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**BY EMAIL AND RESS**

August 8, 2022

Ms. Nancy Marconi  
Registrar  
Ontario Energy Board  
Suite 2700, 2300 Yonge Street  
P.O. Box 2319  
Toronto, ON M4P 1E4

Dear Ms. Marconi,

**EB-2018-0117- Hydro One Networks Inc.'s Section 92 – Barrie Area Transmission Upgrade Project – Response to OEB Letter**

**EB-2021-0110 - Custom IR Application (2023-2027) for Hydro One Networks Inc. Transmission and Distribution (Hydro One) - Response to OEB Letter in EB-2018-0117**

This filing is Hydro One's response to the letter and corresponding questions received from Ontario Energy Board ("OEB") Staff on July 25, 2022, regarding the material changes to the Barrie Area Transmission Upgrade Project ("the Project" or the "BATU Project"). This correspondence provides a response to each question posed and has been filed under the leave to construct docket for the BATU Project (EB-2018-0117) as well as the docket for Hydro One's Joint Rate Application (EB-2021-0110) as requested by OEB Staff.

An electronic copy of the responses has been submitted using the Board's Regulatory Electronic Submission System.

Sincerely,



Joanne Richardson

c/ Intervenors on record for EB-2018-0117

c/ Intervenors on record for EB-2021-0110

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## OEB QUESTION 1

**Interrogatory:**

In Hydro One's and the Independent Electricity System Operator's (IESO) assessment, are changes required to the IESO System Impact Assessment and Hydro One Customer Impact Assessment because of the in-service delay?

**Response:**

The changed Project in-service date does not impact, or require a change to, Hydro One's Customer Impact Assessment, as filed in Evidence at Exhibit G, Tab1, Schedule 1, Attachment 1.

**The IESO has provided the following response to Hydro One with respect to the System Impact Assessment ("SIA")**

Changing the BATU Project's in-service date from June 2022 to December 2023 does not require an addendum to the SIA report, as filed in Evidence at Exhibit F, Tab1, Schedule 1, Attachment 1.

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## OEB QUESTION 2

### **Interrogatory:**

In Hydro One's and the IESO's assessment, will the in-service delay impact supply reliability given the age and / or end-of-life issues with the existing line and station facilities?

### **Response:**

**This response has been prepared in conjunction with the IESO.**

In terms of considering the impact of the in-service delay on maintaining equipment reliability, Barrie Transformer Station ("TS") has been operating reliably with the majority of its assets having considered to be at, or approaching, end-of-life. The forecast delay to the Project in-service has the potential to have minimal impact on supply reliability, however, Hydro One considers this risk to be low because the condition of existing equipment will continue to be monitored and maintained until the new facilities are placed in-service.

While the Essa TS 230/115kV auto-transformer, known as Unit T1, and associated 115kV switchyard are at end-of-life, Hydro One will continue to monitor the condition of these assets and maintain them in order to minimize the risk of failure until the BATU Project is completed and legacy equipment is removed from service. The in-service delay is not expected to significantly impact supply reliability. As new Project assets are placed in-service the risk will continue to be managed and can be expected to decline, during the transitional construction period as new assets are brought online.

In terms of the impact on the 115 kV transmission circuits being replaced in the BATU Project's scope, the delay is not expected to have an impact on supply reliability as the line replacement is being advanced before those lines are expected to reach end-of-life. Hydro One will continue to closely monitor the condition and performance of these assets until the new double-circuit 230 kV transmission circuits are placed in service.

In terms of the impact of the in-service delay on maintaining reliability, as it relates to forecast demand in the region, Hydro One and the IESO expect this to be minimal. As per the latest regional planning demand forecast for Barrie TS, the station is expected to exceed its 10-day LTR in the Summer of 2022, when considering peak demand conditions. However, the duration of these peak demand conditions is expected to be short-term and measures such as short-term load transfers to other stations in the area, while requiring complex coordination, can help manage these brief periods.

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### OEB QUESTION 3

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**Interrogatory:**

Does the estimated cost increase change the transmission alternative that Hydro One would have proposed in the Project's application? Please explain.

**Response:**

No, the forecast cost increase does **not** change the preferred transmission alternative.

The BATU Project remains the preferred alternative, consistent with the options considered and analysis provided in Hydro One's S.92 Application at **Exhibit B, Tab 5, Schedule 1**. The other options in that evidence were eliminated because they will **not** meet the near-, medium-, or long-term capacity needs of the area, and will not provide InnPower the increased supply capacity they have requested.

The BATU Project, as approved by the OEB will provide benefits consistent with the evidence provide to the OEB during the S.92 leave to construct hearing, being; increased reliability and adequate capacity to Barrie TS, reduced system line losses, and facilitation of the expansion of the electrical system into the Barrie/Innisfil area, as requested by the Customer (InnPower) triggering the upgrade.

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**OEB QUESTION 4**

**Interrogatory:**

Does the estimated cost increase materially change the impact on a typical residential customer?

**Response:**

The estimated cost increase and the corresponding customer capital contribution is shown below by rate pool.

**Table 1  
 Project Cost Estimate and Customer Capital Contribution – Scenario Analysis**

Rate Pool	Leave to Construct Approval			2022 Updated Forecast		
	Gross Cost (\$M)	Sustainment & Advancement credit (\$M) Per B-7-1	Capital Contribution (\$M) Per B-7-1	Gross Cost (\$k)	Sustainment & Advancement credit (\$k)	Capital Contribution (\$k)
Transformation	36.7	25.5	2.6	50.3	44.9	-
Line	23.4	3.4	13.1	35.5	8.5	20.4
Network	30.9	20.4	-	39.2	21.6	-
<b>Total</b>	<b>91.0</b>	<b>49.3</b>	<b>15.7</b>	<b>125.0</b>	<b>74.9</b>	<b>20.4</b>

The revised BATU Project costs and the corresponding change in the customer’s capital contribution, as shown in Table 2 below, will increase a typical residential customer’s monthly bill by 0.03%, when utilizing Hydro One’s R1 rate class and the OEB-approved 2022 rates and demand factors (700 kWh average residential consumption), compared to the 0.00% estimated increase provided in Hydro One’s S.92 Application evidence during the EB-2018-0117 hearing, which assumed the average residential consumption was 920 kWh).

For comparison purposes, Hydro One updated the 2019 analysis underpinning the S.92 Application evidence utilizing the 2022 BATU Project cost estimate. The results of the analysis, as it related to the impact on customer bills, is provided below:



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**Table 2**  
**Rate Impact Using the S.92 Average Residential Consumption (920 kWh)**

Rate Impact Year of Comparison Cost Estimate Utilized	2019 Rate Impact	
	2019 Estimate as Filed in s92 Application	2022 Cost Estimate
A. Typical monthly bill	\$137.4 per month	\$137.4 per month
B. Transmission component of monthly bill	\$15.04 per month	\$15.04 per month
C. Line Connection Pool share of Transmission component	\$2.09 per month	\$2.09 per month
D. Transformation Connection Pool share of Transmission component	\$5 per month	\$5 per month
E. Network Connection Pool share of Transmission component	\$7.95 per month	\$7.95 per month
F. Impact on Line Connection Pool Provincial Uniform Rates	0.00%	0.00%
G. Impact on Transformation Connection Pool Provincial Uniform Rates	0.43%	0.87%
H. Impact on Network Connection Pool Provincial Uniform Rates	-0.26%	-0.26%
I. Increase in Transmission costs for typical monthly bill (C x F + D x G)	\$0 per month or \$0.01 per year	\$0.02 per month or \$0.27 per year
J. Net increase on typical residential customer bill (I / A)	0.00%	0.02%

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**Table 3**  
**Rate Impact Using Current Average Residential Consumption (700 kWh)**

Rate Impact Year of Comparison Cost Estimate Utilized	2022 Rate Impact	
	2019 Estimate as Filed in s92 Application	2022 Cost Estimate
A. Typical monthly bill	\$132.53 per month	\$132.53 per month
B. Transmission component of monthly bill	\$14.24 per month	\$14.24 per month
C. Line Connection Pool share of Transmission component	\$1.45 per month	\$1.45 per month
D. Transformation Connection Pool share of Transmission component	\$4.65 per month	\$4.65 per month
E. Network Connection Pool share of Transmission component	\$8.13 per month	\$8.13 per month
F. Impact on Line Connection Pool Provincial Uniform Rates	0.00%	1.14%
G. Impact on Transformation Connection Pool Provincial Uniform Rates	0.36%	0.71%
H. Impact on Network Connection Pool Provincial Uniform Rates	-0.19%	-0.19%
I. Increase in Transmission costs for typical monthly bill (C x F + D x G)	\$0 per month or \$0.02 per year	\$0.03 per month or \$0.41 per year
J. Net increase on typical residential customer bill (I / A)	0.00%	0.03%

1 For the Line Connection Pool 2022 Rate Impact analysis, the incremental revenue  
2 requirement impact utilizing the 2022 cost estimate on the line pool is an additional \$0.4M  
3 (totaling \$1.2M) of revenue requirement, vs the revenue requirement utilizing the 2019  
4 cost estimate, totaling \$0.8M of revenue requirement). The result on the Line Connection  
5 Pool Provincial Uniform Rate is to increase it by 1 cent from \$0.88 to \$0.89.  
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*Notes:*

*i. The 2022 rate impact analysis is based on January 1, 2022-rates, which assumes an average monthly consumption of 700 kWh per month.*

*ii. The filed S.92 Application rate impact analysis is based on the July 1, 2019- rates which, at the time, was assumed to be an average consumption of 920 kWh per month.*

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## OEB QUESTION 5

### Interrogatory:

In terms of the increase in the Project's cost:

- i. What does the most recent estimate represent in terms of Hydro One's project cost maturity level?
- ii. Has Hydro One considered any further evaluation of its project cost estimation process and overall approach to project management needs for future projects?

### Response:

- i. The current BATU Project forecast estimate of \$125.0M was derived from applying the Association for Advancement of Cost Engineering ("AACE") Class 3 (+30% / -20%) principles and processes. The Project is now approximately 50% complete which has resulted in the elimination of some of the execution risks that were considered and included in the Project's s.92 Application prior to construction commencement, such as: the completion of project designs, establishing the contract pricing (with the selected contractor) for the E3B/E4B line upgrade element of the BATU Project and securing all major project materials.

Based on the decreased Project risks, and the progress of work to date, Hydro One considers the forecast project costs accuracy, given the Project's construction progress, to be in the +20 / -10% range.

- ii. Hydro One has introduced, or is working to introduce the following process enhancements:
  - a) In 2021 Hydro One implemented Work Package Agreements<sup>1</sup> ("WPAs"), which serve as a documented commitment between the Project Manager and Senior Management of individual work groups who contribute to the delivery of an individual project. It ensures alignment on a project's cost, schedule, and scope, as part of the development of the Project Execution Plan. WPAs are another tool Project Managers use to ensure project groups are held accountable to project timelines and budget.
  - b) Hydro One has recently enhanced our change management processes, which have improved our ability to manage project changes proactively. This was achieved by introducing new accountabilities within the project team for the identification, initiation, and documentation of changes to the budget throughout the execution phase of a project.

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<sup>1</sup> EB-2021-0110, Exhibit I, Tab 22, Schedule B2-SEC-104, Filed: 2021-11-29

- 1           c) Enhanced categorization of project changes has been implemented to enable  
2           *lessons learned* to be applied to minimize the impact of similar changes on  
3           future projects.
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- 5           d) Project cost estimation reporting has been upgraded to enable a more  
6           detailed understanding of an approved project cost estimate across the  
7           project team.
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- 9           e) The impact of a project's maturity on cost accuracy is currently being re-  
10          assessed to strengthen our adoption of industry best practices.

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12 Further details regarding capital work execution can be found in Hydro One's  
13 Transmission System Plan evidence at, **EB-2021-0110, Exhibit B-2-1, Section 2.10.**

**OEB QUESTION 6**

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**Interrogatory:**

Has InnPower Corporation objected to, or expressed any concerns regarding, the increase in Project cost, including any change to its required capital contribution?

**Response:**

InnPower Corporation (“InnPower”), has been informed of the BATU Project cost increases, including the cost allocation impacts, and the anticipated increase to their required capital contribution.

InnPower has expressed to Hydro One that it remains supportive of the Project and still wishes to proceed with the Project as approved by the OEB.

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## OEB QUESTION 7

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3 **Interrogatory:**

4 How does Hydro One plan to accommodate the Project's cost increase in its capital  
5 program?  
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7 **Response:**

8 Hydro One monitors year-to-date expenditures and accomplishments to the Project  
9 forecast regularly. The approval of the variance proposal is in accordance with the limits  
10 set out in Hydro One's internal Expenditure Authority Register (EAR)<sup>1</sup> and Hydro One's  
11 Program and Project Approval Procedures.  
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13 As changes to investments/projects or other circumstances occur, Hydro One reprioritizes  
14 and redirects within its work programs. On an ongoing basis, Hydro One adjusts its capital  
15 investments through annual planning and its in-year redirection processes. In some cases,  
16 this results in the acceleration of work when electrical system conditions or customer  
17 requirements change resulting in acceleration of some work for gained efficiencies.  
18 Alternatively, some investment/project deferral can occur as a result of increased demand  
19 for non-discretionary investments, and as such, planned discretionary work is reprioritized  
20 as a result.  
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22 Redirection, or re-allocation, allows prudent and timely adjustments to be made to the  
23 work originally identified in the investment plan, in response to changing conditions in  
24 concert with Hydro One's system stewardship requirements.  
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26 Hydro One intends to manage the variance associated with the BATU Project within its  
27 capital program, which is ultimately tied to OEB approval levels.

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<sup>1</sup> Hydro One's EAR is an internally Hydro One Board of Directors-approved authorization matrix that forms a component of Hydro One's financial controls and is structured based on the level of overall project cost. This provides Hydro One direction as to the level of seniority that is required to authorize/release funding for the execution of any individual investment.



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