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

BY EMAIL

August 20, 2024

Nancy Marconi
Registrar
Ontario Energy Board
2300 Yonge Street, 27th Floor
Toronto ON M4P 1E4

Dear Ms. Marconi:

Re: Hydro One Networks Inc.
Leave to Construct Application – St. Clair Project
Ontario Energy Board (OEB) Staff Interrogatories
OEB File Number: EB-2024-0155

In accordance with Procedural Order No. 1, please find attached the OEB staff interrogatories for the above proceeding. This document has been sent to Hydro One Networks Inc. and to all other registered parties to this proceeding.

Hydro One Networks Inc. is reminded that its responses to interrogatories are due by **September 4, 2024**. Responses to interrogatories, including supporting documentation, must not include personal information (as that phrase is defined in the *Freedom of Information and Protection of Privacy Act*), unless filed in accordance with rule 9A of the OEB's Rules of Practice and Procedure.

Yours truly,

Yunusmu
Digitally signed by Yunusmu
Date: 2024.08.20 15:04:36 -04'00'

Muhammad Yunus
Advisor, Generation & Transmission

Encl.

OEB Staff Interrogatories
Hydro One Networks Inc.
EB-2024-0155

Staff – 1

Ref: Exhibit B, Tab 1, Schedule 1, p. 2-3

Preamble:

Hydro One states that the transmission line facilities comprising the Project will be owned by a future limited partnership through which Hydro One will offer equity ownership to impacted First Nations.

Hydro One further states that, as of the time of filing the application, the limited partnership has not yet been finalized Hydro One is not able to provide commercial details.

Questions:

a) Please confirm if the limited partnership has been finalized and provide an update on which groups are involved.

b) If negotiations have advanced to a stage where commercial details can be provided, please describe the proposed ownership model as well as any other information that provides insight on the structure of the future partnership.

Staff – 2

Ref(s): Exhibit B, Tab 3, Schedule 1, Attachment 1, p. 6

Preamble:

In the System Impact Assessment, it is stated that through the Environmental Assessment process, Hydro One identified route options that utilize the existing 115 kilovolt ("kV") transmission line (N5K) that currently supplies Wallaceburg TS. This would require (1) N5K be converted to a 230 kV line, forming part of the Project, and (2) Wallaceburg TS be upgraded from a 115 kV TS to a 230 kV TS, being supplied by the Project.

Question(s):

a) Please briefly describe Hydro One's route selection process. As part of the description, please clearly articulate the reasons for why the preferred route was selected.

    i. When responding, please specifically identify the steps Hydro One has taken to ensure that a cost-effective route is selected.

b) Please briefly describe each route option considered during the EA process, including identifying the advantages and disadvantages of each.

c) What feedback did Hydro One receive from affected communities with respect to the selected route and other alternatives?

    i. If there was opposition expressed, please detail the specific concerns and how Hydro One has addressed these concerns in the final route.

Staff – 3

Ref(s): Exhibit B, Tab 10, Schedule 1, p. 1-2

Preamble:

The need for the Project was identified in the Transmission System Plan included in Hydro One's most recent revenue requirement application, EB-2021-0110 at Exhibit B, Tab 2, Schedule 1 Section 2.11 and more specifically discussed in Investment Summary Document (ISD) ISD T-SS-09 for the West of London Transmission Reinforcement.

Hydro One states at the above reference that it recognizes that there is a cost difference between the forecast cost of $76.8 million for the terminal station modification work at Lambton TS and Chatham SS that underpinned the ISD and the cost to execute the Project ($137.4 million) filed in this Application at Table 2 of Exhibit B, Tab 7, Schedule 1.

Question(s):

1. Please provide a detailed list of the specific costs and reasons associated with the approximately $60.6 million difference in costs.

2. If applicable, please list any other costs which may affect the project cost as stated that were not considered at the time of the filing of this Application.

Staff – 4

Ref(s): Exhibit B, Tab, 7, Schedule 1, Table 1-2, p. 1

Preamble:

At the above noted reference in Tables 1 and 2, Line and Station Costs are listed for the Project as shown below:

Table 1 - Line Cost

	Estimated Cost ($000's)
Materials	29,913
Labour	18,793
Equipment Rental & Contractor Costs	125,227
Sundry	5,207
Contingencies	27,950
Overhead [2]	6,444
Allowance for Funds Used During Construction [3]	41,803
Real Estate	79,156
Total Line Work	**$334,493**

Table 2 - Station Cost

	Estimated Cost ($000's)
Materials	29,111
Labour	24,916
Equipment Rental & Contractor Costs	47,691
Sundry	5
Contingencies	13,515
Overhead [2]	7,298
Allowance for Funds Used During Construction [3]	13,867
Real Estate	978
Total Station Work	**$137,381**

Question(s):

a) For both Table 1 and 2 please provide a detailed list of the costs included in the contingencies category and the reason for its inclusion.

b) Please describe how the contingency cost estimate for the Project compares to contingency cost estimates developed for projects of similar size and complexity undertaken by Hydro One.

c) How would Hydro One characterize the confidence of the cost estimate for the Project? What method did Hydro One use to estimate its confidence?

d) How did Hydro One develop its estimates and confidence estimates for project material, labour, equipment rental and contractor costs?

e) Please describe the process used to develop the real estate component of the project costs. What steps has Hydro One taken to mitigate these costs?

f) Are there any project components that have been identified as high risk for cost overruns? How are these being mitigated?

g) Please update Tables 3, 4 and 5 at Exhibit B, Tab 7, Schedule 1 to reflect the inflation adjustment factors that include the latest OEB annual inflation parameters for 2025. Additionally, please provide the results in Microsoft Excel format showing the calculations.

Staff – 5

Ref: Exhibit B, Tab 2, Schedule 1, p. 2-3

Preamble:
Hydro One indicates that the Chatham Switching Station will require modifications to accommodate the transmission line facilities for the proposed Project. Hydro One was previously granted leave to construct the Chatham x Lakeshore Line under OEB decision EB-2022-0140. This transmission line required station modifications at Chatham Switching Station.

Questions:

a) Please describe the specific modifications at the Chatham Switching Station for both projects and provide details on how potential cost overlaps or redundancies could have been anticipated and managed, if at all.

Staff – 6

Ref(s): Exhibit B, Tab 5, Schedule 1, p. 2-3

Preamble:

At the above noted reference, Hydro One states that a detailed 50-year NPV analysis using a discount rate of 5.65% was conducted to evaluate which conductor provided the best NPV results. This study was done using varying values for the prices of energy and a capacity price of $143,640/MW consistent with Hydro One's Transmission Line Loss Guideline.

Question(s):

a) Please provide the calculations used to derive the information in Table 2 (p.3 in the reference).

b) Please explain the methodology for developing the "varying values for prices of energy" that were used in the calculations and justification for utilizing these values.

c) Beyond the NPV analysis, please explain if there are any other considerations in choosing between the four conductor alternatives.

Staff – 7

Ref: Exhibit B, Tab 9, Schedule 1, p. 4-5

Preamble:

Hydro One states at the reference above that the bill impact of the costs of adding the required facilities to the network, line and transformation connection pools will cause a $0.14 per month decrease in a typical residential customer's bills under the RPP. The table on page 5 shows this result for a typical residential customer who is under the RPP, utilizing the maximum impact by rate pool, regardless of year.

Questions:

a) Please confirm the consumption (kWh) per month that is assumed for the typical residential customer.

b) If the estimate does not assume a residential consumption of 700 kWh per month, please recalculate the table to reflect a residential consumption of 700 kWh.

c) For the value provided please provide the calculations showing how the monthly bill value was collected.

d) In the table provided on page 5 of the reference, please provide references as to how the values shown in rows B, C, D, and E were developed and calculated.

Staff – 8

Ref(s): Exhibit B, Tab 7, Schedule 1, p. 1

Preamble:

Hydro One states that overhead costs are charged through an ECI-EPC overhead capitalization rate for the line costs and Hydro One's standard overhead capitalization rate for the station costs.

Further, Hydro One states that Allowance for Funds Used During Construction (AFUDC) is calculated using the OEB's approved interest rate methodology to the Project's forecast monthly cash flow and carrying forward closing balances from the preceding month.

Question(s):

a) Provide additional details on how the overhead costs were calculated, with additional information on how they relate to the ECI-EPC methodology.

b) Provide an explanation of the methodology used to determine the overhead costs as well as all calculations used to arrive at the stated values. Please provide the information in Microsoft Excel format.

c) Please describe how the overhead cost estimate shown in Table 1 and Table 2 for the Project compares to overhead cost estimates developed for similar Hydro One projects.

d) Please describe if there are any cost-savings achieved by Hydro One through the use of the ECI-EPC model.

    i. If yes, please show a detailed calculation of how these savings were determined and what methodology they were compared against.

e) Please also break down the cost differences between direct overheads and indirect overheads. If any of this cannot be done by Hydro One, please explain.

f) Provide an explanation of the methodology used to determine the AFUDC as well as all calculations used to arrive at the stated values. Please provide the information in Microsoft Excel format.

g) Please describe how the AFUDC cost estimate shown in Table 1 and Table 2 for the Project compares to AFUDC cost estimates developed for similar Hydro One projects.

Staff – 9

Ref(s): Exhibit B, Tab 9, Schedule 1, p. 6-18

Preamble:

Hydro One has conducted a Net Present Value analysis on Network, Line and Transformation connection pools in addition to revenue requirements for each.

Question(s):

a) Please provide the following tables at the reference above in Microsoft Excel format:
   i. Table 1, p. 6
   ii. Table 2, p. 7
   iii. Table 3, p. 8
   iv. Table 4. p. 9
   v. Table 5, p. 10
   vi. Table 6, p. 11
   vii. Table 7, p. 12
   viii. Table 8, p. 13
   ix. Table 9, p. 14
   x. Table 10, p. 15
   xi. Table 11, p. 16
   xii. Table 12, p. 17
   xiii. Table 13, p. 18

Staff – 10

Ref(s): Exhibit B, Tab 7. Schedule 1, p. 3

Preamble:

At the above reference Hydro One states that they have entered into an agreement with a selected EPC contractor for the transmission line, with a Limited Notice to Proceed on early activities to advance contractors' long lead procurement process.

Question(s):

a) Please provide a copy of the agreement entered into between Hydro One and the selected contractor.

b) Please clarify whether the agreement with the selected EPC contractor only applies to transmission line construction or if station upgrades are included?

    i. If station upgrades are not included, how will a contractor be selected for these upgrades?

c) Are there any aspects of the project costs that Hydro One did not competitively tender? If so, why?

d) Please provide a list of early activities the contractor will be conducting that require a long lead procurement process.

e) Please clarify the scope of the Limited Notice to Proceed provided to the selected contractor.

f) Please provide details on how cost overruns will be handled between Hydro One and the selected contractor.

g) Does the agreement with the contractor provide for cost escalations and if so, what are the contractual provisions regarding escalation rates over the life cycle of the Project.

h) Please provide details on how the EPC contract with the selected contractor deals with risk assignment around aspects such as:

    i. Payment
    ii. Insurance
    iii. Recovery of Costs

Staff – 11

Ref(s): Exhibit B, Tab 7. Schedule 1, p. 2

Preamble:

At the reference above Hydro One states that the Project cost estimate for the transmission line is based on a fixed price EPC contract.

Question(s):

a) Please provide a breakdown of the fixed price EPC contract by line costs and station costs.

b) What is the magnitude of the EPC contract as a percentage of the total Project cost?

Staff – 12

Ref(s): Exhibit B, Tab 7. Schedule 1, p. 2-3

Preamble:

At the reference above Hydro One states that the Project cost estimate for the transmission line is based on a fixed price EPC contract, and the selection of the EPC contractor used a two-stage process (known as the ECI-EPC methodology). The first stage was to utilize an external owners engineer and qualify EPC bidders based on experience and capacity to perform many of the development functions that under the standard Hydro One EPC delivery model would be performed internally by Hydro One. During the second stage, EPC contractors developed independent competitive proposals.

Question(s):

a) Provide a detailed description of the ECI-EPC methodology

    i. In the response please detail the specific steps taken in Stage 1 and Stage 2

b) Provide the criteria used to select the external owners engineer in Stage 1.

c) The reference above notes that “qualify EPC bidders based on experience and capacity to perform many of the development functions that under the standard Hydro One EPC delivery model would be performed internally by Hydro One.”

    i. Provide a list of the specific functions bidders were assessed on

    ii. Provide a quantitative analysis on how utilizing the successful contractor’s bid amount is more cost-effective than Hydro One performing the work itself.

d) During the ECI-EPC process, how many contractors were qualified under Stage 1?

    i. Please list all contractors that were considered qualified.

e) Provide the criteria used by Hydro One to evaluate the proposals received in Stage 2.

f) How many contractors submitted bids as part of Stage 2 of the process?

g) Provide the costs quoted by the proposals received in Stage 2 by each bidder and explain why the final proposal was selected.

h) Please provide a list of contractors who have previously been approved in Hydro One's LTC projects within the past 5 years and compare them to the contractors who have been approved in this project.

i) Is there any cost saving from using the ECI-EPC model to deliver the Project versus using the standard EPC delivery model that would be performed internally by Hydro One.

   i. If yes, please confirm whether the cost saving from using the ECI-EPC model is reflected in the total Project cost?

   ii. What other models besides the ECI-EPC methodology were considered in the process, and what are the costs associated with these models?

j) Please estimate the total project cost for the Project if the standard EPC delivery model was used.

k) Please explain advantages, disadvantages and risks associated with using ECI-EPC model vs the standard EPC delivery model performed internally by Hydro One in delivering large scale projects being added to Ontario's transmission system.

l) Please explain in detail what criteria Hydro One uses to decide whether the ECI-EPC model is appropriate for a particular transmission project?

m) What incentives or penalties are in place to encourage the ECI-EPC contractor to meet budgetary constraints and timelines?

Staff – 13

Ref(s): Exhibit B, Tab 7, Schedule 1, Table 5, p. 11

Preamble:

Table 5 at the reference above shows the cost comparisons between the Wallaceburg TS, Chenaux TS and Parry Sound TS. The table is provided below for reference.

Table 5 - Costs of Comparable Station Projects (Wallaceburg TS)

Project	Chenaux TS	Parry Sound TS	Wallaceburg TS
Technical	Replace two 230/115kV 125MVA transformers and associated equipment, two 115kV breakers, new relay building, spill containment, drainage, and oil/water separator	Replace two 230/44kV 83MVA transformers and associated equipment, protection and control, spill containment, drainage, and oil/water separator	Install new 230 kV facilities, two 230/27.6 kV 83MVA transformers and associated equipment, protection and control, spill containment, drainage, oil/water separator and removal of existing 115 kV equipment and two existing buildings
Location	Eastern Ontario	Central Ontario	Southwest Ontario
Project Surroundings	Mostly rural	Mostly rural	Mostly rural
Environmental Issues	None	None	None
In-Service Year	2020	2023	2026
Estimate or Actual	**Actual**	**Actual**	**Estimate**
OEB-Approved Cost Estimate	N/A[20]	N/A[20]	–
Total Cost	**$45,036K**	**$24,156K**	**$48,900K**
Less Adjustments:			
Land Cost	*N/A*	*N/A*	*$100K[21]*
230kV Switching Facilities	*N/A*	*N/A*	*$2,106K*
Station Property Fence Line Expansion	*N/A*	*N/A*	*$2,271K*
Demolish/Removal Cost	*$2,016K*	*$587K*	*$1,190K*
Comparable Costs, before Escalation	**$43,020K**	**$23,569K**	**$43,233K**
Escalation Adjustment[22]	$11,737K	$4,203K	N/A
Total Adjusted Comparable Cost	**$54,757K**	**$27,772K**	**$43,233K**

Question(s):

a) Please provide a detailed calculation to show how the escalation adjustment values presented were determined for the Chenaux TS and Parry Sound TS.

b) The “Total Cost” for Wallaceburg TS is higher than both comparator projects. Please provide an explanation as to why this is the case.

Staff – 14

Ref(s): Exhibit E, Tab 1, Schedule 1, p. 1-5

Preamble:

At the above reference, Hydro One states that the Project will require Hydro One to acquire land rights from 103 directly impacted properties, consisting of 95 privately held properties, 2 provincially held properties owned by OPG and 6 railway crossings. Hydro One is working with directly impacted property owners to negotiate amicable voluntary agreements, which may include full property buyouts, at the property owner's election. As of May 1, 2024, Hydro One has achieved voluntary early access agreements on approximately 95% of the properties that require new land rights. Additionally, as of May 1, 2024, 11 voluntary property settlement offers have been made, and 2 offers have been accepted.

Question(s):

a) Please provide an update on Hydro One's progress towards securing voluntary agreements with all affected landowners.

b) Please indicate when Hydro One anticipates securing the remaining voluntary agreements?

c) If Hydro One fails to secure voluntary agreements with all affected landowners, is it Hydro One's intention to seek expropriation allowances? If so, please describe the expropriation process Hydro One intends to follow as well as its timing. Please comment on whether the timing of securing voluntary agreements or seeking expropriation allowances could impact the construction schedule or in-service date.

    i. Please provide the total cost estimate related to potential expropriation activities for the proposed project.

    ii. Are the costs related to expropriation (including potential OEB proceeding) included in the costs estimate for the Project or will they be incremental to the project costs estimated in the Application?

d) OEB staff notes that under the "Resolution Approach" column, Hydro One states "Accommodate minor route refinements where and to the extent possible".

    i. Please define what a minor route refinement is and provide an example.

ii. If applicable, please list any route refinements that have been proposed to landowners during negotiations and if any have been accepted.

Staff – 15

Ref(s): Exhibit G, Tab 1, Schedule 1, Attachment 1, p. 3

Preamble:

At the above noted reference, the Customer Impact Assessment (CIA) states that the "CIA is concerned with the potential impact of the above project on transmission connected customers in the area."

Further, the report states, "the following potential impacts on existing customers in the area are reviewed is this CIA:

- Short circuit impact
- Impact on customer power supply reliability."

Question(s):

1. Describe specific measures Hydro One has implemented to address these concerns.

2. Describe any feedback Hydro One has received from affected customers and how Hydro One has responded.

3. Provide information related to any stakeholder sessions Hydro One will conduct to ensure affected customers are aware of how these concerns will be addressed.