

## **ONTARIO ENERGY BOARD**

**IN THE MATTER OF** the *Ontario Energy Board Act*, 1998, S.O. 1998, c. 15, Sched. B, as amended (the **Act**);

**AND IN THE MATTER OF** an application by Hydro One Networks Inc. for an order or orders made pursuant to section 78 of the Act approving rates for the transmission of electricity.

**EB-2019-0082**

### **CROSS-EXAMINATION COMPENDIUM**

#### **PANEL 1**

**ANWAATIN INC.**

**October 21, 2019**

**EB-2019-0082**  
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# **Ontario Energy Board Commission de l'énergie de l'Ontario**

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## **DECISION AND ORDER**

**EB-2017-0335**

### **ANWAATIN INC.**

**Motion to review and vary the Decision and Order dated November 1, 2017 regarding Hydro One Network Inc.'s electricity transmission revenue requirement and charge determinants beginning January 1, 2017 (EB-2016-0160)**

**BEFORE:**        **Cathy Spoel**  
Presiding Member

**Allison Duff**  
Member

**Rumina Velshi**  
Member

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**August 23, 2018**

## 1 INTRODUCTION AND SUMMARY

This is a decision on a motion brought by Anwaatin Inc. (Anwaatin), an intervenor in the Ontario Energy Board (OEB) proceeding that considered the application of Hydro One Networks Inc. (Hydro One) for transmission revenue requirements and charge determinants for 2017 and 2018. Anwaatin filed a motion seeking a review and variance of the OEB decision issued September 28, 2017 and revised October 11, 2017 and November 1, 2017 (the Decision)<sup>1</sup>. The OEB assigned OEB file number EB-2017-0335 to the Motion.

Anwaatin filed its Notice of Motion on October 18, 2017 and followed with a factum, motion record and book of authorities on January 15, 2018 in accordance with Procedural Order No. 1 on the motion.

The grounds for the motion were that the OEB failed to consider and address in the Decision:

- the Anwaatin evidence regarding extremely disparate and inadequate transmission system reliability in First Nations communities in Northern Ontario, and video evidence and expert evidence called by Anwaatin on the significant negative impacts of the very poor transmission reliability on the Anwaatin communities
- the relief requested by Anwaatin in its submission that part of Hydro One's approved capital budget be earmarked to remedy the outdated, outlier transmission assets that are causing the very poor reliability issues in the Anwaatin communities.

Anwaatin sought an order varying the Decision to expressly address the reliability and disparate reliability impact evidence adduced by Anwaatin, and to address the relief requested by Anwaatin by earmarking a portion of the capital budget to address the Indigenous reliability and reliability impacts, or imposing a condition that the Anwaatin reliability issues be promptly addressed.

On June 15, 2018, Anwaatin and Hydro One filed a settlement proposal which addresses the issues in the motion (see Appendix A). The OEB accepts the settlement proposal filed by Anwaatin and Hydro One. As the matter is now settled there is no need to issue a decision on the motion.

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<sup>1</sup> EB-2016-0160

## 2 THE PROCESS

Hydro One applied to the OEB on May 31, 2016 for approval of transmission revenue requirements and charge determinants for 2017 and 2018. The OEB issued its Decision on that application on September 28, 2017. The Decision was revised on October 11, 2017 and again on November 1, 2017<sup>2</sup>. Anwaatin was approved as an intervenor in this proceeding.

On October 18, 2017, Anwaatin filed a Notice of Motion. In Procedural Order No. 1, issued on December 19, 2018, the OEB directed the filing of submissions on the motion and provided for intervenor participation in the motion.

As directed, Anwaatin filed its argument and motion record with the OEB and sent these materials to all intervenors on January 15, 2018. Parties supporting the motion in whole or in part filed their arguments with the OEB on January 22, 2018. Submissions were filed by OEB staff, the Vulnerable Energy Consumers Coalition (VECC) and the School Energy Coalition (SEC). Hydro One filed its submission responding to the motion on January 29, 2018.

An oral hearing was held on February 13, 2018 during which the OEB panel asked questions of parties regarding their written submissions and received oral reply argument from Anwaatin.

On June 15, 2018, Anwaatin filed a settlement proposal in which Anwaatin and Hydro One have reached agreement on several issues related to the Anwaatin motion, each of which has been fully settled. VECC and OEB staff filed submissions supporting the settlement proposal and SEC took no position.

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<sup>2</sup> EB-2016-0160

### **3 DECISION**

The OEB accepts the settlement proposal (see Appendix A). A decision on the motion is therefore no longer required.

#### **Costs**

Anwaatin was granted cost eligibility in the Hydro One transmission revenue requirement proceeding. Anwaatin asked that it also be eligible for recovery of costs of the motion. Hydro One did not object to this request, and the OEB finds that Anwaatin may recover its reasonable costs of the motion from Hydro One. Similarly, cost eligible intervenors may submit cost claims to the OEB to recover their reasonable costs from Hydro One for participation in the motion.

## 4 ORDER

### THE ONTARIO ENERGY BOARD ORDERS THAT:

1. Anwaatin, VECC and SEC shall submit their cost claims no later than 7 days from the date of issuance of this Decision and Order.
2. Hydro One Networks Inc. shall file with the OEB and forward to Anwaatin, VECC and SEC any objections to the claimed costs within 14 days from the date of issuance of this Decision and Order.
3. Anwaatin, VECC and SEC shall file with the OEB and forward to Hydro One Networks Inc. any reply to any objections to the cost claims within 21 days from the date of issuance of this Decision and Order.
4. Hydro One Networks Inc. shall pay the OEB's costs incidental to this proceeding upon receipt of the OEB's invoice.

**DATED** at Toronto August 23, 2018

**ONTARIO ENERGY BOARD**

*Original Signed By*

Kirsten Walli  
Board Secretary

**APPENDIX A**  
**DECISION AND ORDER**  
**ANWAATIN INC. MOTION TO REVIEW**  
**EB-2017-0335**  
**SETTLEMENT PROPOSAL**  
**AUGUST 23, 2018**





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June 15, 2018

**Kirsten Walli**  
Board Secretary  
Ontario Energy Board  
P.O. Box 2319, 27<sup>th</sup> Floor  
2300 Yonge Street  
Toronto ON M4P 1E4

Dear Ms. Walli:

**Re: EB-2017-0335**  
**Anwaatin Inc. Motion to Review and Vary Ontario Energy Board Decision in EB-2016-0160 ("Anwaatin MRV")**

We are counsel to Anwaatin Inc. (**Anwaatin**) in relation to the Anwaatin MRV.

Further to our prior correspondence in relation to the Anwaatin MRV, we hereby submit the attached Settlement Proposal for the Panel's review and consideration. Anwaatin and Hydro One Networks Inc. have worked diligently to reach agreement on several issues, each of which has been fully settled as described in the Settlement Proposal. It is our understanding, subject to their additional communications with the Board, that VECC and SEC, the intervenors in the Anwaatin MRV, do not oppose the contents of the Settlement Proposal.

Sincerely,

A handwritten signature in black ink, appearing to be "Lisa DeMarco", with a long, sweeping horizontal line extending to the right.

Lisa (Elisabeth) DeMarco

cc: Intervenor  
Jennifer Lea, OEB  
Harold Thiessen, OEB  
Gordon Nettleton, McCarthy Tétrault LLP

**SETTLEMENT PROPOSAL**

**ANWAATIN INC.**

Motion to Review and Vary the Ontario Energy Board's Decision  
on Hydro One Network Inc.'s Transmission Rates in EB-2016-0160

**EB-2017-0335**

**June 15, 2018**

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**Anwaatin Inc.  
EB-2017-0335**

**SETTLEMENT PROPOSAL**

**A. PREAMBLE**

This Settlement Proposal is filed with the Ontario Energy Board (the “**OEB**”) in connection with the Anwaatin Inc. (“**Anwaatin**”) Motion to Review and Vary the Ontario Energy Board's Decision on Hydro One Networks Inc.'s (“**HONI**”) Transmission Rates in EB-2016-0160 (the “**Decision**”) through the EB-2017-0335 proceeding (the “**Anwaatin MRV**”). It follows settlement discussions that took place after the Anwaatin MRV was argued and before the OEB rendered a decision in the Anwaatin MRV. The settlement discussions were predominantly between Anwaatin and HONI, with limited involvement of a distributed energy resource developer, Abundant Solar Inc. (“**Abundant**”), and the two intervenors in the Anwaatin MRV, (Schools Energy Coalition “**SEC**”) and Vulnerable Energy Consumers Coalition “**VECC**”) in a manner that was guided by the process contemplated in the OEB's Practice Direction on Settlement Conferences, as amended (the “**Practice Direction**”). OEB staff were also informed of the settlement discussions, but in accordance with the Practice Direction OEB Staff is neither a Party nor a signatory to this Settlement Proposal. Nonetheless, OEB Staff who were apprised of the developments in and around the settlement discussions are bound by the same confidentiality provisions that apply to all of the above-mentioned Parties and entities. The communities Anwaatin represents for the Anwaatin MRV and this Settlement Proposal (“**the Anwaatin First Nations**”) include Aroland First Nation, McCreebec Eeyoud, and Waaskiinaysay Ziibi Inc. Development Corporation (“**WZI**”), an economic development corporation representing five First Nations in the Lake Nipigon watershed: Animbiigoo Zaagiigan Anishinaabek, Bingwi Neyaashi Anishinaabek, Biinjitiwaabik Zaaging Anishinaabek, Red Rock Indian Band, and Whitesand First Nation.

This Settlement Proposal is subject to the following conditions subsequent:

- (i) Acceptance of the Settlement Proposal by the OEB in its entirety, and in a manner that allows for implementation of its terms;
- (ii) The Pilot Project satisfies the OEB and Ministry of Energy's Impact Assessment Requirements:
  - a. System Impact Assessment conducted by the IESO; and
  - b. Connection Impact Assessment conducted by HONI.
- (iii) Obtaining any approvals required by Abundant and Anwaatin/Anwaatin First Nations, if any, regarding the repurposing of existing FIT contracts if included or required to facilitate reliability as part of the Pilot Project.

- (iv) Decisions made by HONI to proceed with Phase 1 and 2 investments as described in Paragraph 1.5(c) below.

(collectively, the “**Conditions Subsequent**”).

Unless amended on the written consent of Anwaatin and HONI, all Conditions Subsequent must be fulfilled by no later than December 31, 2021, failing which this Settlement Proposal is null and void and of no further effect.

In entering this agreement, the Parties understand and agree that, pursuant to the *Ontario Energy Board Act, 1998*, S.O. 1998, c.15 (Schedule B) (the "Act") the OEB has the exclusive initial jurisdiction with respect to the interpretation and enforcement of the terms hereof.

## **B. DESCRIPTION OF SETTLEMENT**

### **1.1 The Parties**

Anwaatin and HONI were the central parties to the Anwaatin MRV and are the signatories to this Settlement (“**Parties**”). Two other interveners participated in the Anwaatin MRV in a limited manner. SEC intervened in the Anwaatin MRV for the limited purpose of requesting that any cost consequences to the Decision be reviewed. VECC intervened in the Anwaatin MRV in support of Anwaatin. Abundant was involved in the settlement discussions in order to ensure that the proposed solutions were technically feasible and able to be implemented in a timely manner.

### **1.2 Confidentiality**

The Parties agree that the settlement discussions shall be subject to the rules relating to confidentiality and privilege contained in the Practice Direction. The Parties acknowledge that confidentiality in that context does not have the same meaning as confidentiality in the OEB’s Practice Direction on Confidential Filings, and the rules of that latter document do not apply. The Parties interpret the Practice Direction to mean that the documents and other information provided, the discussion of each issue, any offers and counter-offers, and the negotiations leading to settlement of each issue during the course of the settlement discussions are strictly confidential between the Parties and were undertaken on a without prejudice basis. None of the foregoing settlement discussions and processes leading to this Settlement Proposal are admissible as evidence in this or any other proceeding, or otherwise, except where the filing of such settlement information is necessary to implement the Settlement Proposal and/or resolve a subsequent dispute over the interpretation of any provision of this Settlement Proposal and subject to the direction of the OEB. In such case, only the settlement information that is necessary for the purpose of implementing and interpreting the settlement proposal shall be filed and such information shall be filed using the appropriate protections afforded under the relevant legislation and OEB instruments. These obligations shall not impede the filing of this Settlement Proposal itself or its use as evidence in subsequent proceedings including, without limitation, the EB-2017-0049 proceeding.

Further, the Parties have a positive and ongoing obligation not to disclose settlement information to persons who were not involved in the settlement discussions.

### **1.3 Parameters of Proposed Settlement**

All of the elements of this Settlement Proposal have been settled by the Parties as a package, and none of the provisions of this Settlement Proposal are severable. Numerous compromises were made by Anwaatin and HONI with respect to various matters to arrive at this Settlement Proposal. The distinct issues and elements addressed in this Settlement Proposal are inextricably interrelated, and changes in the agreed parameters are likely to have consequences in other areas of this Settlement Proposal, which may be unacceptable to one or more of the Parties. If the OEB does not accept this package in its entirety, then there is no settlement (unless HONI and Anwaatin agree in writing that any portion of the package that the OEB does accept may continue as part of a valid Settlement Proposal).

If the OEB directs the Parties to make reasonable efforts to revise the Settlement Proposal, the Parties agree to use reasonable efforts to discuss any potential revisions, but neither Anwaatin nor HONI will be obligated to accept any proposed revision. The Parties agree that Anwaatin and HONI must agree with any revised Settlement Proposal prior to its re-filing with the OEB.

None of the Parties can withdraw from this Settlement Proposal except in accordance with the terms contemplated herein (including satisfaction of the Conditions Subsequent) and with Rule 30.05 of the OEB's Rules of Practice and Procedure.

### **1.4 Full Settlement of Parties**

- a) HONI will undertake a pilot project that is intended to explore the feasibility of implementing non-wires distributed energy projects ("**Pilot Project**") in and around the Anwaatin First Nations communities as a means to improve reliability in remote and radial areas of HONI's system. The Pilot Project is intended to provide HONI with an opportunity to assess whether similar and repeatable approaches may be used in other remote areas of its system that are experiencing poor reliability conditions.
- b) HONI's investment in the Pilot Project shall not exceed \$5 million and shall be funded from HONI's distribution capital investment plan.
- c) Anwaatin and HONI agree to work together in an effort to offset or augment this investment amount by obtaining government funding through subsidies or grant programs.
- d) The Parties acknowledge that any further funding of this initiative is dependent on (i) the feasibility of the Pilot Project and (ii) further review and approval by the OEB to increase HONI's approved capital investment envelope and recovery through rates of the additional funding requirements.

- e) Anwaatin/Anwaatin First Nations communities and Abundant plan to jointly develop and implement up to 45 MW of FIT contracted solar generation in the following repurposed locations:
  - a. Longlac M2/Nakina DS: maximum size 5 MW
  - b. Moosonee: maximum size 10 MW
  - c. Longlac M1/Longlac East DS: maximum size 9 MW
  - d. Longlac TS LV bus: maximum size 10 MW
  - e. Beardmore DS: maximum size 1.1 MW
  - f. Jellicoe DS: maximum size 0.9 MW
  - g. Red Rock: maximum size 9 MW.
- f) HONI will consider the technical feasibility of having Abundant/Anwaatin First Nation solar generation be used as a source of supply to the energy storage facilities as part of the Pilot Project.
- g) HONI commits to processing all connection impact assessment applications made by Anwaatin/Anwaatin First Nations and Abundant in a timely manner, taking into account all other existing connection impact assessment applications HONI has received.
- h) The first phase of the Project will complete the technical assessment of energy storage facilities that may improve reliability in the communities served by HONI's F2 Feeder that serves the Nakina area. Energy storage facilities for Phase 1 are targeted to be in-service by March 31, 2019.
- i) The design, size and load to be served by Phase 1 facilities are matters not yet determined and will be dependent upon further technical review. HONI will continue to regularly consult with Anwaatin regarding the status of the Phase 1 design.
- j) A technical review of Phase 1 implementation is targeted for completion within six months of in-service timing. This information is intended to be used to inform the approaches, design, and viability of Phase 2.
- k) During the EB-2017-0049 proceeding, Anwaatin and HONI will provide the OEB with an update on the Project, including any preliminary information regarding sizing of energy storage, siting alternatives and preliminary cost estimates. As part of this update, Anwaatin and HONI may file this Settlement Proposal.
- l) The Project shall have no retrospective financial or cost consequences that will require revisiting the amounts assessed and determined by the Board in the EB-2016-0160 Decision.
- m) Anwaatin and HONI will consult and cooperate on any other longer-term wires and/or non-wires electricity reliability proposals and solutions affecting the Anwaatin First Nations communities and may jointly pursue other projects intended to improve reliability in other regions served by HONI.

## 1.5 Description of Project

- (a) **Phase 1** is focussed on improving reliability to the communities served by HONI's F2 Feeder situated in the Nakina region. The objective is to provide measurable improvement to the reliability of supply to these communities and as compared to the five-year historical average SAIDI and SAIFI values applicable to these communities. Anwaatin/Anwaatin First Nations, Abundant and HONI intend to achieve this objective through designing and implementing energy storage facilities in close proximity to the referenced communities and the option of having solar generation used to recharge the storage facilities in times of outages.

Anwaatin/Anwaatin First Nations, Abundant and HONI will take reasonable steps to find suitable off-reserve locations in proximity to HONI's feeder distribution facilities to site both solar generation and energy storage facilities at locations in close proximity to local community distribution load.

All constructed Phase 1 energy storage facilities will initially be owned and operated by HONI. HONI agrees to explore in good faith the possibility of Anwaatin First Nations obtaining a minority, non-operating ownership interest in the Phase 1 facilities, should the said facilities proceed to development. The valuation of this interest will be based on HONI's actual investment cost incurred to the date that such interest is acquired by Anwaatin First Nations.

HONI's design of the Phase 1 energy storage facilities will take into account, among other technical factors, historic load levels in the Aroland community. Anwaatin agrees to work with HONI in assessing ways to prioritize distribution service during times of an outage so that stored energy may be used for essential services in the communities.

HONI will consult with Anwaatin/Anwaatin First Nations and Abundant regarding design and sizing of the energy storage facilities.

Anwaatin/Anwaatin First Nations and Abundant intend to jointly develop and implement solar generation facilities in close proximity to all identified energy storage facilities so that the solar generation facilities may be used to supply the energy storage facilities at times when outages occur in the Aroland community.

The targeted timelines for Phase 1 are as follows:

- Scope of work completed and storage partner selected by July 15, 2018
- Siting locations determined and community engagement completed by July 31, 2018
- Completion of all detailed engineering and financial viability review completed by September 30, 2018
- Civil work completed by November 30, 2018



- In-service of energy storage facilities by March 31, 2019.

Anwaatin/Anwaatin First Nations and Abundant acknowledge that targeted timelines may require adjustments, given acquisition timing of requisite land rights, remoteness of worksite locations, workforce availability and the season in which construction work occurs.

- (b) **Phase 2:** is focussed on Waaskiinaysay Ziibi Inc. (an economic development corporation representing Rocky Bay First Nation, Bingwi Neyaashi Anishinaabek, Red Rock Indian Band, Whitesand First Nation, and Animbiigoo Zaagiigan Anishinaabek and other smaller First Nations along HONI's A4L transmission line) (collectively, "**WZI**").

The Phase 2 objective is complete technical assessments of potential non-wires solutions for WZI communities in order to determine whether cost-effective and technically feasible ways may be used through the use of non-wires solutions to improve reliability to levels consistent with HONI's current average SAIDI and SAIFI metrics for its northern rural distribution customers and by deploying similar approaches and measures described in Phase 1. The results of Phase 1 are intended to inform and be used in the technical assessments contemplated for Phase 2.

In Phase 2, HONI and Anwaatin will also work together to identify and evaluate critical loads in MoCreebec Eeyoud locations served by HONI's F1 and F3 feeders and assess whether cost effective and technically feasible non wire energy storage facilities could be implemented to significantly improve reliability for identified critical loads.

Anwaatin will facilitate meetings between HONI, Abundant, WZI and other smaller interested First Nations served by the A4L line in order to describe, explain, and assess solar/storage reliability solutions.

HONI's Phase 2 commitments are limited to preparing technical assessments that consider deployment of energy storage facilities in the WZI communities in the same manner as carried out for Phase 1 and which technical assessments have been filed as part of Exhibit I-6-1(c) in OEB Hearing EB-2017-0049.

Once the technical assessments for Phase 2 are completed, HONI and Anwaatin/Anwaatin First Nations, Abundant and WZI will meet and discuss all technical, operational and financial viability issues that would need to be addressed before any further steps are taken to initiate potential investments. This discussion is intended to explore possible joint development opportunities to implement energy storage and solar generation facilities so that they may be used in an effective and feasible way to provide a means of back-up supply in times of outages for small communities along the A4L route, while maintaining feeder integrity.

- (c) **Final Decisions to Proceed with Phase 1 Investments.** HONI's decision to proceed with the work execution and installation of Phase 1 is subject to: (1) investment requirements to not exceed the amounts or outcomes described in paragraph 1.4(b)-(d)

above, (2) HONI's technical review and its acceptability to HONI of the final design of the facilities, (3) the level of reliability improvement expected from Phase 1 is reasonably achievable as determined by HONI, and (4) Phase 1 facilities are expected to provide a repeatable outcome for development in other areas of HONI's system. HONI will consult with Anwaatin on the ongoing status of these conditions throughout Phase 1.


#### 1.6 Other Matters

- (a) **Ongoing HONI Communications with the Anwaatin First Nations Communities.** HONI and Anwaatin agree to develop and implement a communications plan to facilitate regular communications between them and the First Nations communities to discuss and assess the progress and success of the Pilot Project.
- (b) **Pilot for Future HONI/Indigenous Community Cooperation.** If the Pilot Project is successful, HONI and Anwaatin agree to work together and promote the Pilot Project as a potential reliability solution in other Indigenous and similarly situated communities.
- (c) **Conditions Precedent.** The final form of the Settlement Proposal is subject to the approval of the Band Councils and/or the applicable First Nation governing body(ies).
- (d) **Conditions Subsequent.** This Settlement Proposal is subject to the Conditions Subsequent listed in Part A (Preamble) above.

ACCEPTED AND AGREED TO THIS 15 DAY OF JUNE 2018



Ferio Pugliese, Executive Vice President  
Customer Care and Corporate Relations  
Hydro One Networks Inc.



Larry Sault, President and Chief Executive  
Office  
Anwaatin Inc.

**Hydro One Networks Inc.**

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**Frank D'Andrea**

Vice President  
Regulatory Affairs

BY COURIER

June 15, 2018

Ms. Kirsten Walli  
Board Secretary  
Ontario Energy Board  
Suite 2700, 2300 Yonge Street  
P.O. Box 2319  
Toronto, ON, M4P 1E4

Dear Ms. Walli,

**EB-2017-0049 - Interrogatory Response Update in Hydro One Networks Inc.'s 2018-2022 Distribution Custom IR Application (the "Application")**

Please find enclosed the updated interrogatory I-06-Anwaatin-001 for Hydro One Networks Inc.'s 2018-2022 Distribution Custom IR Application. This update takes into account a new pilot project initiative that Hydro One is evaluating in the area that serves Anwaatin communities.

Sincerely,

ORIGINAL SIGNED BY FRANK D'ANDREA

Frank D'Andrea

Enc.

**Anwaatin Inc. Interrogatory # 1**

**Issue:**

Issue 6: Does Hydro One's First Nation and Métis Strategy sufficiently address the unique rights and concerns of Indigenous customers with respect to Hydro One's distribution service?

Issue 23: Was the customer consultation adequate and does the Distribution System Plan adequately address customer needs and preferences?

Issue 24: Does Hydro One's investment planning process consider appropriate planning criteria? Does it adequately address the condition of distribution assets, service quality and system reliability?

**Reference:**

A-04

A-04-02

**Preamble:**

Hydro One's distribution business serves the majority of the First Nations and Métis communities in Ontario.

In the Application, Hydro One states that it will be implementing a three-pronged strategy that is intended to increase system reliability within First Nations communities (increasing capital investments and replacing equipment that affects reliability; leveraging technology to allow Hydro One to better detect, limit the scope, and remotely respond to certain types of outages; and reducing planned outages by bundling work).

Hydro One indicates that, through its First Nations and Métis Strategy (Exhibit A, Tab 4, Schedule 2), communities would like to see an increase in procurement, investment/ownership opportunities, and other business partnership opportunities for Aboriginal businesses. Hydro One further indicates that First Nations communities have raised concerns about the high frequency and duration of power outages, particularly in Northern Ontario. Some communities have also indicated that the electricity supply is not sufficiently reliable to serve businesses on reserve and are concerned about degrading Hydro One asset conditions on reserve.

Hydro One also notes that First Nations communities and customers feel they are disproportionately impacted by high electricity costs. Many have raised concerns that their delivery charge is higher than their electricity consumption. In addition, First Nations customers are most sensitive to cost and place the greatest importance on cost over improvements in the service they receive.

Hydro One indicates that it hopes to address many of the Indigenous concerns with reliability and distributed energy resources, including Indigenous investment and ownership, and is developing a consolidated framework to guide First Nations and Métis relations and engagement across all lines of business.

**Interrogatory:**

a) Please describe how Hydro One consulted First Nations on any and all investment/ownership opportunities and other business partnership opportunities related to DERs in grid-connected communities, and what resulted from these consultation efforts.

b) Please describe in detail and provide all reports, notes, memos and documents related to:

- i. all processes Hydro One undertook to consult with Indigenous communities on this distribution rate application; and
- ii. the outcome of those consultations.

c) Please list each and all distributed energy resources that:

- i. Hydro One considered for Indigenous communities;
- ii. Hydro One consulted with First Nations on;
- iii. Hydro One implemented or intends to implement for Indigenous communities;
- iv. the Hydro One actions that result from them; and
- v. the quantified improvements in reliability and service that result from them.

d) Since First Nations in Ontario have now acquired or will soon acquire more than 14 million shares of Hydro One (representing 2.4% of the outstanding common shares of Hydro One), please describe how Hydro One will address the significant concerns of Indigenous shareholders relating to the high frequency and duration of power outages in Indigenous communities and the disparate reliability afforded to this class of shareholder.

**Response:**

a) Hydro One engages First Nations on investment/ownership opportunities on a project by project basis such as the Bruce to Milton Transmission Project and the Niagara Reinforcement Project. At this time, Hydro One has not yet engaged First Nations on any investment/ownership opportunities and other business partnership opportunities related to distributed energy resources (DERs) in grid-connected communities. Hydro One has recently begun exploring opportunities to partner with interested First Nation communities and to leverage federal and provincial government funding to support green energy and greenhouse gas reducing energy projects.

b)

i) Hydro One regularly engages with First Nations and Métis communities about various issues of concern.

As part of its review of customer needs and preferences, Hydro One conducted a telephone survey in August 2016 of a random and representative sample of 300 First Nations customers. A key finding was that First Nations customers are most sensitive to cost and place the greatest importance on cost over improvements in the service they receive. A copy of the telephone survey results with First Nations customers can be found EB-2017-0049, Exhibit B1-1-1, Section 1.3, Attachment 1, pages 1562 to 1570.

In addition, Hydro One also held engagement sessions with (a) the 88 First Nation communities it serves on February 9 and 10, 2017, the session reports for which are provided as Attachment 4 to section 1.3 of the DSP (Exhibit B1, Tab 1, Schedule 1) and (b) the 29 Métis Councils represented by the Métis Nation of Ontario on May 13, 2017. The purpose of the sessions was to engage on Application as well as to share information on various programs and initiatives benefiting Indigenous communities and to hear about issues and concerns expressed by participants as they related to Hydro One. Please find enclosed reports, presentations, and notes related to these engagement sessions as Attachments 1 to 9.

Hydro One will be hosting a second First Nations Engagement Session on February 21, 2018 which will be open to representatives of the 88 First Nations communities it serves. A similar engagement session will be offered to the Métis Nation of Ontario in 2018.

ii) For the most part, Hydro One had existing initiatives in place to address the concerns raised in these engagement sessions. Hydro One made 35 specific commitments at the

1 February 9 and 10, 2017 First Nation engagement session and 95% of these commitments  
2 were addressed throughout the year. Hydro One made 10 specific commitments at the  
3 May 13, 2017 engagement session with the Métis Nation of Ontario. Attachment 10 lists  
4 the 10 questions asked by the Métis Nation of Ontario and includes Hydro One  
5 responses.

6  
7 The outcomes of these engagement sessions was the development of additional strategies  
8 and plans responsive to the key issues and concerns expressed by participants as they  
9 related to the transmission and distribution system.

10  
11 To improve affordability, Hydro One implemented an outreach plan to ensure all eligible  
12 First Nation customers benefit from the First Nations Delivery Credit announced as part  
13 of the Ontario Fair Hydro Plan and which came into effect on July 1, 2017. Hydro One  
14 also adjusted a plan to implement the First Nations Conservation Program (FNCP) in new  
15 First Nation communities in 2018. The FNCP is a follow-up program to the Aboriginal  
16 Conservation Program which was implemented by the Independent Electricity System  
17 Operator (IESO) and ended in 2015 after providing services to 39 communities. The  
18 FNCP is designed to serve the communities not served by the IESO's earlier program.

19  
20 In addition, Hydro One also implemented the Get Local Initiative to help customers by  
21 providing information about conservation programs and resources that may assist low-  
22 income customers and ensuring that qualifying customers are aware of and accessing the  
23 Province of Ontario's Ontario Electricity Support Program. Finally, in 2018 Hydro One  
24 started to roll-out the Affordability Fund to improve First Nations' home energy  
25 efficiency by providing free energy-saving upgrades, which can lower home energy use  
26 and, correspondingly, a customer's electricity bill over the long term.

27  
28 In order to improve reliability and in response to complaints raised at the engagement  
29 sessions, Hydro One has revised its vegetation management policy whereby it will  
30 increase the frequency of forestry maintenance work on reserve. In addition, on measures  
31 to improve reliability, please see parts c) i), ii), and iii) of Exhibit I-6-Anwaatin-2.

32  
33 On liability and access, Hydro One responded to feed-back committing to notify or seek  
34 permission as applicable from First Nation communities when conducting reconnection  
35 work on reserve in the context of its distribution business.

1  
2 c) In its February 12, 2018 response to Exhibit I-6-Anwaatin-001 c), Hydro One stated that it  
3 had not yet considered distributed energy resources related to Indigenous communities.  
4 Hydro One has recently begun exploring opportunities to partner with interested First Nation  
5 communities and to leverage federal and provincial government funding to support green  
6 energy and greenhouse gas reducing energy projects.

7  
8 By way of update, in April 2018, Hydro One commenced preliminary discussions with  
9 Anwaatin regarding renewable sourced generation interconnection capacity and energy  
10 storage capacity at distribution station locations in proximity to Anwaatin communities.  
11 These discussions have evolved into assessing whether an energy storage pilot project could  
12 be developed in a remote region of the distribution system serving Anwaatin communities  
13 and tested to determine reliability improvement and whether this approach could be used as a  
14 repeatable approach in other regions of the system.

15  
16 More technical information is now available regarding this initiative. Hydro One's current  
17 technical assessment has focused on the three distribution feeder lines that serve the Nakina  
18 and Moosonee communities (referred to as Moosonee F1 and F3, and Nakina F2).

19  
20 These assessments, included in Attachment 11, provide information regarding the following:

- 21
- 22 • the historical reliability of these feeders;
  - 23 • three potential energy storage solutions that are in the process of evaluation;
  - 24 • expected levels of costs of each solution; and
  - 25 • the potential reliability improvement.

26 The assessments are continuing. Completion of all detailed engineering and financial  
27 viability review is targeted by September 30, 2018. Forecast investment for this new pilot  
28 project will not exceed \$5 million. Government grants and funding may also provide a  
29 source of funds. One of the key objectives with this pilot project is assessing scalability to  
30 meet similar reliability concerns in other communities served by Hydro One.

31  
32 At this time, issues affecting pilot project feasibility include, but are not limited to, the  
33 following:

- 34
- 35 • Installation of energy storage facilities on a radial line will result in the "islanding" of an  
36 area, with the consequence that during the outage, this load would be served by non-wires



1 storage. This technical design and approach are not found on any other part of the Hydro  
2 One Distribution system and will require careful operational scrutiny.

- 3
- 4 • Estimated capital costs set out in the attached technical assessments are preliminary and  
5 subject to further review. Investment estimates depend on a variety of factors, including  
6 battery sizing, variability of load, and availability of government funding programs.

- 7
- 8 • Cost/benefit analysis of the potential reliability improvement must also be considered by  
9 a comparison to other potential ways to improve reliability, such as changes in vegetation  
10 management and prior transmission investments that have been made in the area.

- 11
- 12 d) Hydro One will continue to invest in its assets according to asset condition assessments  
13 without regard to preferences of specific shareholders.

# Nakina DS F2 & Moosonee DS F1 /F3 Energy Storage Reliability Overview

June 15, 2018

# Assumptions and Context

- HONI has recently explored Non-Wires Alternatives (NWA) to improve reliability to Anwaatin communities.
- Key issues associated with NWA include storage sizing, location, cost, and “islanding” operational concerns.
- This analysis is based on total community load. Variability in load may impact the battery backup duration to the community.
- Targeting critical loads for backup would reduce the battery size required, and hence the total cost.
- Cost estimates are based on informal vendor discussions, and publicly available information plus contingency due to remote access/unknown variables.
- Optimal location of the battery is in close proximity to the community to maximize the reliability benefit.

# Feeder Supply to Anwaatin Communities

- Nakina DS F2 – supplies Aroland First Nations
- Moosonee DS F1 & F3 – supplies Moccreebec First Nations

# Reliability Ranking of Supply Feeders

## Ranking without Transmission Loss of Supply\*

	SAIDI Ranking	SAIFI Ranking
Nakina DS F2	1988	2146
Moosonee DS F1	498	549
Moosonee DS F3	1134	1184

## Ranking with Transmission Loss of Supply\*

	SAIDI Ranking	SAIFI Ranking
Nakina DS F2	2022	2183
Moosonee DS F1	431	412
Moosonee DS F3	864	678

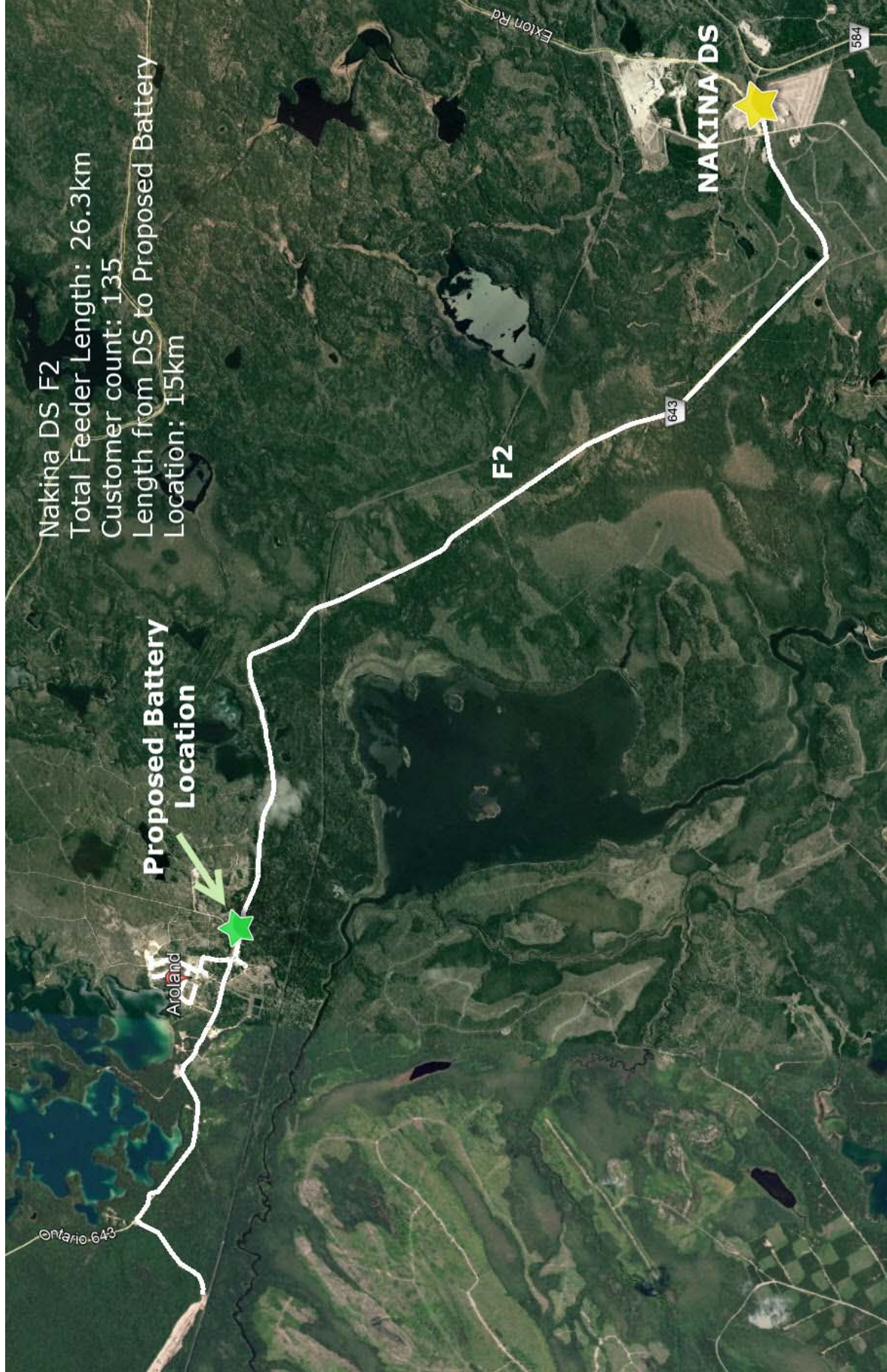
\*Ranking based on 2015-2017 average data, out of approximately 3300 feeders. Feeder ranking is from worst to best, with "1" being the worst.

# Nakina DS F2

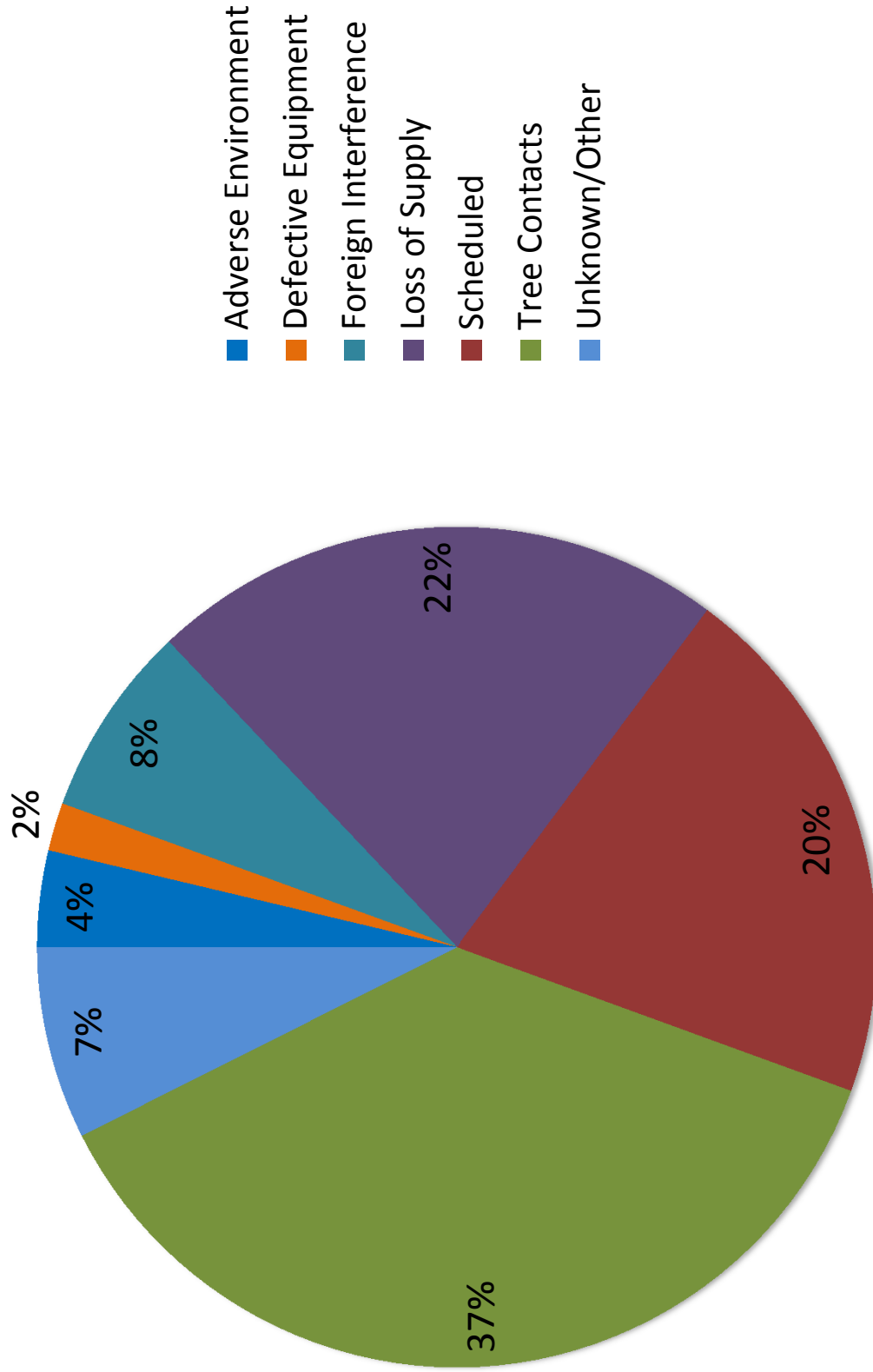
## Energy Storage

## Reliability Overview

# Nakina DS F2



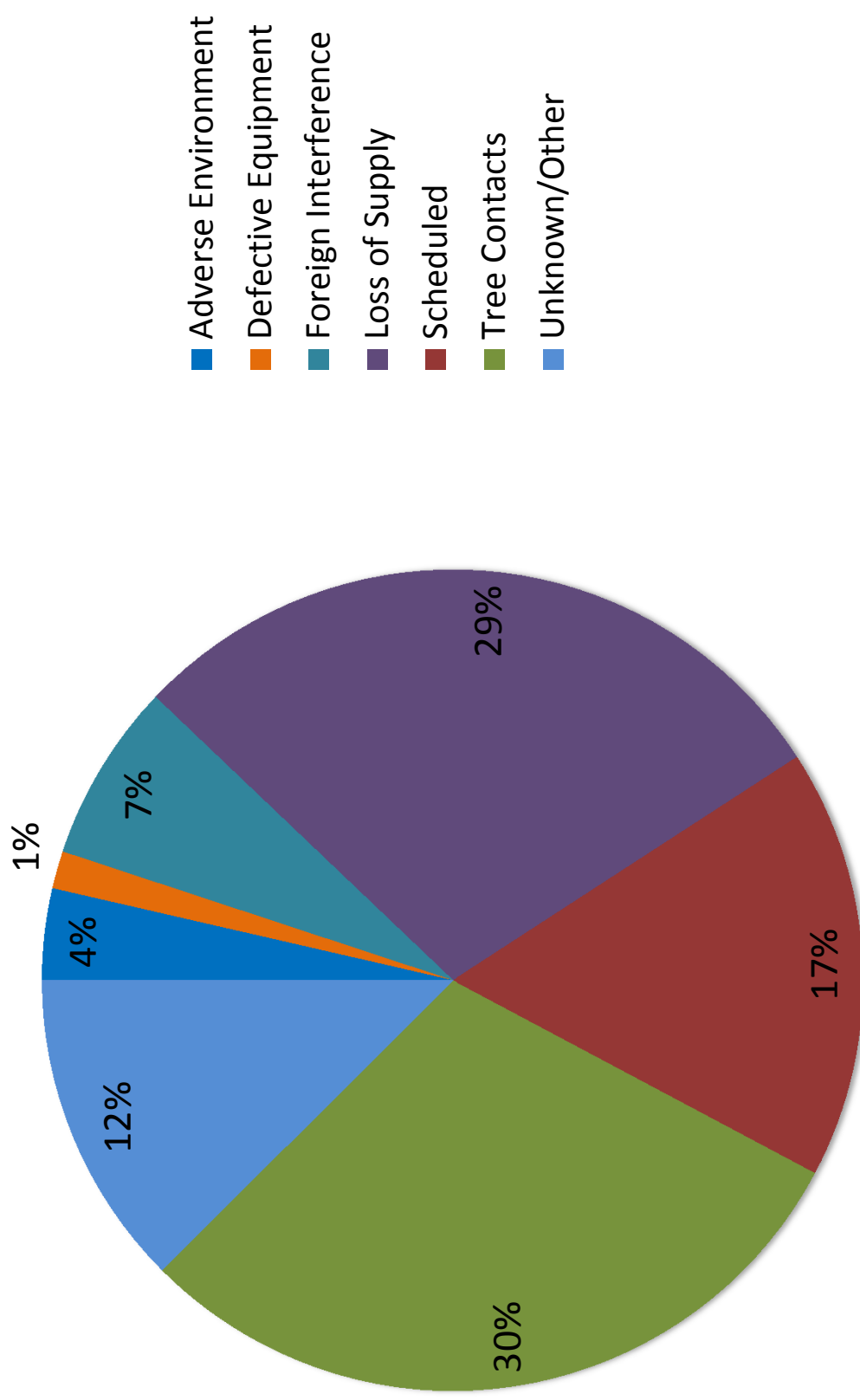
## Nakina DS F2 - Frequency of Upstream Outages by Cause (5 years)



\*Vegetation management will improve by 20-40% over the planning period.



## Nakina DS F2 - Duration of Upstream Outages by Cause (5 Years)

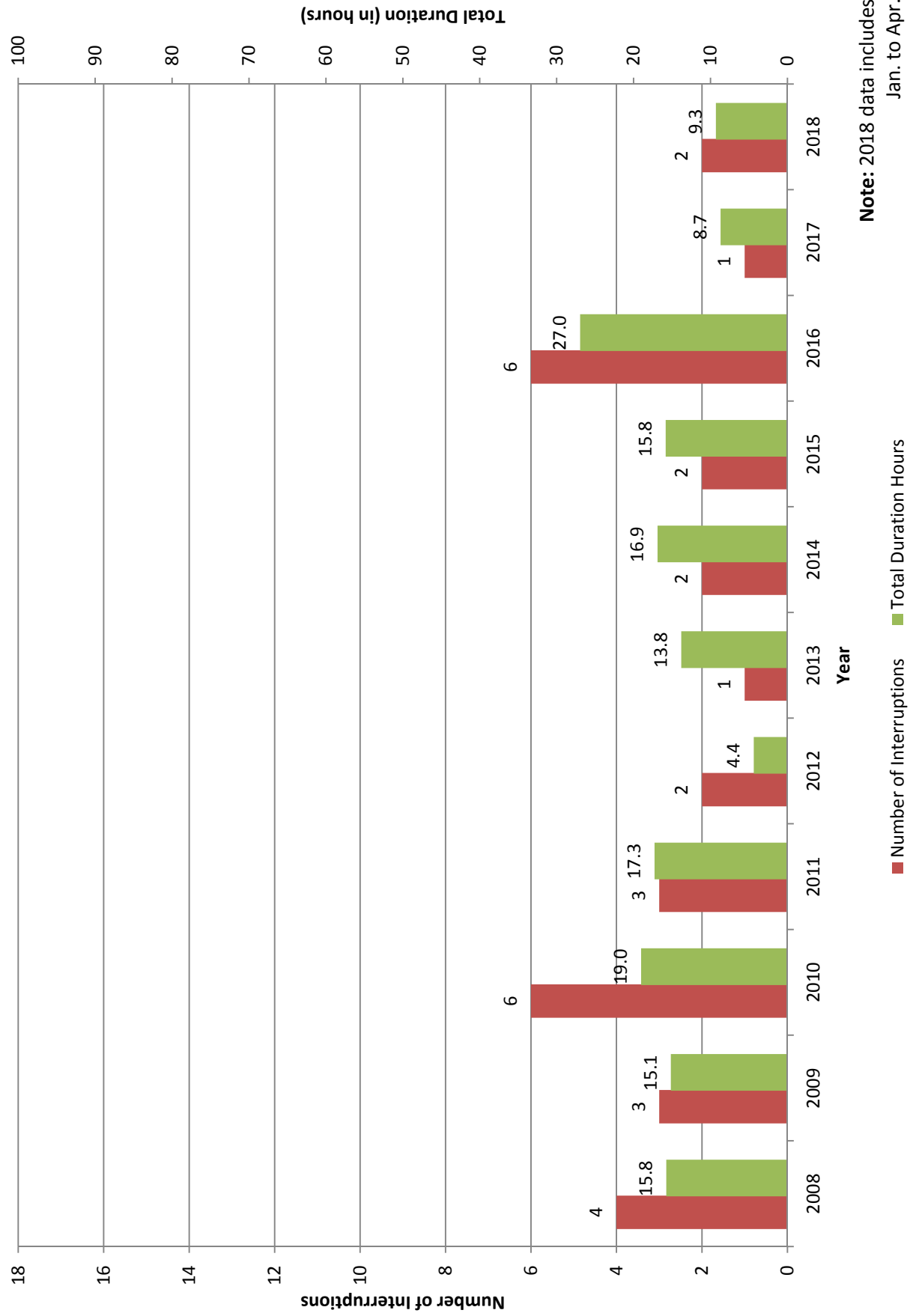


\*Vegetation management will improve by 20-40% over the planning period.

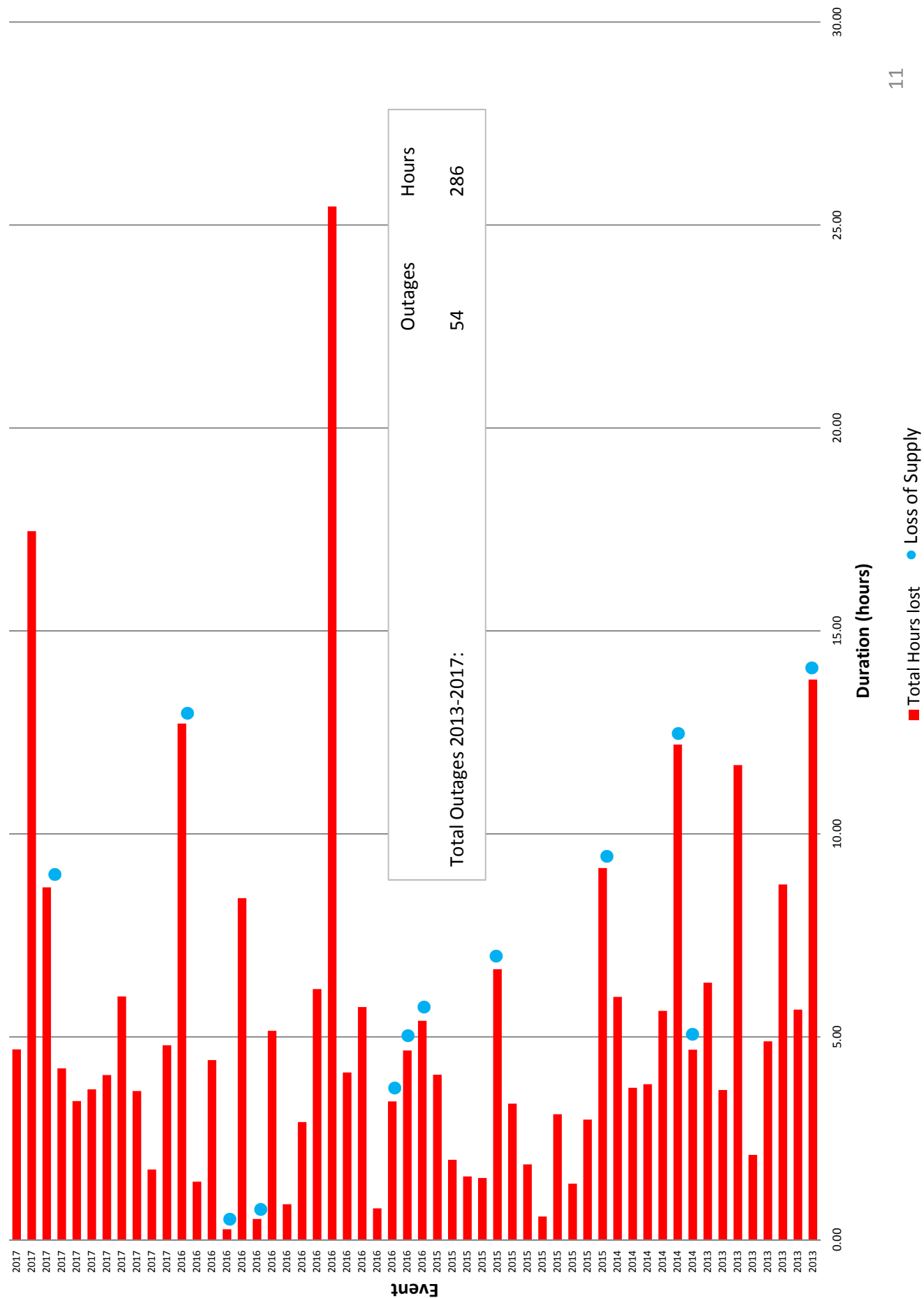
## Nakina DS F2 - Number and Total Duration of Outages by Year

Year	Number of Outages	Total Duration of Outages (Hours)
2013	8	57
2014	6	36
2015	12	38
2016	17	92
2017	11	62

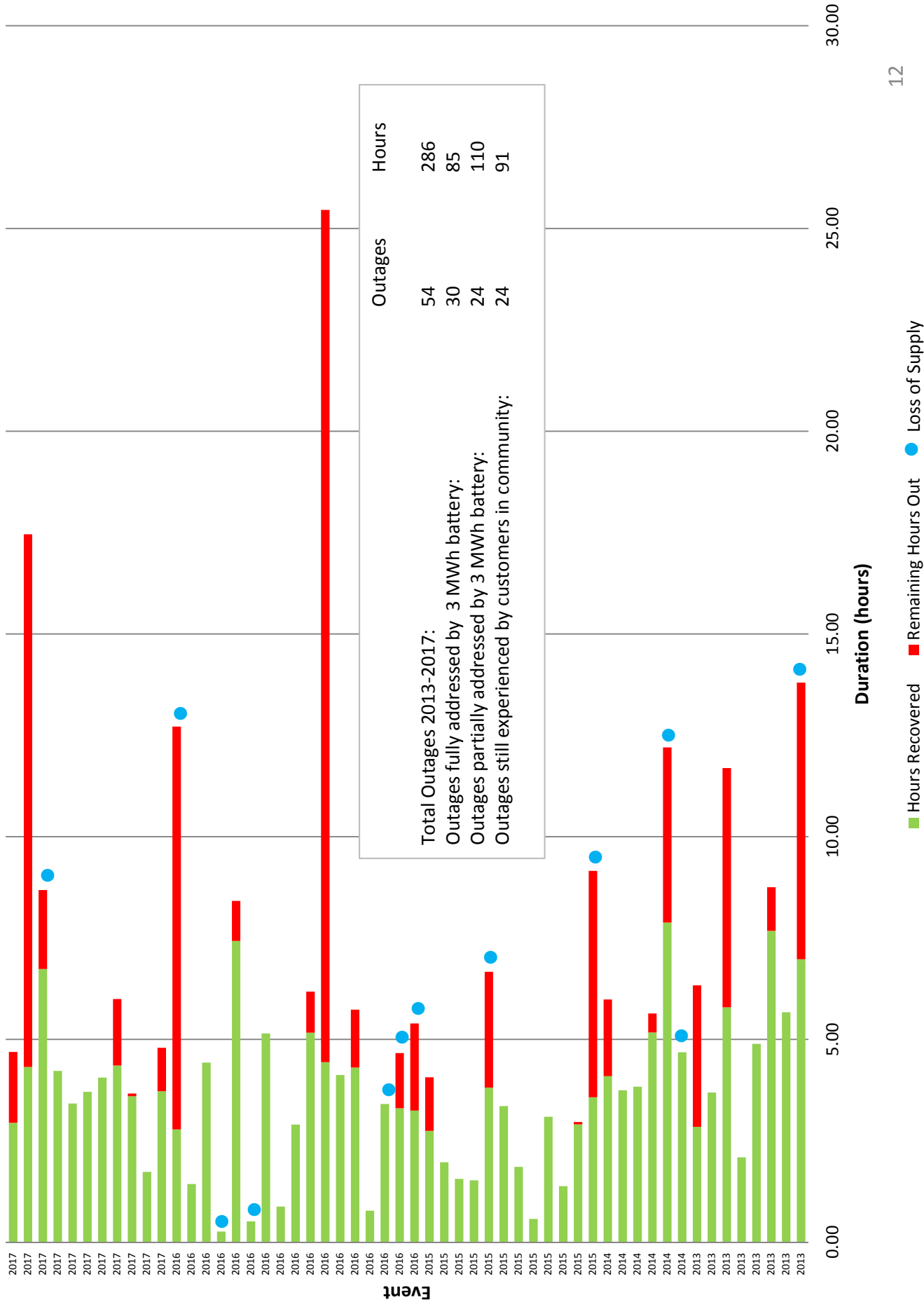
## Transmission Loss of Supply Interruptions for Nakina DS over 10 Years



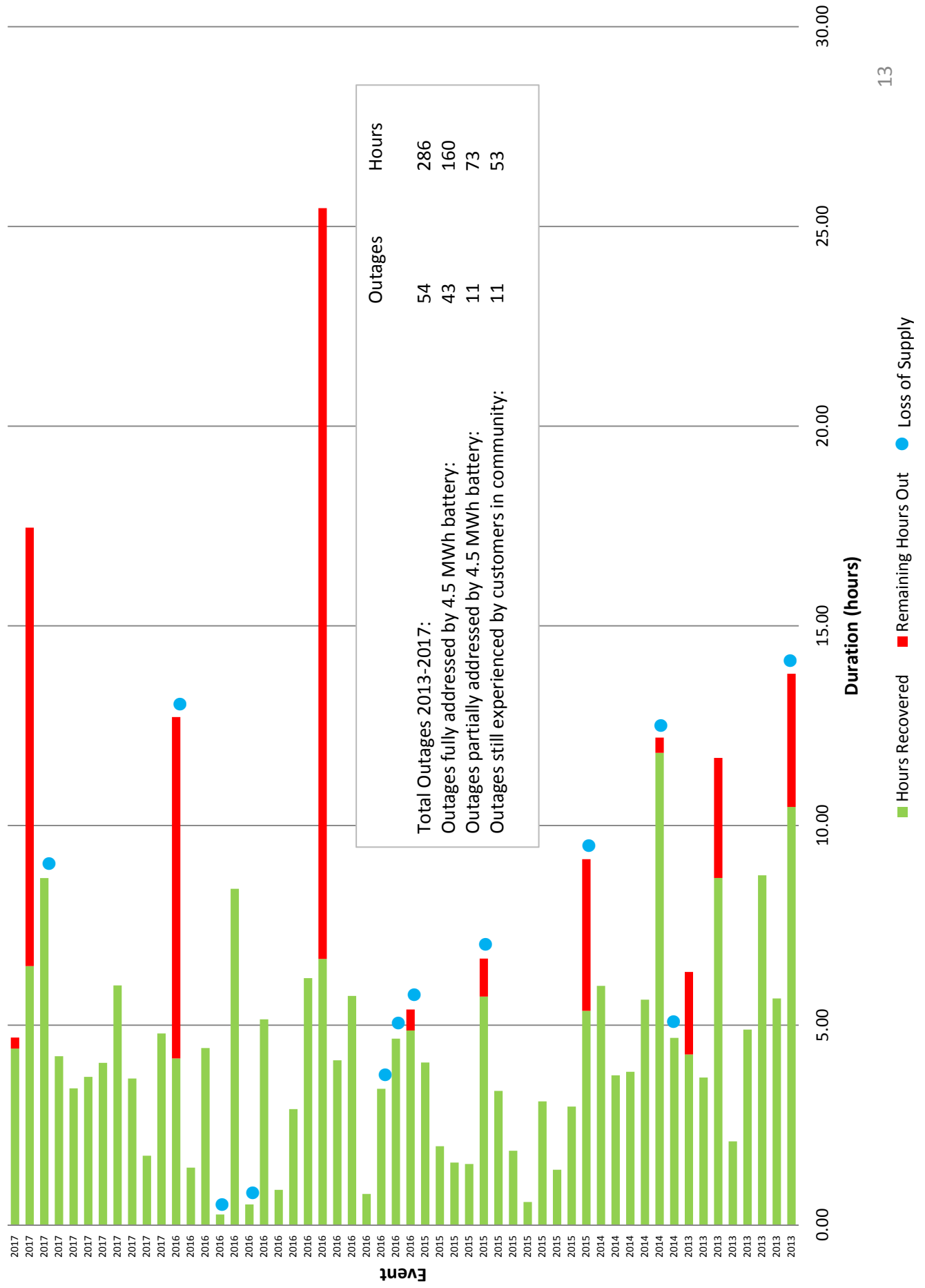
Nakina DS F2: Outages Experienced Over Last 5 Years



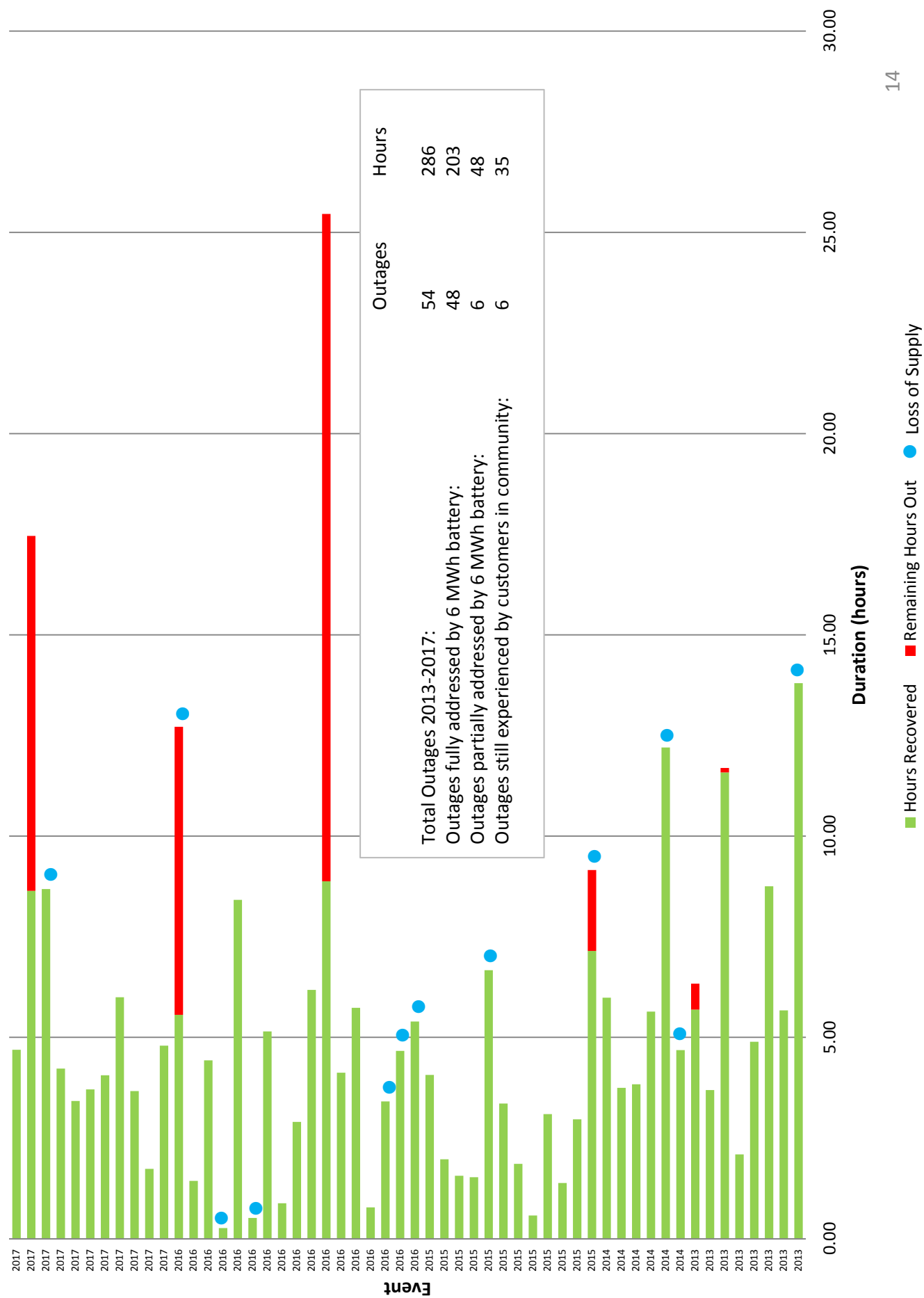
Nakina DS F2: Outage Impact with 1.5MW, 3MWh energy storage (\$4.5M)



## Nakina DS F2: Outage Impact with 1.5MW, 4.5MWh energy storage (\$6.8M)



## Nakina DS F2: Outage Impact with 1.5MW, 6MWh energy storage (\$9M)



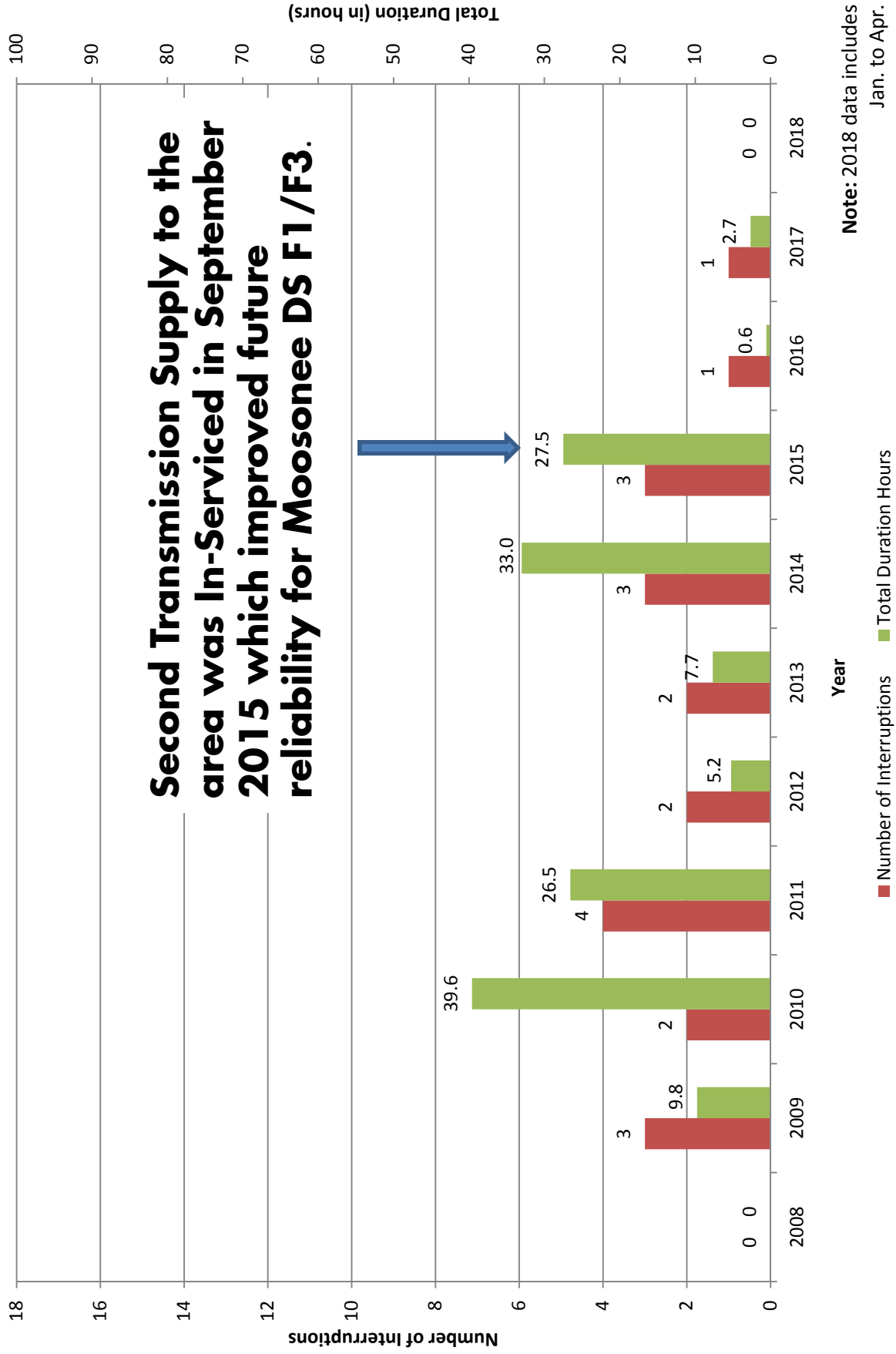
# Moosonee DS F1 / F3

## Energy Storage

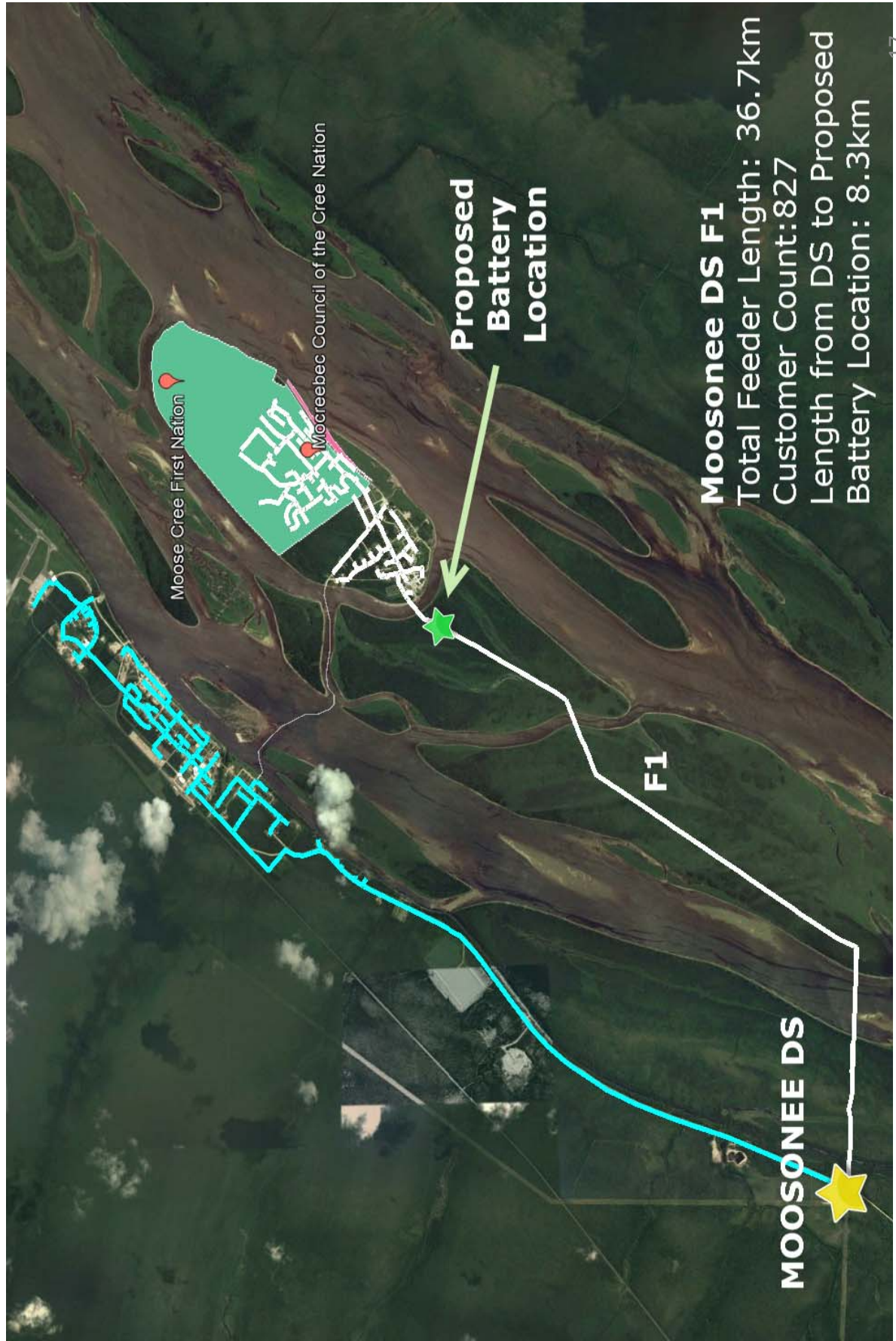
## Reliability Overview



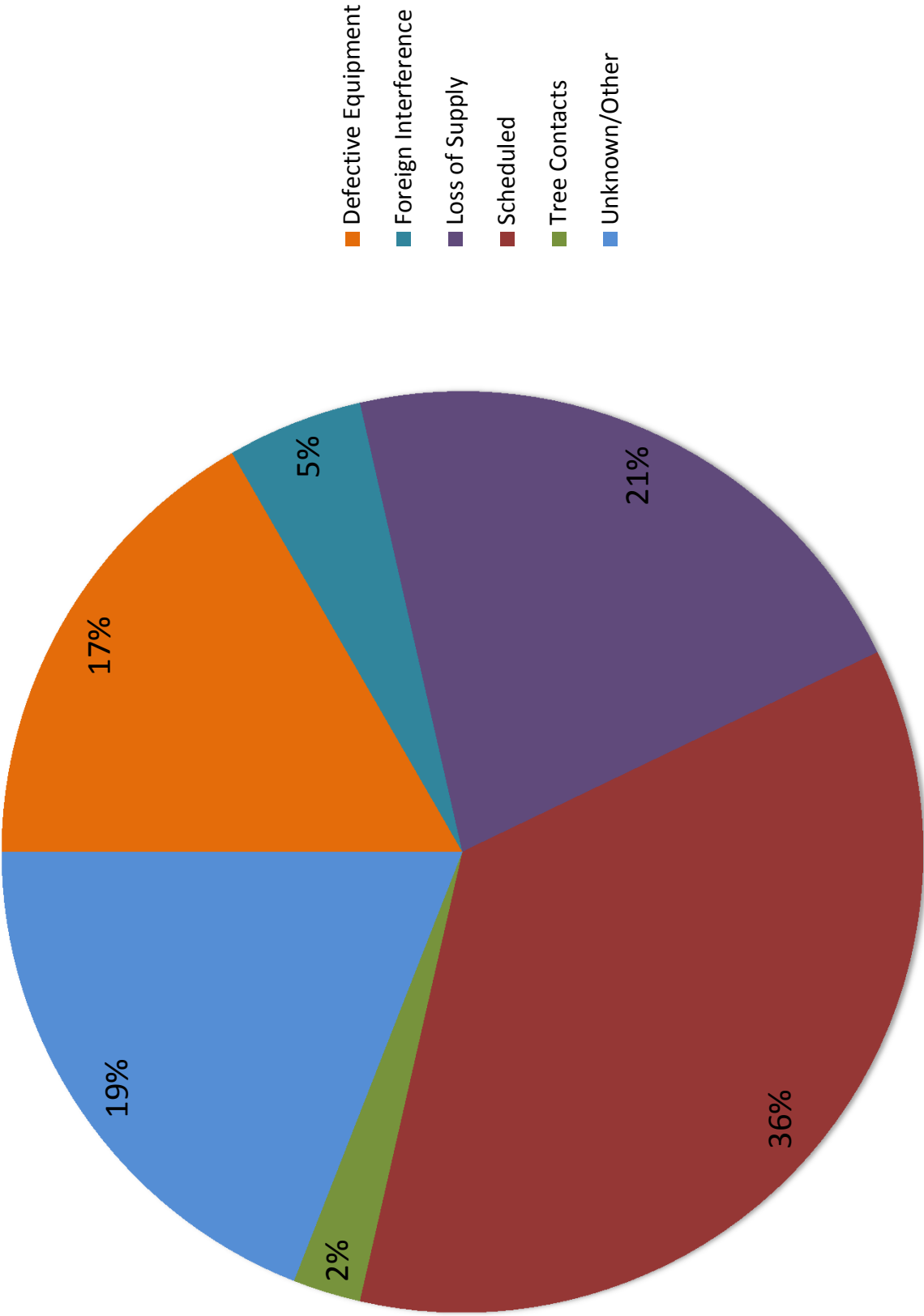
## Transmission Loss of Supply (LOS) Interruptions for Moosonee DS F1/F3 over 10 Years



# Moosonee DS F1

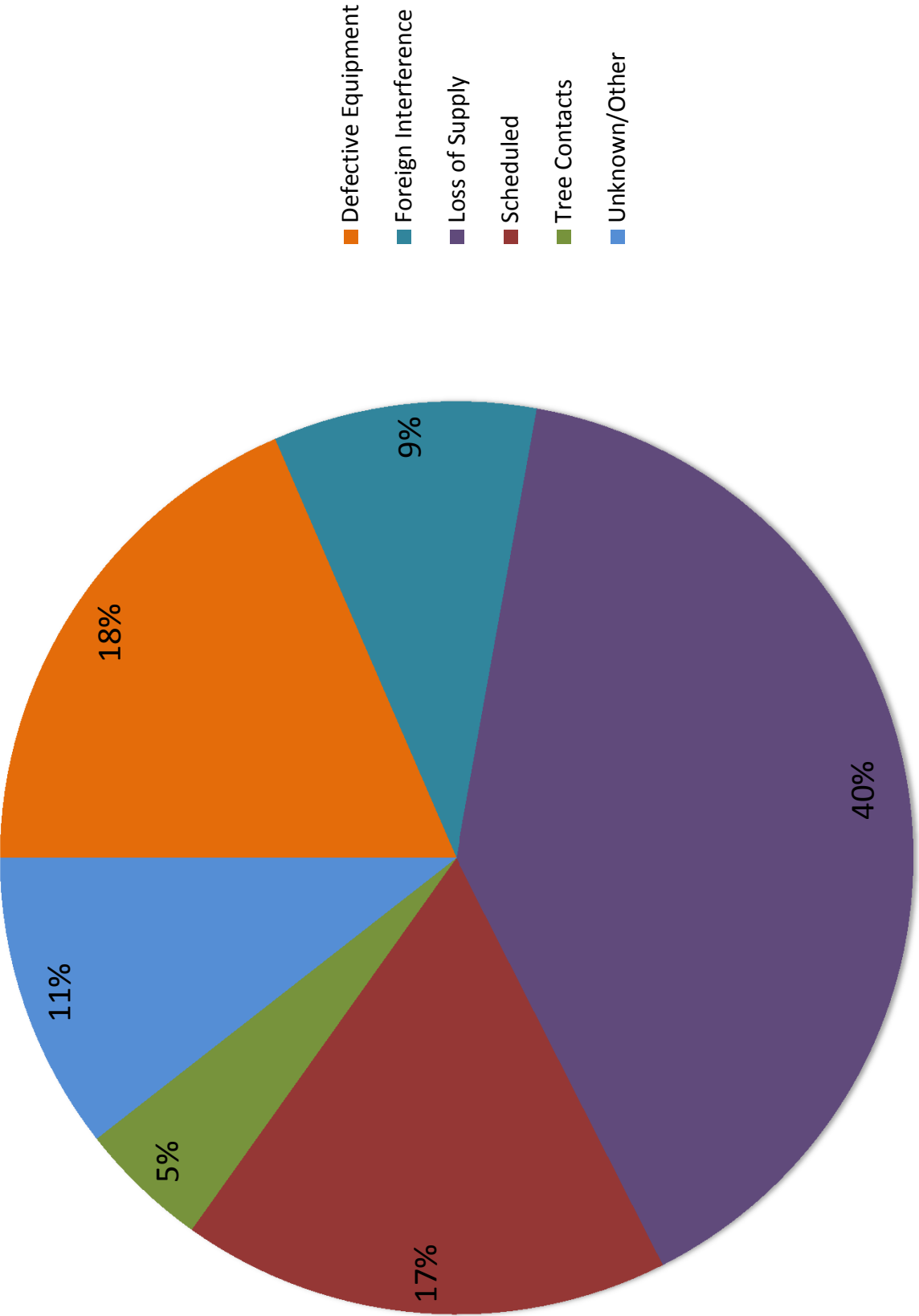


**Moosonee DS F1: Frequency of Upstream Outages by Cause (5 years)**



\*Vegetation management will improve by 20-40% over the planning period.  
\*\* Reduction in frequency of Loss of Supply is expected due to upstream transmission investments.

**Moosonee DS F1: Duration of Upstream Outages by Cause (5 years)**

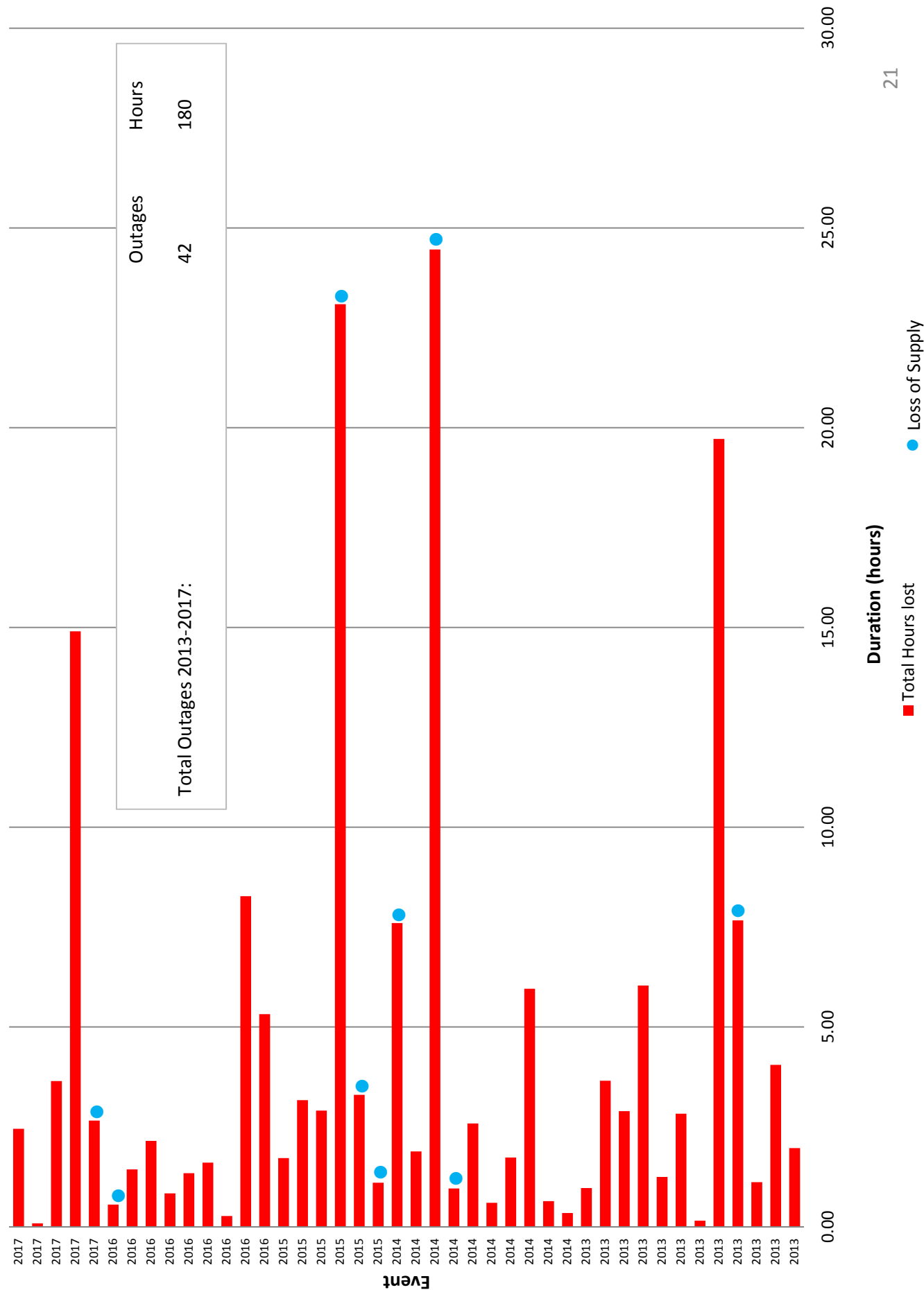


\*Vegetation management will improve by 20-40% over the planning period.  
\*\* Reduction in frequency of Loss of Supply is expected due to upstream transmission investments.

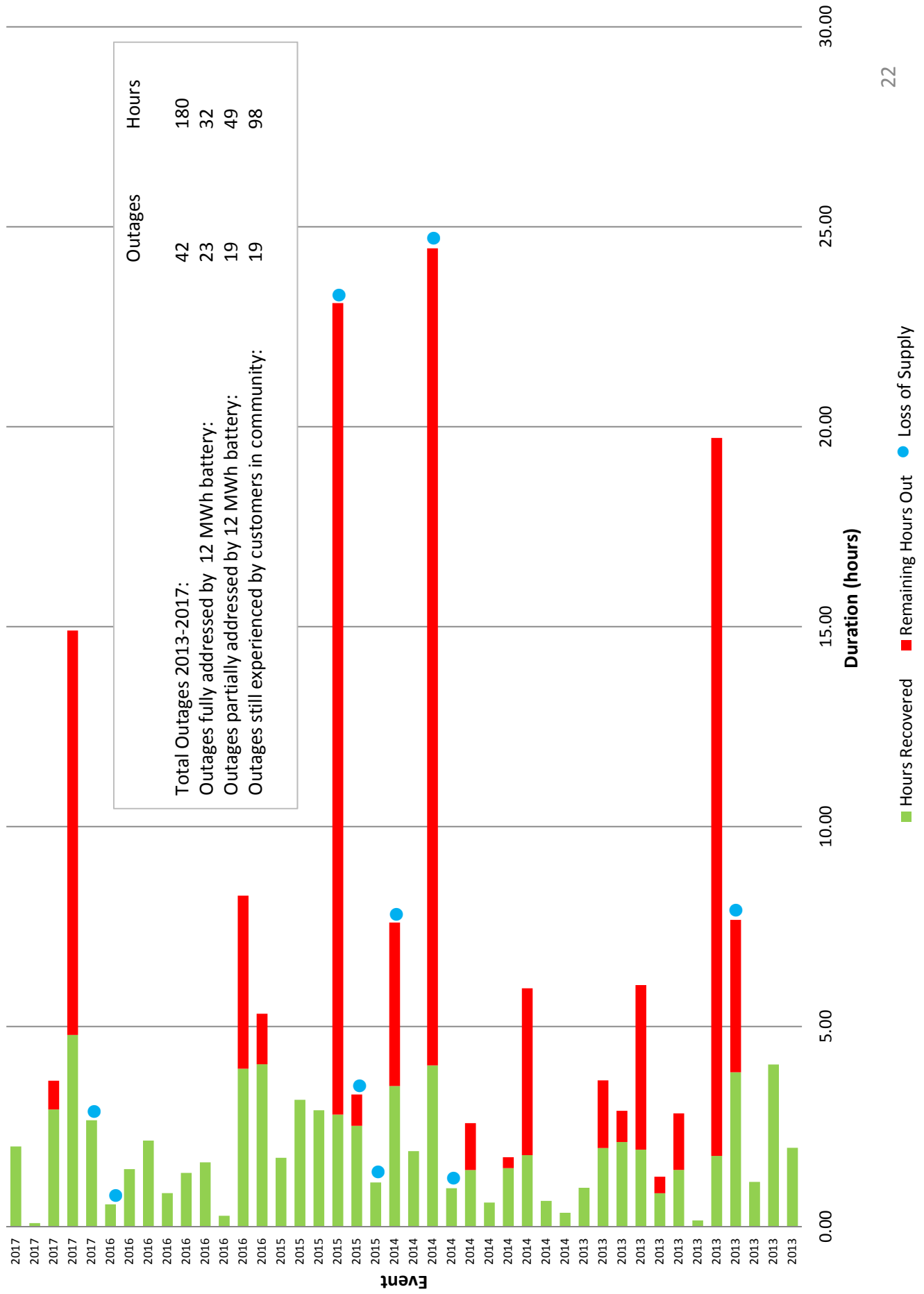
**Moosonee DS F1 - Number and Total  
Duration of Outages by Year**

<b>Year</b>	<b>Number of Outages</b>	<b>Total Duration of Outages (Hours)</b>
2013	12	52
2014	10	47
2015	6	35
2016	9	22
2017	5	24

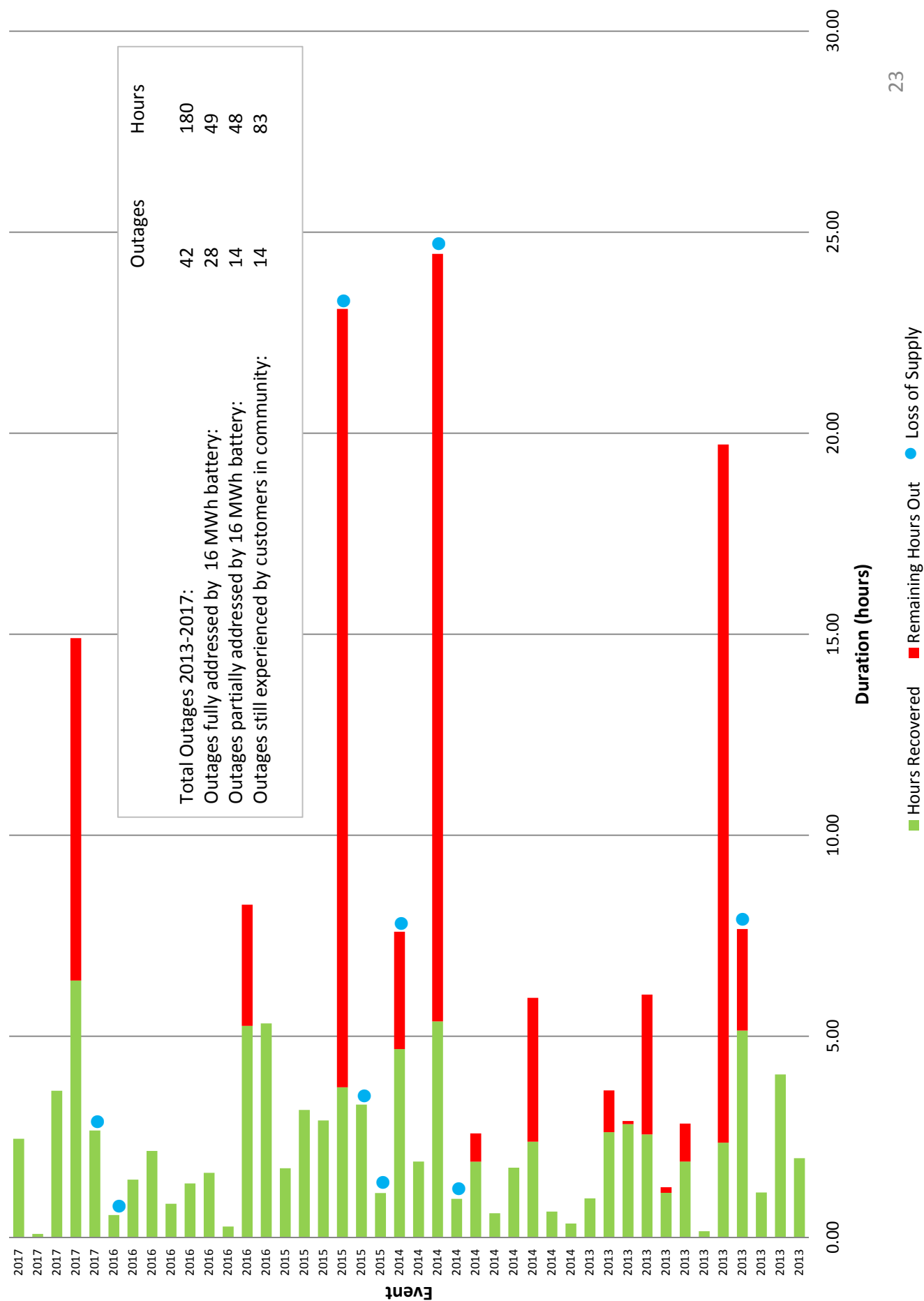
Moosonee DS F1: Outages Experienced Over Last 5 Years



## Moosonee DS F1: Outage Impact with 8MW, 12MWh energy storage (\$18M)

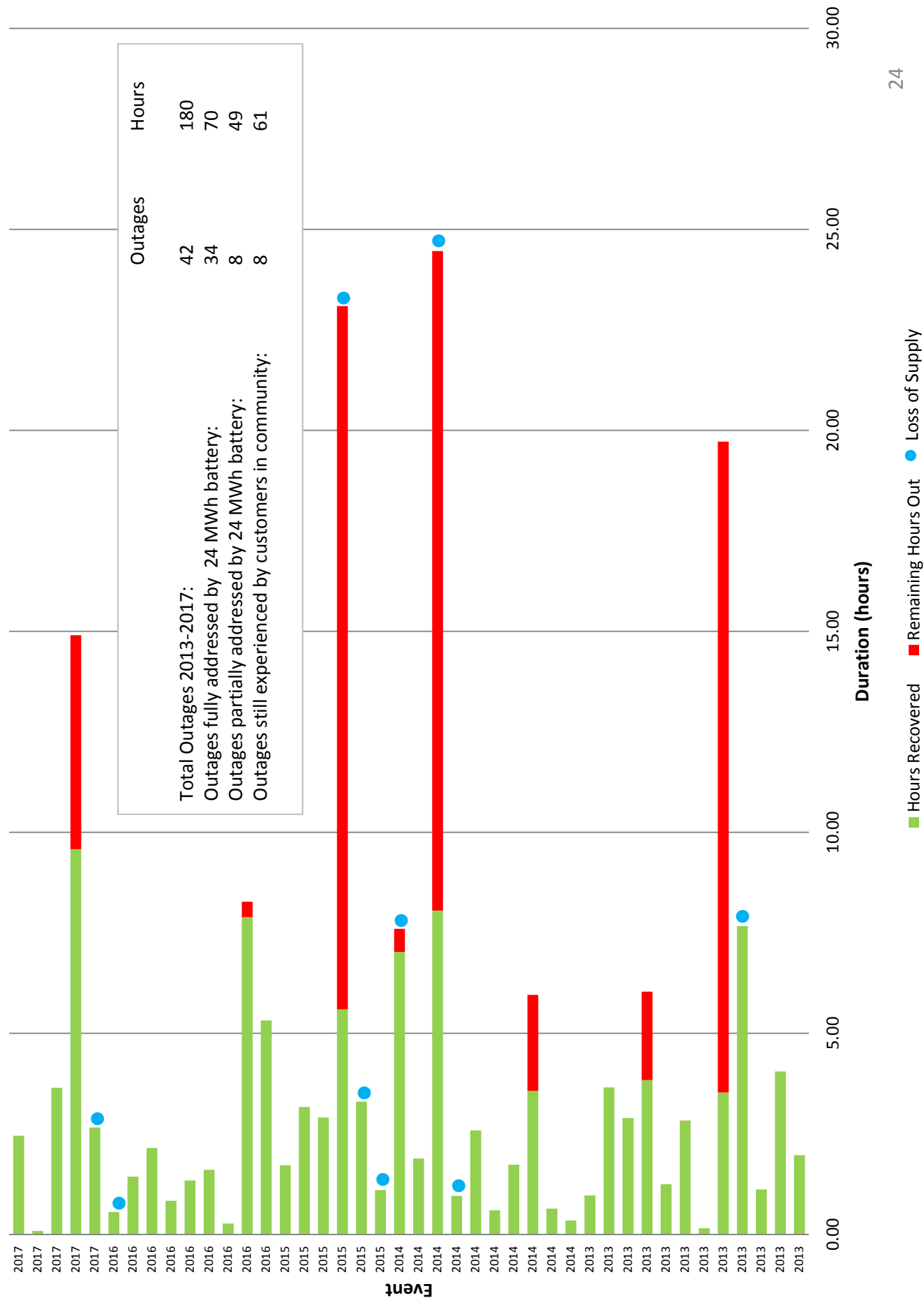


Moosonee DS F1: Outage Impact with 8MW, 16MWh energy storage (\$24M)

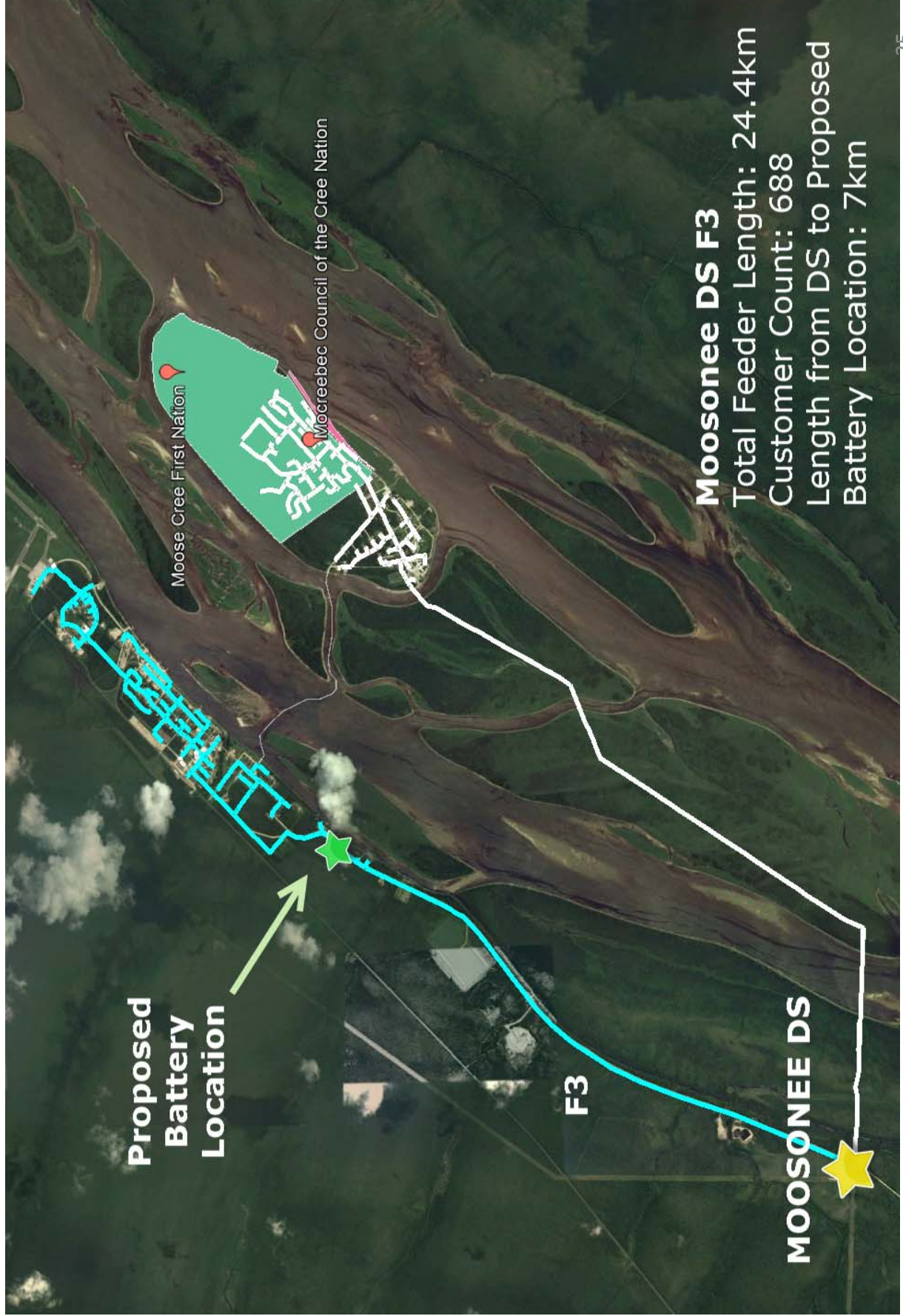




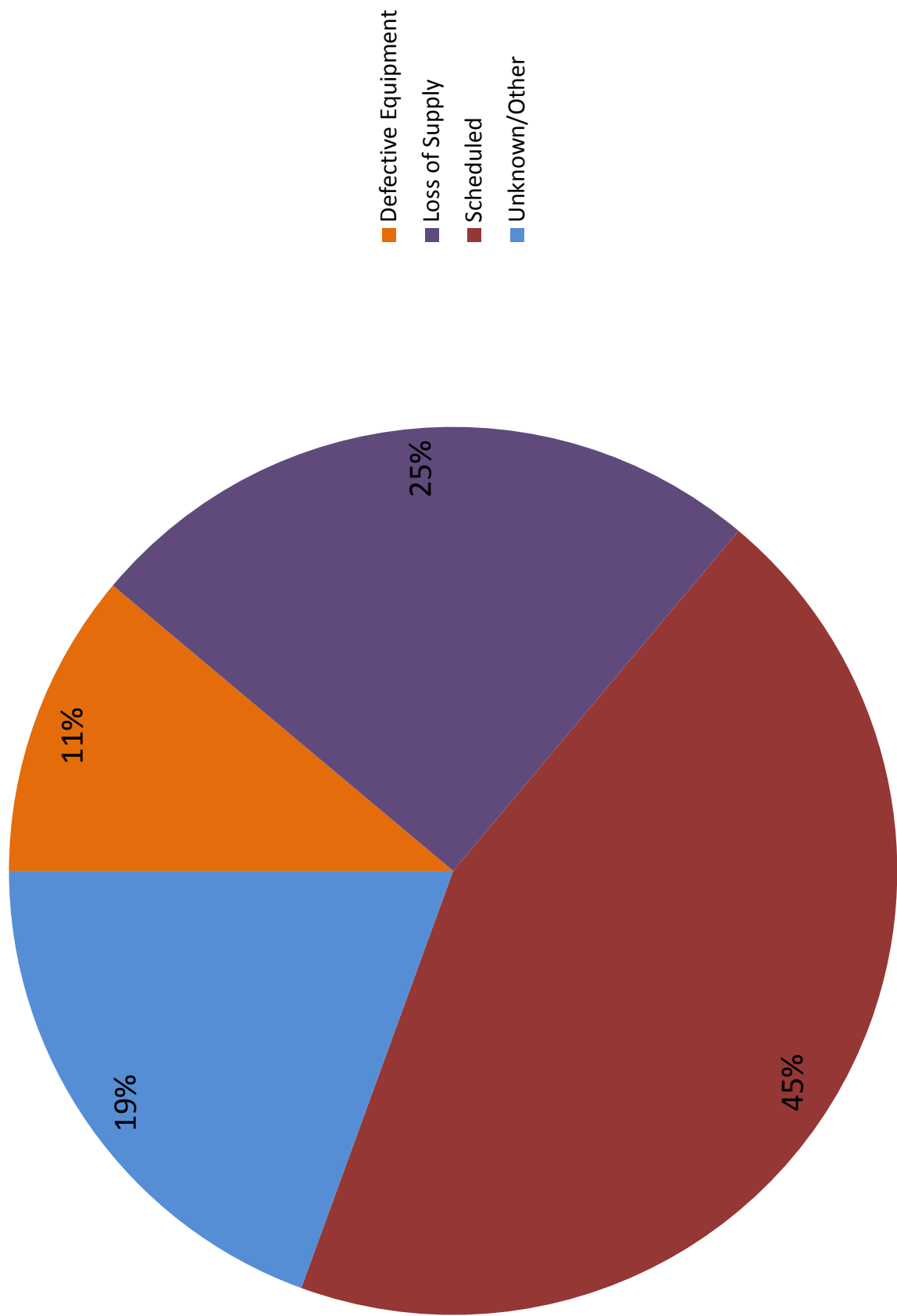
Moosonee DS F1: Outage Impact with 8MW, 24MWh energy storage (\$36M)



# Moosonee DS F3

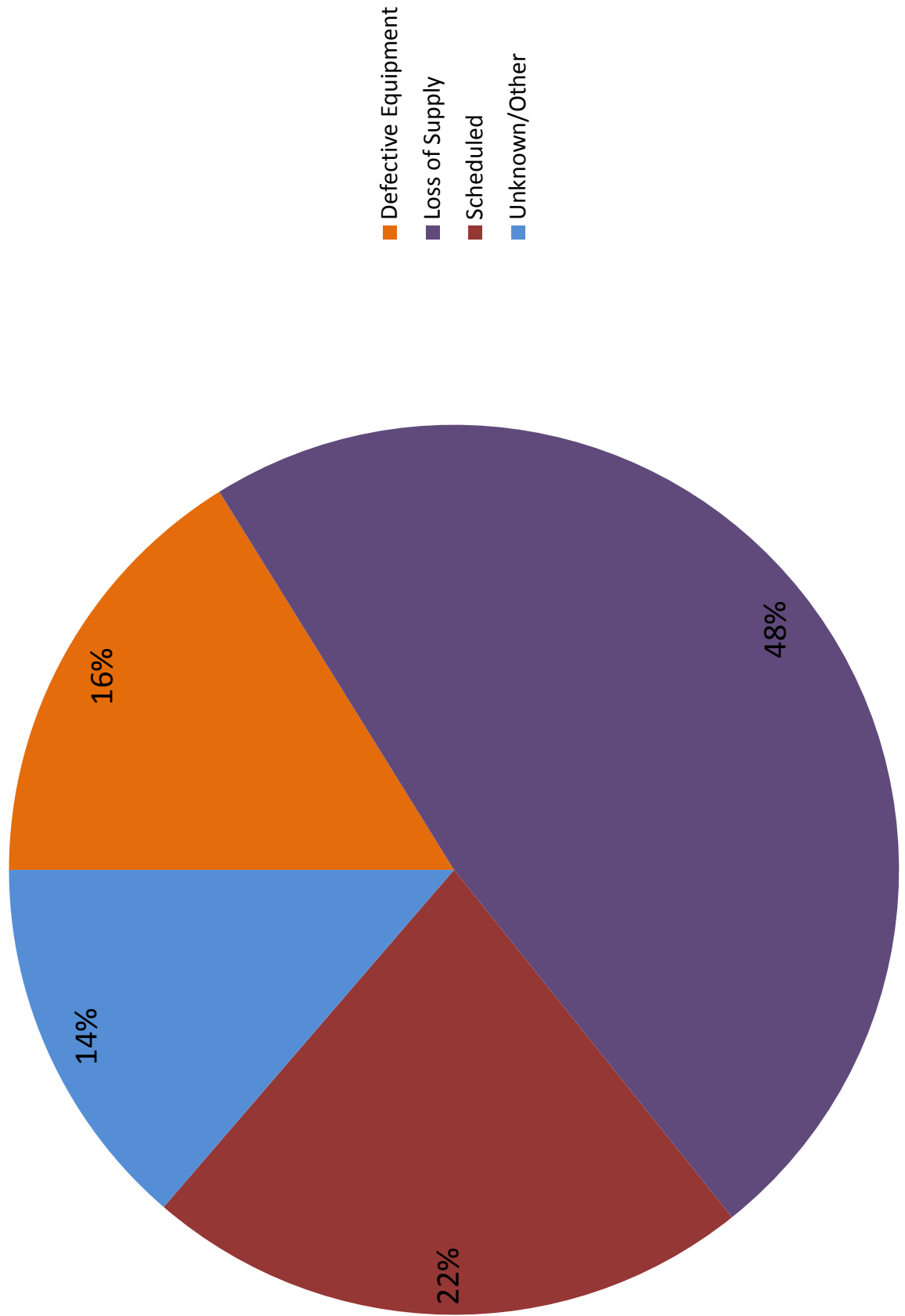


**Moosonee DS F3: Frequency of Upstream Outages by Cause (5 years)**



\* Reduction in frequency of Loss of Supply is expected due to upstream transmission investments.

**Moosonee DS F3: Duration of Upstream Outages by Cause (5 years)**

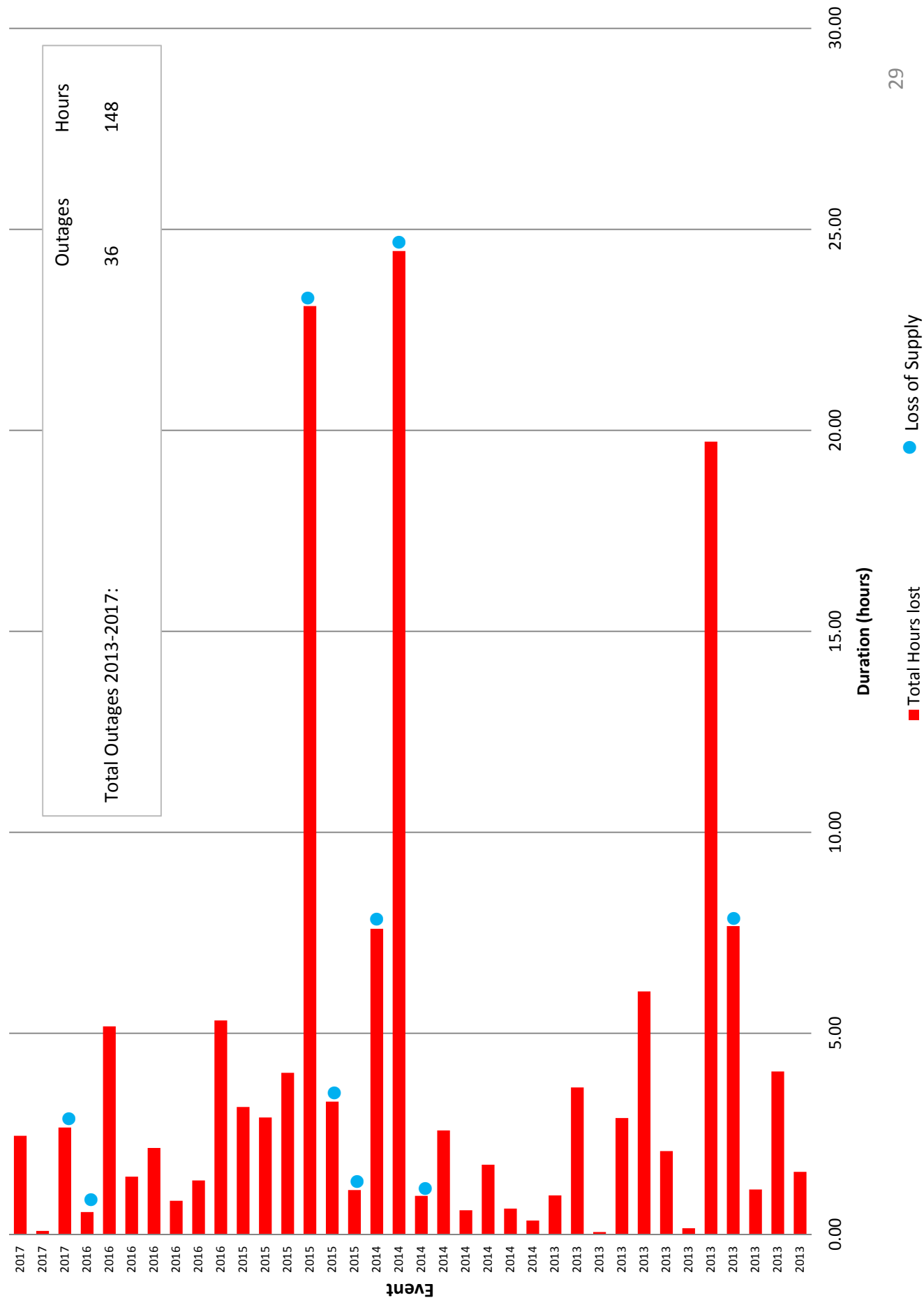


\* Reduction in frequency of Loss of Supply is expected due to upstream transmission investments.

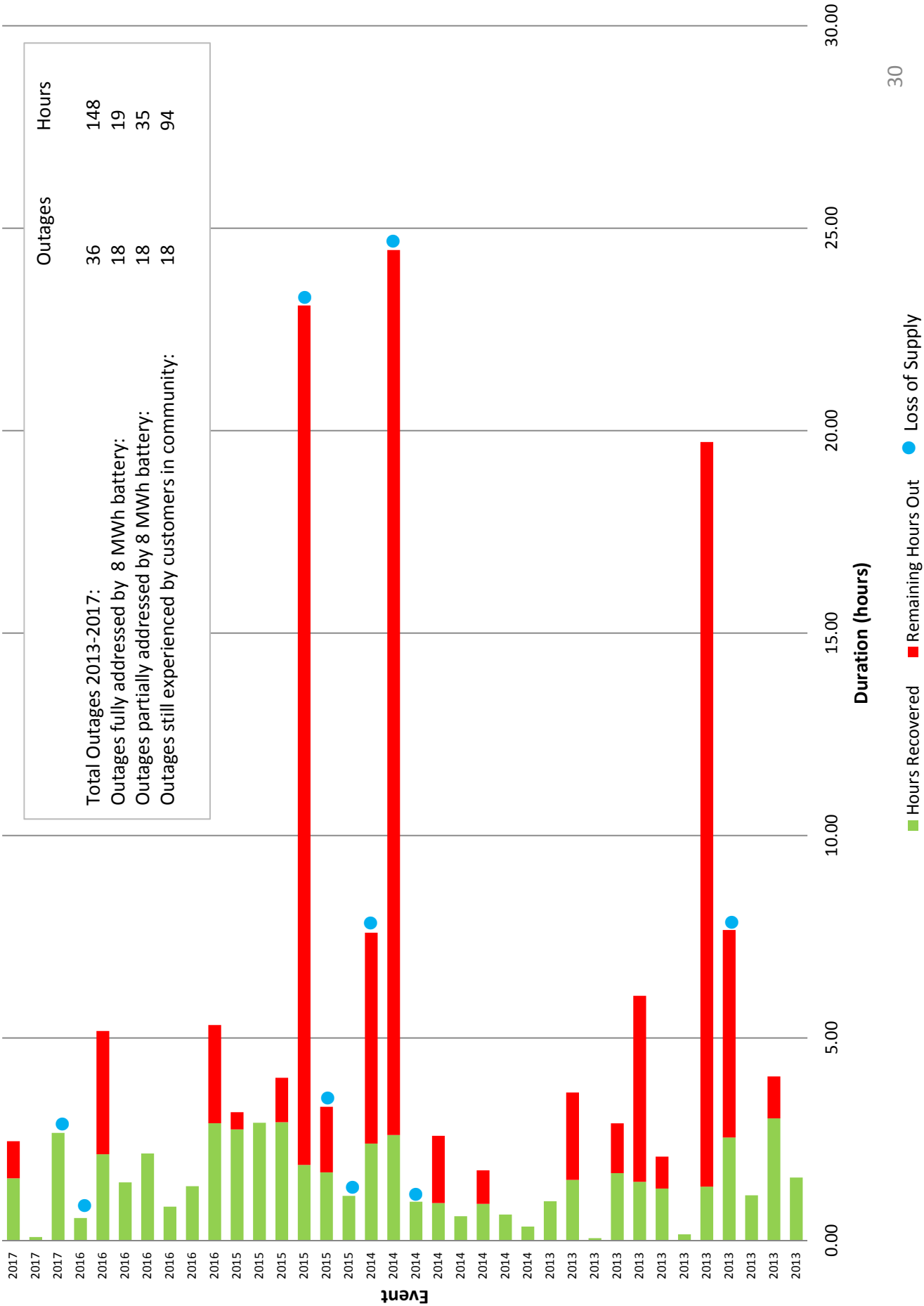
# Moosonee DS F3: Number and Total Duration of Outages by Year

Year	Number of Outages	Total Duration of Outages (Hours)
2013	12	50
2014	8	39
2015	6	38
2016	7	17
2017	3	5

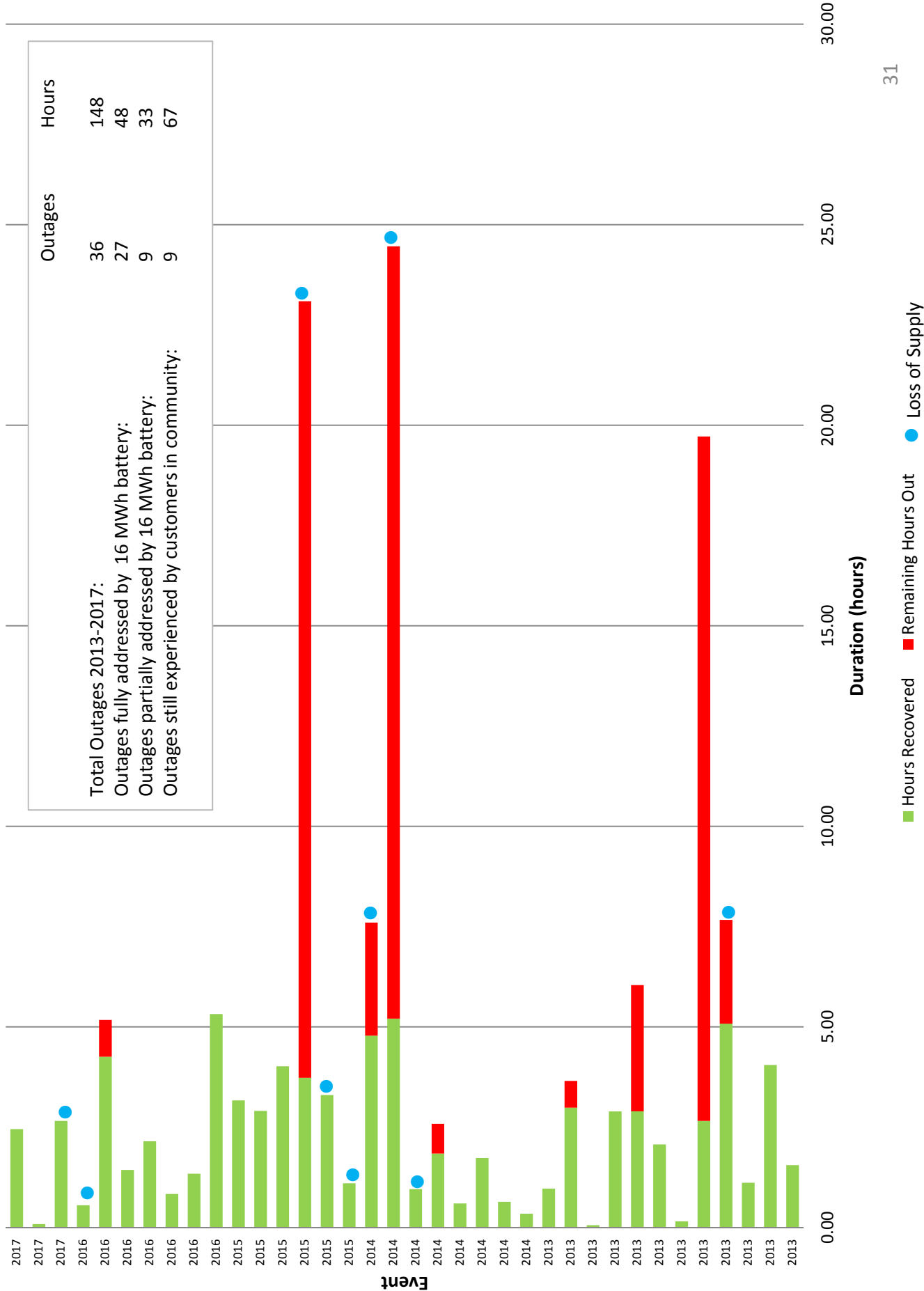
Moosonee DS F3: Outages Experienced Over Last 5 Years



### Moosonee DS F3: Outage Impact with 8MW, 8MWh energy storage (\$12M)



Moosonee DS F3: Outage Impact with 8MW, 16MWh energy storage (\$24M)







# Investment Prioritization

- Retention of an experienced storage and engineering partner is underway.
- The detailed engineering and financial viability review is targeted by September 30, 2018.
- There may be additional value due to scalability.
- Pilot project funding sourced through redirection (\$5M) and may be offset or augmented by government funding programs.



Ontario  
Energy  
Board | Commission  
de l'énergie  
de l'Ontario

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## **DECISION AND ORDER**

**EB-2017-0049**

### **HYDRO ONE NETWORKS INC.**

**Application for electricity distribution rates beginning January 1,  
2018 until December 31, 2022**

**BEFORE: Ken Quesnelle**  
Presiding Member

**Emad Elsayed**  
Member

**Lynne Anderson**  
Member

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**March 7, 2019**

Woodstock (the Acquired Utilities): (i) street lighting customers, (ii) sentinel light customers and; (iii) unmetered scattered load (USL) customers. Hydro One proposed rate mitigation in the form of a bill credit for the customers within these rate classes to ensure that they will not experience total bill impacts greater than 10%, the mitigation threshold established by the OEB.

Hydro One also proposed rate mitigation in the form of adjustments to the revenue-to-cost ratios for the distributed generation (DGen) customer class to limit total bill impacts to no more than 10% for a typical customer in that class.

OEB staff and some intervenors submitted that the mitigation measures proposed by Hydro One for its distributed generation customers in 2018 and 2019 are appropriate. Submissions with respect to rate mitigation for customers of the Acquired Utilities are addressed under Issue 14.

## Findings

The OEB finds that with the adjustments required by this Decision and Order, the revenue required by Hydro One to provide distribution service is reasonable, and consequential rate and bill impacts will also be reasonable. The OEB also finds that Hydro One's rate mitigation plan for the DGen class is reasonable. Rate mitigation for the customers of the Acquired Utilities is addressed in separate sections (Issue 14 and 56).

### 3.1.5 Indigenous Customer Issues (Issue 6)

#### **6. Does Hydro One's First Nation and Métis Strategy sufficiently address the unique rights and concerns of Indigenous customers with respect to Hydro One's distribution service?**

Hydro One stated that it is committed to developing and maintaining positive relationships with First Nations and Métis communities and customers across Ontario. Hydro One further stated that it recognizes the unique rights and interests of Indigenous customers and seeks to work with First Nations and Métis communities in Ontario in the spirit of collaboration, mutual respect and trust and shared responsibility.

Hydro One noted that it provides electricity transmission and distribution services to 85 First Nations communities. Furthermore, approximately 21,700 First Nations customers residing on reserve lands receive service, 88% of which are residential and 12% are general service customers. Transmission and distribution facilities used to provide this service are situated across reserve lands, traditional or treaty lands.

Hydro One stated that the three pillars of its First Nations and Métis Relations Strategy Framework are as follows:

- a) Integration - Improve communication with First Nation and Métis communities and develop programs to ensure their unique interests and concerns are integrated into Hydro One's lines of business and that Hydro One works with communities in a way that recognizes and respects Aboriginal and treaty rights.
- b) Partnership - Develop opportunities to collaborate with First Nations and Métis communities in Ontario through the development of business, technical, knowledge, and advocacy partnerships.
- c) Leadership - Provide opportunities to First Nations and Métis individuals within Hydro One's organization to support the training, development, and promotion of First Nations and Métis employees and future leaders.

Hydro One stated that it is continuing to research and consider industry best practices to benchmark its activities in these three areas and will seek input on, and give consideration to, new strategic approaches to achieve these objectives.<sup>17</sup>

Hydro One stated that over the past 18 to 24 months, it has refined its approach as to how it engages with First Nations and Métis communities and that its strategy addresses the unique rights and concerns of Indigenous customers with respect to Hydro One's distribution service as evidenced by: (1) Hydro One's engagement with its First Nations and Métis customers; and (2) Hydro One's initiatives that address concerns expressed by First Nations and Métis customers.<sup>18</sup>

During the oral hearing phase of the proceeding, it was announced that Hydro One and Anwaatin Inc. (Anwaatin) had agreed on a settlement proposal to be presented to the OEB with respect to Anwaatin's motion to review and vary the OEB's recent Hydro One transmission decision.<sup>19</sup> The settlement proposal was subsequently accepted by the OEB in a separate proceeding.

Hydro One submitted that the agreement with Anwaatin is a significant achievement as not only is the "pilot project" intended to address reliability concerns in Anwaatin First Nations Communities, but it is also intended to assess whether similar and repeatable

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<sup>17</sup> Exh A, Tab 4, Sch. 2, pp. 1-2.

<sup>18</sup> Argument-in-chief, p. 25.

<sup>19</sup> Exhibit K4.4 EB-2017-0335 "Settlement Proposal Anwaatin Inc. Motion to Review and Vary the Ontario Energy Board's Decision on Hydro One Network Inc.'s Transmission Rates in EB-2016-0160," June 15, 2018.

approaches may be used in other remote areas of the Hydro One distribution system that are experiencing poor reliability conditions. Hydro One stated that the maximum total cost of the Anwaatin initiative is \$5 million and any further funding is dependent on the results of the “pilot project” and approval of increases to Hydro One’s capital envelope.<sup>20</sup>

OEB staff and intervenors commended Hydro One for its development of its First Nations and Métis Relations Strategy Framework and supported the settlement proposal. They noted that the “pilot project” could potentially have learnings to benefit other regions in Hydro One’s service territory, and including it in the distribution capital investment plan was reasonable.

Several intervenors suggested that Hydro One should investigate the implementation of economically justified distributed energy resource (DER) solutions not only in Anwaatin and other Indigenous communities, but other northern communities facing similar reliability issues. It was also suggested that the OEB should direct Hydro One in its next application to explicitly provide evidence with respect to the reliability in, and capital programs for, First Nations communities which it serves.

## Findings

The OEB commends Hydro One and Anwaatin for providing an example of how a cooperative approach can result in mutually beneficial outcomes. The OEB encourages both Hydro One and First Nations and Métis groups to continue this approach to achieving an understanding of the concerns and the implementation of solutions.

Given the unique reliability challenges experienced in northern communities, the OEB directs Hydro One, in its next application in which distribution rates are rebased (next rebasing application) to explicitly identify initiatives to address these challenges including other economically justified DER solutions. The question of capital funding for the “pilot project” is addressed under Issue 30.

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<sup>20</sup> Argument-in-chief, p. 28.

## **RELIABILITY PERFORMANCE**

### **1.1 TRANSMISSION RELIABILITY**

Hydro One measures and actively monitors its transmission system reliability from two principal perspectives, namely: equipment performance and delivery performance. The equipment performance perspective enables Hydro One to assess the operational performance of transmission components, ensuring that the transmission equipment is functioning effectively according to their design. The delivery performance perspective establishes a measure of how reliably electricity is delivered to transmission customers such as Local Distribution Companies and Direct Connect Customers, in addition to the Hydro One distribution system. Being a customer focused organization, Hydro One considers the delivery of electricity an important measure of transmission reliability and it strives to achieve a high level of performance in the area.

Transmission reliability is determined using measures developed collaboratively with other transmission utilities across Canada at the Transmission Consultative Committee on Outage Statistics (“T-CCOS”) with the Canadian Electricity Association (“CEA”). These measures have been widely adopted since they are well defined and understood by the participating member utilities. The metrics are sufficiently precise and consistent over time to be used for historical performance trending and multi-jurisdictional transmission performance comparisons.

### **1.2 TRANSMISSION RELIABILITY MEASURES**

Hydro One’s service reliability includes a set of transmission system equipment performance and delivery performance measures. Four reliability measures are listed in

Witness: Bruno Jesus

Table 1, the first three are related to delivery point (“DP”)<sup>1</sup> performance and the last one is based on transmission equipment performance.

Delivery performance is measured by the frequency of delivery point interruptions, the duration of delivery point interruptions and the delivery point unreliability index which is a normalized measure of estimated unsupplied energy to customers. All interruptions caused by forced outage are included in these measures. For equipment performance, transmission system forced unavailability is used.

**Table 1: Transmission Reliability Measures**

Perspective	Measure	Description
Reliability of Delivery of Electricity to Customers	Frequency of Delivery Point Interruptions	Average number of interruptions experienced at delivery points due to forced interruptions
	Duration of Delivery Point Interruptions	Average interruption duration in minutes experienced at delivery points due to forced interruptions
	Delivery Point Unreliability Index – a measure of unsupplied energy	Energy not supplied to customers caused by forced interruptions, normalized by system peak load and presented in System Minutes
Performance of Transmission Equipment	Transmission Equipment Unavailability	Extent to which transmission equipment is not available due to forced outages

Hydro One’s rationale for employing these measures is as follows:

- These metrics are commonly used transmission reliability measures in the industry, especially in Canada. As a group, the measures address transmission service reliability, which is important to customers and stakeholders.

---

<sup>1</sup> Delivery points are generally defined as the interfaces between Hydro One’s transmission system and its load customers. Delivery Points are either (a) low voltage buses at Hydro One owned step-down transformer stations, or (b) stations owned by transmission load customers, including Hydro One distribution stations and transmission directly connected customers.



- 1       • The benchmarking of these measures is meaningful since the data collecting and
- 2       reporting practices among all CEA member utilities are consistent, and have been
- 3       developed and refined over time.
- 4       • These measures have been in place for several decades which facilitates internal
- 5       performance trending, setting targets and external benchmarking.
- 6       • The limited number of measures keeps tracking and reporting requirements at a
- 7       manageable and cost-effective level, while still covering a broad transmission
- 8       reliability performance spectrum.

9

10      A summary of delivery point performance according to the Hydro One Customer

11      Delivery Point Performance (CDPP) Standards is discussed below under the delivery

12      point performance outliers section. The standard, as attached in Attachment 1, is a Hydro

13      One document previously filed with the OEB: Customer Delivery Point Performance

14      (CDPP) Standard, EB-2002-0424. Additionally, Attachment 2 provides definitions and

15      detailed descriptions of the reliability measures used in this evidence.

### 16

### 17      **1.3      EXTERNAL COMPARISONS OF RELIABILITY**

### 18

19      Using data collected by the CEA, Hydro One is able to compare the reliability

20      performance of its transmission system against the Canadian Transmission Utility

21      average performance. The comparison of delivery point reliability performance is done

22      at the system level, reflecting the system average of all delivery points. Below the

23      system level, Hydro One also focuses on multi-circuit supplied delivery point

24      performance, which is also benchmarked with comparable Canadian utilities.

25

26      Hydro One's comparative reliability performance at the system level is illustrated in the

27      following Figures:

Witness: Bruno Jesus

- 1       • Figure 1a - frequency of momentary interruptions;
- 2       • Figure 1b - frequency of sustained interruptions;
- 3       • Figure 2 - overall frequency of interruptions;
- 4       • Figure 3 - average duration of sustained interruptions; and
- 5       • Figure 4 - delivery point unreliability index.

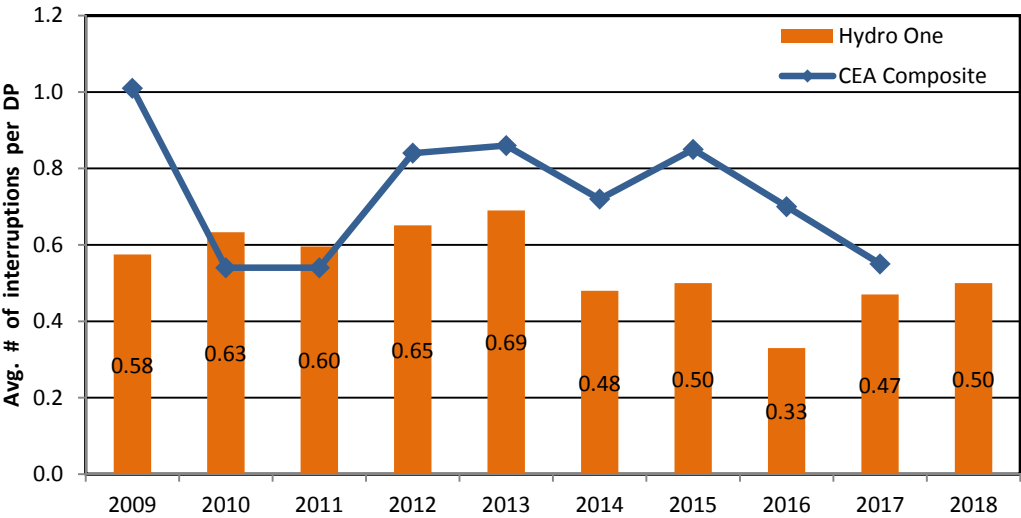
6

7       **Exclusion of Extraordinary Events:**

8       Outages resulting from extraordinary events that have had an “excessive” impact on the  
9       transmission system and that, in Hydro One’s assessment, strongly skew the historical  
10      trend of the measure, such as the 1998 Eastern Ice Storm, the 2003 Northeast Blackout,  
11      the 2013 GTA Flood and 2018 Ottawa area Tornado, have been excluded. These outages  
12      were not due to equipment failure or human error, which Hydro One considers to be  
13      controllable.

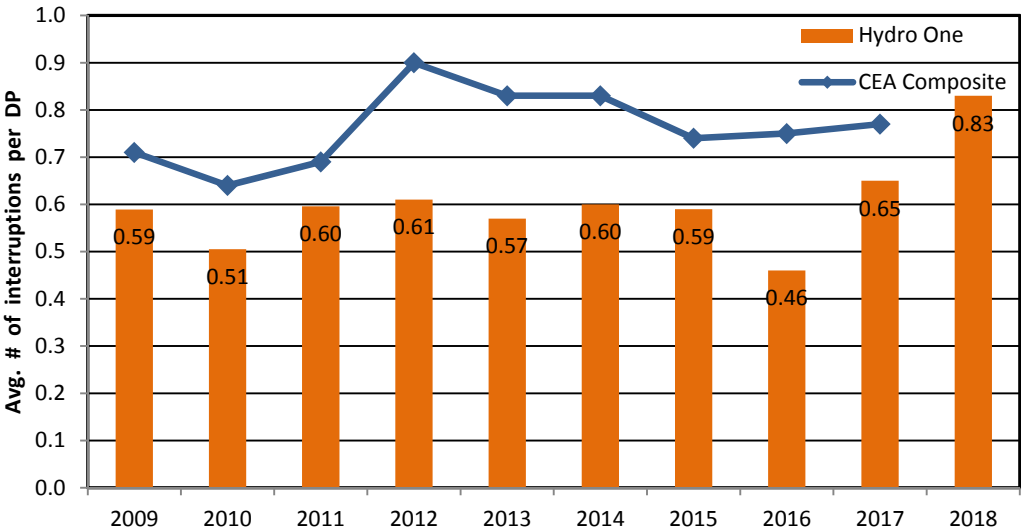
14

15      Hydro One removes extraordinary events from its reliability metrics that have had an  
16      “excessive” impact on the transmission system and that, in Hydro One’s assessment,  
17      strongly skew the historical trend of the measure. This exclusion threshold has been  
18      determined using a statistical method (log-standard deviation ( $\beta$ )) resulting in a threshold  
19      of 10,000 MW\*min being used to exclude major unsupplied energy events from  
20      reliability metrics. This threshold corresponds to a CEA Degree of Severity Level 2  
21      disturbance event. Hydro One will apply this exclusion threshold to performance tracking  
22      and target setting from 2019.



\* Results exclude the impact of the 2013 GTA Flooding and 2018 Ottawa Area Tornadoes

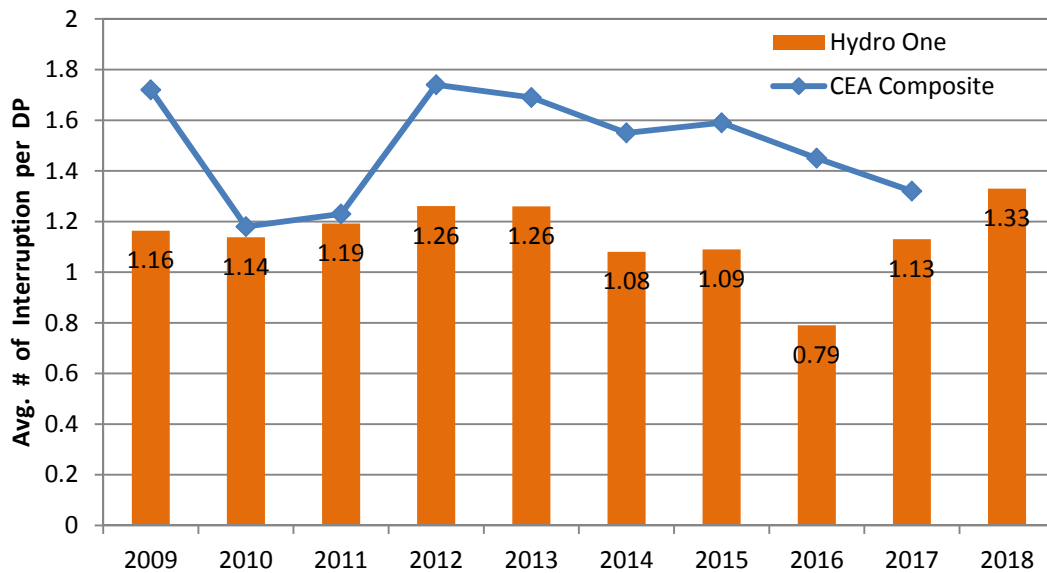
**Figure 1a: Comparison of Hydro One Frequency of Momentary Interruptions to CEA Composite**



\* Results exclude the impact of the 2013 GTA Flooding and 2018 Ottawa Area Tornadoes

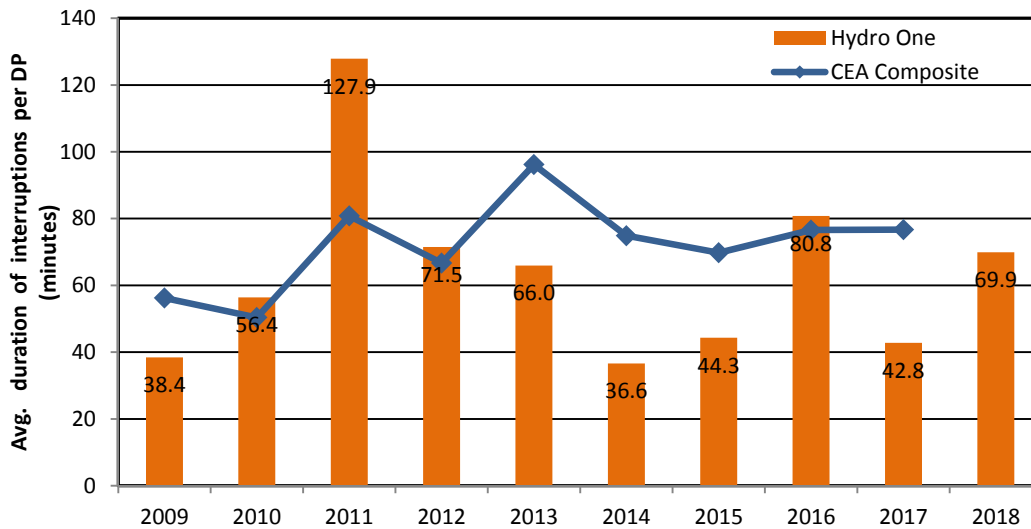
**Figure 1b: Comparison of Hydro One Frequency of Sustained Interruptions to CEA Composite**

Witness: Bruno Jesus



\* Results exclude the impact of the 2013 GTA Flooding and 2018 Ottawa Area Tornadoes

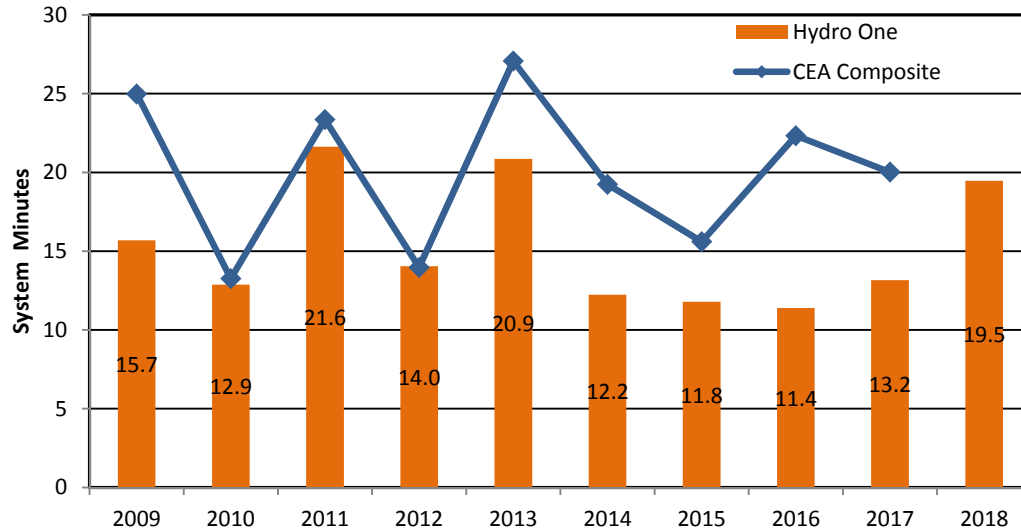
**Figure 2: Comparison of Hydro One Overall Frequency of Interruptions to CEA**



\* Results exclude the impact of the 2013 GTA Flooding and 2018 Ottawa Area Tornadoes  
 1E1C/M1M Forest First represents ~50% of 2011 Total

**Figure 3: Comparison of Hydro One Duration of Sustained Interruptions to CEA Composite**

Witness: Bruno Jesus

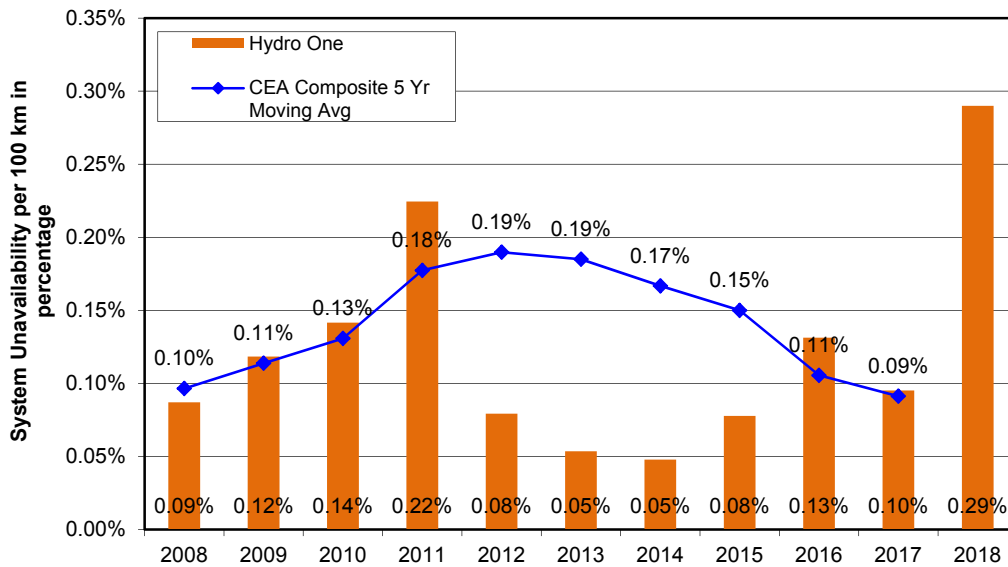


\* Results exclude the impact of the 2013 GTA Flooding and 2018 Ottawa Area Tornadoes

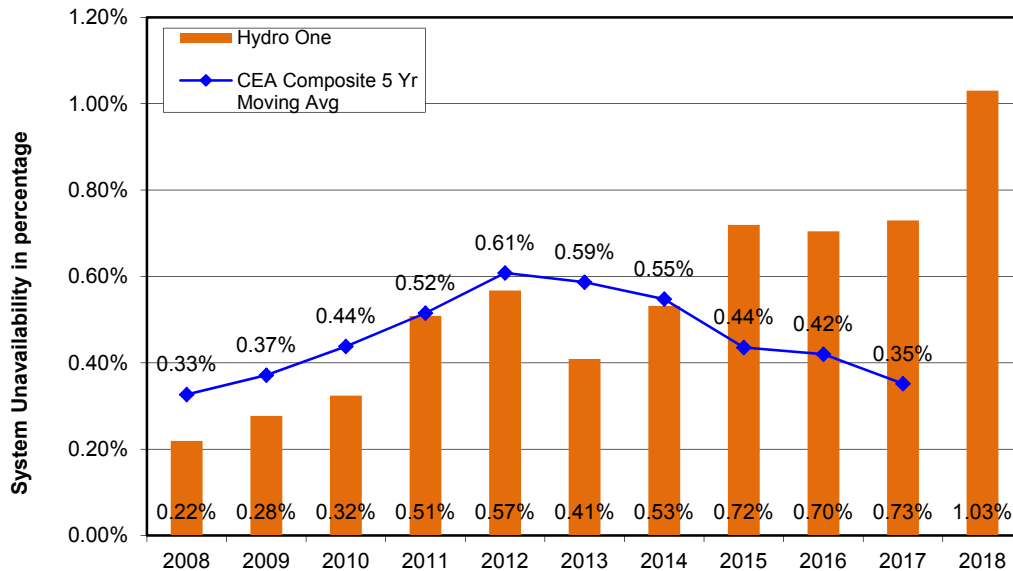
**Figure 4: Comparison of Hydro One Delivery Point Unreliability Index to CEA Composite**

In this evidence, transmission system forced unavailability is divided into Unavailability of Transmission Lines and Unavailability of Transmission Station Equipment. This is based on the different characteristics of the equipment. Station equipment includes power transformers and circuit breakers, etc. The Unavailability measure represents the extent to which the major transmission equipment is not available for use within the system due to forced outages. The detailed description of this measure is provided in Attachment 2 for both Major Transmission Station Equipment and Transmission Lines. Figures 5 and 6 illustrate historical performance of Hydro One lines and station equipment in comparison to the CEA Composite five-year moving average performance of all the CEA member utilities. Further information regarding 2018 performance has been provided in the Transmission System Plan at Exhibit B, Tab 1, Schedule 1 (“TSP”) at section 1.5.3, Performance Measurement Outputs and Performance Update.

Witness: Bruno Jesus



**Figure 5: Unavailability of Transmission Lines**



**Figure 6: Unavailability of Major Transmission Station Equipment**

1 Equipment performance is a leading indicator of future system reliability. By the time  
2 system reliability has measurably degraded, equipment performance will have  
3 deteriorated and a significant increase in asset level investment will be required to return  
4 to historical reliability levels. Renewal investments are made to preserve the  
5 performance of critical asset groups by evaluating assets at both an individual asset level  
6 and at a station or line level. This prioritizes investment needs to identify the most  
7 effective reliability alternative. This approach helps preserve overall system reliability.

8  
9 Hydro One undertakes an annual detailed assessment of the cited performance measures.  
10 This assessment is taken into account along with other factors (such as asset condition)  
11 when establishing candidate investments. For further details see the Transmission  
12 System Plan at Exhibit B, Tab 1, Schedule 1 (“TSP”) at section 2.1, Investment Planning  
13 Process.

#### 14 15 **1.4 DELIVERY POINT PERFORMANCE OUTLIERS**

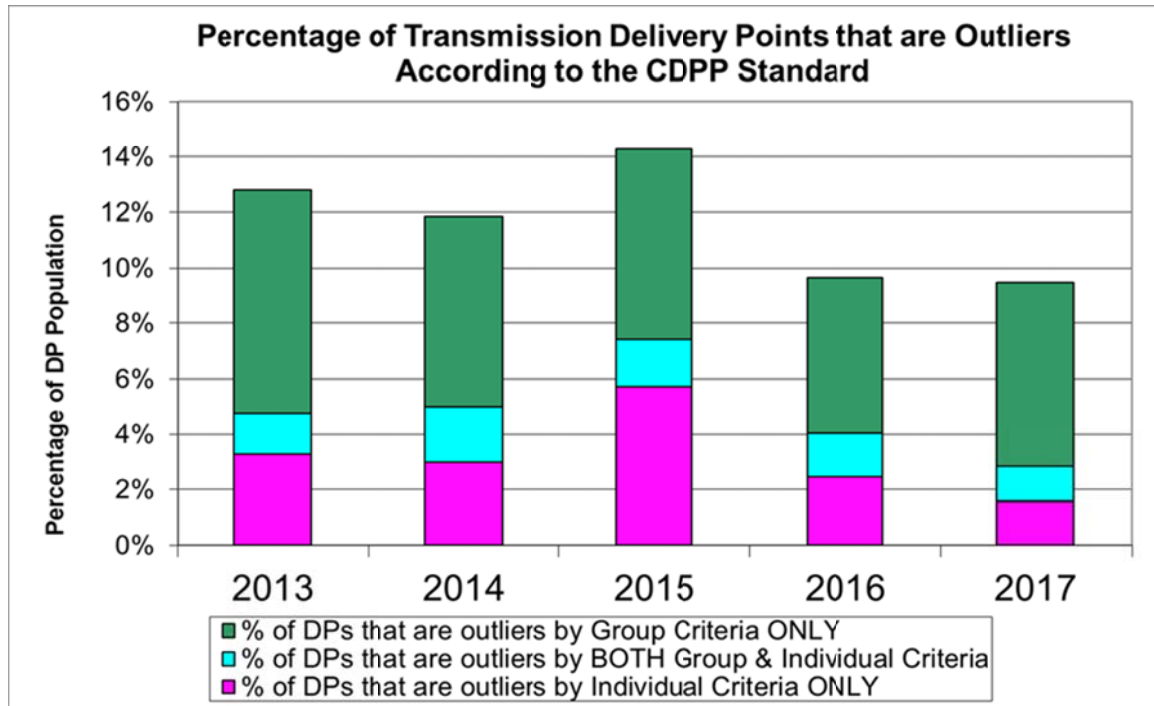
16  
17 Delivery point performance is evaluated according to the Customer Delivery Point  
18 Performance (CDPP) Standard that Hydro One developed, filed with, and was  
19 subsequently approved by the Board in EB-2002-0424. The performance standard is  
20 used as a trigger to initiate assessment and follow up with affected customers to:

- 21 • Determine the root cause of unreliability;
- 22 • Perform technical and financial evaluations; and
- 23 • Decide on remedial action to improve reliability.

24  
25 Figure 7 is a summary of the transmission Group and Individual Outliers as determined  
26 by the CDPP Standard criteria from 2007, the first year of formal CDPP reporting.

Witness: Bruno Jesus

Note: The Group and Individual CDPP Standard criteria are not mutually exclusive. A delivery point can be both a group outlier and an individual outlier in same year.



**Figure 7: Transmission Load Delivery Point Performance Outliers**

The delivery point outliers are analysed and considered for incorporation into future investment programs. Hydro One endeavours to keep the number of outliers at approximately 10% of the total population of its delivery points. However, this will not always be the case. Some delivery points are flagged as individual outliers even though they normally experience better reliability performance as measured by the group outlier standard. For example, a specific delivery point may have performed better than the relevant group standard, but, given its extremely good individual outlier (historical) baseline, recent isolated events may drive a performance decline resulting in this delivery point temporarily becoming an individual outlier. In most cases, such delivery point could return to non-outlier status in the following year without the need for any

Witness: Bruno Jesus



1 incremental investment. Hydro One takes this possibility into consideration in its  
2 assessments.

3

4 **ATTACHMENTS: PERFORMANCE MEASUREMENT**

5 Attachment 1 - Customer Delivery Point Performance (CDPP) Standard

6 Attachment 2 - Description of the Reliability Measures

Performance Outcomes	Performance Categories	Measures	Targets										
			2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Customer Focus	Customer Satisfaction	Satisfaction with Outage Planning Procedures (% Satisfied)	86	92	89	94	85	86	87	87	88	88	
		Overall Customer Satisfaction (% Satisfied)	77	85	78	88	90	88	88	88	88	88	
	Service Quality	Customer Delivery Point (DP) Performance Standard Outliers as % of Total DPs	11.8	14.3	9.7	9.5	10.1	12.0	11.7	11.5	11.3	11.0	10.8
	Safety	Recordable Incidents (# of recordable injuries/illnesses per 200,000 hours worked)	1.8	1.7	1.1	1.2	1.1	1.1	1.1	1.0	0.9	0.9	0.9
Operational Effectiveness	System Reliability	T-SAFI-S (Ave. # Sustained interruptions per Delivery Point)	0.60	0.59	0.46	0.65	0.83	0.55	0.54	0.53	0.52	0.51	0.50
		T-SAFI-M (Ave. # of Momentary interruptions per Delivery Point)	0.48	0.50	0.33	0.47	0.50	0.49	0.48	0.48	0.47	0.46	0.45
		T-SAIDI (Ave minutes of interruptions per Deliver Point)	36.7	43.9	80.8	42.8	70.0	35.4	34.66	33.96	33.28	32.62	31.97
		System Unavailability (%)	0.48	0.63	0.70	0.69	0.71	0.48	0.47	0.47	0.46	0.45	0.44
		Unsupplied energy (minutes)	12.2	11.8	11.4	13.2	19.5	9.8	9.59	9.40	9.21	9.02	8.84
		Transmission System Plan Implementation Progress (%)	99	105	100	94	99	100	100	100	100	100	100
		CapEx as % of Budget	90	106	105	100	98	100	100	100	100	100	100
Cost Control	Asset & Project Management	OM&A Program Accomplishment (composite index)		97	99	108	108	100	100.0	100.0	100.0	100.0	100.0
		Capital Program Accomplishment (composite index)		122	59	88	116	100	100.0	100.0	100.0	100.0	100.0
		Total OM&A and Capital per Gross Fixed Asset Value (%)	8.4	9.0	8.6	7.9	7.7	7.3	7.8	7.9	7.7	7.3	7.0
		OM&A per Gross Fixed Asset Value (%)	2.7	2.9	2.5	2.3	2.3	1.8	1.8	1.7	1.6	1.5	1.5
		Line Clearing Cost per kilometer (\$/km)	2,495	2,234	1,966	2,100	2,797	2,295	2,264	2,200	2,175	2,100	2,100
Public Policy Responsiveness		Brush Control Cost per Hectare (\$/Ha)	1,624	1,566	1,542	1,356	1,539	1,625	1,620	1,630	1,608	1,608	1,608
	Connection of Renewable Generation	% on-time completion of renewables customer impact assessments	100	100	100	100	100	100	100	100	100	100	100
	Regional Infrastructure Planning (RIP) & Long-Term Energy Plan (LTEP) Right-Sizing	Regional Infrastructure Planning progress - Deliverables met, %	100	100	100	100	100	100	100	100	100	100	100
		End-of-Life Right-Sizing Assessment Expectation					Met	Met	Met	Met	Met	Met	Met
Financial Performance	Financial Ratios	Liquidity: Current Ratio (Current Assets/Current Liabilities)	0.69	0.13	0.20	0.13	0.12						
		Leverage: Total Debt (includes short-term and long-term debt) to Equity Ratio	1.16	1.39	1.43	1.47	1.53						
		Profitability: Regulatory Return on Equity	9.36	9.30	9.19	8.78	9.00						
		Achieved	13.12	10.93	10.02	9.03	11.08						

Figure 1 – Evolved Electricity Transmitter Scorecard & Targets – Hydro One Networks Inc.<sup>4</sup>

<sup>4</sup> Satisfaction with Outage Planning Procedures survey was not performed in 2013. The return on equity achieved values for 2013 to 2015 were restated.

## ANWAATIN INTERROGATORY #1

### **Reference:**

A-07-02

### **Interrogatory:**

#### **Preamble:**

Following discussions with Anwaatin, Hydro One began an initiative in April 2018 to assess whether an energy storage pilot project could be developed in a remote region of the distribution system with sub-standard performance serving Anwaatin communities and tested to determine reliability improvement and whether the approach could be used as a repeatable approach in other regions of the system (the **Pilot Project**).

Anwaatin and Hydro One filed a Settlement Proposal with the Board on June 15, 2018 in EB-2017-0335 (the **Settlement Proposal**) and the Board accepted the Settlement Proposal in its Decision and Order dated August 23, 2018.

As of June 2018, Hydro One's technical assessment had focused on three distribution feeder lines that serve the Nakina and Moosonee communities (Nakina F2 and Moosonee F1 and F3). Completion of all engineering and financial viability review was targeted by September 30, 2018. Hydro One has noted that one of the key objectives of the Pilot Project is to assess scalability to meet similar reliability concerns in other communities served by Hydro One (see Exhibit I, Tab 6, Schedule Anwaatin-1, page 5 of EB-2017-0049).

As of February 2019, Hydro One reported that a Request for Proposal was completed outlining Hydro One's requirements for the Battery Energy Storage System (BESS) to supply Aroland First Nation. In response to the proposal, bids were received from several vendors and were in the process of being evaluated. In tandem with proceeding with steps toward completing the Pilot Project, Hydro One stated that it has met with the Aroland First Nations community and Anwaatin to provide updates on the status of the Pilot Project and will continue to do so as appropriate going forward (EB-2018-0130, Exhibit I, Tab 8, Schedule 1, page 2).

In its Decision and Order in EB-2017-0049 dated March 7, 2019 (the **EB-2017-0049 Decision**), the Board encouraged "both Hydro One and First Nations and Métis groups to

1 continue [a cooperative approach resulting in mutually beneficial outcomes] to achieving  
2 an understanding of the concerns and the implementation of solutions” (p. 18).

3  
4 a) Please provide an update on the status of the Pilot Project and indicate the steps  
5 Hydro One has taken to-date to implement the Pilot Project and the steps Hydro One  
6 plans to take in the future in order to complete the Pilot Project and determine  
7 whether the approach can be used to address sub-standard performance for Anwaatin  
8 communities and other outlier communities served by Hydro One.

9  
10 b) Please describe the model Hydro One proposes to use to rate-base the Pilot Project  
11 and any similar energy storage projects undertaken in the future, including any impact  
12 on the process followed by Hydro One to derive its 2019 transmission rates revenue  
13 requirement and allocate it among the three transmission rate pools.

14 c) Setting aside the Pilot Project, please discuss all aspects of the Settlement Proposal  
15 that Hydro One is currently undertaking or intends to undertake during the term of the  
16 Settlement Proposal.

17  
18 d) The Settlement Proposal contemplates the use of solar generation facilities in  
19 conjunction with battery energy storage systems. Please describe Hydro One’s  
20 consideration of solar generation facilities in relation to the Pilot Project and the  
21 Settlement Proposal broadly and provide all related reports and analysis.

22  
23 e) Please discuss how Hydro One has, in the context of this application, begun  
24 implementing the cooperative approach that the Board encouraged Hydro One to  
25 continue in the EB-2017-0049 Decision to achieve reliability improvements in  
26 northern and remote Indigenous communities.

27  
28 **Response:**

29 a) Hydro One has taken several steps toward implementing the Pilot Project to install a  
30 Battery Energy Storage System (BESS). Hydro One’s technical requirements for the  
31 Pilot Project were determined after a detailed review of the distribution system supply  
32 and load characteristics of Aroland First Nation (FN). The land for the site of the  
33 BESS has been purchased. Geotechnical and archeological studies on the proposed  
34 site were completed and revealed that the site is suitable for construction of the  
35 BESS. A Request for Proposal (RFP) was completed outlining Hydro One’s  
36 requirements for the BESS to supply Aroland FN. In response to the proposal, bids  
37 were received from several vendors. Hydro One selected the successful vendor,

1 Siemens Canada, and has executed a contract to engineer procure and construct the  
2 BESS. The project is schedule to be completed by Q4 of 2019. In tandem with  
3 proceeding with steps toward implementing the Pilot Project, Hydro One has met  
4 with the Aroland First Nations community and Anwaatin Inc. to provide updates on  
5 the status of the pilot project and will continue to do so as appropriate going forward.  
6

7 Hydro One has several additional steps planned in the future to facilitate the  
8 completion of the Pilot Project. Upon in-service of the project, Hydro One will  
9 monitor and evaluate its performance for a period of time deemed necessary to  
10 determine if the expected reliability benefit was achieved. The final project cost and  
11 benefits realized will be used to determine if it makes sense for Hydro One to utilize  
12 this approach elsewhere on its system.  
13

- 14 b) The Pilot Project was addressed as part of Hydro One's distribution rates proceeding  
15 EB-2017-0049 and includes distribution assets only. Hydro One will rate base the  
16 Pilot Project as directed by the OEB in its Decision and Order dated March 7, 2019 in  
17 EB-2017-0049 at page 77:  
18

19 Anwaatin submitted that it expected the "pilot project" agreed to between Hydro One  
20 and Anwaatin, at a cost not to exceed \$5 million, "should be expressly approved by  
21 the OEB in this proceeding." The OEB does not approve individual projects within  
22 Hydro One's capital envelope. The settlement agreement between Hydro One and  
23 Anwaatin stated that the pilot project "shall be funded from Hydro One's distribution  
24 capital investment plan." Therefore, it is incumbent on Hydro One to accommodate  
25 the pilot project within the OEB-approved capital envelope in this proceeding.  
26

27 As the Pilot Project is comprised of distribution assets and is included in Hydro One's  
28 distribution revenue requirement, it has no impact on Hydro One's transmission  
29 revenue requirement for 2019 or otherwise and falls outside the scope of this  
30 proceeding.  
31

- 32 c) Hydro One will complete phase 2 assessments for other First Nations communities  
33 supplied by the A4L circuit after full completion of Phase 1 and evaluation of the  
34 costs and benefits of phase 1 is completed.  
35  
36 d) For this Pilot Project, while in islanding mode, the BESS microcontroller will be  
37 designed to permit other distributed energy resources to inject energy in parallel with

1 the BESS. In relation to the Pilot Project Hydro One has no related reports or analysis  
2 considering solar generation facilities. As noted above, the Pilot Project falls outside  
3 the scope of this proceeding.

4  
5 e) In its Decision and Order dated March 7, 2019 in EB-2017-0049, the OEB stated at p.  
6 18:

7  
8 *“The OEB commends Hydro One and Anwaatin for*  
9 *providing an example of how a cooperative approach can*  
10 *result in mutually beneficial outcomes. The OEB*  
11 *encourages both Hydro One and First Nations and Métis*  
12 *groups to continue this approach to achieving an*  
13 *understanding of the concerns and the implementation of*  
14 *solutions.*

15  
16 *Given the unique reliability challenges experienced in*  
17 *northern communities, the OEB directs Hydro One, in its*  
18 *next application in which distribution rates are rebased*  
19 *(next rebasing application) to explicitly identify initiatives*  
20 *to address these challenges including other economically*  
21 *justified DER solutions. The question of capital funding for*  
22 *the “pilot project” is addressed under Issue 30.”*

23  
24 At its next rebasing application, Hydro One will identify initiatives to address the  
25 unique reliability challenges experienced in northern communities as directed by the  
26 OEB. For further details on Hydro One’s approach to working with First Nations and  
27 Métis groups to achieve mutually beneficial outcomes, please refer to Exhibit A, Tab  
28 7, Schedule 2: “First Nations and Métis Engagement Strategy”. For information on  
29 the OEB’s province wide policy consultation on DER, please see the response to  
30 Anwaatin-004 subsection c).

## ANWAATIN INTERROGATORY #2

### **Reference:**

A-07-02, A-07-02-03

### **Interrogatory:**

#### **Preamble:**

One of the actions Hydro One is taking to address the needs and preferences of Indigenous customers and communities is: aging assets are being replaced, as described in Attachment 3 titled “First Nations Reliability Performance”, dated February 21, 2018.

In Exhibit I, Tab 10, Schedule 3 of EB-2016-0160, Hydro One’s last transmission rates application, Hydro One provided transmission system performance data for (1) the “Northern” part of the system and (2) the transmission system supplying certain First Nation communities (Beardmore DS #2, Long Lac TS, Moosonee DS, Nipigon DC, Red Rock DS). An update to CDDP outlier data was provided in Exhibit TCJ2.5.

a) Please provide an update in respect of Hydro One’s transmission system performance data for (1) the “Northern” part of the system and (2) the transmission system supplying certain First Nation communities (Beardmore DS #2, Long Lac TS, Moosonee DS, Nipigon DC, Red Rock DS) by completing the following tables:

#### i. Frequency of Momentary Interruptions

Year	2016	2017	2018
# of momentary interruptions			
# of DPs in Northern Region			
T-SAIFI-m*			

\*T-SAIFI-m = Total number of momentary interruptions / total number of DP monitored

ii. Frequency of Sustained Interruptions

Year	2016	2017	2018
# of sustained interruptions			
# of DPs in Northern Region			
<b>T-SAIFI-s*</b>			

\*T-SAIFI-s = Total number of sustained interruptions / total number of DP monitored

iii. Overall Frequency of Interruptions

Year	2016	2017	2018
# of overall interruptions			
# of DPs in Northern Region			
<b>T-SAIFI-all*</b>			

\*T-SAIFI-all = Total number of momentary and sustained interruptions / total number of DP monitored

iv. Duration of Sustained Interruptions

Year	2016	2017	2018
Duration of sustained interruptions (minutes)			
# of DPs in Northern Region			
<b>T-SAIDI</b>			

\*T-SAIDI = Total duration of sustained interruptions / total number of DP monitored

v. Delivery Point Unreliability Index

Year	2016	2017	2018
Total Unsupplied Energy (MW x minutes)			
System Peak Load (MW)			
<b>DPUI</b>			

\*DPUI = Total unsupplied energy / system peak load



vi. CDPP Outliers

Year	2016	2017	2018
Total # of DPs in Northern Region			
# of Outliers in Northern Region			

b) Please present the data provided pursuant to part (a) in graphical form, together with the data from 2006 through 2015, in a manner similar to the graphical presentation of data in Exhibit TCJ2.5 of EB-2016-0160.

**Response:**

a)

1. The “Northern” part of the system

i. Frequency of Momentary Interruptions

Year	2016	2017	2018
# of momentary interruptions	198	217	218
# of DPs in Northern Region	148.0	149.0	148.1
T-SAIFI-m*	1.34	1.46	1.47

ii. Frequency of Sustained Interruptions

Year	2016	2017	2018
# of sustained interruptions	170	347	257
# of DPs in Northern Region	148.0	149.0	148.1
T-SAIFI-s*	1.15	2.33	1.73

iii. Overall Frequency of Interruptions

Year	2016	2017	2018
# of overall interruptions	368	564	475
# of DPs in Northern Region	148.0	149.0	148.1
T-SAIFI-all*	2.486	3.786	3.207

iv. Duration of Sustained Interruptions

Year	2016	2017	2018
<b>Duration of sustained interruptions (minutes)</b>	22862	27112	28044
<b># of DPs in Northern Region</b>	148.0	149.0	148.1
<b>T-SAIDI</b>	154.4	182.0	189.3

v. Delivery Point Unreliability Index

Year	2016	2017	2018
<b>Total Unsupplied Energy (MW x minutes)</b>	93751	197805	121659
<b>System Peak Load (MW)</b>	1874.9*	1728.1*	1936.6*
<b>DPUI</b>	50.00	114.46	62.82

\* System Peak Load for Northern Region was not available at this time. Values shown are estimated.

vi. CDPP Outliers

Year	2016	2017	2018
<b>Total # of DPs in Northern Region</b>	148	149	148
<b># of Outliers in Northern Region</b>	49	56	46

2. The transmission system supplying certain First Nation communities (Beardmore DS #2, Long Lac TS, Moosonee DS, Nipigon DC, Red Rock DS)

i. Frequency of Momentary Interruptions

Year	2016	2017	2018
<b># of momentary interruptions</b>	13	7	8
<b># of DPs supplying First Nation Communities</b>	5	5	5
<b>T-SAIFI-m*</b>	2.6	1.4	1.6

ii. Frequency of Sustained Interruptions

Year	2016	2017	2018
# of sustained interruptions	18	6	5
# of DPs supplying First Nation Communities	5	5	5
T-SAIFI-s*	3.6	1.2	1

iii. Overall Frequency of Interruptions

Year	2016	2017	2018
# of overall interruptions	31	13	13
# of DPs supplying First Nation Communities	5	5	5
T-SAIFI-all*	6.2	2.6	2.6

iv. Duration of Sustained Interruptions

Year	2016	2017	2018
Duration of sustained interruptions (minutes)	5684	1231	664
# of DPs supplying First Nation Communities	5	5	5
T-SAIDI	1136.8	246.2	132.8

v. Delivery Point Unreliability Index

Year	2016	2017	2018
Total Unsupplied Energy (MW x minutes)	21299	2765	2745
System Peak Load (MW)	29.5	30.0	31.1
DPUI	722.1	92.2	88.3

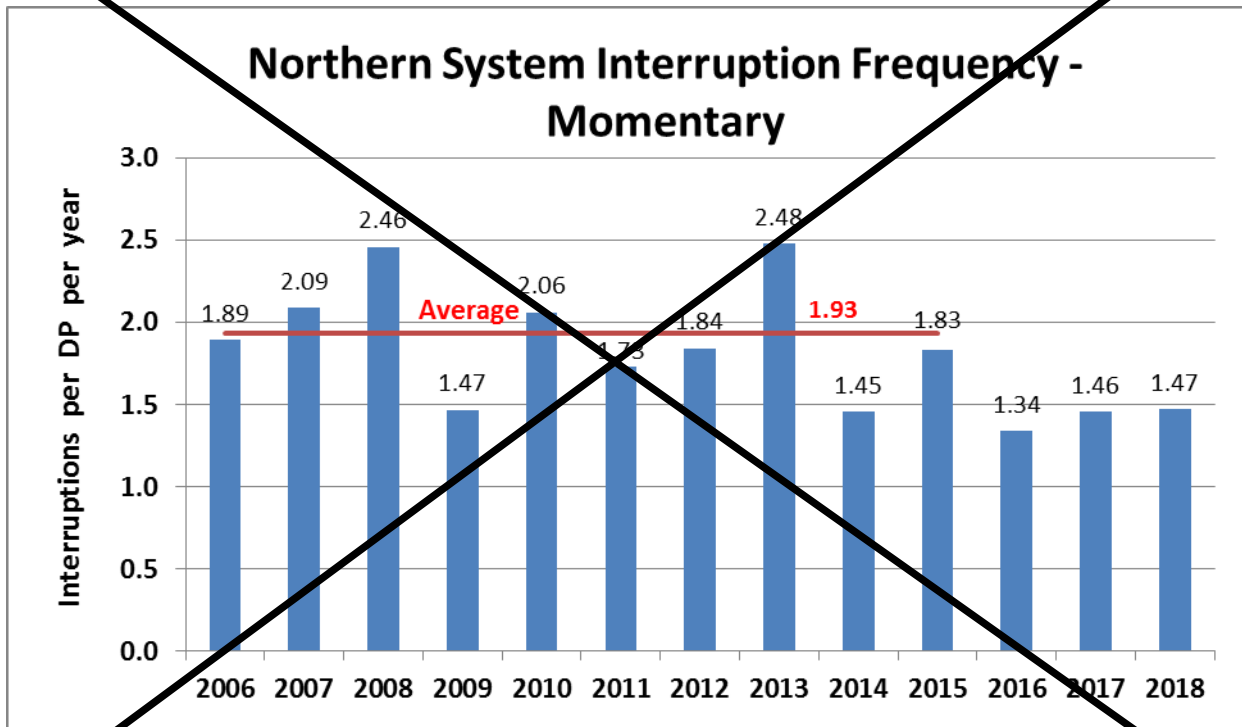
vi. CDPP Outliers

Year	Hydro One Delivery Points
2016	LONGLAC TS, MOOSONEE DS, BEARDMORE #2 DS
2017	LONGLAC TS, MOOSONEE DS,

	BEARDMORE #2 DS
2018	LONGLAC TS, BEARDMORE #2 DS

b)

1. The "Northern" part of the system



## UNDERTAKING - JT 1.27

### **Reference:**

I-09-Anwaatin-002, part b)

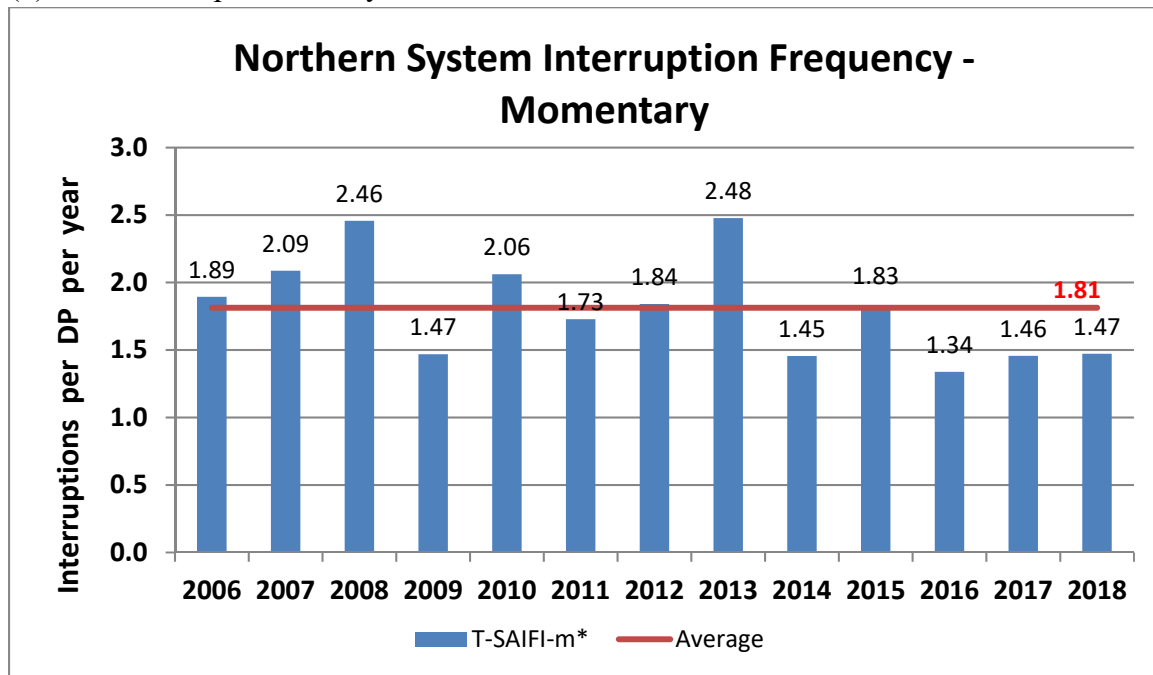
### **Undertaking:**

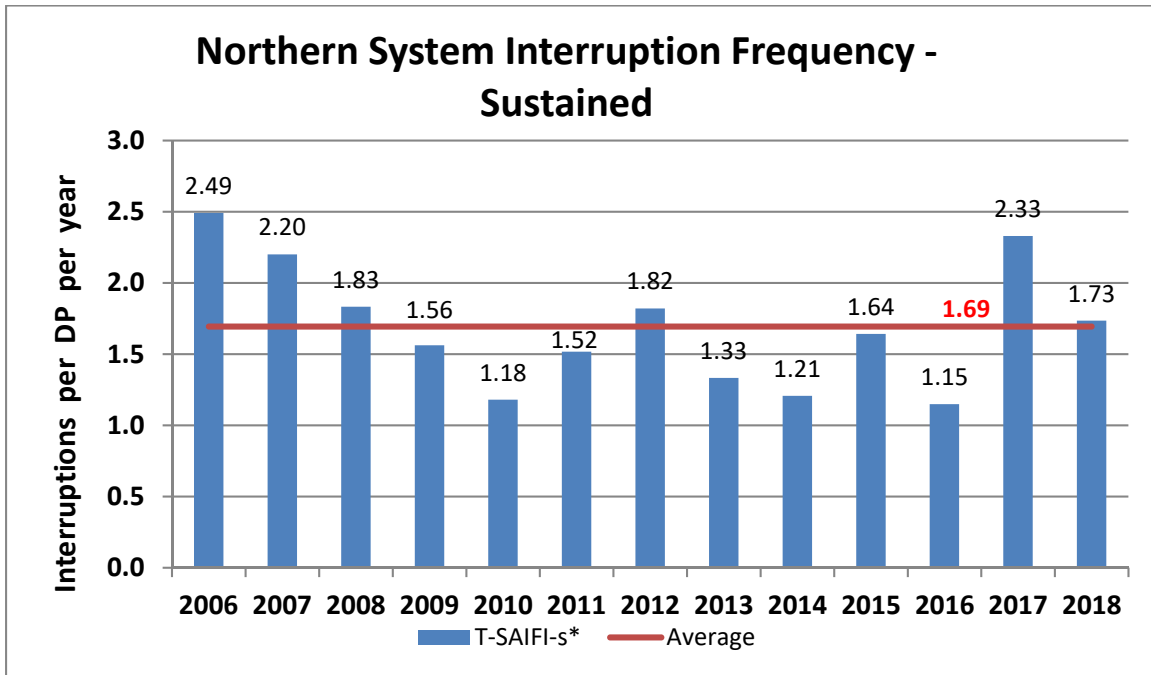
To compare the figures in the bar charts in Anwaatin IR 2, page 6 to 11, to EB-2016-0160, TCJ 2.5, and confirm that the averages are calculated based on the 2006 to 2015 period; to provide updated data to include 2016 to 2018.

### **Response:**

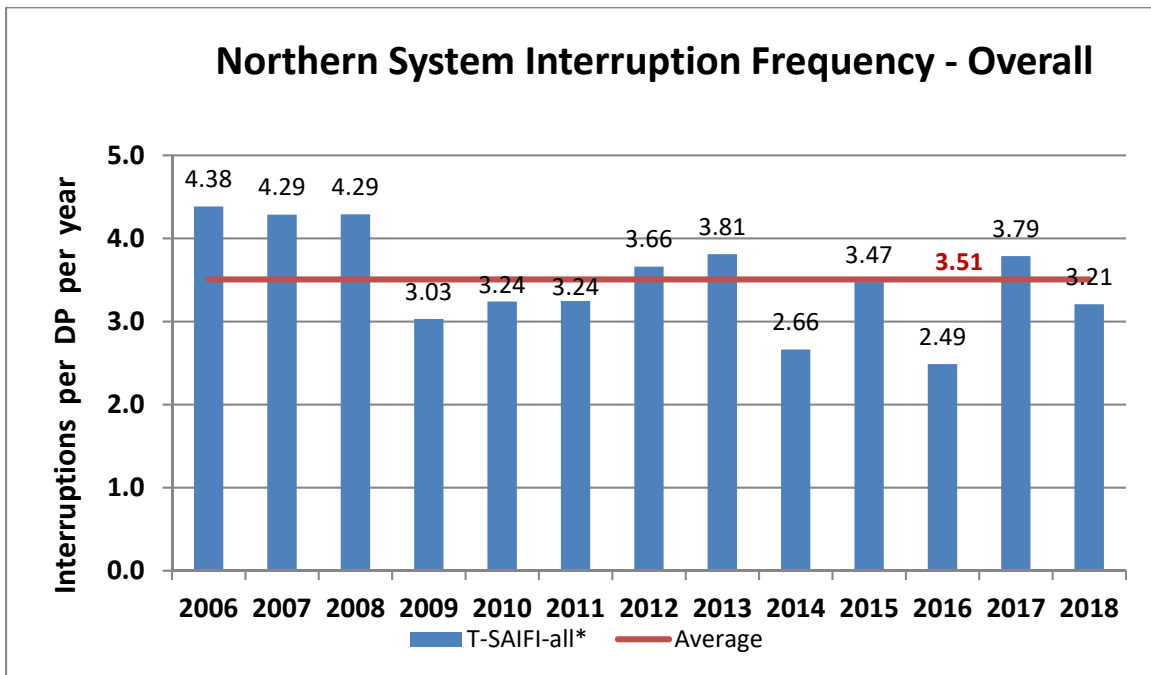
Hydro One has updated the bar charts in Anwaatin-002 to include the average from 2006 to 2018.

(1) “Northern” part of the system

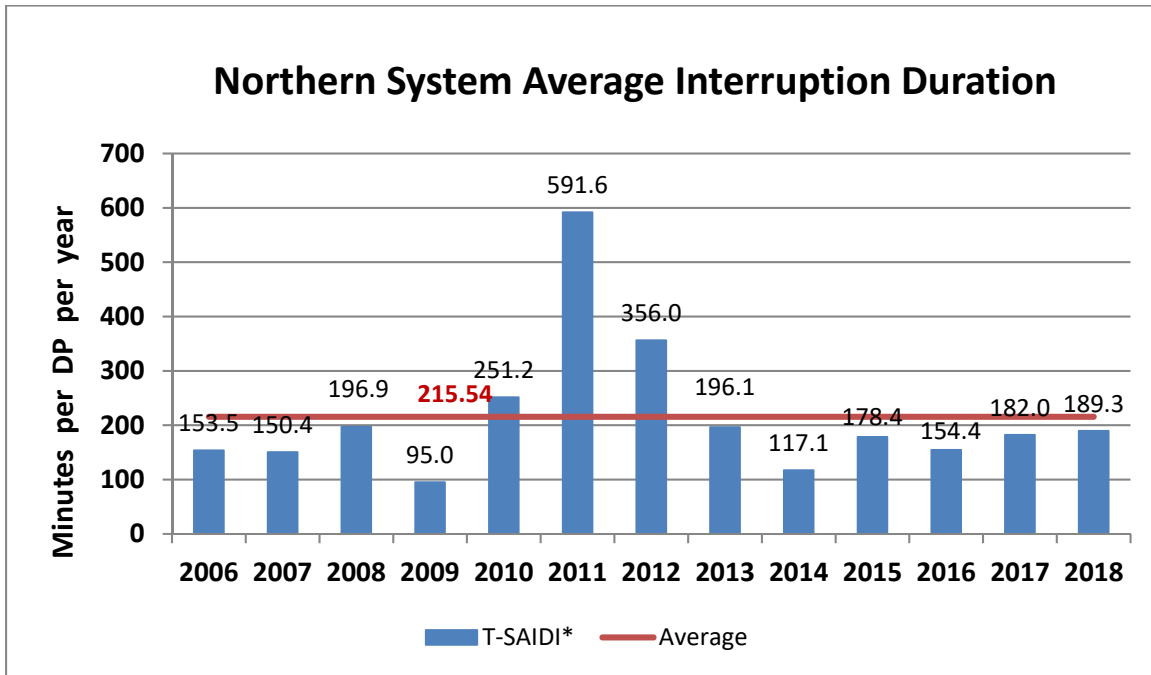




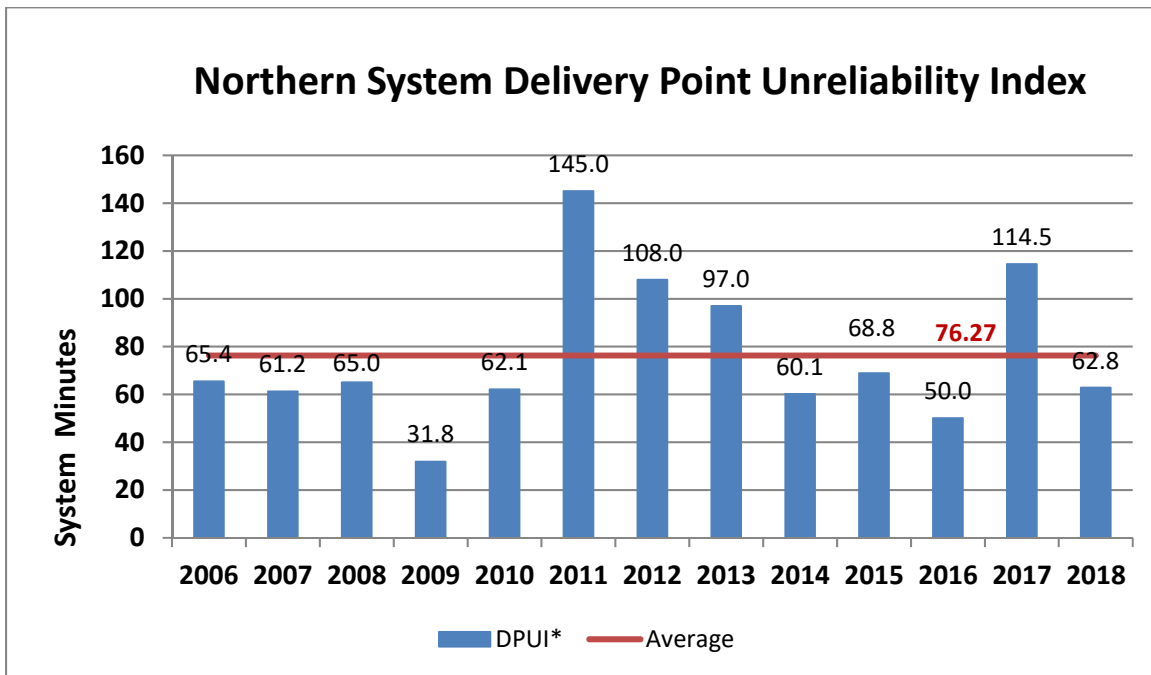
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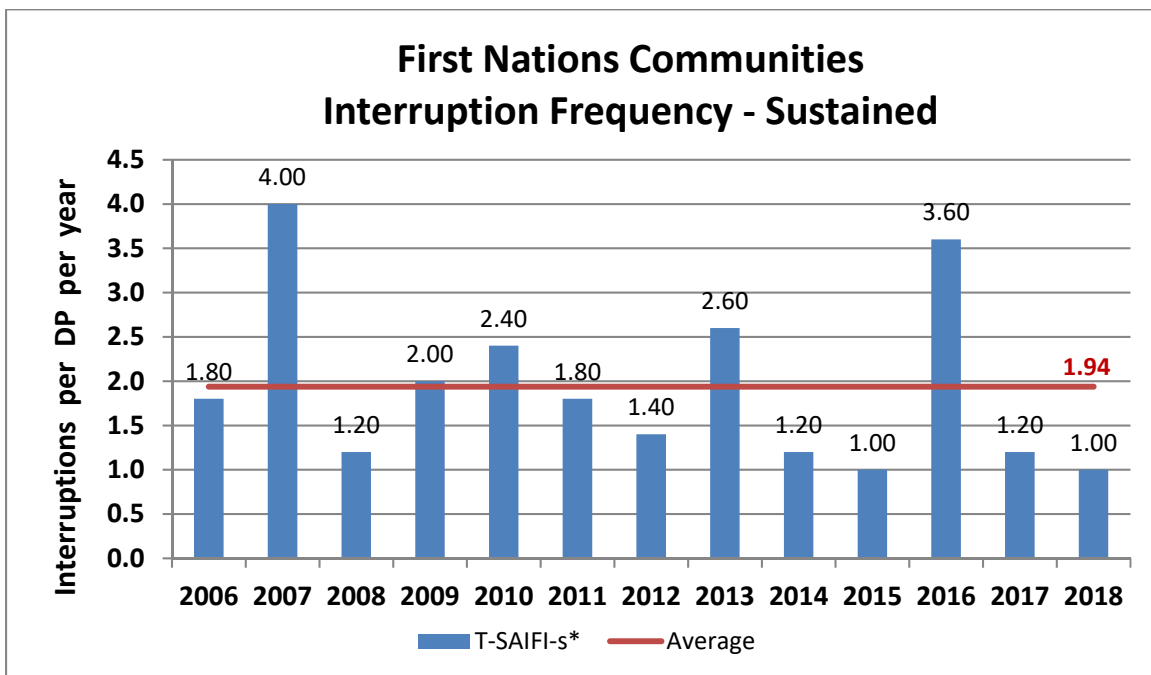
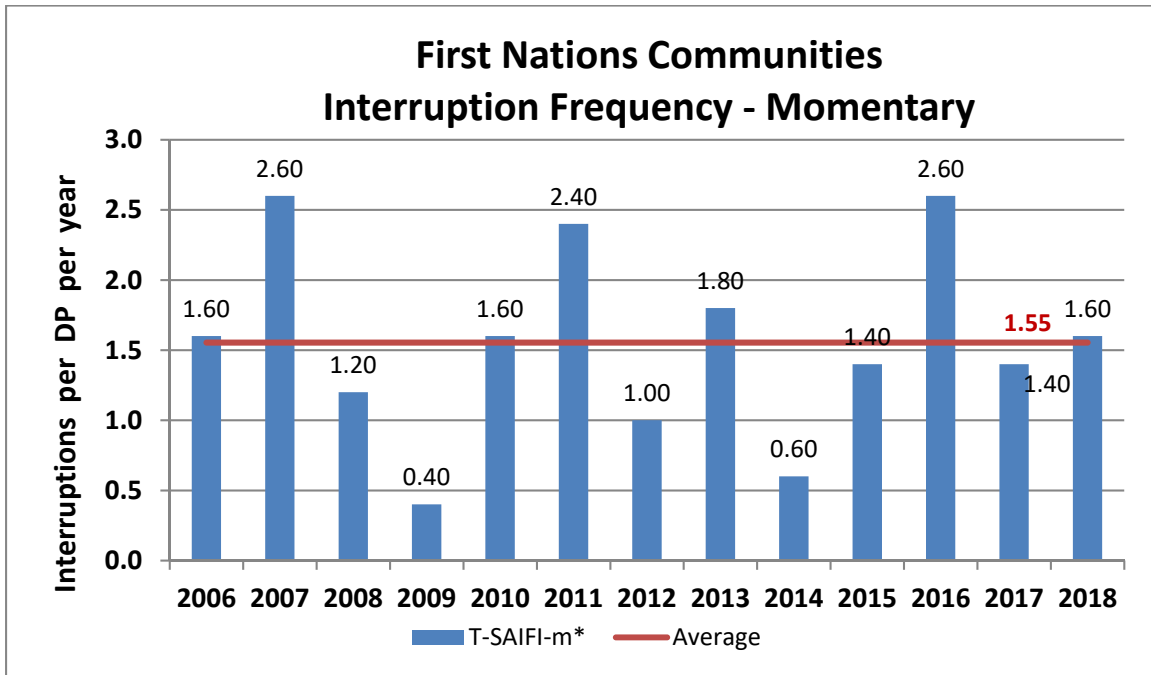


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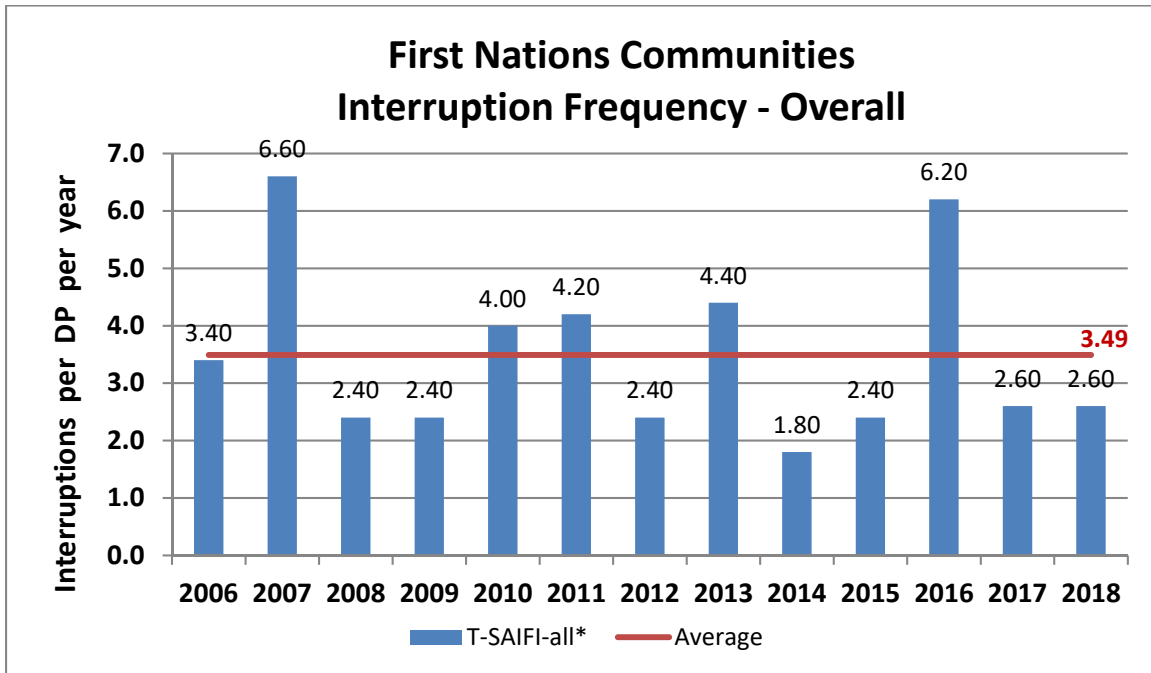


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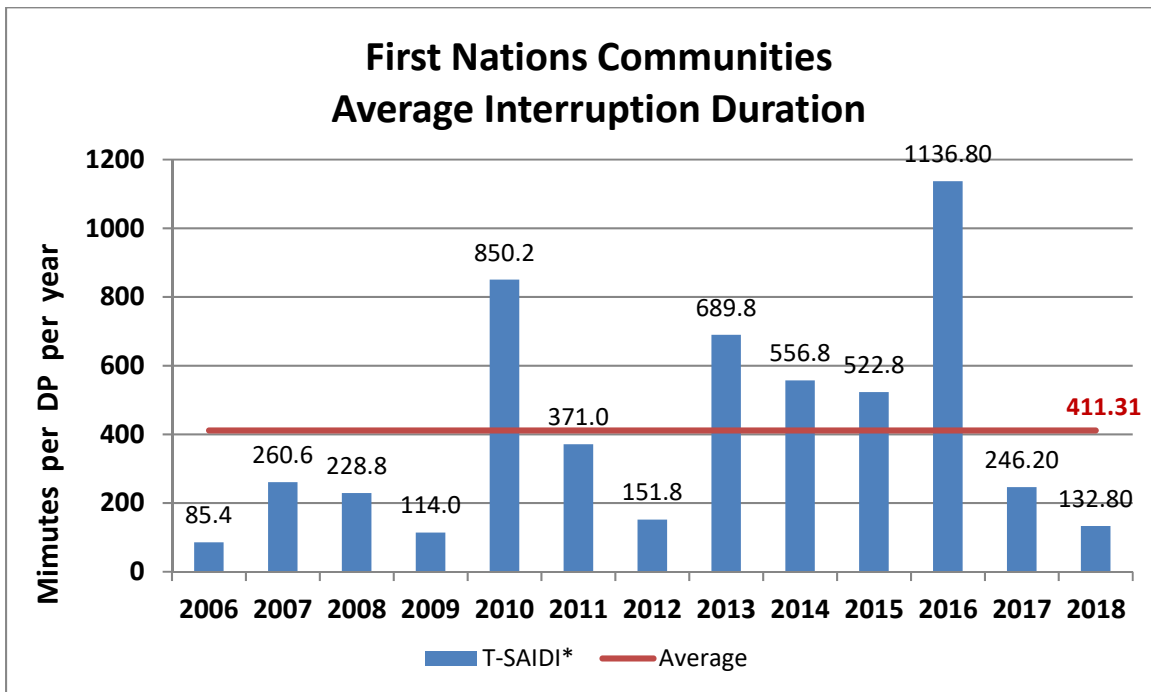
1 (2) The transmission system supplying certain First Nation communities (Beardmore DS  
2 #2, Long Lac TS, Moosonee DS, Nipigon DC, Red Rock DS)  
3



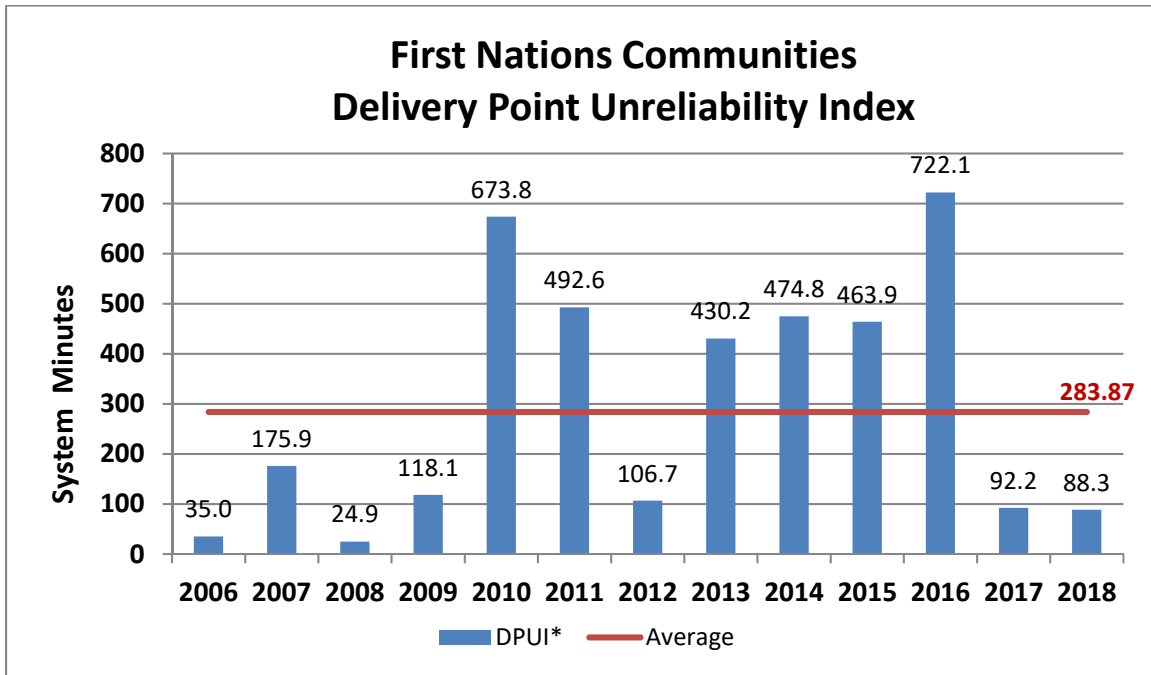




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3



1

## UNDERTAKING - JT 1.28

### **Reference:**

I-09-Anwaatin-002

### **Undertaking:**

With reference to Anwaatin IR 2, pages 9 to 11, to explain the disparity between First Nations communities' reliability data versus the general northern region reliability data; to explain the cause for the 2016, 2017, and 2018 numbers to be higher than in previous years; to explain the poor reliability in 2016.

### **Response:**

The increased duration of interruptions in 2016 reflected in the graph on page 10 (First Nation Communities Average Interruption Duration) serving the five delivery points, Beardmore DS #2, Long Lac TS, Moosonee DS, Nipigon DC, Red Rock DS, was primarily driven by issues on circuit A4L impacting Longlac TS and Beardmore DS #2. The duration in 2016 was primarily impacted by two different insulator failure events on circuit A4L and a tree contact on circuit A4L during a snow storm. These two events contributed to 1074.8 minutes (94.5 %) of the total 1136.8 minutes in 2016.

The increased frequency in 2016 was driven primarily by multiple trips of the M3K on August 20 impacting Moosonee DS which was attributed to a faulty CPU card in the protections. This event, plus the aforementioned events on A4L, contributed to 1.8 interruptions (~30 %) of the total 6.2 interruptions in 2016. The other 4.4 interruptions (70%) are attributable to weather and momentary outages.

## ANWAATIN INTERROGATORY #4

### **Reference:**

A-07-02, A-07-02-01, A-06-06-01, p. 9

### **Interrogatory:**

Hydro One's transmission business may impact Indigenous communities in several ways: (1) Hydro One transmission assets are located on reserve lands of twenty three First Nation communities and within the traditional territories of Indigenous communities; (2) Hydro One has large projects that cross or may impact Indigenous communities; (3) Hydro One enters into business partnerships with Indigenous communities.

Hydro One has ongoing efforts to engage with Indigenous communities, identify the needs and preferences of those communities as they related to Hydro One's transmission system, and take steps to address those needs and preferences. Hydro One hosted its 2<sup>nd</sup> Annual Hydro One and First Nations Engagement Session on February 21, 2018.

The Independent Electricity System Operator (**IESO**) defines distributed energy resources (**DERs**) as "electricity-producing resources or controllable loads that are directly connected to a local distribution system or connected to a host facility within the local distribution system."<sup>1</sup> DERs may include electric vehicles, energy storage, net-metering, solar panels, smart grid technologies, combined heat and power plants, natural gas-fuelled generators, and controllable loads (HVAC systems and electric water heaters). These resources are typically smaller in scale than the traditional generation facilities that serve most of Ontario demand.

- a) Please provide the presentation, all notes, memos, reports and related documents from Hydro One's First Nations engagement session held on February 21, 2018, including any and all reports to the Hydro One board of directors.
- b) Please provide any and all communications between Hydro One Transmission and Hydro One Distribution relating to:
  - i. the needs of Indigenous communities;

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<sup>1</sup> Independent Electricity System Operator, *Ontario's Power System*, "Distributed Energy Resources", available online at: <http://www.ieso.ca/en/Learn/Ontario-Power-System/A-Smarter-Grid/Distributed-Energy-Resources>.

- 1        ii. reliability in Indigenous communities; and
- 2        iii. any other matter relating to Indigenous communities.
- 3
- 4        c) Please describe how Hydro One consulted First Nations on increasing Hydro One
- 5        capital investments in DERs to improve system reliability for First Nation customers
- 6        in communities impacted by Hydro One's transmission business and what resulted
- 7        from these consultation efforts.
- 8
- 9        d) Please describe how Hydro One's transmission business is inclusive of DERs and
- 10       responsive to the application of DERs in Indigenous communities.
- 11
- 12       e) Given Hydro One's findings that some First Nation communities indicate that the
- 13       electricity supply is not sufficiently reliable and are concerned about degrading Hydro
- 14       One asset conditions (see, in particular, Attachment 1, page 12), please describe and
- 15       provide any and all of Hydro One's plans, timing, and costs to:
- 16       i. effectively address reliability in all Indigenous communities;
- 17       ii. facilitate businesses in Indigenous communities; and
- 18       iii. integrate DERs into areas of northern Ontario that experience higher frequency
- 19       and duration of power outages to improve system reliability.
- 20
- 21       f) Please describe how Hydro One's transmission system planning and investment
- 22       planning processes consider appropriate planning criteria for the increasing scale of
- 23       demand for DERs, especially for rural and First Nation customers seeking relief from
- 24       reliability issues and increasing costs.
- 25
- 26       g) Please describe how Hydro One's transmission business is accommodating the
- 27       demand for DERs connected to the distribution system in terms of making its
- 28       distribution network and customer services "DER-friendly", especially in areas where
- 29       system reliability is a significant issue, such as northern Ontario.
- 30
- 31       h) Please list any and all First Nation communities that are concerned about historical,
- 32       present and future compensation (or the lack thereof), for Hydro One transmission
- 33       assets on reserve lands and/or within traditional territories and treaty lands.
- 34       i) Please list and describe in detail any and all measures that Hydro One has taken with
- 35       respect to DERs and business partnerships with DERs as a means of accommodating
- 36       First Nation communities that are concerned about historical, present and future

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1 compensation (or the lack thereof), for Hydro One transmission assets on reserve  
2 lands and/or within traditional territories and treaty lands.

- 3  
4 j) Would Hydro One be amenable to a business arrangement whereby Hydro One leases  
5 Indigenous-owned DER assets, without initial capital expenditure, for the benefit of  
6 Hydro One's distribution or transmission business?

7  
8 **Response:**

- 9 a) Please refer to Exhibit A Tab 7 Schedule 2 Page 3 of 8 footnote 1.

- 10  
11 b) Communications between Hydro One Transmission and Hydro One Distribution are  
12 not relevant as they do not provide information that the OEB may require to  
13 determine whether Hydro One's First Nation and Metis Engagement Strategy  
14 sufficiently addresses the unique rights and concerns of Indigenous customers with  
15 respect to Hydro One's transmission services or the adequacy of Hydro One's  
16 customer consultations generally. Hydro One has delineated its Hydro One's First  
17 Nation and Metis Engagement Strategy in Exhibit A, Tab 7, Schedule 2 and the  
18 associated attachments.

19  
20 With respect to reliability specifically, Hydro One Transmission and Hydro One  
21 Distribution regularly communicate with each other about reliability issues including  
22 for Indigenous communities. Given the scope of the question, Hydro One is not able  
23 to provide each communication in this regard. However, by way of example, Hydro  
24 One Transmission and Hydro One Distribution coordinated with each other in respect  
25 of the settlement proposal entered into between Anwaatin Inc. and Hydro One  
26 Networks Inc. dated June 15, 2018 as included in EB-2017-0335.

- 27  
28 c) –g)The implementation of DER is being addressed as a province-wide policy issue by  
29 the OEB in its consultation proceeding EB-2018-0288 on Utility Remuneration and  
30 Responding to Distributed Energy Resources. Indeed, in its Decision and Order dated  
31 March 7, 2019 in EB-2017-0049 at p. 142, the OEB stated:

32  
33 *“The OEB has determined that the appropriate manner to*  
34 *address energy storage matters is on a generic basis*  
35 *through an industry-wide forum. There is insufficient*  
36 *information on the record of this proceeding to consider*  
37 *creating a customer class specifically for energy storage*

1                   *customers. The OEB notes that it does have a policy review*  
2                   *identified in its 2018 to 2021 business plan to identify and*  
3                   *develop regulatory reform to facilitate investment in*  
4                   *distributed energy resources (DERs) that can benefit*  
5                   *customers. The OEB has also issued a report from the*  
6                   *OEB's Advisory Committee on Innovation which includes*  
7                   *specific recommendations related to DER. Further*  
8                   *consultation will occur, as appropriate, as initiatives*  
9                   *proceed."*

10  
11           Hydro One is participating in this OEB-led consultation along with other regulated  
12           entities and interested stakeholders. Hydro One also notes that DERs are distribution  
13           assets not transmission assets. Questions about DERs may be best addressed as part  
14           of the OEB's ongoing consultation or at Hydro One's next distribution rate  
15           proceeding, but are not relevant to the current proceeding.

16  
17           h) To the extent First Nations communities have concerns or wish to discuss  
18           compensation for Hydro One transmission assets on reserve, these are addressed in  
19           the normal course of negotiations, the details of which are commercially sensitive.

20  
21           i) Please see c)

22  
23           j) Please see c)

**ANWAATIN INTERROGATORY #5**

**Reference:**

A-07-02-03

**Interrogatory:**

**Preamble:**

One of the actions Hydro One is taking to address the needs and preferences of Indigenous customers and communities is: [a]ging assets are being replaced, as described in Attachment 3 titled “First Nations Reliability Performance”, dated February 21, 2018.

This attachment provides details on Hydro One’s historical reliability performance, the First Nations communities it supplies (transmission and distribution), certain aspects of distribution grid modernization, and planned work on assets serving First Nations communities.

- a) Please outline the methodology Hydro One employed in order to determine the structure and content of Attachment 3.
- b) Please discuss how Attachment 3 has been used for internal and external purposes.
- c) Please provide additional detail and specific examples of First Nations communities where Hydro One is improving transmission reliability, as set out in the four bullets on page 8 of Attachment 3.
- d) Pages 16 through 20 of Attachment 3 provide details of planned work on assets serving First Nations communities. Please update pages 16 through 20 to reflect the current status of planned work and re-file the complete corresponding spreadsheet.
- e) Please identify, in chart format, any and all planned work line-items updated pursuant to part (c) that incorporate, integrate, or otherwise involve the use of DERs.



1 **Response:**

2 a) Hydro One management worked through content development in a manner that is  
3 typical when creating presentations. Factors such as who the audience is and key  
4 messages to be conveyed are considered.

5  
6 b) The presentation was used at the engagement session that is the subject of the  
7 question.

8  
9 c) Please refer to our response to d) below.

10  
11 d) Updated table is provided below. Note that only transmission planned work are  
12 identified and updated.

13  
14 e) Please see Anwaatin – 005 c).

Communities	Zone	Op Centre	Supply Station	Feeder	Upstream TS	TS Circuit	TS Feeder	Transmission Work Planned	Year In-Service
<b>Alderville First Nation</b>	3A	Peterborough	Bowmanston DS	F2	PORT HOPE TS DESN1	P4S / P3S	M15	Port Hope TS: T3/T4 & Component Replacement	2024
	3A		Roseneath DS	F1	PORT HOPE TS DESN1	P4S / P3S	M15		
	3A		Roseneath DS	F3	PORT HOPE TS DESN1	P4S / P3S	M15		
<b>Algonquins of Pikwakanagan</b>	3B	Cobden	Golden Lake DS	F2	COBDEN TS	X2Y / X6	M6	Tx Line Refurb. X2Y   Chenaux JCT-IPB Bryson JCT-Magellan Aero S JCT	2019
<b>Animakee Wa Zhing #37</b>	7	Kenora	Sioux Narrows DS	F2	Transmission Circuit	K6F	K6F		
<b>Animbigoo Zaagigagan Anishinaabek (AZA)</b>	7	Thunder Bay	Jellicoe DS #3	F1	Transmission Circuit	A4L		Tx Line Refurb. A4L   Roxmark Mines CTS-Beardmore JCT/DS #2	2021
<b>Anishinaabeg of Naongashiing</b>	7	Fort Frances	Sleeman DS	F4	BARWICK TS	K6F	M2		
<b>Anishinabe of Wauzhushk Onigum (Rat Portage)</b>	7	Kenora	Margach DS	F1	Transmission Circuit	K6F	K6F		
<b>Aroland First Nation</b>	7	Thunder Bay	Nakina DS	F2	LONGLAC TS M2	A4L	A4L	Relocate Longlac TS	2022

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Communities	Zone	Op Centre	Supply Station	Feeder	Upstream TS	TS Circuit	TS Feeder	Transmission Work Planned	Year In-Service
Asubspeeschose ewagong Netum Anishinabek (Grassy Narrows)	7	Kenora	Margach DS	F2	Transmission Circuit	K6F	K6F	Tx Line Refurb. A4L   Roxmark Mines CTS- Beardmore JCT/DS #2	2021
	6	Manitoulin	Little Current DS	F2	MANITOULIN TS	S2B	M26		
	5	Penetang	Thunder Beach DS	F2	WAUBAUSHE NE TS	E26 / E27	M7		
Aundeck-Omni-Kaning	5		Thunder Beach DS	F3	WAUBAUSHE NE TS	E26 / E27	M7	S2B line component replacement, surge arresters installation	Completed
	5		Awenda DS	F1	WAUBAUSHE NE TS	E26 / E27	M7		
Big Grassy First Nation	7	Fort Frances	Sleeman DS	F4	BARWICK TS	K6F	M2		

Communities	Zone	Op Centre	Supply Station	Feeder	Upstream TS	TS Circuit	TS Feeder	Transmission Work Planned	Year In-Service
<b>Biinjitiwaabik Zaaging Anishinaabek (BZA) (aka Rocky Bay First Nation)</b>	7	Thunder Bay	Beardmore DS #2	F4	Transmission Circuit	A4L	A4L	Tx Line Refurb. A4L   Roxmark Mines CTS-Beardmore JCT/DS #2	2021
<b>Brunswick House, Chapleau Cree FN , Chapleau Ojibway FN</b>	6	Timmins	Chapleau DS	F4	Transmission Circuit	W2C	W2C		
<b>Caldwell First Nation</b>	1A	Essex	Kingsville TS	-	Kingsville TS	K2Z / K6Z	K2Z	Leamington DESN2: Build Second 230/27.6 kV DESN	2019
	1A	Essex	Kingsville TS	-	Kingsville TS	K2Z / K6Z	K6Z	Kingsville TS: T1, T2, T3, T4 & Component Replacement Phase 2	2022
<b>Cat Lake FN</b>	7	Dryden	Cat Lake DS	F1	Transmission Circuit	E1C	E1C	Tx Line Refurb. E1C   Ear Falls TS-Slate Falls DS + Etruscan JCT-Crow River DS	2024
								Watay Line to Pickle Lake Connection	2020
<b>Chippewas of Georgina Island First Nation</b>	3A	Fenelon Falls	Virginia Beach DS	F2	BEAVERTON TS	M80B / M81B	M27	Beaverton TS: Component Replacements	2026

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Communities	Zone	Op Centre	Supply Station	Feeder	Upstream TS	TS Circuit	TS Feeder	Transmission Work Planned	Year In-Service
<b>Chippewas of Kettle and Stony Point First Nation</b>	3A		Virginia Beach DS	F3	BEAVERTON TS	M80B / M81B	M27		
	1A	Lambton	Forest Jura DS	F1	Transmission Circuit	S2N	S2N	Tx Line Refurb. S2N   Sydenham JCT-Adelaide JCT	2019
	1A		Forest Jura DS	F2	Transmission Circuit	S2N	S2N		
	1B	Owen Sound	Colpoys Bay DS	F3	OWEN SOUND TS	B27S / B28S	M23		
<b>Chippewas of Rama First Nation</b>	5	Orillia	Rama DS	F1	ORILLIA TS	M6E / M7E	M7	M6E/M7E Sectionalizing Disconnect Switches	2019
	5		Orillia TS	M7	Transmission Circuit	M6E / M7E	M7E	Tx Line Refurb. M6E/M7E   Cooper's Falls JCT-Orillia TS	2022
<b>Chippewas of The Thames First Nation</b>	1A	Strathroy	Longwood TS	M26	Transmission Circuit	L24L / L26L	L24L	Longwood TS: Component Replacement	2023
	1A					L24L / L26L	L26L	Longwood TS: Component Replacement	2023
	1A		Appin DS	F1	LONGWOOD TS	L24L / L26L	M26	Longwood TS: Component Replacement	2023
<b>Constance Lake</b>	6	Kapuskasing	Calstock DS	F2	Transmission	H2N	H2N		

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Communities	Zone	Op Centre	Supply Station	Feeder	Upstream TS	TS Circuit	TS Feeder	Transmission Work Planned	Year In-Service
<b>First Nation</b>									
<b>Couchiching First Nation</b>	7	Fort Frances	Burleigh DS	F1	Transmission Circuit	F1B	F1B		
<b>Curve Lake First Nation</b>	3A	Peterborough	Buckhorn DS	F3	OTONABEE TS DESN2	C28C / H24C	M27	Tx Line Refurb. C28C, Complete Line, Chats Falls SS X Cherrywood TS	2026
<b>Delaware Nation</b>	1A	Kent	Thamesville North DS	F2	KENT TS DESN2	L28C / L29C	M24	Kent TS: T1, T2 & Component Replacement	2025
<b>Dokis</b>	6	Sudbury	Noelville DS	F1	MARTINDALE TS	S21N / F2SP	M5	Martindale TS: T21/T23 & Component Replacement	2021
<b>Eagle Lake</b>	7	Dryden	Eton DS	F3	Transmission Circuit	K3D	K3D		
<b>Ginoogaming First Nation</b>	7	Thunder Bay	Longlac East DS	F2	LONGLAC TS	A4L	M1	Relocate Longlac TS	2022
								Tx Line Refurb. A4L   Roxmark Mines CTS-Beardmore JCT/DS #2	2021
<b>Henvey Inlet</b>	6	Sudbury	Alban DS	F3	MARTINDALE TS	S21N / F2SP	M5	Martindale TS: T21/T23 & Component Replacement	2021
<b>Hiawatha First Nation</b>	3A	Peterborough	Bensfort Bridge DS	F3	OTONABEE TS DESN2	C28C / H24C	M28	Tx Line Refurb. C28C, Complete Line, Chats Falls SS X Cherrywood TS	2026
<b>Iskatewizaagegan #39</b>	7	Kenora	Clearwater Bay DS	F1	Transmission Circuit	SK1	SK1		

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Communities	Zone	Op Centre	Supply Station	Feeder	Upstream TS	TS Circuit	TS Feeder	Transmission Work Planned	Year In-Service
<b>Independent First Nation</b>									
<b>Lac La Croix</b>	7	Fort Frances	Crilly DS	F1	Transmission Circuit	M1S	M1S		
<b>Lac Seul First Nation</b>	7	Dryden	Sam Lake DS	F1	Transmission Circuit	K3D	K3D		
<b>Long Lake No. 58 First Nation</b>	7	Thunder Bay	Longlac West DS	F1	LONGLAC TS	A4L	M1	Relocate Longlac TS	2022
<b>Magnetawan First Nation</b>	5	Parry Sound	Pointe Au Baril DS	F1	PARRY SOUND TS	E26 / E27	M1	Parry Sound TS: Component Replacement	2022
<b>Matachewan</b>	6	Kirkland Lake	Matachewan DS	F2	KIRKLAND LAKE TS	K2 / A8K	G3K	Tx Line Refurb. A8K/A9K   A8K Str. 141 JCT-A8K Str. 277 JCT-Ramore JCT Tx Line Refurb. K1/K2   Kirkland Lake TS-Holloway Holt JCT	2021 2020
<b>Mattagami</b>	6	Timmins	Shiningtree DS	F1	Transmission Circuit	T61S	T61S	Tx Line Refurb. T2R/T61S   Timmins JCT-Wawa/JCT-Shiningtree JCT	2022
<b>M'Chigeeng First Nation</b>	6	Manitoulin	West Bay DS	F1	MANITOULIN TS	S2B	M25	S2B line component replacement, surge arresters installation	Completed
	6		West Bay DS	F2	MANITOULIN TS	S2B	M25		

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Communities	Zone	Op Centre	Supply Station	Feeder	Upstream TS	TS Circuit	TS Feeder	Transmission Work Planned	Year In-Service
Mishkeegogama ng	7	Dryden	Crow River DS	F1	Transmission Circuit	E1C	E1C	Tx Line Refurb. E1C   Ear Falls TS-Slate Falls DS + Etruscan JCT-Crow River DS	2024
	7		Crow River DS	F2	Transmission Circuit	E1C	E1C	Watay Line to Pickle Lake Connection	2020
Mississauga	6	Algoma	North Shore DS	F1	Transmission Circuit	T1B	T1B		
	6		Blind River DS	F1	STRIKER DS	T1B	F1		
	6		Striker DS	F1	Transmission Circuit	T1B	T1B		
	6		Striker DS	F2	Transmission Circuit	T1B	T1B		
Mississaugas of Scugog Island First Nation	3A	Bowmanville	Scugog Island DS	F2	WILSON TS DESN2	B23C / E29C	M12	B23C, Pancake JCT-Oshawa Area JCT, Tx Line Refurb.	2025
	3A		Scugog Island DS	F3	WILSON TS DESN2	B23C / E29C	M12	Wilson TS: T1, T2, PCT & Component Replacements	2022
Mississaugas of The New Credit First Nation	2	Simcoe	Lythmore DS	F2	CALEDONIA TS	N1M / N5M	M3		
	2		Lythmore DS	F3	CALEDONIA TS	N1M / N5M	M3		
	2		Jarvis TS	M3	Transmission	N21J /	N21J	N21J/N22J Install new	Completed

Witness: Derek Chum, Bruno Jesus



Communities	Zone	Op Centre	Supply Station	Feeder	Upstream TS	TS Circuit	TS Feeder	Transmission Work Planned	Year In-Service
<b>MoCreebec Eeyoud aka Moose Cree FN</b>	6	Kapuskasing	Moosonee DS	F1 & F2	Circuit	N22J		lightning arrestors	
<b>Mohawks of the Bay of Quinte</b>	3B	Picton	Deseronto DS	F1	NAPANEE TS	X21 / X22	M4		
	3B		Shannonville DS	F2	BELLEVILLE TS	B23C /H23B	M6	B23C, Pancake JCT-Oshawa Area JCT, Tx Line Refurb.	2025
								Belleville TS- Station Refurbishment	2021
	3B		Marysville DS	F1	NAPANEE TS	X21 / X22	M4		
	3B		Marysville DS	F2	NAPANEE TS	X21 / X22	M4		
	3B		Marysville DS	F3	NAPANEE TS	X21 / X22	M4		
	3B		Beechwood DS	F1	NAPANEE TS	X21 / X22	M4		
<b>Moose Cree First Nation</b>	6	Kapuskasing	Moosonee DS	F1	Transmission Circuit	M9K / T7M / T8M	M9K	New T8M 115 kV Line	Completed
	6		Moosonee DS	F3	Transmission Circuit	M9K / T7M / T8M	M9K		

Witness: Derek Chum, Bruno Jesus

Communities	Zone	Op Centre	Supply Station	Feeder	Upstream TS	TS Circuit	TS Feeder	Transmission Work Planned	Year In-Service
<b>Moose Deer Point First Nation</b>	5	Parry Sound	Footes Bay DS	F2	PARRY SOUND TS	E26 / E27	M2	Parry Sound TS: Component Replacement	2022
<b>Munsee-Delaware Nation</b>	1A	Strathroy	Appin DS	F1	LONGWOOD TS	L24L / L26L	M26	Longwood TS: Component Replacement	2023
	1A		Longwood TS	M26	Transmission Circuit	L24L / L26L	L26L		
	1A						L24L		
<b>Naicatchewenin</b>	7	Fort Frances	Devlin DS	F1	BARWICK TS	K6F	M1		
<b>Naotkamegwaning</b>	7	Kenora	Sioux Narrows DS	F1	Transmission Circuit	K6F	K6F		
	7		Sioux Narrows DS	F2	Transmission Circuit	K6F	K6F		
<b>Nigigoonsimini kaaning First Nation (aka Red Gut First Nation)</b>	7	Fort Frances	Burleigh DS	F2	Transmission Circuit	F1B	F1B		
<b>Nipissing First Nation</b>	6	Nipissing	Sturgeon Falls DS	F1	CRYSTAL FALLS TS	H23S / H24S	M2		
	6		Sturgeon Falls DS	F2	CRYSTAL FALLS TS	H23S / H24S	M2		
<b>Northwest Angle No. 33 /</b>	7	Kenora	Sioux Narrows DS	F2	Transmission Circuit	K6F	K6F		

Witness: Derek Chum, Bruno Jesus

Communities	Zone	Op Centre	Supply Station	Feeder	Upstream TS	TS Circuit	TS Feeder	Transmission Work Planned	Year In-Service
<b>Whitefish Bay</b> <b>33A</b>									
<b>Obashkaandaga ang</b>	7	Kenora	Keewatin DS	F2	Transmission Circuit	SK1	SK1		
<b>Ochiichagwe'ba bigo'ining First Nation</b>	7	Kenora	Kenora DS	F1	Transmission Circuit	T1L / T2L	T2L		
<b>Ojibway Nation of the Saugeen</b>	7	Dryden	Valora DS	F1	Transmission Circuit	29M1	29M1		
<b>Ojibways of Onigaming First Nation</b>	7	Fort Frances	Nestor Falls DS	F2	Transmission Circuit	K6F	K6F		
<b>Oneida Nation of the Thames</b>	1A	Strathroy	Southwold DS	F1	EDGEWARE TS	W44LC / W45LS	M2	Edgware TS: PCT & Component Replacement	2022
	1A		Shedden DS	F1	EDGEWARE TS	W44LC / W45LS	M2		
<b>Pays Plat</b>	7	Thunder Bay	Schreiber Winnipeg DS	F1	Transmission Circuit	A5A	A5A		
<b>Pic Mobert</b>	7	Thunder Bay	White River DS	F3	Transmission Circuit	M2W	M2W		
<b>Pic River First Nation (Biigtigong)</b>	7	Thunder Bay	Pic DS	F2	Transmission Circuit	M2W	M2W		

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Communities	Zone	Op Centre	Supply Station	Feeder	Upstream TS	TS Circuit	TS Feeder	Transmission Work Planned	Year In-Service
<b>Nishnaabeg First Nation)</b>									
<b>Rainy River First Nation</b>	7	Fort Frances	Barwick DS	F1	BARWICK TS	K6F	M2		
<b>Red Rock (aka Lake Helen First Nation)</b>	7	Thunder Bay	Red Rock DS	F2	Transmission Circuit	56M1	56M1		
<b>Sagamok Anishnawbek</b>	6	Algoma	Massey DS	F3	Transmission Circuit	S2B	S2B	S2B line component replacement, surge arresters installation	Completed
<b>Saugeen First Nation</b>	1B	Owen Sound	Elsinore DS	F1	OWEN SOUND TS	B27S / B28S	M25		
	1B		Elsinore DS	F2	OWEN SOUND TS	B27S / B28S	M25		
	1B		Sauble Beach DS	F1	OWEN SOUND TS	B27S / B28S	M25		
<b>Seine River First Nation</b>	7	Fort Frances	Crilly DS	F1	Transmission Circuit	M1S	M1S		
<b>Serpent River</b>	6	Algoma	Spanish DS	F2	Transmission Circuit	S2B	S2B	S2B line component replacement, surge arresters installation	Completed
<b>Shawanaga First Nation</b>	5	Parry Sound	Carling DS	F3	PARRY SOUND TS	E26 / E27	M1	Parry Sound TS: Component Replacement	2022

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Communities	Zone	Op Centre	Supply Station	Feeder	Upstream TS	TS Circuit	TS Feeder	Transmission Work Planned	Year In-Service
<b>Sheguiandah</b>	6	Manitoulin	Little Current DS	F2	MANITOULIN TS	S2B	M26	S2B line component replacement, surge arresters installation	Completed
<b>Sheshegwaning</b>	6	Manitoulin	Wolsey Lake DS	F1	MANITOULIN TS	S2B	M25	S2B line component replacement, surge arresters installation	Completed
	6		Manitouwaning DS	F1	MANITOULIN TS	S2B	M26		
	6		West Bay DS	F2	MANITOULIN TS	S2B	M25		
<b>Shoal Lake No. 40</b>	7	Kenora	Clearwater Bay DS	F1	Transmission Circuit	SK1	SK1		
<b>Six Nations of the Grand River</b>	2	Simcoe	Lythmore DS	F2	CALEDONIA TS	N1M / N5M	M3		Completed
	2		Lythmore DS	F3	CALEDONIA TS	N1M / N5M	M3		
	2		Jarvis TS	M3	Transmission Circuit	N21J / N22J	N21J	N21J/N22J Install new lightning arrestors	
	2						N22J		
	2		Caledonia TS	M3	Transmission Circuit	N1M / N5M	N5M		
	2						N1M		

Communities	Zone	Op Centre	Supply Station	Feeder	Upstream TS	TS Circuit	TS Feeder	Transmission Work Planned	Year In-Service
	2		Newport DS	F1	BRANTFORD TS	M32W / M33W	M27		
<b>Slate Falls First Nation</b>	7	Dryden	Slate Falls DS	F1	Transmission Circuit	E1C	E1C	Tx Line Refurb. E1C   Ear Falls TS-Slate Falls DS + Etruscan JCT-Crow River DS Watay Line to Pickle Lake Connection	2024  2020
<b>Stanjikoming/Mitaanijigamiin g First Nation</b>	7	Fort Frances	Burleigh DS	F1	Transmission Circuit	F1B	F1B		
<b>Taykwa Tagmou Nation</b>	6	Kapuskasing	Cochrane West DS	F1	Transmission Circuit	A4H	A4H	Tx Line Refurb. A4H/A5H   C.P. Tunis JCT-Fournier JCT	2022
<b>Temagami First Nation</b>	6	New Liskeard	Herridge Lake DS	F1	Transmission Circuit	D2L	D2L	Line Refurbishment - D2L, Upper Notch JCT x Martin River JCT	2019
<b>Thessalon</b>	6	Algoma	Sowerby DS	F2	Transmission Circuit	T1B	T1B		
<b>Wabaseemoong Independent Nations</b>	7	Kenora	Whitedog DS	F1	WHITEDOG FALLS GS	FP3H	FP3H		
<b>Wabauskang First Nation</b>	7	Dryden	Perrault Falls DS	F1	Transmission Circuit	E4D	E4D	E4D Line Upgrade to operate at higher temperature	Completed
<b>Wabigoon Lake Ojibway Nation</b>	7	Dryden	Dryden Rural DS	F2	DRYDEN TS	FP25A1A2	M1	Dryden TS - ISCR	Completed

Witness: Derek Chum, Bruno Jesus

Communities	Zone	Op Centre	Supply Station	Feeder	Upstream TS	TS Circuit	TS Feeder	Transmission Work Planned	Year In-Service
<b>Wahgoshig</b>	6	Kirkland Lake	Ramore TS	M3	Transmission Circuit	A9K	A9K		
<b>Wahnapiitae</b>	6	Sudbury	Post Creek DS	F1	MARTINDALE TS	S21N / F2SP	M7	Martindale TS: T21/T23 & Component Replacement	2021
<b>Wahta Mohawks First Nation</b>	5	Bracebridge	Bala River DS	F1	MUSKOKA TS	M6E / M7E	M1	M6E/M7E Sectionalizing Disconnect Switches	2019
								Tx Line Refurb. M6E/M7E	
								Cooper's Falls JCT-Orillia TS	2022
								Muskoka TS: Component Replacement	2025
	5	Parry Sound	Footes Bay DS	F1	PARRY SOUND TS	E26 / E27	M2	Parry Sound TS: Component Replacement	2022
	5		Footes Bay DS	F2	PARRY SOUND TS	E26 / E27	M2		
<b>Walpole Island</b>	1A	Kent	Wallaceburg TS	M5	Transmission Circuit	N5K	N5K	N5K: Connect Otter Creek Generation	2019
<b>Wasauksing First Nation</b>	5	Parry Sound	McGowan Lake DS	F1	PARRY SOUND TS	E26 / E27	M3	Parry Sound TS: Component Replacement	2022
<b>Whitefish Lake (Atikamekshen g Anishnawbek)</b>	6	Sudbury	Whitefish DS	F2	Transmission Circuit	S2B	S2B	S2B line component replacement, surge arresters installation	Completed
	6	Manitoulin	Birch Island DS	F1	MANITOULIN TS	S2B	M26	S2B line component replacement, surge arresters installation	Completed

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Communities	Zone	Op Centre	Supply Station	Feeder	Upstream TS	TS Circuit	TS Feeder	Transmission Work Planned	Year In-Service
	6		Birch Island DS	F2	MANITOULIN TS	S2B	M26		
<b>Wikwemikong</b>	6	Manitoulin	Manitouwaning DS	F1	MANITOULIN TS	S2B	M26	S2B line component replacement, surge arresters installation	Completed
	6		Wolsey Lake DS	F2	MANITOULIN TS	S2B	M25		
<b>Zhiibaahaasing First Nation</b>	6	Manitoulin	Wolsey Lake DS	F1	MANITOULIN TS	S2B	M25	S2B line component replacement, surge arresters installation	Completed

Witness: Derek Chum, Bruno Jesus