspection master form/template				
130	Provide ability for collecting inspection data while off-line and retain collected information for up to at least four weeks				
131	Allows for viewing of Nameplate data in field				
132	Allows various users to see status of inspections completed by others				
133	Provide a modern, highly intuitive, roles-based user interface that allows users to perform the tasks related to their role with a minimal number of navigation steps				
134	Ability for appropriately authorized users to modify their user interface based on their role or their commonly performed system tasks, with the revert to a previous UI view upon request				
135	Present, filter and sort all records, and associated attributes, in the asset management software system (such as assets, work orders, materials/inventory, resources, tools, equipment, failures, defects, service requests) in accordance with user permissions				
136	Configure information entry fields to enforce information standards when entering information manually, such as mandatory fields, field length, or field format				
137	Present records associated with geospatial information in a map view, including point and linear assets, asset failures, service requests, asset condition, work orders and locations.				
138	Identify records associated with a record being viewed, such as child assets or locations related to a parent asset or location, work orders related to other work orders, spare parts related to an asset, or assets providing a back-up function to a main asset				
139	Perform simple searches for information in the asset management software system, such as those based on text, wildcard parameters or ranges, including in defined data fields and free text notes/comments across all record types in the asset management software system				
140	Ability for a limited number of appropriately authorized users to construct and perform complex searches for information held in the asset management software system, such as those based on SQL				
141	Save commonly used searches in a search library for later re-use (and modification when required)				

Request for Information

Asset Management System Replacement

142	Perform searches for information held in the asset management software system based on geospatial parameters, such lat/long coordinates or via a map				
<b>User interface (mobile)</b>					
143	Provide a mobile solution, including a dedicated mobile application, that allows authorized users or user groups to access and perform mobile-enabled functions applicable to their role, regardless of their location and connectivity (i.e., inside and outside the king county network). The mobile solution must be compatible with a wide variety of commercially available mobile devices.				
144	Present information such as assets, failures, service requests, inventory, and work orders on a map view via a mobile device				
145	Present and update asset register records in accordance with user permissions via a mobile device.				
146	Report failures, defects and service requests via a mobile device, describe the failure/defect or service required, assign an initial priority and identify the asset and/or location (or nearest parent in the hierarchy) to which the request applies.				
147	Record the GPS coordinates of a failure, defect or service request reported via a mobile device, such that it can be more readily associated with an asset at that location, or the location itself.				
148	Present and update work order records in accordance with user permissions via a mobile device. Such updates may include adding work order results and notes, adding photos, indicating parts or labor utilized.				
149	Manage work orders via a mobile device. Such as creating, assigning, reassigning and closing the work order.				
<b>User Interface (self-service portal)</b>					
150	Ability for authorized users (such as third-party service providers) to report failures, defects and service requests through a simplified user interface (a self-service portal), accessible through any web-enabled device.				
151	Ability for self-service portal users, when reporting a failure, defect or service request, to describe the failure, defect or service required, assign an initial priority, provide a unique identification for themselves, and identify the asset and/or location (or nearest parent in the hierarchy) to which the request applies.				
152	Ability for authorized users (such as third-party service providers) to view and update the work orders assigned to them through a simplified user interface (a self-service portal), accessible through any web-enabled device.				
<b>User Interface (web browser)</b>					
153	Ability for authorized users to access all system functions applicable for their user permissions and user role via a web browser, accessible via any web enabled device				
<b>Work Orders</b>					
154	Record/Integrate the information necessary against unplanned work requests to support subsequent work order planning, scheduling and assignment such as estimated time to complete and materials.				
155	Approve or reject unplanned work requests. A full history of approval and rejection decisions to be retained.				
156	Manually raise unplanned work orders against single/multiple assets and locations at any level of the asset and location hierarchy				

Request for Information

Asset Management System Replacement

157	Flag existing work orders prior to raising a work order for the same asset or location, to avoid duplication of effort				
158	Automatically approve certain unplanned work requests and route approved work orders to the appropriate resource for execution, such as high priority failures bypassing scheduling for immediate execution.				
159	Raise work orders pre-populated with required information to support expedited creation and assigning, such as for emergency work				
160	Manually raise work orders for unplanned work on plant, tools and equipment				
161	Record the status of a work order, such as created, planned, issued, in progress, complete and closed				
162	Assign work types to a work order and the tasks within it, such as emergency (breakdown), repair (or planned corrective), inspection, calibration, preventive, construction, etc.				
163	Define multi-trade/craft, sequenced tasks within a work order				
164	Create work orders based on pre-defined standard tasks and tasks specifically created for that work order				
165	Schedule and group work orders on the basis of assets, locations, organizational responsibility, and work type.				
166	Create and schedule work orders on the basis of asset utilization or time, such scheduling a work order to occur after 5,000 hours or in 3 months' time				
167	Schedule work order(s) to be completed by a specific date or within a certain period of time				
168	Define time periods for when work orders can or cannot be scheduled, such as during 'off hours'				
169	Present scheduled work orders via a calendar view				
170	Present historical, current and planned work order information on a map view. Including contextual information to support work order planning such as presence of local landmarks, schools and demographic information.				
171	Flag when proposed work schedule introduces clashes (such as resources or locations being double booked) or violates business rules configured in the asset management system				
172	Schedule multiple work orders against the same asset				
173	Include multiple assets in a single scheduled work order				
174	Issue single or multiple work orders that are ready for execution to the assigned internal or external resource				
175	Amend open and issued work orders to reflect changes in work scope and content, such as when the full scope of work is not initially known, and a work order for the initial investigation and scoping is followed by execution of the full scope of work under the same work order				
176	Update the status of work orders that have been successfully issued to external resources, where status (such as received, confirmed, or in progress) is received outside of the asset management software system, e.g., via phone call, email or fax				
177	Prevent a work order from starting until pre-requisite activities have been completed, such as completion of risk assessments, safety briefings or the issue of the required work permits.				
178	Record any reasons for delaying a work order's execution, such as the unavailability of required materials or tools				

Request for Information

Asset Management System Replacement

179	Record work order details as it is executed, such as progress made, delays, etc.				
180	Attribute labor, material, services, and other costs to work orders under execution				
181	Create associated work orders for additional or related work discovered or revealed during work execution				
182	Enable efficient data entry of work order results and feedback via a mobile device, such as via a standardized data entry form				
183	Indicate single and multiple work orders are "complete" and route for final review, approval and closure				
184	Flag work orders under execution for which actual costs exceed planned costs by a user-defined percentage or financial expenditure limits have, or are likely to be, exceeded.				
185	Ability for appropriately authorized users to cancel work orders with standard, pre-defined reasons and notify interested parties (such as work request initiator) of cancellation				
186	Record actual work performed and labor/materials used against the work order at the point of closure				
187	Distribute work performed and labor/materials costs across multiple assets within a single work order				

188	Close single and multiple work orders once reviewed and approved, with work orders prevented from being closed without such a review occurring				
189	Define different business rules at each stage of a work order for different user groups/divisions, such as no new costs can be posted once the work order is closed, work orders with time charged cannot be closed, or preventing unauthorized users from modifying closed work orders				
190	Record "as found" failures or defects against an asset when closing a work order				
191	Ability for suggested Work Order improvements (such as changes to the underlying standard task or work schedule) to be recorded for subsequent review				
192	Present the percentage of an asset (at any level of hierarchy) that is affected by a work order				
193	Integrate completed work order information (such as work performed, time to complete, or services/parts provided) from external parties and support reconciliation with contractual conditions.				
	<b>Work Schedules</b>				
194	Create work schedules from pre-defined standard tasks for one or more assets, including any required sub-tasks				
195	Group assets into work schedules on the basis of asset type, locations or routes				
196	Create work schedules on the basis of frequency/utilization				
197	Vary the frequency of work schedules over time, define cycle time or seasonality (such as increasing their frequency during colder months or as an asset approaches the end of its useful life)				
198	Manually adjust work schedules once created (such as skipping, resetting schedules, delaying or bringing forward)				
199	Create work schedules based on multiple standard tasks (e.g. including or replacing the tasks comprising a 5,000 hours inspection with the tasks comprising a 15,000 hours inspection)				

Request for Information

Asset Management System Replacement

<b>Audit/Compliance Requirements</b>					
200	Ability to track the lifecycle of an asset or an order, such as when it was created, who it was created by, when it was last modified and by who, what was last modified, and when the order was completed and archived				
201	Role based access to audit trail. Ability for IS and approved Managers to access the audit trail in real-time.				
202	Ability to limit access to authorized users to the database; all access must be recorded and stored for audit purposes				
203	The solution must comply with CASL for any outbound (external to the company) communication. www.fightspam.gc.ca				
<b>General IS Database Requirements</b>					
204	The solution must ensure that all individual customer and employee personal information is only stored in Canada				
205	Provide the database server hardware requirements and scalability of the database based on the number of users/records				
206	Ability to run on Microsoft SQL Server or Oracle				
207	Provide the database size or the anticipated growth rate for this database. Indicate the actual disk space needed by a database: the indices, support tables, backups, and all other necessary files. Provisions should be made for the first 2 years				
208	Ability for the database to allow hot backups without bringing down application. Please describe how this is achievable with a SQL Server back end				
209	License and model options (Named user, concurrent user, scale options)				
<b>Non-Functional Requirements</b>					
210	The proposed solution should support the current Windows OS and up to two releases prior.				
211	Overall Solution must be accessible using a Citrix environment				
212	Recommended approach for security updates, patching, authentication, segmentation, and least privilege				
213	Outline the number of environments recommended, and required to support the deployment of solution. (E.g. production, training, testing, etc.). In addition, all licenses required for different environments and integrations. Outline including on premise hosted cloud service				
214	Solution needs to be deployable in a distributed environment.				
215	Proponent's product will support Customer applied upgrades or customizations without the need for onsite attendance				
216	When moving in and out of cellular connectivity, all data is maintained on the local device, there is no data loss				
217	Require a 3 to 5 year roadmap and provide an SLA				
218	Ability to support single sign on using MS Active Directories or Office 365 for employee facing applications.				
219	Platform is built on an open architecture platform to communicate with devices (open protocols) or legacy systems.				
220	Mission critical applications adhere to standard IS backup policies and procedures.				
221	The solution should be optimized for all mobile devices (Windows, iOS).				
222	Proponent's product will provide the ability to enable remote management of the server				



Request for Information

Asset Management System Replacement

223	Able to provide scalable log analysis capability for all logs originating from any component of the proposed solution.					
224	The system shall support an efficient, scalable mechanism with recommended hardware.					
225	Able to support low bandwidth with low latency when accessing application from remote sites with slower bandwidth					
226	If on-prem solution, preference would be given to virtualization. Please provide capabilities.					
227	Please provide available options					
228	Web browser agnostic. Please identify all supported web browsers.					
229	Outline requirements for Web Servers to support overall solution.					

## **Appendix B – Cloud Assessment**

# Cloud Assessment

The *Cloud Assessment* is a risk-based approach for assessing a Cloud Provider being considered by Newfoundland Power for delivering services on its behalf. The *Cloud Assessment* should be completed primarily by the Cloud Provider. Support from IT Solution Delivery Enterprise Architecture group is available as required.

## CLOUD USE OVERVIEW

<b>Cloud Provider</b>		<b>Cloud Solution</b>	
<b>Cloud Use</b>	<input type="checkbox"/> Software as a Service	<input type="checkbox"/> Infrastructure as a Service	<input type="checkbox"/> Platform as a Service
<b>Cloud Type</b>	<input type="checkbox"/> Private Cloud	<input type="checkbox"/> Public Cloud	
<b>Completed By</b>		<b>Completion Date</b>	

Cloud Use Overview:

## SECTION 1 - DATA SOVEREIGNTY

1. Where is the Cloud Provider’s Registered Head Office?
2. In which legal jurisdiction does the Cloud Provider store data?
3. In which legal jurisdiction does the Cloud Provider process data?
4. In which legal jurisdiction does the Cloud Provider back up data?
5. Does the Cloud Provider provide options for where the data can be stored?
6. How long is data retained?
7. Does the customer have the ability to download all data to an on-prem database?
8. Are there additional costs for data moving to and from the cloud?
9. Does the Cloud Provider outsource/sub-contract any portion of the services being considered? a. If yes:
  - i. Where is the Registered Head Office?
  - ii. Will the sub-contractor have access to the data?

## SECTION 2 – PRIVACY

If the Cloud Solution stores/processes/transmits personal information, then the following section must be completed.

1. Does the Cloud Provider have a Privacy Policy/Statement? If so, please reference the link.
2. Does the Cloud Provider have privacy breach protocols (may be included in the Privacy Policy)?
  - a. If yes, do they include mandatory client (Newfoundland Power) notification?

3. If the Cloud Provider has direct access to Newfoundland Power end users, does the Cloud Provider comply with Canada’s Anti-Spam Legislation?

**SECTION 3 – INFORMATION MANAGEMENT & PROTECTION**

The importance of these questions increases based on the *Confidentiality, Integrity, and Availability* identified in the *Information Security Classification*.

1. Does the Cloud Provider have a Security Policy/Statement? If so, please reference the link.
2. Does the Cloud Provider conduct regular vulnerability assessments and penetration tests? a. If yes, are the results released/available?
3. What security standards does the Cloud Provider adhere to?
4. What security certifications does the Cloud Provider maintain?
5. Does the Cloud Provider have security/data breach protocols?
  - a. If yes, do they include mandatory client (Newfoundland Power) notification?
6. What type of security clearances, confidentiality agreements/oaths does the Cloud Provider require of its employees?
7. Does the Cloud Provider delete data completely when the customer deletes it from their web service?
8. How can data be removed from the Cloud Provider upon termination of the contract?
  - a. Can the Cloud Provider guarantee that all data has been removed (including backups)?
9. Does the Cloud Provider confirm that the client’s information will not be used/sold for any other purpose than that agreed upon with Newfoundland Power?
10. Does the system have the ability to purge data in accordance with a Records Retention and Disposal Schedule? a. If yes, is this an extra cost?
11. What level of audit and logging does the Cloud Provider generate?
  - a. Can Newfoundland Power access the logs upon request?
12. How does the Cloud Provider protect data in transit?
13. How does the Cloud Provider protect data at rest (including backups)?
14. Does the Cloud Provider offer encryption/key management options?
15. If applicable, complete the following:

Authentication	Power/Admin User – N/A <input type="checkbox"/>	General User – N/A <input type="checkbox"/>
2-Factor Authentication	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Challenge Question	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>

Request for Information

Asset Management System Replacement

Complex Password	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Lockout after X failed login attempts	Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, how many attempts?	Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, how many attempts?
Uses https	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>
Inactive Accounts Expire	Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, after how many days?	Yes <input type="checkbox"/> No <input type="checkbox"/> If yes, after how many days?
Password Recovery Mechanism	Describe:	Describe:

**16. How does the Cloud Provider handle requests for client information from government agencies?**

- a. Is a court order required prior to release?
- b. Will the Cloud Provider notify the client?

**17. Can the Cloud Provider meet Newfoundland Powers expectations regarding core support hours and critical/peak periods?**

**18. What is the backup and disaster recovery procedures of the Cloud Provider?**

**19. How often are backups restored/tested?**

- 20. Depending on the type of cloud solution, a test environment may be required for testing upgrades/new functionality.**
- a. If required, is a test environment available?

**SECTION 4 - PCI**

If the Cloud Solution stores/processes/transmits credit card information, then the following section must be completed.

- 1. Is the Cloud Provider PCI Compliant?
- 2. Does the Cloud Provider store credit card information?
- 3. Does the Cloud Provider's payment environment support e-payment gateways?

**SECTION 5 - INTEGRATION**

*If the cloud solution requires an interface with any Newfoundland Power system (Active Directory, LDAP, ERP, etc.), the integration requirements must be described in detail.*

*Alternatively, the Vendor may describe all integration capabilities or APIs.*

**SECTION 6 - ADMINISTRATION**

1. Is the Cloud Provider's service subscription-based or a signed contract?
2. Does the Cloud Provider have a standard contract/terms of service or is it negotiated?
3. Can the Cloud Provider generate reports as required? Is there a fee?
4. What is the Cloud provider's policy for data storage ownership should the company cease operations? (Change of ownership, bankruptcy)
5. Does the Cloud Provider charge a fee to remove data upon termination of the contract?
6. Does the Cloud Provider charge a fee for eDiscovery/Information Access Requests?