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

BY EMAIL

October 27, 2021
Ms. Christine E. Long
Registrar
Ontario Energy Board
2300 Yonge Street, 27th Floor
Toronto, ON M4P 1E4
Registrar@oeb.ca

Dear Ms. Long:

**Re: Ontario Energy Board (OEB) Staff Submission**
**Hydro One Networks Inc. (Hydro One)**
**Leave to Construct Application**
**Richview by Trafalgar Reconductoring Project**
**OEB File Number: EB-2021-0136**

Please find attached the OEB staff submission for the above proceeding, in accordance with Procedural Order No. 1. This document has been sent to Hydro One and to all other registered parties to this proceeding.

Hydro One is reminded that its reply submission is due by November 12, 2021, should it choose to file one.

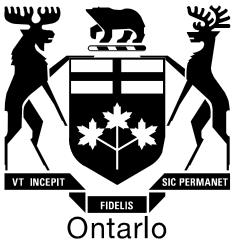
Yours truly,

*Original Signed By*

Andrew Pietrewicz
Project Advisor, Generation and Transmission

Encl.

cc: All parties in EB-2021-0136




# ONTARIO ENERGY BOARD

## OEB Staff Submission

**Hydro One Networks Inc.**

**Leave to Construct Application - Richview by Trafalgar Reconductoring Project**

**EB-2021-0136**

**October 27, 2021**

# 1. Background and Overview

## 1.1 Overview of the Application

Hydro One applied to the OEB on July 16, 2021 under sections 92 and 97 of the OEB Act for approval to reconductor existing transmission circuits R14T/R17T and R19TH/R21TH between Richview TS and Trafalgar TS, to perform related enabling work and to replace the skywire associated with circuits R14T/R17T with an optical ground wire.

Hydro One also applied for approval of the forms of land use agreements it will offer to affected landowners.

## 1.2 Overview of OEB Staff Submission

OEB staff supports Hydro One's section 92 request for leave to construct, subject to the standard conditions of approval set out in Section 2.6. OEB staff also supports Hydro One's section 97 request for approval of the forms of agreements it will offer to affected landowners. OEB staff's submission is provided in further detail below.

# 2. OEB Staff Submission

## 2.1 Need and Alternatives

The 230 kV circuits R14T, R17T, R19TH and R21TH together form one of the three paths that comprise the Flow East Towards Toronto (FETT) interface. The FETT interface is a transmission interface that delivers power from western Ontario to central and eastern Ontario.

The IESO has identified the need to expand transfer capability across the FETT interface by 2,000 MW by 2026 to address anticipated declines in generator availability east of the interface. The IESO has recommended the Richview by Trafalgar Reconductoring Project to Hydro One as the preferred way of addressing that need.

Hydro One's application states that generator capacity east of the FETT interface is expected to decline in coming years because of nuclear retirements and outages related to refurbishments. Generator capacity may decline further by the end of the 2020s as other generation facilities reach the end of their contractual terms. The IESO has concluded that, if transfer capability across the FETT interface is not increased to address anticipated generation declines to the east, applicable transmission security and resource adequacy reliability criteria will not be met starting in 2026.

The IESO considered alternatives[1] in the development of its project scope recommendation to Hydro One. Non-transmission alternatives considered by the IESO include additional conservation programs east of FETT, new domestic supply resources east of FETT, and imports. The IESO did not recommend conservation alternatives because "additional conservation in the near term beyond what has been committed as part of the 2021-2024 CDM Framework is not significant compared to the magnitude of the need." The IESO did not recommend new resources and imports east of FETT because "there are uncertainties on the capacity level that can be obtained east of FETT through the targeted capacity auction process and other resource acquisition mechanisms under development."

The IESO considered one transmission alternative to the Project: a new double-circuit 230 kV line connecting Trafalgar TS and Oakville TS with new switching facilities at Trafalgar TS. The transmission alternative to the Project considered by the IESO is called "Alternative #2". The IESO did not recommend Alternative #2 because it would perform worse in the long-term, involve greater environmental disturbance and present higher implementation/permitting risk. The IESO noted that the recommended Richview

[1] Exhibit B / Tab 3 / Schedule 1 / Attachment 3. IESO report "Trafalgar TS x Richview TS 230 kV line upgrade: Need and Selection of the Preferred Plan".

by Trafalgar Reconductoring Project also conforms with the Provincial Policy Statement under the *Planning Act*, which establishes that the use of existing infrastructure and public service facilities should be optimized and opportunities for adaptive re-use should be considered before consideration is given to developing new infrastructure and public service facilities.

Hydro One stated that it did not consider project alternatives because the project scope recommended by the IESO was very specific[2] and that there are no practical alternatives to the scope of work for which Hydro One is seeking OEB approval.

Hydro One also proposed to replace the existing sky-wire on the tower series that carries circuits R14T and R17T with optical ground wire (OPGW) between Richview TS and Trafalgar TS. Hydro One stated that the existing skywire was installed in 1985 and that new conductor characteristics and generation and transmission upgrades in the area have raised short circuit fault levels to the existing skywire's carrying capability. Hydro One stated that combining the OPGW skywire replacement with the Richview by Trafalgar Reconductoring Project is economically more efficient than if Hydro One were to perform the scopes of work separately.

Submission

OEB staff supports the proposed solution, considering IESO's evidence on need, its assessment of transmission and non-transmission alternatives and Hydro One and the IESO's interrogatory responses.

On Hydro One and the IESO's assessment of resource alternatives, OEB staff was assisted by explanations provided in interrogatory responses on the appropriateness of the size and capability of the proposed project. For instance, OEB staff notes the IESO's clarification that the recommended upgrade "will be sufficient to meet the need for the foreseeable future if existing resources east of FETT are re-acquired", that "relying on a single transmission interface with greater transfer capability than what the project provides creates concerns of system resilience for extreme events that have the potential to interrupt the entire interface" and that there are upgrade options "that can be implemented at a later date, if necessary [which] "would not reduce the usefulness and cost effectiveness of the project nor would it make any aspect of the project redundant."[3]

OEB staff was also assisted by the analysis that Hydro One undertook in response to an interrogatory from Environment Defence, which asked Hydro One to compare the

[2] Exhibit B / Tab 3 / Schedule 1 / Attachment 1. IESO "Hand-off Letter" to Hydro One
[3] Exhibit I / Tab 1/ Schedule 2 (Response to OEB Staff 2)

proposed 1433 kcmil transmission upgrade to a 1730 kcmil alternative. [4] Hydro One's analysis demonstrated that the "incremental NPV result of selecting the larger 1730 kcmil ACSS conductor, compared to the preferred option over a 40 year time horizon, yields an incremental negative cost (i.e. additional cost to ratepayers)" of between $13.6M and $10.2M, depending on the assumed electricity price. Hydro One concluded that the analysis "ultimately shows that the additional incremental cost of the larger 1730 kcmil ACSS conductor will not be recovered over a 40-year timeframe."

Hydro One's analysis accounted for the additional quantity and value of electricity loss reduction that would be achieved through use of the larger, 1730 kcmil alternative. Hydro One's analysis demonstrated that the incremental electricity loss reduction savings associated with the larger, 1730 kcmil alternative would be outweighed by the additional costs of the alternative. Hydro One clarified that the additional costs of the 1730 kcmil alternative would relate to the "additional modifications that would be required to the existing towers, and/or additional towers beyond that proposed for the 1433 kcmil RTR Project." Hydro One elaborated that, "the larger and heavier 1730 kcmil conductor would necessitate the construction of additional new towers along the circuit pathway, and the various additional new accessory costs of connecting the conductor, in addition to increased labour and equipment effort to support an expanded scope (for example, additional temporary access roads and crane pads for the new towers, combined with greater inherent interest, overhead and potential increased contingency), resulting from the cost of a the larger and heavier 1730 kcmil reconductoring option".

OEB staff is also satisfied with the IESO's clarification of its assessment of generation alternatives to the proposed upgrade and of its outreach approach to supply resource developers and existing operators as part of its assessment of needs and options.[5] The IESO stated that it "provides supply resource developers and existing operators with various forums and ad hoc opportunities to engage with the IESO." While the IESO "relied upon its knowledge of the market and did not undertake specific outreach to supply resource developers and existing operators on this matter", the IESO stated that the "need east of FETT that will arise due to the Pickering GS retirement has been communicated to the marketplace, including in the IESO's 2020 Annual Planning Outlook, and should be well known to resource developers and existing operators." The IESO also stated that "there are no projects east of FETT with completed System Impact Assessments nor, to the IESO's knowledge, are there projects east of FETT with ongoing public/Indigenous consultations." The IESO also stated that it "is not aware of planned projects that are in a sufficiently advanced stage of development that could, individually or collectively, meet the approximately 2,000 MW need east of FETT by

[4] Exhibit I / Tab 3/ Schedules 3 - 5 (Responses to Environmental Defence 3, 4 and 5)
[5] Exhibit I / Tab 4 / Schedules 2 - 3 (Responses to Association of Power Producers in Ontario 2 and 3)

2026".

OEB staff was also assisted by Hydro One's clarification of the rationale for replacing the skywire, that the replacement would have been required even if the Richview by Trafalgar Reconductoring Project were not going ahead, and that the reconductoring project provides an opportune occasion to replace the existing skywire. OEB staff was also assisted by Hydro One's clarification on the standards and processes it follows in relation to skywire assessment and replacement.[6]

## 2.2 Project Cost

The estimated project capital cost is $56.3 million, including overheads and capitalized interest but not including removal costs of $4.3 million. The total project cost, including removal costs, is $60.9 million. Hydro One's estimated project cost includes a contingency amount in recognition of risks. Hydro One stated that the contingency amount as a percentage of direct costs is within the range of other, similar construction projects undertaken by Hydro One.

Hydro One cited three of its previous transmission projects as comparator projects; each involved the reconductoring of existing 115 kV or 230 kV circuits.

Hydro One stated that the scope of the Richview by Trafalgar Reconductoring project differs from the comparator projects in ways which require more planning, safety requirements, execution time and resources. Hydro One stated that these additional complexities contribute to a comparatively higher cost per circuit km for the Project. The total project cost per circuit km of the comparator projects was between $0.4 million and $0.6 million. Hydro One estimated that the Richview by Trafalgar Reconductoring Project will cost $0.8 million per circuit km.

Submission

OEB staff submits that Hydro One followed a reasonable process for developing its project cost estimate[7] and that it followed a reasonable process for assessing project risks and developing a contingency estimate.[8] OEB staff also submits that Hydro One has provided a reasonable explanation of the differences in costs between the Richview by Trafalgar Reconductoring Project and comparator projects.[9] Given the above, OEB staff does not take issue with Hydro One's cost estimate for the project.

OEB staff notes that the Richview by Trafalgar Reconductoring Project cost estimate

[6] Exhibit I / Tab 1/ Schedule 4 (Response to OEB Staff 4)
[7] For example, Exhibit I / Tab 1/ Schedule 8 (Response to OEB Staff 8)
[8] For example, Exhibit I / Tab 1/ Schedule 9 (Response to OEB Staff 9)
[9] For example, Exhibit I / Tab 1/ Schedule 10 (Response to OEB Staff 10)

has an accuracy level +30%/-20% while the cost estimate for Alternative #2 is a "planning estimate" with an accuracy level of +100/-50%. The estimated cost of the Richview by Trafalgar Reconductoring Project is $60.9 million. The estimated cost of Alternative 2 is $88.8 Million. The IESO estimated that Alternative #2 would displace the need for transmission enhancements that increase the supply to Richview South and provide a benefit of about $23 million, resulting in an effective cost of $65 million for Alternative #2.[10] OEB staff notes the $23M estimate is a "budgetary estimate" with an accuracy of +50%/-30%.

OEB staff appreciates that cost estimates for alternatives will not always have the same maturity or range of accuracy. The different confidence levels of transmission options assessed in this application were communicated through interrogatory responses. OEB staff has no concerns with the fact that Hydro One and/or the IESO have assessed options that have different levels of cost estimate confidence – in this case, the differences are not necessarily determinative, in OEB staff's view.

For future applications, however, OEB staff submits that it would be informative if Hydro One clarified the confidence of its cost estimates for all options considered in the pre-filed evidence. OEB staff further submits that it would assist if Hydro One would explain the appropriateness of a recommended option in light of any differences and overlaps of confidence distributions among options considered.

## 2.3 Consumer Impacts

Hydro One circuits R14T, R17T, R19TH and R21TH are network circuits within the eastern Ontario Bulk Electric System. The existing circuits are part of the network connection rate pool.

The Richview by Trafalgar Reconductoring Project is proposed to accommodate increased system flows on the four 230 kV Richview TS by Trafalgar TS circuits to meet the transmission security and resource adequacy needs east of the FETT interface as identified by the IESO. The costs of the Project will be included in the network connection pool. The Project is not tied to any specific load increase or customer load application; Hydro One stated that no customer contributions are required.

Hydro One estimated that the project will have a negative net present value of $52.7 million, given the total project cost of $60.9 million and with no incremental revenue or operating and maintenance expenditures. The resulting revenue requirement shortfall will be recovered via network pool rates.

[10] Exhibit I / Tab 1 / Schedule 3 (Response to OEB Staff 3)

Hydro One anticipates that the project will cause a 0.51% increase in the network pool revenue requirement, which will increase the current network rate of $3.92/kW/month to $3.94/kW/month. The maximum annual revenue shortfall (annual revenue requirement) related to the proposed facilities will be $4.2 million in 2034.

Submission

OEB staff submits that Hydro One's proposed allocation of project costs to the network rate pool is appropriate. OEB staff takes no issue with Hydro One's position that no customer contribution is required.

OEB staff submits that the consumer impacts of the Richview by Trafalgar Reconductoring Project cost are appropriate given the need for the project, its costs and its alternatives (which, in OEB staff's view, have been assessed reasonably).

OEB staff also submits that Hydro One's evidence demonstrates that the project will have a relatively modest impact on customers: the project will increase the typical residential customer bill by $0.03 per month or by 0.02%. This amounts to an increase of approximately $0.38 per year.

## 2.4 Reliability and Quality of Service

Hydro One's proposal to increase the ampacity of 230 kV circuits R14, R17T, R19TH and R21TH along the Richview TS by Trafalgar TS path by upgrading to 1,433 kcmil Aluminum Conductor Steel Supported (ACSS) conductor would meet the reliability need identified by the IESO to increase FETT transfer capability by 2026.

The IESO's Final System Impact Assessment (SIA) concluded that the Project is expected to have no material adverse impact on the reliability of the integrated power system. The IESO also noted that impedances and thermal ratings of the replacement conductors will be similar to or better than those of the existing conductors.

Hydro One's Final Customer Impact Assessment (CIA) concluded that the Project will not have any adverse impact on Hydro One transmission customers.

Submission

OEB staff does not have any concerns about the reliability and quality of service associated with the Richview by Trafalgar Reconductoring Project, considering Hydro One and the IESO's evidence, interrogatory responses, and the conclusions of the IESO's SIA and Hydro One's CIA.

## 2.5 Landowner Agreements

Hydro One stated that the Project will rely on existing Right of Ways (ROWs). Hydro One does not expect that any new permanent land rights will be required.

Hydro One stated that temporary land rights may be required, but not extensively given Hydro One's ability to use the existing ROW and Hydro One-owned land surrounding the stations along the route. Any temporary land rights required have not yet been identified but will be determined before the construction start date. Hydro One stated that required temporary land rights may include temporary access roads, temporary laydown areas and material storage areas.

Hydro One stated that it does not expect to require any early access agreements and does not anticipate the need to apply to the OEB for early access in advance of leave to construct approval (under s.98 of the OEB Act).

Hydro One requested OEB approval of two agreements that it will use to obtain land rights for the Project, should they be required: A Temporary Land Rights Agreement and a Damage Claim Agreement. Hydro One stated that the two proposed agreements were approved by the OEB in previous leave to construct applications. Hydro One stated that where it requires encroachment or occupancy permits from MTO over 400-series highways, the form agreement will be provided by MTO as the landowner.

Submission

OEB staff has reviewed the proposed forms of agreements and has no issues or concerns. The agreements are consistent with agreements approved by the OEB through previous proceedings[11].

Hydro One confirmed that all impacted landowners have the option to receive independent legal advice regarding the land agreements, and that it would commit to reimbursing those landowners for reasonably incurred legal fees associated with the review and completion of the necessary land rights.

## 2.6 Conditions of Approval

The OEB Act permits the OEB, when making an order, to impose such conditions as it considers proper. The OEB has established a set of standard conditions of approval for transmission Leave to Construct applications. They were attached to Procedural Order

[11] EB-2019-0077 Decision and Order October 17, 2019 (Power South Nepean Project); EB-2018-0117 Decision and Order April 23, 2020 (Barrie Area Transmission Upgrade)

No. 1 in this proceeding[12].

Submission

OEB staff proposes that the standard conditions of approval attached to Procedural Order No. 1 be placed on Hydro One. The proposed conditions have been approved by the OEB in prior leave to construct applications. They have been reviewed by Hydro One during this proceeding; Hydro One has agreed to them.[13]

## 3. Conclusion

In conclusion, OEB staff submits that Hydro One's leave to construct application for the Richview by Trafalgar Reconductoring Project should be granted subject to the conditions of approval proposed in this submission and that Hydro One's proposed forms of landowner agreements should be approved. OEB staff submits that the Project addresses a need, that it represents a reasonable option for addressing that need, that its impacts on price, and reliability and quality of service are appropriate, and that Hydro One's proposed forms of land agreement are appropriate.

~All of which is respectfully submitted~

[12] EB-2021-0136 Procedural Order No. 1, Schedule B, Attachment 1
[13] Exhibit I / Tab 1 / Schedule 7 (Response to OEB Staff 7)