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May 11, 2018

Ms. Kirsten Walli
Board Secretary
Ontario Energy Board
P.O. Box 2319, 27th Floor
2300 Yonge Street
Toronto, ON M4P 1E4

Dear Ms. Walli:

Re: EB-2017-0049
Hydro One Networks Inc. application for electricity distribution rates beginning January 1, 2018 until December 31, 2022

We are counsel to Anwaatin Inc. (**Anwaatin**) in the above-mentioned proceeding. Please find enclosed the responses from Anwaatin to the interrogatories received from Ontario Energy Board Staff (**Board Staff**).

Yours very truly,

Lisa (Elisabeth) DeMarco

ANWAATIN RESPONSE TO BOARD STAFF INTERROGATORY #1

Interrogatory: E M2-Staff-1

Reference: Ref: p. 4, item 8

Question: At the above reference, a power outage along the A4L transmission line in the Greenstone-Marathon planning area in August 2016 is referenced.

Please discuss the number of power failures that have impacted Anwaatin First Nation Communities since January 2016 and their duration.

Response: The Anwaatin First Nation governments and Band Councils are responsible for a very broad range community services and infrastructure supports on limited administrative budgets. They do not, therefore, have thorough and accurate written records of each and all outages since January, 2016. This response is based largely on information orally reported by the Greenstone area Anwaatin First Nation councils and their staff members, where outages have caused negative impacts on their people, community services, infrastructure, and/or band council mitigation actions were required to address a power outage. In light of the oral tradition, many of the Anwaatin First Nations communities did not have written records.

Anwaatin community members in the Greenstone region report the following, memorable power outages:

2016 – March 8 – approximately 15 hours – this resulted in a letter from the Northwestern Ontario Associated Chambers of Commerce to the Minister of Energy[1] regarding:

[1] Northwestern Ontario Associated Chambers of Commerce, 2016.
https://greenstone.civicweb.net/document/21643

- the ongoing challenges faced by businesses in some areas of Northwestern Ontario due to a lack of stable and reliable power supply
- significant costs to the local economy through lost productivity and product spoilage across the business community
- reducing otherwise busy restaurants, retailers, schools, service providers, and manufacturers to idleness with no compensation available for lost revenues and outage related expenses
- power outages have become an ongoing challenge for the Greenstone area

2016 – August 31 – approximately 5pm for about 24 hours

2016 – November 21 – duration not clear

2016 – November 24 – duration not clear

2017 – March 7 – duration not clear

2017 – July 27 – approximately 6am to 2:30 pm

2018 – March 25 – Emergency planned outage – 10am – 3pm

2018 – April 27 – duration not clear

Anwaatin also requested reliability data from Hydro One as part of Ex.I-Anwaatin – 3(d) and was not provided with the outage frequency or duration data for the Anwaatin communities.

ANWAATIN RESPONSE TO BOARD STAFF INTERROGATORY #2

Interrogatory: E M2-Staff-2

Reference: Ref: p. 7, item 10

Question: At the above reference, the evidence notes that there was no discussion on Indigenous reliability issues including the potential role of distributed energy resources (DERs) at the two Hydro One February 9 and 10, 2017 First Nations engagement sessions.

a) Please state whether or not Anwaatin participated in these sessions and if so whether or not attendees raised these issues with Hydro One during or following the meetings.
b) If Anwaatin did not participate or raise these issues, please explain why this was the case.
c) If these issues were raised with Hydro One, please state what Hydro One's response was.

Response:

a) Please see response to HONI-01.1.
b) Please see response to HONI-01.1.
c) Please see the response to HONI-02.3 and the attached Appendix A, noting that ongoing settlement discussions are privileged and confidential.

ANWAATIN RESPONSE TO BOARD STAFF INTERROGATORY #3

Interrogatory: E M2-Staff-3

Reference: Ref: p. 7, item 11

Question: At the above reference, the evidence discusses DERs and other non-wires solutions as a means to mitigate or defer the cost of traditional grid expansion and improve distribution system reliability challenges in Indigenous communities.

a) Please discuss whether to Anwaatin's knowledge DERs have been used to date in Indigenous communities, or in non-Indigenous communities facing similar power supply issues and, if so, what the results have been.
b) With respect to the reference to non-wires solutions, please discuss any views Anwaatin may have on the extent to which DERs versus other non-wires solutions would represent the best solution to its power supply issues, or whether a mix of the two would be the most appropriate and if so how such a mix should be determined.

Response:

a) Please see response to Board Staff Interrogatory #7. In addition, the power supply issues facing Anwaatin First Nations are unique. The reliability evidence previously provided by Anwaatin for EB 2016-0160 documents the situation, and the unusually poor reliability faced by these First Nations. Anwaatin notes that: (i) the IESO IRPP for the Greenstone Marathon area provides that a DER was used to address the reliable power needs of an industrial entity in a similar area, and (ii) the Tierney Study attached to VECC-Anwaatin IR#1 speaks to the use of DERs for distribution reliability in California. Anwaatin is not aware of: (i) Indigenous or non-Indigenous communities facing similarly significant, and poor, power reliability issues; (ii) the use of a DER to address such issues specifically in an indigenous

community outside of the Anwaatin communities (other than the Aki example set out in Anwaatin's response to Board Staff Interrogatory #7). Hydro One may have customer-specific, regional and, province-wide data on this issue that Board Staff may wish to request.

b) Anwaatin would include energy storage, demand reduction, and conservation within the broader class of DERs that should be considered as an alternative to, or in conjunction with, traditional wires reliability solutions. DERs represent alternative non-wires solutions that should be fully considered as an alternative to, or in conjunction with, traditional wires solutions to power demand and reliability issues. In fact, DERs may assist distributors, transmitters and customers in:

- Pacing and mitigating capital expenditures over time
- Avoiding stranded assets
- Providing easier to site, permit, develop, and implement solutions that optimize the timing and sizing of wires and other reliability solutions.

The appropriate solutions will likely depend on a variety of local circumstances, appropriate technologies, costs, and carbon constraints.

ANWAATIN RESPONSE TO BOARD STAFF INTERROGATORY #4

Interrogatory: E M2-Staff-4

Reference: Ref: p. 8, item 13

Question: At the above reference, Anwaatin submits that Hydro One did not "deeply engage" with First Nation and Métis communities in discussions with respect to its strategy to increase system reliability within First Nations communities.

Please state what changes in its engagement efforts Anwaatin believes that Hydro One would need to make to address these concerns.

Response: The Anwaatin communities have provided Hydro One, and the Crown as represented by the OEB, with a strong case that electricity system reliability issues cause significant impacts on the well-being of First Nation ratepayers, and their communities, in numerous ways. The lack of operational effectiveness (reliability) of the combined Hydro One distribution and transmission system in First Nations communities infringes upon the innate traditional and constitutional rights of First Nations communities and ratepayers.

Hydro One may wish to specifically provide First Nation customers in areas with known reliability challenges with information on outages (frequency, duration), electricity system reliability, comparators to other regions of Ontario, and provide a suite of potential wires and non-wires solutions that HONI may implement to help address significant reliability challenges and mitigate costs for First Nations community members. HONI should refrain from consulting with First Nations using complicated and misleading metrics such as "reliability risk" instead of simple "reliability". It should also provide relevant costs of options to allow meaningful and deeply consultation through asking questions and listen to the responses of First Nation leaders and ratepayers on appropriate short, medium and long-term goals,

objectives and solutions. Please also see the Anwaatin evidence in EB-2016-0160 on related process issues.

ANWAATIN RESPONSE TO BOARD STAFF INTERROGATORY #5

Interrogatory: **E M2-Staff-5**

Reference: Ref: p. 9, item 15

Question: At the above reference, Anwaatin states that non-wire measures may be lower cost and more effective.

Please state whether or not Anwaatin has undertaken any site-specific cost analysis that demonstrates this would be the case for its communities.

Response: Please see the Anwaatin response to HONI-02.3 and Appendix A.

ANWAATIN RESPONSE TO BOARD STAFF INTERROGATORY #6

Interrogatory: E M2-Staff-6

Reference: Ref: p. 13, item 25

Question: At the above reference, Anwaatin states that its community energy plans including various DERs strategies for cost containment and reliability do not appear to be reflected in the Application.

a) Please state whether Hydro One was informed of these plans and strategies and if so, please provide additional details on when and how this was done.

b) Please state what the referenced DERs strategies were and/or where additional information about them can be found.

Response:

a) Please see Anwaatin response to HONI-01. The IESO's Aboriginal Community Energy Plan (ACEP) Program, operating since 2013, supports Indigenous communities in the development of comprehensive, long-term energy plans[2]. The objectives of ACEP include support for communities to develop an implementation plan for opportunities and requirements for undertaking electricity conservation and small-scale renewable generation projects. Each Community Energy Plan is to:

- benchmark of the Community's current energy performance that allows a Community to identify potential opportunities for energy savings in all areas of the Community
- assess the Community's current and future forecasted energy needs

[2] IESO, 2018. Aboriginal Community Energy Plans. http://www.ieso.ca/en/get-involved/funding-programs/aboriginal-community-energy-plans/overview

- determine priorities related to energy use and generation, and "renewable energy and small-scale generation should also be assessed"

As such, most of the 107 ACEP participating Indigenous communities will have Community Energy Plans that include renewable energy and small-scale generation components that might qualify as grid-connected DERs if grid connections are available and appropriate.

The names of communities that have participated in developing Community Energy Plans are available from the IESO.[3] Communities represented by Anwaatin for this proceeding that have participated in the ACEP Program:

- 2013-14: MoCreebec; Aroland First Nation
- 2015: Red Rock Indian Band; Whitesand First Nation; Biinjitiwaabik Zaaging Anishinaabek First Nation (Rocky Bay First Nation)
- 2016: Animbiigoo Zaagi'igan Anishinaabek

Anwaatin understands that Hydro One is aware of both the ACEP Program and individual plan implications through the IESO. Aboriginal Community Energy Plans may be requested directly from each participating First Nation. The IESO also has access to each Community Energy Plan to potentially inform Integrated Regional Resource Planning (IRRP) processes. Dr. Richardson was part of the consulting team that developed the ACEP program prior to its launch in 2013.

b) Please see response to a). In addition, Dr. Richardson indicates (at page 8, item 12 of his evidence) that in the period leading up to the Application, Anwaatin First Nation Communities report that they did not have meaningful consultation and engagement with Hydro One relating to the "smart grid" and related DERs, despite the inclusion of

[3] IESO, 2018. Aboriginal Community Energy Plans – Participating Communities. http://www.ieso.ca/en/get-involved/funding-programs/aboriginal-community-energy-plans/participation

aspirations for adoption DERs to address cost and reliability issues in several Anwaatin First Nation Communities' community energy plans. Dr. Richardson provided, as an example of one such plan, Aroland First Nation's Community Energy Plan dated October 5, 2016 (see page 8, footnote 12). Dr. Richardson provided extensive discussion of the Aroland First Nation Community Energy Plan at page 14, items 27-28 and refers Board Staff to that section of his evidence.

ANWAATIN RESPONSE TO BOARD STAFF INTERROGATORY #7

Interrogatory: **E M2-Staff-7**

Reference: Ref: p. 15, item 30

Question: At the above reference, Anwaatin describes how Aki Energy has successfully worked with a provincial utility to establish a distributed energy model.

Please provide additional details on the development of this model and Anwaatin's views as to the extent of its applicability to its concerns raised with respect to the Application.

Response: Anwaatin considers the Aki Energy model[4] from a technology neutral standpoint, as an example of how a major regulated electricity distribution utility can adopt DERs that benefit First Nations in terms of lower costs and improve energy reliability, making use of ratepayer "pay-as-you-save" billing. While the technology primarily used by Aki Energy in Manitoba consists of geothermal loops and ground source heat pumps, Anwaatin believes that the approach may also be applicable to other types of DERs at the household, community and local distribution system levels. The key Aki Energy – Manitoba Hydro model features:

- "Pay-as-you-save" ratepayer billing – amortized capital, operating and maintenance costs billed monthly, and generating ratepayer savings vs. alternative energy supply, and

[4] Assembly of Manitoba Chiefs, 2015. Social Enterprise and the Solutions Economy A Toolkit for Manitoba First Nations https://ccednet-rcdec.ca/sites/ccednet-rcdec.ca/files/social_enterprise_and_the_solutions_economy.pdf; Aki Energy, 2018. http://www.akienergy.com/

- a focus on First Nation households where energy poverty, energy reliability and energy costs are a substantial concern.

Founded as a non-profit organization in 2013, Aki Energy has successfully installed over $6 million in renewable energy systems in the First Nations communities in Manitoba, leading to over a quarter of a million dollars in annual bill reductions. Aki Energy has also greatly contributed to the communities it serves by providing local tradesmen with new skill sets and employment opportunities.

In 2012, The Manitoba Government introduced the *Energy Savings Act*. The *Energy Savings Act* specifies that Manitoba Hydro is to provide financing to individuals and communities interested in investing in renewable energy, where the technology could 'pay for itself' over 20 years. Essentially, the *Energy Savings Act* establishes and maintains an on-meter efficiency improvement program under Manitoba Hydro.

The Manitoba *Energy Savings Act* established an Affordable Energy Fund to be managed by Manitoba Hydro, with contributions to the fund coming from a proportion of Manitoba Hydro's gross revenue from the sale of power to customers outside Manitoba.[5]

The purpose of the fund is to provide support for:

> (a) programs, services, and projects
>
> > (i) that encourage and realize efficiency improvements and conservation in the use of power, natural gas, other home heating fuels and,
> >
> > (ii) that encourage and realize the use of renewable energy sources, including earth energy, and

[5] Government of Manitoba, 2012. *Green Energy Act.* https://web2.gov.mb.ca/bills/40-1/b024e.php

(iii) that are designed to reduce greenhouse gas emissions that result from the use of home heating fuels other than natural gas in Manitoba;

(b) research and development of renewable energy sources and innovative energy technologies; and

(c) social enterprises, community organizations and other business who assist people or neighborhoods to realize efficiency improvements and conservation in the use of power, natural gas, other home heating fuels.

To be eligible to receive support from the fund, Manitoba Hydro must be satisfied that a social enterprise, community organization or other business will use the support to train and employ persons facing barriers to employment in order that they may acquire the skills needed to be employed in activities that realize efficiency improvements and conservation in the use of power, natural gas, and other home heating fuels.

The Manitoba Energy Savings Act also targets energy poverty across the province, and specifically, First Nation energy poverty. The programs and services for efficiency improvements and conservation:

(a) must be generally designed and delivered to ensure

(i) that people living in rural or northern Manitoba, seniors and people with low incomes have access to those programs, services and projects, and

(ii) that the corporation's residential customers, regardless of the energy source they use to heat their homes, have access to comparable programs, services and projects; and

(b) may specifically

(i) target particular locations or areas of Manitoba,

(ii) encourage the use of particular types of renewable energy sources, and

(iii) assist seniors, those with low incomes, tenants or other specified groups.

The programs, services and projects that it will support to implement the strategy, may include programs, services and projects that

(i) replace or improve equipment and materials related to the use of power and natural gas and the production of greenhouse gas emissions,
(ii) enhance space heat retention and heating efficiency, and
(iii) change customer behaviour relating to the use of power and natural gas and the production of greenhouse gas emissions.

For eligible participants, the utility:

(i) pays on behalf of a person — pursuant to an agreement with the person — some or all of the costs incurred by the person in relation to changes made to improve the efficiency of a building; and
(ii) recovers the costs that are to be repaid to it by or on behalf of the person by levying a monthly charge on the account for power for the building.

Costs and contract considerations are set out as follows:

(i) the term of the agreement, must not exceed the useful lifespan of the longest lasting change made to improve efficiency;
(ii) the amount of the monthly charge to be levied on the account for power for the building, which, subject to adjustments in the interest rate under subsection (3), must be the same throughout the entire term of the agreement;
(iii) the times and manner in which the amount of the monthly charge may be adjusted by the corporation in order to reflect

adjustments in the interest rate charged by the corporation under the agreement;

(iv) if a building that is subject to the on-meter efficiency improvements program is occupied by one or more tenants who are responsible for paying the account for power for the building, the registered owner must provide each tenant the program-related information that the utility gives to the registered owner to give to the tenants;

(v) the amount of the monthly charge for the first five years of the agreement must be less than the projected average monthly cost savings that the corporation reasonably expects will be realized during the first 12 months of the agreement because of the changes;

(vi) the corporation must ensure that the monthly charge is shown as a separate line item on the monthly statement for the account for power; and

(vii) the person who is responsible for paying an account for power for a building for any period must pay each monthly charge levied for that period under the on-meter efficiency improvements program, even if that person is not a party to the agreement under which the corporation first levied the monthly charge.

As of 2015, 5,885 community residential geothermal systems were installed across Manitoba through this program. According to 2015 information, The Affordable Energy Fund provides funding to support the application of geothermal technology. A portion of the fund is being used to subsidize the interest rate for Residential Earth Power Loan program participants from 6.5% to 4.9% for the first five years of the loan term.[6]

https://www.hydro.mb.ca/regulatory_affairs/electric/gra_2014_2015/pdf/appendix_8_1.pdf

[6] Manitoba Hydro, 2015. Power Smart Plan – 2014 to 2017. https://www.hydro.mb.ca/regulatory_affairs/electric/gra_2014_2015/pdf/appendix_8_1.pdf

As a result of the *Energy Savings Act*, the Utility created the Pay As You Save (PAYS) Program to support participating ratepayers, and First Nation ratepayers specifically. The PAYS program allows First Nations to access financing from the Utility to cover the high upfront cost of installing green energy. To use geothermal energy as an example, the Utility will pay the full cost of purchasing and installing the system up front, collecting its money back over 20 years through small monthly charges on the utility bill. That monthly charge – and this is key – is guaranteed by the Manitoba Energy Savings Act to be lower than the monthly bill savings associated with the green energy. In other words, even though you are paying back the upfront cost, your overall bill is still guaranteed by the Utility to be lower than when you started.

Here is an example. Let's say that a home has an annual electricity bill of $2800, or about $233/month. The home is retrofitted with a geothermal energy system, and that cuts the annual bill by half to $1400. There are $1400 a year in savings – or $115 per month. The geothermal system requires an upfront cost of $16,000 which is provided by Manitoba Hydro. Manitoba Hydro places a monthly charge on the utility bill of $100 that they collect for a period of about 20 years or until they have recouped all of the original upfront cost including interest. The household enjoys a small, but welcome, net reduction in their electrical bill yielding about 10% energy savings. The savings can grow as electricity rates increase.

A 10% energy saving across a First Nation community-wide can be significant. If installing geothermal energy in one house saves $150 a year, then installing geothermal energy in 100 houses will save $15,000 a year – or $150,000 over 10 years. And this is not including additional money saved as electricity costs rise. Peguis First Nation and Fisher River Cree Nation together installed 110 geothermal units in households in 2013. In 2014, both First Nations together installed an additional 150 geothermal units. Total annual savings in these two First Nations alone, after only two years of work, add up to over $50,000 a year or over a half million dollars over a decade.

There is another major benefit to First Nations with the PAYS financing approach. Aki Energy trains local First Nation tradespeople to install renewable energy technologies such as geothermal and solar thermal energy. As a result, employment and business development opportunities are created in the community. Both Peguis First Nation and Fisher River Cree Nation worked with Aki Energy to train a total of 30 local tradespeople to install geothermal energy in 2013. Today, Chief Peguis Construction and Fisher River Builders are two of the largest residential geothermal installers in western Canada.

In 2012/2013, Aki Energy partnered with Fisher River Cree Nation to deliver a successful community wide geothermal energy project - together with Peguis First Nation, this project was the first of it's kind in Canada.

Fisher River Cree Nation worked with Aki Energy to train 15 local tradespeople to install and maintain geothermal energy, a process through which Fisher River Builders became fully certified by the International Geothermal Energy Alliance and the Manitoba Geothermal Energy Alliance. Aki Energy worked with Fisher River Cree Nation to secure $750,000 in first year financing through Manitoba Hydro's PAYS Financing program, which fully covered the upfront costs of installing 50 residential geothermal energy systems in the community. In 2014, Fisher River Cree Nation worked with Aki Energy to expand to project, installing an additional 75 geothermal energy systems with $1,125,000 in financing from Manitoba Hydro's PAYS financing program. Fisher River Builders plans to convert 100% of the community to geothermal energy in the next ten years.

Aki is continuing geothermal programs, and is also business planning for other DERs including ductless heat pumps, solar thermal hot water heating, biomass energy, drain water heat recovery, wind energy, solar PV, and small scale hydro power.

Additional detail on the Aki Energy model:

- Aki Energy was the recipient of the Social Innovation Award at the 2016 Startup Canada Awards for its renewable energy development in Indigenous communities in Manitoba.
- In April 2018 – Aki Energy also received $ 1,167,200 in funding from the Federal government's Western Diversification Program to install geothermal heating systems in 600 First Nation homes in Manitoba

ANWAATIN RESPONSE TO BOARD STAFF INTERROGATORY #8

Interrogatory: **E M2-Staff-8**

Reference: N/A

Question: Please state what specifically Anwaatin is requesting that the OEB direct Hydro One to do in its Decision on the Application.

Response: Please see Anwaatin Response to HONI-02.3 and Appendix A. Anwaatin hopes to be in a position to provide the Board with further information in short order.