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, Schedule1, 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

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

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

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

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

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

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

Response:

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

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

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

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

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

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

c) Hydro One will complete phase 2 assessments for other First Nations communities supplied by the A4L circuit after full completion of Phase 1 and evaluation of the costs and benefits of phase 1 is completed.

d) For this Pilot Project, while in islanding mode, the BESS microcontroller will be designed to permit other distributed energy resources to inject energy in parallel with

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

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

> *"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."*

At its next rebasing application, Hydro One will identify initiatives to address the unique reliability challenges experienced in northern communities as directed by the OEB. For further details on Hydro One's approach to working with First Nations and Métis groups to achieve mutually beneficial outcomes, please refer to Exhibit A, Tab 7, Schedule 2: "First Nations and Métis Engagement Strategy". For information on the OEB's province wide policy consultation on DER, please see the response to 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 CDPP 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			
T-SAIFI-s*			

**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			
T-SAIFI-all*			

**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			
T-SAIDI			

**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)			
DPUI			

**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
Duration of sustained interruptions (minutes)	22862	27112	28044
# of DPs in Northern Region	148.0	149.0	148.1
T-SAIDI	154.4	182.0	189.3

v. Delivery Point Unreliability Index

Year	2016	2017	2018
Total Unsupplied Energy (MW x minutes)	93751	197805	121659
System Peak Load (MW)	1874.9*	1728.1*	1936.6*
DPUI	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
Total # of DPs in Northern Region	148	149	148
# of Outliers in Northern Region	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
# of momentary interruptions	13	7	8
# of DPs supplying First Nation Communities	5	5	5
T-SAIFI-m*	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

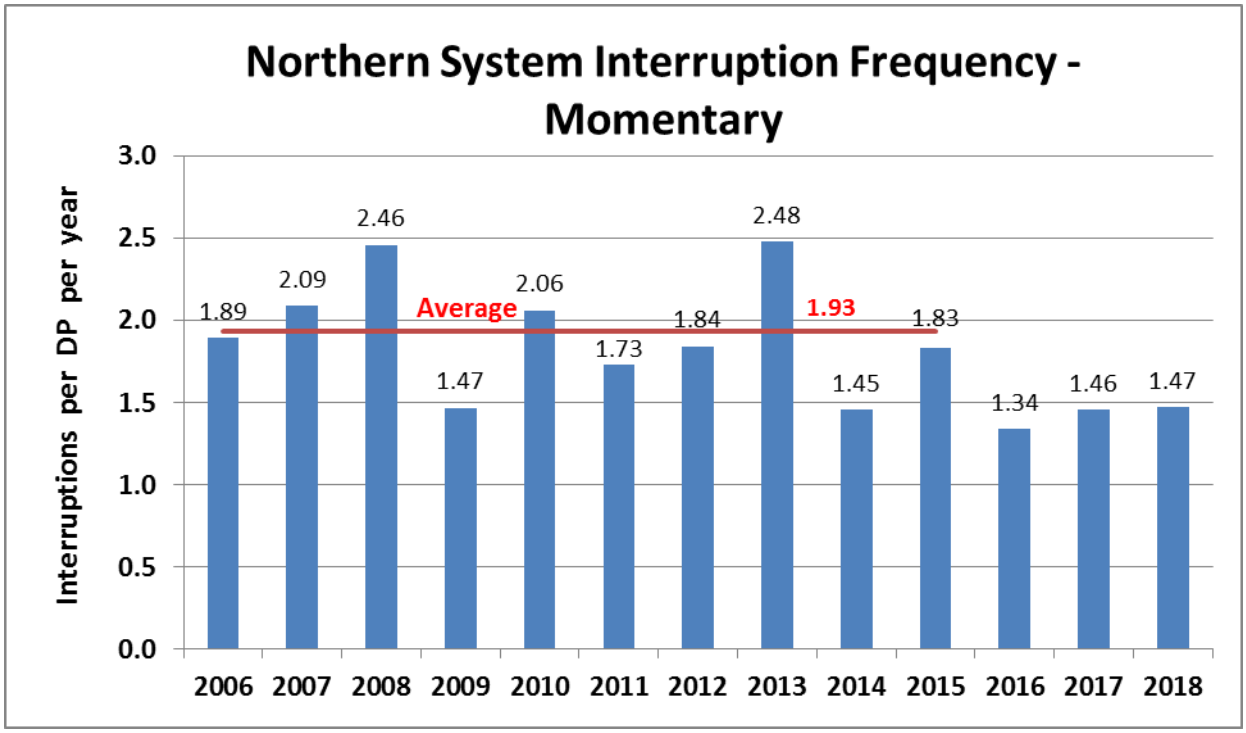
vi. CDPP Outliers

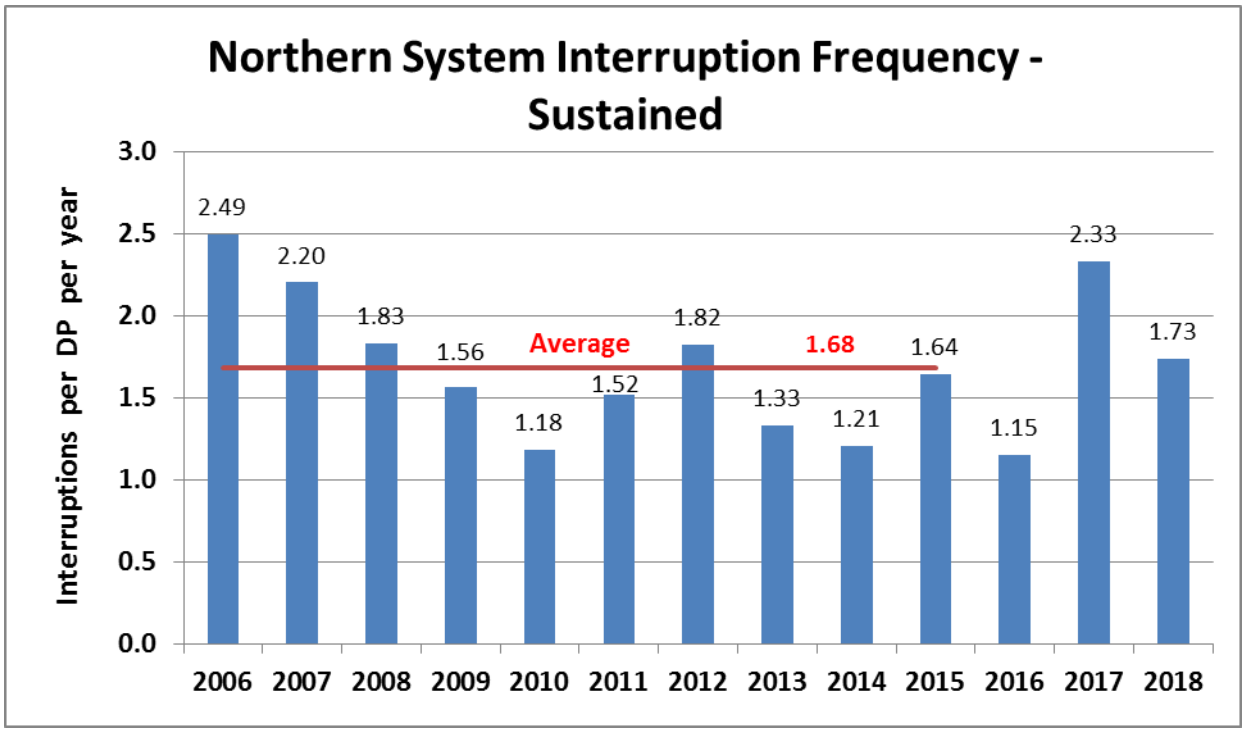
Year	Hydro One Delivery Points
2016	LONGLAC TS, MOOSONEE DS, BEARDMORE #2 DS
2017	LONGLAC TS, MOOSONEE DS,

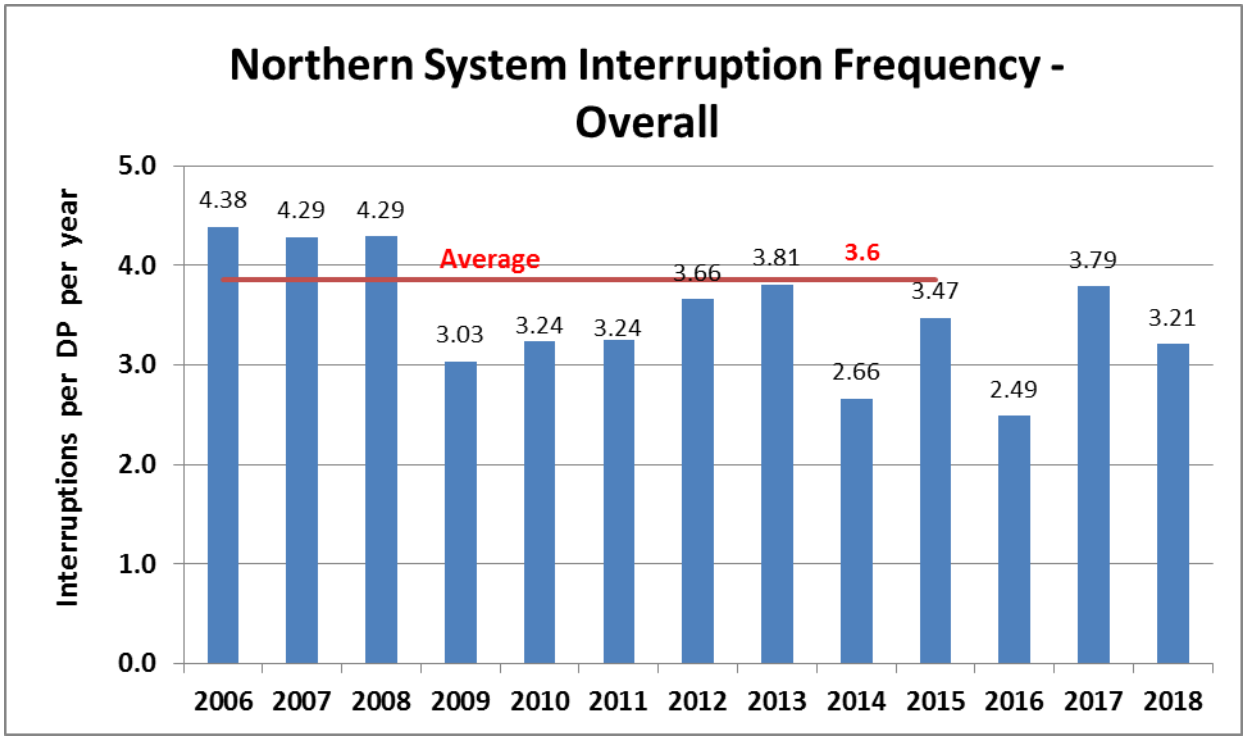
	BEARDMORE #2 DS
2018	LONGLAC TS, BEARDMORE #2 DS

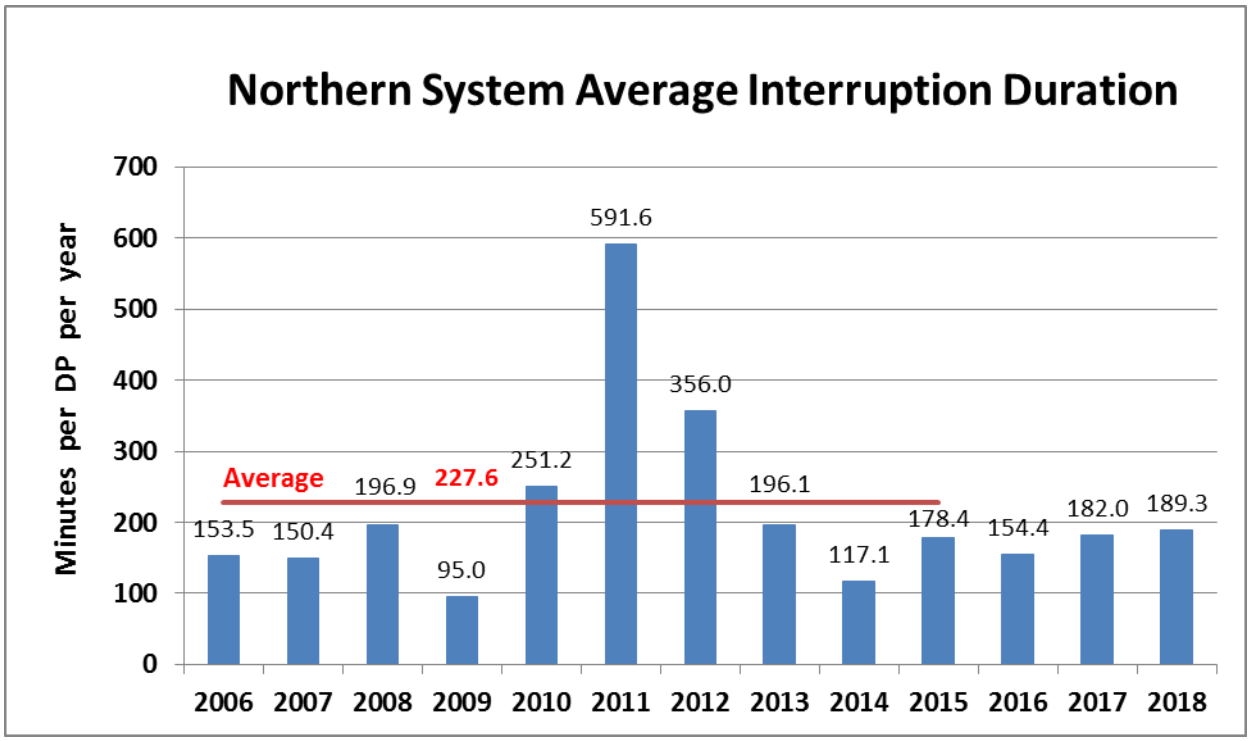
b)

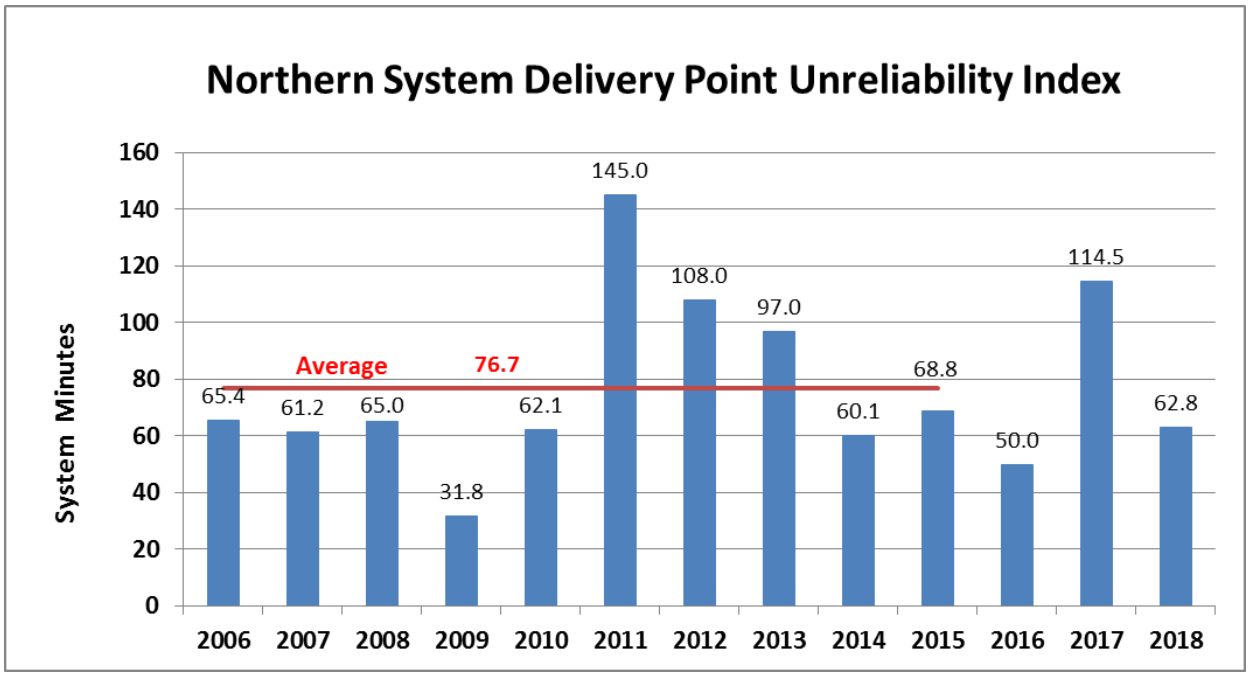
1. The "Northern" part of the system



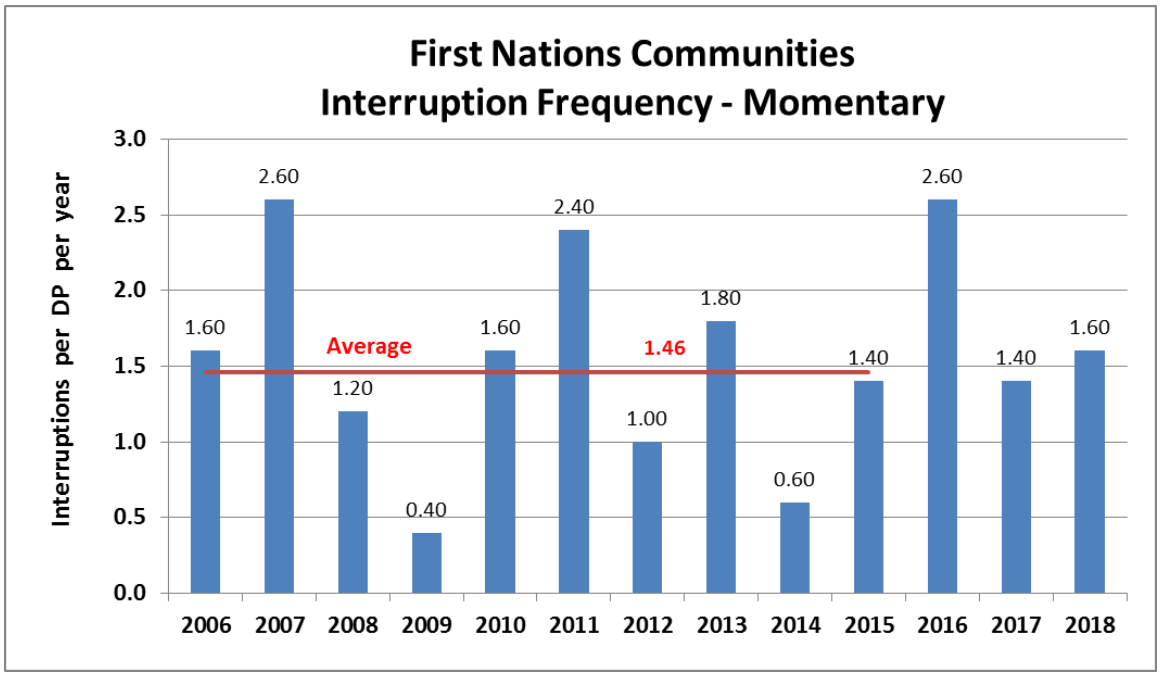

Northern System Interruption Frequency - Sustained
Interruptions per DP per year
3.0
2.5
2.0
1.5
1.0
0.5
0.0
2.49
2.20
1.83
1.56
1.18
1.52
1.82
1.33
1.21
1.64
1.15
2.33
1.73
Average
1.68
2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018

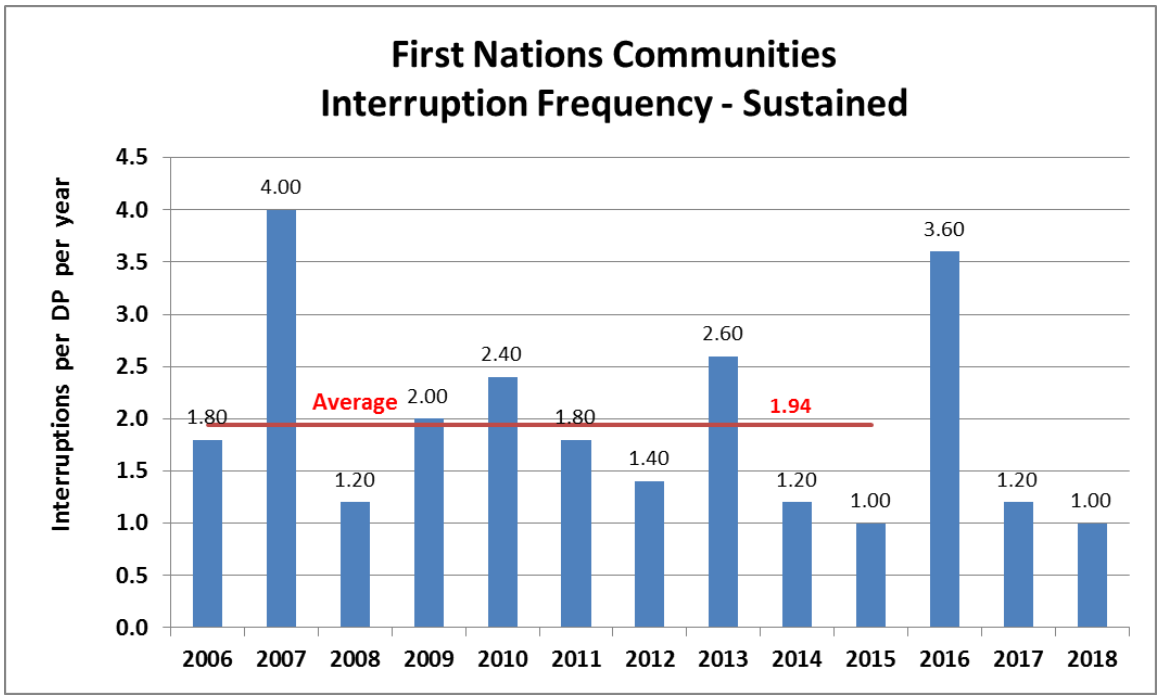

Northern System Interruption Frequency - Overall
Interruptions per DP per year
5.0
4.0
3.0
2.0
1.0
0.0
4.38
4.29
4.29
3.03
3.24
3.24
3.66
3.81
2.66
3.47
2.49
3.79
3.21
Average
3.6
2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018

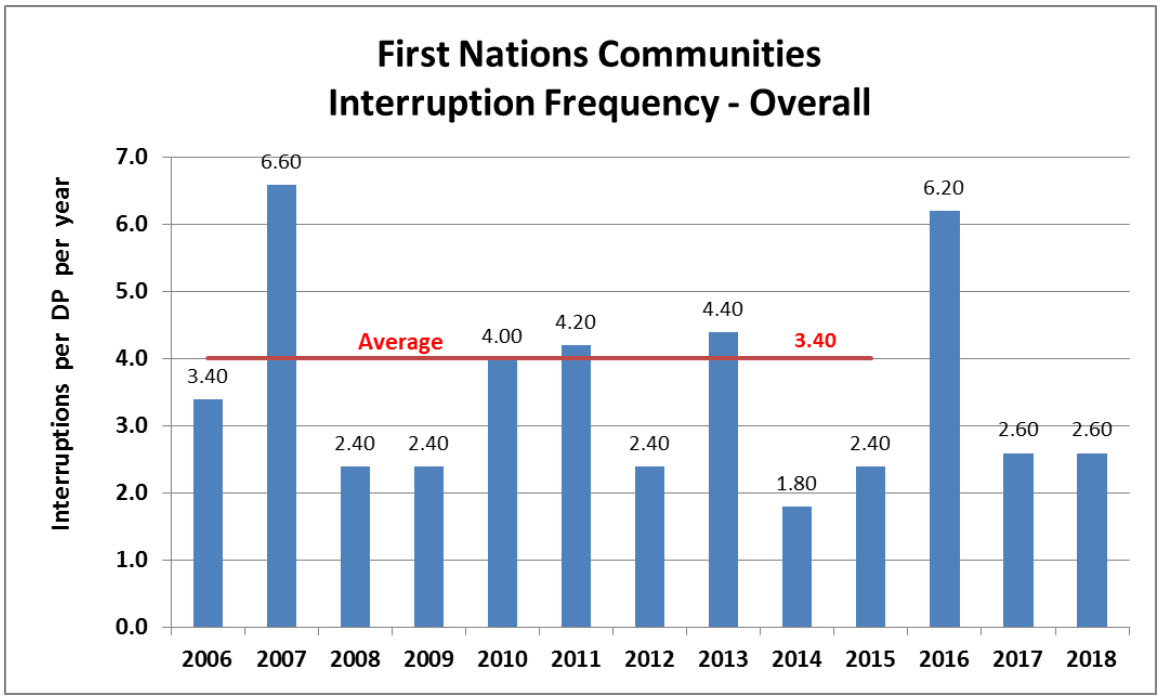

Northern System Average Interruption Duration
Minutes per DP per year
700
600
500
400
300
200
100
0
Average
227.6
153.5
150.4
196.9
95.0
251.2
591.6
356.0
196.1
117.1
178.4
154.4
182.0
189.3
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018


Northern System Delivery Point Unreliability Index
System Minutes
160
140
120
100
80
60
40
20
0
Average
76.7
65.4
61.2
65.0
31.8
62.1
145.0
108.0
97.0
60.1
68.8
50.0
114.5
62.8
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

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

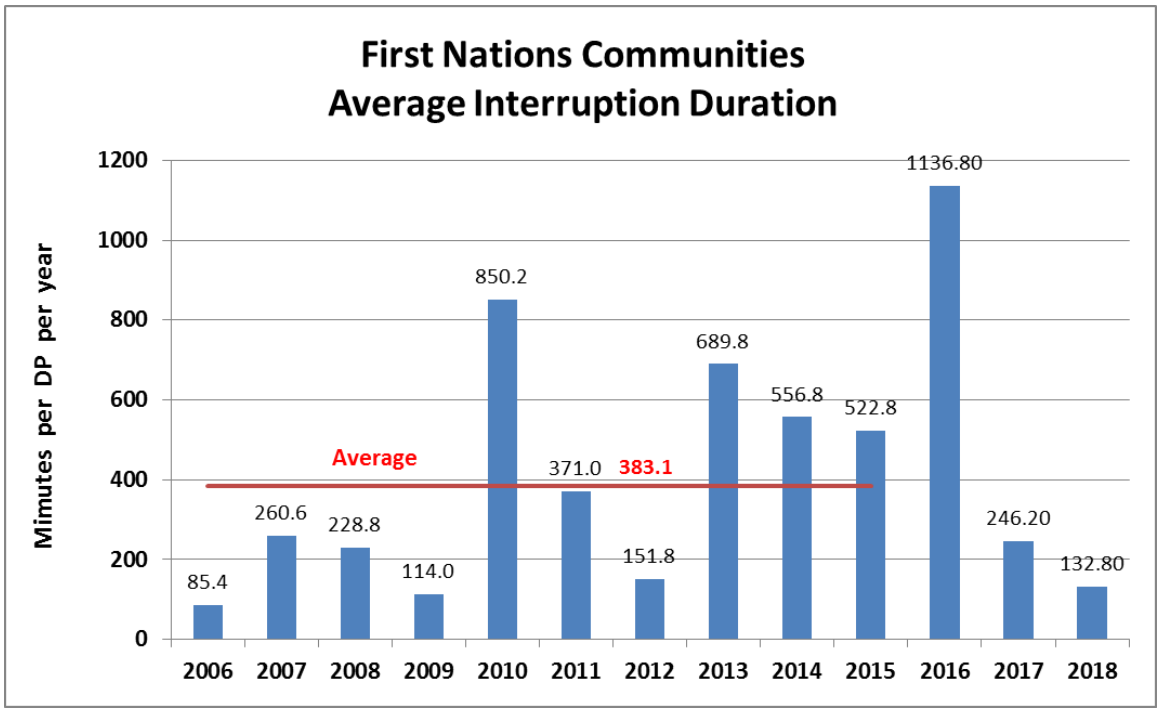




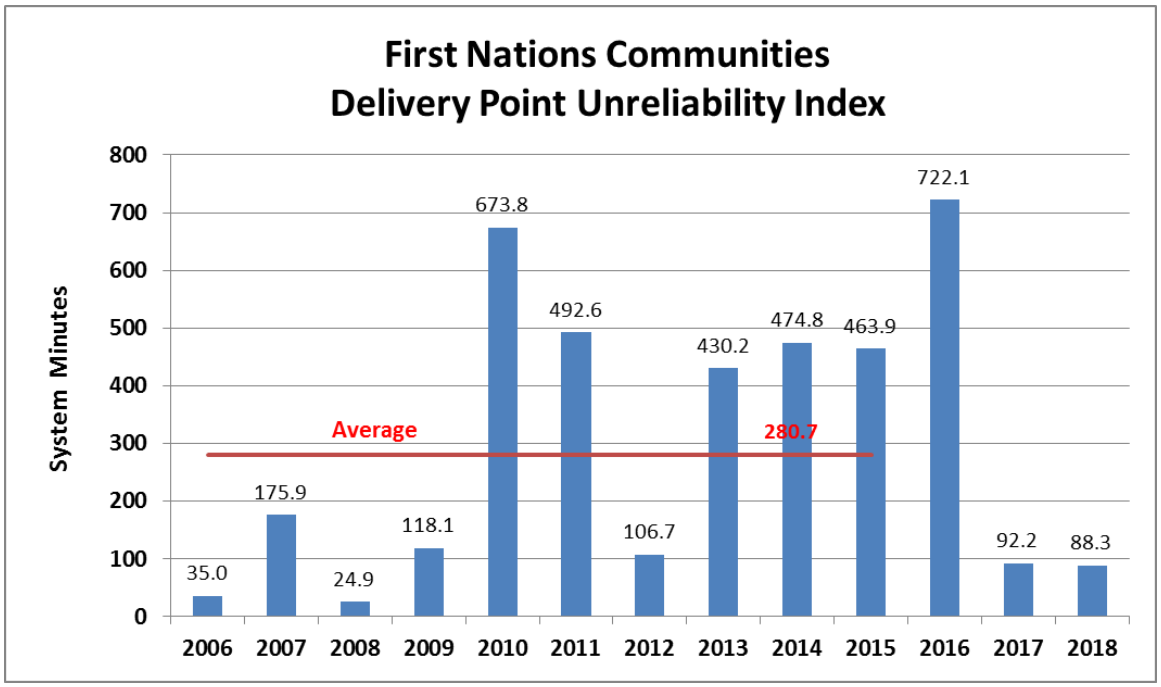

First Nations Communities
Interruption Frequency - Overall
Interruptions per DP per year
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0.0
3.40
6.60
2.40
2.40
4.00
4.20
2.40
4.40
1.80
2.40
6.20
2.60
2.60
Average
3.40
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

1

2


First Nations Communities
Average Interruption Duration
Mimutes per DP per year
1200
1000
800
600
400
200
0
85.4
260.6
228.8
114.0
850.2
371.0
151.8
689.8
556.8
522.8
1136.80
246.20
132.80
Average
383.1
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

3


First Nations Communities
Delivery Point Unreliability Index
System Minutes
800
700
600
500
400
300
200
100
0
Average
280.7
35.0
175.9
24.9
118.1
673.8
492.6
106.7
430.2
474.8
463.9
722.1
92.2
88.3
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018

ANWAATIN INTERROGATORY #3

Reference:

A-07-01, TSP-01-03, TSP-01-03-01

Interrogatory:

Hydro One states that its capital expenditure plan, as set out in Section 3 of the Transmission System Plan, is closely aligned with and highly responsive to the customer needs and preferences that Hydro One has identified through its customer engagement activities.

a) Please describe all measures Hydro One has undertaken to ensure inclusion of Indigenous communities in the stakeholder session that took place on March 29, 2017.

b) Please list which, if any, First Nation governments and First Nation organizations Hydro One invited to the stakeholder sessions listed in part (a).

c) Please describe any and all assistance that Hydro One made available to First Nation entities to facilitate their attendance at the stakeholder session listed in part (a).

Response:

a) Hydro One held a stakeholder session on March 29, 2017 with OEB Staff and intervenors of record from EB-2016-0160, Hydro One's application for 2017 and 2018 transmission revenue requirement. Hydro One initiated the stakeholder session to solicit feedback on its last customer engagement process for the purpose of informing its engagement process for this Application. This step was taken because a decision in EB-2016-0160, with feedback on the customer engagement process, had not yet been issued.

b) Hydro One regularly engages with Indigenous communities and is committed to developing and maintaining relationships with Indigenous communities and adapting its business practices in response to evolving industry best practices and legal rights of Indigenous communities and individuals. For the reasons outlined above, the session held March 29, 2017 was limited to OEB Staff and intervenors who had participated in EB-2016-0160, as those were the parties who were familiar with and

had commented on Hydro One's customer engagement process in that application. This included Anwaatin, who was invited to and attended the March 29, 2017 stakeholder session.

c) Please see responses to a) and b).

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 2nd 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."[1] 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;

[1] 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.

ii. reliability in Indigenous communities; and
iii. any other matter relating to Indigenous communities.

c) Please describe how Hydro One consulted First Nations on increasing Hydro One capital investments in DERs to improve system reliability for First Nation customers in communities impacted by Hydro One's transmission business and what resulted from these consultation efforts.

d) Please describe how Hydro One's transmission business is inclusive of DERs and responsive to the application of DERs in Indigenous communities.

e) Given Hydro One's findings that some First Nation communities indicate that the electricity supply is not sufficiently reliable and are concerned about degrading Hydro One asset conditions (see, in particular, Attachment 1, page 12), please describe and provide any and all of Hydro One's plans, timing, and costs to:
i. effectively address reliability in all Indigenous communities;
ii. facilitate businesses in Indigenous communities; and
iii. integrate DERs into areas of northern Ontario that experience higher frequency and duration of power outages to improve system reliability.

f) Please describe how Hydro One's transmission system planning and investment planning processes consider appropriate planning criteria for the increasing scale of demand for DERs, especially for rural and First Nation customers seeking relief from reliability issues and increasing costs.

g) Please describe how Hydro One's transmission business is accommodating the demand for DERs connected to the distribution system in terms of making its distribution network and customer services "DER-friendly", especially in areas where system reliability is a significant issue, such as northern Ontario.

h) Please list any and all First Nation communities that are concerned about historical, present and future compensation (or the lack thereof), for Hydro One transmission assets on reserve lands and/or within traditional territories and treaty lands.

i) Please list and describe in detail any and all measures that Hydro One has taken with respect to DERs and business partnerships with DERs as a means of accommodating First Nation communities that are concerned about historical, present and future

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

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

Response:

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

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

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

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

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

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

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

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

i) Please see c)

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.

Response:

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

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

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

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

e) Please see Anwaatin – 005 c).

1

Communities	Zone	Op Centre	Supply Station	Feeder	Upstream TS	TS Circuit	TS Feeder	Transmission Work Planned	Year In-Service
Alderville First Nation	3A	Peterborough	Bowmanton 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		
Algonquins of Pikwakanagan	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
Animakee Wa Zhing #37	7	Kenora	Sioux Narrows DS	F2	Transmission Circuit	K6F	K6F		
Animbigoo Zaagiigan Anishinaabek (AZA)	7	Thunder Bay	Jellicoe DS #3	F1	Transmission Circuit	A4L		Tx Line Refurb. A4L | Roxmark Mines CTS-Beardmore JCT/DS #2	2021
Anishinaabeg of Naongashiing	7	Fort Frances	Sleeman DS	F4	BARWICK TS	K6F	M2		
Anishinabe of Wauzhushk Onigum (Rat Portage)	7	Kenora	Margach DS	F1	Transmission Circuit	K6F	K6F		
Aroland First Nation	7	Thunder Bay	Nakina DS	F2	LONGLAC TS M2	A4L	A4L	Relocate Longlac TS	2022

Communities	Zone	Op Centre	Supply Station	Feeder	Upstream TS	TS Circuit	TS Feeder	Transmission Work Planned	Year In-Service
								Tx Line Refurb. A4L | Roxmark Mines CTS-Beardmore JCT/DS #2	2021
Asubspeeschose ewagong Netum Anishinabek (Grassy Narrows)	7	Kenora	Margach DS	F2	Transmission Circuit	K6F	K6F		
Aundeck-Omni-Kaning	6	Manitoulin	Little Current DS	F2	MANITOULIN TS	S2B	M26	S2B line component replacement, surge arresters installation	Completed
Beausoloeil First Nation	5	Penetang	Thunder Beach DS	F2	WAUBAUSHENE TS	E26 / E27	M7		
	5		Thunder Beach DS	F3	WAUBAUSHENE TS	E26 / E27	M7		
	5		Awenda DS	F1	WAUBAUSHENE 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
Biinjitiwaabik Zaaging Anishinaabek (BZA) (aka Rocky Bay First Nation)	7	Thunder Bay	Beardmore DS #2	F4	Transmission Circuit	A4L	A4L	Tx Line Refurb. A4L | Roxmark Mines CTS-Beardmore JCT/DS #2	2021
Brunswick House, Chapleau Cree FN , Chapleau Ojibway FN	6	Timmins	Chapleau DS	F4	Transmission Circuit	W2C	W2C		
Caldwell First Nation	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
Cat Lake FN	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
Chippewas of Georgina Island First Nation	3A	Fenelon Falls	Virginia Beach DS	F2	BEAVERTON TS	M80B / M81B	M27	Beaverton TS: Component Replacements	2026

Communities	Zone	Op Centre	Supply Station	Feeder	Upstream TS	TS Circuit	TS Feeder	Transmission Work Planned	Year In-Service
	3A		Virginia Beach DS	F3	BEAVERTON TS	M80B / M81B	M27		
Chippewas of Kettle and Stony Point First Nation	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		
Chippewas of Nawash Unceded First Nation	1B	Owen Sound	Colpoys Bay DS	F3	OWEN SOUND TS	B27S / B28S	M23		
Chippewas of Rama First Nation	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
Chippewas of The Thames First Nation	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
Constance Lake	6	Kapuskasing	Calstock DS	F2	Transmission	H2N	H2N		

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

Communities	Zone	Op Centre	Supply Station	Feeder	Upstream TS	TS Circuit	TS Feeder	Transmission Work Planned	Year In-Service
Independent First Nation									
Lac La Croix	7	Fort Frances	Crilly DS	F1	Transmission Circuit	M1S	M1S		
Lac Seul First Nation	7	Dryden	Sam Lake DS	F1	Transmission Circuit	K3D	K3D		
Long Lake No. 58 First Nation	7	Thunder Bay	Longlac West DS	F1	LONGLAC TS	A4L	M1	Relocate Longlac TS	2022
Magnetawan First Nation	5	Parry Sound	Pointe Au Baril DS	F1	PARRY SOUND TS	E26 / E27	M1	Parry Sound TS: Component Replacement	2022
Matachewan	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
Mattagami	6	Timmins	Shiningtree DS	F1	Transmission Circuit	T61S	T61S	Tx Line Refurb. T2R/T61S | Timmins JCT-Wawaitin JCT-Shiningtree JCT	2022
M'Chigeeng First Nation	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		

Communities	Zone	Op Centre	Supply Station	Feeder	Upstream TS	TS Circuit	TS Feeder	Transmission Work Planned	Year In-Service
Mishkeegogamang	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

Communities	Zone	Op Centre	Supply Station	Feeder	Upstream TS	TS Circuit	TS Feeder	Transmission Work Planned	Year In-Service
					Circuit	N22J		lightning arrestors	
MoCreebec Eeyoud aka Moose Cree FN	6	Kapuskasing	Moosonee DS	F1 & F2	Transmission Circuit	M9K / T7M / T8M	M9K	New T8M 115 kV Line	Completed
Mohawks of the Bay of Quinte	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		
Moose Cree First Nation	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		

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

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

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

Communities	Zone	Op Centre	Supply Station	Feeder	Upstream TS	TS Circuit	TS Feeder	Transmission Work Planned	Year In-Service
Sheguiandah	6	Manitoulin	Little Current DS	F2	MANITOULIN TS	S2B	M26	S2B line component replacement, surge arresters installation	Completed
Sheshegwaning	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		
Shoal Lake No. 40	7	Kenora	Clearwater Bay DS	F1	Transmission Circuit	SK1	SK1		
Six Nations of the Grand River	2	Simcoe	Lythmore DS	F2	CALEDONIA TS	N1M / N5M	M3		
	2		Lythmore DS	F3	CALEDONIA TS	N1M / N5M	M3		
	2		Jarvis TS	M3	Transmission Circuit	N21J / N22J	N21J	N21J/N22J Install new lightning arrestors	Completed
	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		
Slate Falls First Nation	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
Stanjikoming/ Mitaanjigamiing First Nation	7	Fort Frances	Burleigh DS	F1	Transmission Circuit	F1B	F1B		
Taykwa Tagmou Nation	6	Kapuskasing	Cochrane West DS	F1	Transmission Circuit	A4H	A4H	Tx Line Refurb. A4H/A5H | C.P. Tunis JCT-Fournier JCT	2022
Temagami First Nation	6	New Liskeard	Herridge Lake DS	F1	Transmission Circuit	D2L	D2L	Line Refurbishment - D2L, Upper Notch JCT x Martin River JCT	2019
Thessalon	6	Algoma	Sowerby DS	F2	Transmission Circuit	T1B	T1B		
Wabaseemoong Independent Nations	7	Kenora	Whitedog DS	F1	WHITEDOG FALLS GS	FP3H	FP3H		
Wabauskang First Nation	7	Dryden	Perrault Falls DS	F1	Transmission Circuit	E4D	E4D	E4D Line Upgrade to operate at higher temperature	Completed
Wabigoon Lake Ojibway Nation	7	Dryden	Dryden Rural DS	F2	DRYDEN TS	FP25A1A2	M1	Dryden TS - ISCR	Completed

Communities	Zone	Op Centre	Supply Station	Feeder	Upstream TS	TS Circuit	TS Feeder	Transmission Work Planned	Year In-Service
Wahgoshig	6	Kirkland Lake	Ramore TS	M3	Transmission Circuit	A9K	A9K		
Wahnapitae	6	Sudbury	Post Creek DS	F1	MARTINDALE TS	S21N / F2SP	M7	Martindale TS: T21/T23 & Component Replacement	2021
Wahta Mohawks First Nation	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		
Walpole Island	1A	Kent	Wallaceburg TS	M5	Transmission Circuit	N5K	N5K	N5K: Connect Otter Creek Generation	2019
Wasauksing First Nation	5	Parry Sound	McGowan Lake DS	F1	PARRY SOUND TS	E26 / E27	M3	Parry Sound TS: Component Replacement	2022
Whitefish Lake (Atikamekshen g Anishnawbek)	6	Sudbury	Whitefish DS	F2	Transmission Circuit	S2B	S2B	S2B line component replacement, surge arresters installation	Completed
Whitefish River	6	Manitoulin	Birch Island DS	F1	MANITOULIN TS	S2B	M26	S2B line component replacement, surge arresters installation	Completed

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		
Wikwemikong	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		
Zhiibaahaasing First Nation	6	Manitoulin	Wolsey Lake DS	F1	MANITOULIN TS	S2B	M25	S2B line component replacement, surge arresters installation	Completed