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Ontario

BY E-MAIL

November 1, 2018

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

Dear Ms. Walli:

RE: Revised OEB Staff Submission
Upper Canada Transmission Inc. (on behalf of NextBridge Infrastructure)
Application for Leave to Construct an Electricity Transmission Line between Thunder Bay and Wawa, Ontario

and

Hydro One Networks Inc.
Application for Leave to Construct an Electricity Transmission Line between Thunder Bay and Wawa, Ontario

and

Hydro One Networks Inc.
Application to Upgrade Existing Transmission Station Facilities in the Districts of Thunder Bay and Algoma, Ontario

OEB File Number Nos.: EB-2017-0182, EB-2017-0194 and EB-2017-0364

In accordance with Procedural Order No. 1 on Combined Hearing, OEB staff filed its submission on October 31, 2018. OEB staff is hereby filing a revised submission with two small changes to its October 31 filing on pages 12 and 34 (footnote 108).
The attached revised OEB staff submission has been sent to the applicants and all other registered parties to the combined proceeding.

Yours truly,

Original Signed By

Zora Crnojacki
Project Advisor
Supply & Infrastructure

Attachment

cc: Parties to Combined Proceeding EB-2017-0182, EB-2017-0194 and EB-2017-0364

OEB Staff Submission

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Application to Upgrade Existing Transmission Station Facilities in the Districts of Thunder Bay and Algoma, Ontario

EB-2017-0182, EB-2017-0194 and EB-2017-0364
(Combined Proceeding)

October 31, 2018
Revised on November 1, 2018

1 INTRODUCTION AND SUMMARY

Upper Canada Transmission Inc. on behalf of NextBridge Infrastructure (NextBridge) and Hydro One Networks Inc. (Hydro One) (collectively, Applicants) have both applied for leave to construct a new transmission line between Wawa and Thunder Bay in northwestern Ontario under section 92 of the *Ontario Energy Board Act, 1998* (Act). The Ontario Energy Board (OEB) must decide which Applicant (if either) should be granted leave to construct the line and on what terms.

In its application, NextBridge seeks an order granting leave to construct a new double circuit 230 kilovolt (kV) overhead electricity transmission line running approximately 443 kilometres (km), with a proposed in-service date of December 2020 (NextBridge-EWT Application).[1] NextBridge's proposed transmission line is referred to as the new East-West Tie line.

Hydro One's application seeks an order granting leave to construct a new double circuit 230 kV overhead transmission line running approximately 403 km with a proposed in-service date of the end of 2021 (Hydro One-LSL Application).[2] Hydro One refers to its proposed transmission line as the Lake Superior Link line.

Hydro One has also filed an application under section 92 of the Act for leave to construct facilities required to upgrade three transformer stations (Hydro One-Station Upgrades Application).[3] These station upgrades are needed for either proposed new transmission line.

On August 13, 2018, the OEB combined the NextBridge-EWT Application and the Hydro One-Station Upgrades Application with the Hydro One-LSL Application.[4]

The two proposals differ in many ways: the route; the proposed in-service date; tower design; and project costs. OEB staff submits that both proposals are viable options. Ultimately, in OEB staff's view the question is therefore one of priorities: lower cost but greater risk and a possible later in-service date (Hydro One-LSL Application) vs. less risk

[1] The NextBridge-EWT Application was filed with the OEB on July 31, 2017 and has been assigned OEB File No. EB-2017-0182.
[2] The Hydro One-LSL Application was filed with the OEB on February 15, 2018 and has been assigned OEB File No. EB-2017-0364.
[3] The Hydro One-Station Upgrades Application was filed with the OEB on July 31, 2017 and has been assigned OEB File No. EB-2017-0194. On October 17, 2017, the OEB issued a Notice of Hearing for the NextBridge-EWT Application and the Hydro One-Station Upgrades Application stating that it would hear these two applications together.
[4] Procedural Order 1 on Combined Hearing, August 13, 2018.

and a possible earlier in-service date, but at a higher cost (NextBridge-EWT Application).

Having reviewed the evidentiary record, OEB staff submits that both proposals address the government-identified need to increase transmission capacity in northwestern Ontario. Each proposal also has its own merits and drawbacks as compared to the other.

Based on more than five years of development, the NextBridge project is more advanced than the Hydro One project, which translates to comparatively lower risks to project price escalations or delays in the in-service date. The NextBridge line may come into service sooner[5] but at a higher cost to both build and operate than Hydro One's proposal. There are also questions about NextBridge's ability to respond to unplanned outages.

Having been in development for a little over a year, the Hydro One project is less advanced than the NextBridge project, which raises questions about Hydro One's ability to complete the project on time and at its current budget estimate. However, even accounting for those uncertainties, it is likely that Hydro One's project would come into service at less cost than NextBridge given Hydro One's ability to leverage its existing assets. There are also questions about Hydro One's proposed use of the quad-circuit towers through Pukaskwa National Park and what impacts this could have on the electricity grid in Ontario.

In this submission, OEB staff highlights the merits and drawbacks of each transmission line Application, and identifies specific conditions that be included with approval for leave to construct in respect of each Applicant's proposed project.

With respect to the Hydro One-Station Upgrades Application, OEB staff agrees with both NextBridge and Hydro One that leave should be granted to upgrade the transmission stations that will be connected to the new transmission line and are required to support it.

2 BACKGROUND

2.1 Designation Proceeding and Project Need

In 2011, the OEB undertook a process for designating a company to complete development work for the expansion of the existing East-West Tie line with a new

[5] As discussed later, the potential for an earlier in-service date is questionable given delays in the environmental approval for two transformer stations that are part of the Hydro One-Station Upgrades Application.

transmission line between Wawa and Thunder Bay that would run roughly parallel to the existing East-West Tie transmission line.

In August 2013, the OEB designated NextBridge as the transmitter to complete development work for the new line between Wawa and Thunder Bay. In that Decision, the OEB explained the implications of designation as follows:

> Designation does not carry with it an exclusive right to build the line or an exclusive right to apply for leave to construct the line. A transmitter may apply for leave to construct the [new transmission line between Wawa and Thunder Bay], designated or not. In designating a transmitter, the Board is providing an economic incentive: the designated transmitter will recover its development costs up to the budgeted amount (in the absence of fault on the part of the transmitter), even if the line is eventually found to be unnecessary.[6]

On March 2, 2016, the Lieutenant Governor in Council made Order-in-Council 326/2016 (Priority Project OIC) under section 96.1 of the Act. The Priority Project OIC declared the expansion or reinforcement of the electricity transmission network in the area between Wawa and Thunder Bay to be needed as a priority project.

The need for the new transmission line has been determined by the Independent Electricity System Operator (IESO) and has been confirmed through regular updates to its need assessments, the latest of which were released in December 2017 and in June 2018.

On December 1, 2017, the IESO provided the then Minister of Energy with an updated needs assessment (the Updated Needs Assessment), which continued to recommend the construction of the new transmission line over local generation options. The Updated Needs Assessment also continued to recommend an in-service date of 2020 for the new line.

On February 27, 2018, NextBridge filed a Motion requesting that the Hydro One-LSL Application be dismissed or, in the alternative, not be processed. Among other things, the Motion relied on reference in the Priority Project OIC to an in-service date of 2020 for the new transmission line. The OEB dismissed that Motion on July 19, 2018, and among other things determined that the Priority Project OIC is not tied to a 2020 in-service date and that a proposed transmission line need not have a proposed in-service date of 2020 in order to fall within the scope of the Priority Project OIC.[7]

[6] EB-2011-0140, Phase 2 Decision and Order, August 7, 2013, p. 4.
[7] Decision and Order, Motion by Upper Canada Transmission Inc., Operating as NextBridge Infrastructure, on Hydro One Network Inc.'s Lake Superior Link Application, July 19, 2018 pp. 7 and 11.

OEB staff's assessment of the two proposals is therefore structured on the understanding that while the Priority Project OIC does not require that the new transmission line be in-service by 2020, the expansion or reinforcement of the electricity transmission network in the area between Wawa and Thunder Bay is a priority for the Province and there is therefore a benefit to an earlier, as opposed to a later, in-service date.

At the OEB's request, the IESO filed with the OEB in June 2018 an Addendum to its Updated Needs Assessment that speaks to the impacts of a delay to the in-service date for the proposed new transmission line between Thunder Bay and Wawa.[8] The IESO continued to recommend a 2020 in-service date for the new transmission line, indicating that if the line is not in service by the end of 2022, there is an increased risk to system reliability and that the associated cost uncertainties are unacceptable.

2.2 Proposed Routes

2.2.1 Route in the NextBridge-EWT Application

The transmission line proposed in the NextBridge-EWT Application would run for approximately 235 km from the Lakehead Transformer Station (TS) in the City of Thunder Bay to the Marathon TS in the Town of Marathon. The line would then continue for approximately 215 km from the Marathon TS to a connection at the Wawa TS located east of the Municipality of Wawa. The proposed route would require a new right of way (ROW), which would be largely adjacent to the existing East-West Tie transmission line owned by Hydro One, and would run within easements NextBridge needs to acquire from private landowners and the Crown. The NextBridge-EWT Application proposes to utilize lattice towers for the entire length of the new transmission line.[9] NextBridge's proposed tower design consists of guyed-Y lattice and self-supporting lattice tower structures.[10]

2.2.2 Route in the Hydro One-LSL Application

The transmission line proposed in the Hydro One-LSL Application would run 235 km from the Lakehead TS to the Marathon TS, then continue for 168 km from the Marathon TS and connect with the Wawa TS. Hydro One's line between Marathon TS and Wawa TS is shorter than NextBridge's proposed line as Hydro One proposes to run 35 km of line

[8] Addendum to the 2017 Updated Assessment for the Need for the East-West Tie Expansion Reliability Impacts and the Projected System Costs of a Delay to the Project In-service Date, June 29, 2018.
[9] NextBridge-EWT Application, Exhibit C, Tab 2, Schedule 1, pp.1-2.
[10] NextBridge Application and Evidence, Exhibit C, Tab 2, Schedule 1, p. 2, line 23 and Exhibit E, Tab 1, Schedule 1, p. 3, line 1.

through Pukaskwa National Park.[11]

For the section of the proposed line that would run through Pukaskwa National Park, Hydro One would accommodate four circuits (two existing and two new) on one set of towers (i.e. quad-circuit towers), which would not require corridor widening through Pukaskwa National Park. The rest of the route proposed in the Hydro One-LSL Application would require a new ROW, which, much like NextBridge's proposal, would be largely adjacent to the existing East-West Tie transmission line and would run within easements acquired from private landowners and the Crown.[12]

Hydro One's proposed design of the towers is a mixture of guyed masts, guyed lattice towers and self-supporting lattice structures.[13]

3 STAFF SUBMISSION

3.1 OEB's Jurisdiction in Section 92 Applications

Section 92 of the Act requires leave of the OEB for the construction, expansion or reinforcement of electricity transmission lines.[14] In considering whether to grant leave, the OEB is restricted to the criteria set out in section 96(2) of the Act:

> In an application under section 92, the Board shall only consider the following when, under subsection (1), it considers whether the construction, expansion or reinforcement of the electricity transmission line or electricity distribution line, or the making of the interconnection, is in the public interest:
>
> 1. The interests of consumers with respect to prices and the reliability and quality of electricity service.
>
> 2. Where applicable and in a manner consistent with the policies of the Government of Ontario, the promotion of the use of renewable energy sources.

In this case, the new transmission line has been declared by the Lieutenant Governor in Council to be needed as a priority under section 96.1 of the Act, and so the OEB is

[11] NextBridge did not receive approval by Parks Canada to cross through Pukaskwa National Park.
[12] Hydro One Application and Evidence, Exhibit C, Tab 1, Schedule 1, pp. 1-8.
[13] Hydro One Application and Evidence, Exhibit C, Tab 2, Schedule 1, p. 2, lines 23-25.
[14] Specifically, s. 92(1) of the Act states as follows: "No person shall construct, expand or reinforce an electricity transmission line or an electricity distribution line or make an interconnection without first obtaining from the Board an order granting leave to construct, expand or reinforce such line or interconnection".

required to accept that the transmission line is needed when it considers the criteria listed above.[15]

3.2 Other Related Legal Requirements

3.2.1 Duty to Consult and Environmental Matters

Based on arguments advanced in the hearing of the Motion, OEB staff anticipates that some parties' submissions may raise the role of the OEB in discharging the Crown's duty to consult. On this issue, OEB staff submits that the OEB's authority to consider the adequacy of Indigenous consultation is limited to the criteria set out in section 96(2) of the Act.

In *Rio Tinto*, the Supreme Court of Canada explained that a tribunal's authority to consider consultation depends on the tribunal's statutory mandate:

> The duty on a tribunal to consider consultation and the scope of that inquiry depends on the mandate conferred by the legislation that creates the tribunal. Tribunals are confined to the powers conferred on them by their constituent legislation: *R. v. Conway*, 2010 SCC 22 (CanLII), [2010] 1 S.C.R. 765. It follows that the role of particular tribunals in relation to consultation depends on the duties and powers the legislature has conferred on it.[16]

Recent jurisprudence from the Supreme Court of Canada, including the *Clyde River*[17] and *Chippewas of the Thames*[18] decisions, does not alter this requirement to examine the relevant legislation to determine the scope of a tribunal's authority to consider the adequacy of Indigenous consultation efforts.[19]

In a 2012 leave to construct application, the OEB explained how section 96(2) limits its review of leave to construct applications:

> ...the Board has no jurisdiction to conduct Aboriginal consultation itself, nor to assess the adequacy of the Crown's consultation efforts in a section 92 application (except as they may arise within the limits of section 96(2)). Aboriginal consultation is a matter of Constitutional law. Although section 19 of the Act confers a general power to consider issues of law, section 96(2) of

[15] Act, s. 96.1(2).
[16] *Rio Tinto Alcan Inc. v. Carrier Sekani Tribal Council*, 2010 SCC 43, para. 55.
[17] *Clyde River (Hamlet) v. Petroleum Geo-Services Inc*., 2017 SCC 40.
[18] *Chippewas of the Thames First Nation v. Enbridge Pipelines Inc*., 2017 SCC 41.
[19] See for example *Chippewas of the Thames First Nation v. Enbridge Pipelines Inc*., 2017 SCC 41, para. 36.

> the Act places specific limitations on the extent of the Board's power to review. As the Supreme Court stated in Rio Tinto: "[t]he power to decide questions of law implies a power to decide constitutional issues that are properly before it, *absent a clear demonstration that the legislature intended to exclude such jurisdiction from the tribunal's power*." In enacting section 96(2) of the Act, the Legislature has clearly demonstrated its intention to exclude from the Board's purview any matters other than those directly associated with the interests of consumers with respect to price and the reliability and quality of electricity service, or the promotion of the Government's renewable energy policies. Other issues, including environmental impacts, have been expressly excluded from the Board's jurisdiction.[20] [emphasis in original]

OEB staff also notes that the adequacy of Indigenous consultation is considered as part of the provincial environmental assessment process for a transmission line. That process remains ongoing in relation to both of the proposed projects. While the OEB does not have jurisdiction to determine issues related to the Environmental Assessment (EA) approval, both of the proposed projects require the successful completion of the EA approval process and the acquisition of any necessary permits.[21] The Ministry of the Environment, Conservation and Parks (MECP) has confirmed that environmental approval will not be granted if there are outstanding issues related to Indigenous consultation.[22]

Based upon this analysis, OEB staff submits that the OEB's authority to consider Indigenous consultation in this proceeding is limited to the criteria set out in section 96(2) of the Act. In this case, Indigenous consultation is relevant to the criterion of price insofar as the stage of Indigenous consultation can affect the costs of and schedule for a project. Similarly, environmental matters are only in scope insofar as they relate to the costs of and schedule for a project.

As noted above, in an application made under section 92 of the Act, the OEB considers the interests of consumers with respect to prices and the reliability, and quality of electricity service and, where applicable, the promotion of renewable energy sources in a manner consistent with the policies of the Government of Ontario. In this submission, OEB staff analyzes the merits and drawbacks of both the NextBridge-EWT and Hydro One-LSL Applications in the context of these criteria.[23]

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[20] EB-2012-0082, Decision and Order, November 8, 2012, p. 12; see also EB-2009-0120, Decision on Questions of Jurisdiction and Procedural Order No. 4, November 18, 2009, pp. 8-11.
[21] EB-2012-0082, Decision and Order, November 8, 2012, p. 4.
[22] Oral Hearing Transcript, October 12, 2018, p. 121, lines 7-16.
[23] The promotion of renewable energy sources in a manner consistent with the policies of the Government of Ontario has not been raised as an issue in either the NextBridge-EWT Application or Hydro One-LSL Application.

3.3 Price

The different categories of costs that are relevant to the "price" criterion in this case are construction costs; development costs; ongoing operations, maintenance and administration (OM&A) costs; additional system costs that may be associated with in-service delays for the line and station facilities; and costs that may be incurred due to delays in the EA approval process. OEB staff's analysis of the NextBridge-EWT and Hydro One-LSL Applications in respect of these costs categories is set out below.

3.3.1 Construction Costs

NextBridge

NextBridge states that it has signed an Engineering, Procurement and Construction (EPC) contract with Valard and that it forecasts NextBridge's construction costs to be $737 M plus or minus 10%[24] (i.e. $810.7 M at the upper end and $663.3 M at the lower end of the cost range). This does not include NextBridge's development costs of $40.2 M for which NextBridge sought full recovery in the hearing on its development costs.[25]

In response to interrogatories, NextBridge declined to provide a not-to-exceed (NTE) price.[26] In the oral hearing NextBridge representatives claimed that NextEra, the largest partner in NextBridge, manages its portfolio of various project budgets efficiently, stating that "[w]e spend between 4 and 10 billion dollars every year, and we manage those budgets to be within plus or minus 1 percent."[27]

In its Argument-in-Chief, NextBridge states that its construction cost estimate is "a mature AACE International (formerly the Association for the Advancement of Cost Engineering)[28] Class 2 estimate within a narrow accuracy band of plus or minus 10%" and that "NextBridge's estimate is on the cusp of becoming an AACE Class 1 estimate, which will

[24] Oral Hearing Transcript, October 10, 2018, p. 17.
[25] On March 1, 2018, the OEB determined that it would conduct a detailed review of NextBridge's development costs as part of this proceeding. Through procedural orders the OEB set out timelines for interrogatories, an oral hearing and submissions on development costs. These procedural steps were completed.
[26] NextBridge's response to OEB Staff Interrogatory 46(a), September 24, 2018.
[27] Oral Hearing Transcript, October 10, 2018, p. 30, lines 1-3.
[28] The AACE classification is a common method of assessing the cost accuracy of a project as it considers the maturity level of a project in providing an evaluation of the accuracy range of the project's cost estimate. As the completed project deliverables and AACE Estimate Class progress, the cost estimates become more accurate. An AACE Class 1 estimate has an accuracy range of minus 10% to plus 15%, while an AACE Class 2 estimate has an accuracy range of minus 15% to plus 20%.

occur upon approval of NextBridge's EA".[29] NextBridge expects approval of its EA from the MECP by February 2019.[30]

As of the end of September 2018, NextBridge had already spent $34.4 M of its $737 M budget, including $5.4 M on environmental and regulatory approvals.[31] NextBridge expects to incur approximately $4.5 M in additional costs to the end of December 2018. NextBridge has indicated that it will seek recovery of this $38.9 M amount should it not receive leave to construct the transmission line.[32]

Hydro One

Hydro One's construction costs estimate is $625 M.[33] If selected to build the line, Hydro One will also seek to recover $17 M of costs up to the date of the OEB's leave to construct decision (which it calls development costs), resulting in a total cost of $642 M.[34] Hydro One's EPC contract with SNC-Lavalin is, in Hydro One's words, "ready-to-execute fixed price and schedule bound".[35] Hydro One and SNC-Lavalin state that the EPC contract is executable and signing the EPC contract is contingent only upon the OEB granting leave to construct to Hydro One. In its Argument-in-Chief, NextBridge raised the issue that this contract is still unsigned and its related costs are subject to change.[36]

During the course of the oral hearing in October 2018, NextBridge asserted that the Hydro One-LSL Application has an AACE Class 3 cost estimate.[37] An AACE Class 3 cost estimate defines a lower bound of minus 20% and an upper bound of plus 30% in terms of accuracy for the given stage of project development. Hydro One asserts in its Argument-in-Chief that "HONI's baseline cost estimate has 6% upper bound and substantially reduces risk of cost increases to customers".[38] Further, Hydro One states that the plus 30% upper bound assertion by NextBridge for its cost estimate accuracy is false.[39] In other words, with Hydro One's project cost estimated at $642 M, the upper bound of 6% would

[29] NextBridge's Argument-in-Chief, October 22, 2018, pp. 2-3.
[30] NextBridge's Argument-in-Chief, October 22, 2018, p. 17.
[31] Exhibit 7.1, October 12, 2018.
[32] Oral Hearing Transcript, October 11, 2018, pp. 194-195.
[33] See OEB Staff Summary of the Evidence on Costs, Exhibit K4.2, October 9, 2018.
[34] Based on updated information provided in response to OEB Staff Interrogatory 11 at Exhibit I, Schedule 11, p. 6 of 8, September 24, 2018.
[35] Hydro One's Argument-in-Chief, October 22, 2018, p. 9, para. 35.
[36] NextBridge's Argument-in-Chief, October 22, 2018, p. 23, para 6e.
[37] Oral Hearing Transcript, October 10, 2018, p.20, lines-1-3.
[38] Hydro One Undertaking JT2.25, May 25, 2018 and Hydro One's Argument-in-Chief, October 22, 2018, p. 11, para. 40.
[39] Hydro One's Argument-in-Chief, October 22, 2018, p. 11, para. 40.

result in a maximum expected cost of approximately $681 M.

Hydro One has advanced a NTE price of $683 M as a maximum cap for the purpose of constructing the line proposed in the Hydro One-LSL Application, subject to the following three conditions: (i) Hydro One receives approval from its Board of Directors for the NTE price of $683 M; (ii) it receives leave to construct approval from the OEB by January 2019; and (iii) the EA approvals (both the Provincial Individual EA and Parks Canada EA for the 35 km segment through Pukaskwa National Park) are received by August 2019.

In cross-examination, Hydro One further stated that it will not seek cost recovery from ratepayers for any costs above the $683 M under "normal course of execution of this project".[40] Hydro One confirmed, however, that it may seek recovery of costs in excess of the $683 M NTE price should the following events occur, which Hydro One characterized as unlikely: labour disputes; safety and environmental incidents not covered by Hydro One's insurance; significant changes in costs of materials, commodity rates, and/or exchange rates; any conditions imposed by regulatory bodies or Governmental agencies; and *force majeure* events.[41]

Submission

OEB staff notes that there has been a thorough review of the costs of both transmission line projects in these proceedings. This should allow the OEB to assess the reasonableness of the costs proposed by the two Applicants.

OEB staff submits that should the OEB approve the NextBridge-EWT Application, the OEB should place as a condition of approval that NextBridge agrees not to apply to recover construction costs in an amount greater than $737 M plus 10% (i.e. $810.7 M) in its rate application, regardless of the cause, unless the additional cost is due to an event accepted by the OEB to be a genuine *force majeure* event (e.g. an earthquake), and such costs are reviewed and approved by the OEB.

In OEB staff's view, this condition is appropriate for several reasons. First, NextBridge has stated that its cost estimate is "on the cusp of becoming an AACE Class 1 estimate" and has repeatedly voiced its confidence in this estimate. If selected by the OEB, NextBridge should therefore be able to build the line as proposed in the NextBridge-EWT Application

[40] Oral Hearing Transcript, October 4, 2018, p. 175.
[41] In its Application (Exhibit B, Tab 7, Schedule 1, p. 10), Hydro One stated that it would submit these costs to the OEB for prudence review for recovery through rates "...only after all other resources have been exhausted".

at this budget. Second, OEB staff has concerns with NextBridge being granted leave without measures in place to restrict its costs. In cross-examination, NextBridge was either unable or unwilling to provide an estimate of the cost increase that may result from shifting its construction schedule from the Fall of 2018 to the Spring of 2019, despite previously indicating that the costs of such a change would be "significant".[42] Moreover, NextBridge conceded that it had not even asked Valard what the potential costs of such a change would be.[43] This lack of transparency, when combined with significant escalations in NextBridge's development and construction costs since the designation proceeding, lead OEB staff to recommend that any leave to construct approval granted to NextBridge include this condition. Third, the selection of NextBridge or Hydro One in this proceeding will be based in part on the comparative analysis of their respective proposed construction costs. If either Applicant wants to be granted leave to construct, it should be prepared to stand behind its cost estimate and provide reasonable cost certainty for ratepayers.

OEB staff further notes that all of NextBridge's construction costs would be subject to the OEB's review in a rate proceeding, as would be the case with any other capital project cost added to the rate base for cost recovery. OEB staff further proposes that recovery of any costs above the $737 M plus or minus 10% estimate (i.e., up to the $810.7 M amount) would also be subject to a detailed review for foreseeability in NextBridge's first rate proceeding.

With respect to NextBridge's $38.9 M in sunk construction costs[44], OEB staff notes that the recovery of these amounts, in the event that NextBridge is not granted leave to construct, is not certain. While NextBridge can apply for recovery of these amounts, it is not presumptively entitled to recover all of its prudent construction costs. In the designation process, the OEB explained that recovery would be considered in light of the relevant circumstances:

> On the issue of cost recovery after a failure to obtain an order for leave to construct the line, the Board agrees with Board staff and other parties that the reason for failure will be an important consideration in determining what costs, if any, are to be recovered from ratepayers. Generally, if the project does not move forward due to factors outside the designated transmitter's control, the designated transmitter should be able to recover

[42] NextBridge Response to Undertaking JT1.25; Oral Hearing Transcript, October 10, 2018, pp. 21-24.
[43] Oral Hearing Transcript, October 12, 2018, pp. 8-10.
[44] This amount is comprised of $34.4 M in costs from the filing of its leave to construct application in July 2017 up to the end of September (see Exhibit K7.1, October 12, 2018), and an estimated spend of $1.5 M per month for October-December 2018 (see Oral Hearing Transcript, October 11, 2018, p. 194).

> the budgeted development costs spent and reasonable wind-up costs. If failure occurs due to factors within the designated transmitter's control, neither recovery nor automatic denial is certain.[45]

In the event NextBridge is not granted leave to construct the transmission line, OEB staff submits that NextBridge should be entitled to recover at least its EA-related sunk construction costs as Hydro One will rely upon NextBridge's EA work to support the EA for its own project. However, as noted in Section 3.3.4 ahead, OEB staff submits that NextBridge should be expected to secure EA approval.

With respect to the Hydro One-LSL Application, OEB staff submits that the OEB should include as a condition of approval that Hydro One agrees not to apply to recover construction and development costs in excess of its $683 M NTE price, with the exception of certain costs related to a potential delay in EA approval. As noted above, one of the conditions related to Hydro One's NTE price is EA approval by August 2019. Hydro One has stated that a 12-month delay in securing its EA approval would be expected to add $14.761 M of costs[46], and so OEB staff is of the view that up to $14.761 M of costs above the $683 M NTE amount could be allowed into rate base if an EA delay arises. OEB staff does not, however, believe that any additional amounts beyond the estimated costs of a 12-month delay should be allowed into rate base even if the actual EA delay is longer than 12 months. OEB staff recommends that Hydro One not be permitted to apply to recover costs above the $683 M, plus up to $14.761 M in respect of EA approval delays (or $697.761 M in total) regardless of the cause, unless the additional cost is due to an event accepted by the OEB to be a genuine *force majeure* event (e.g. an earthquake), and such costs are reviewed and approved by the OEB. OEB staff is of the view that this treatment is appropriate given that the focus of Hydro One's proposal is a potential for lower costs to ratepayers and that, as noted above, both Applicants should be prepared to stand behind their cost estimates and provide reasonable cost certainty for ratepayers.

OEB staff further notes that all construction costs would be subject to the OEB's review in a rate proceeding as would be the case with any other capital project cost added to the rate base for cost recovery. OEB staff further proposes that recovery of any costs above the $641 M estimate (up to the $697.761 M amount in the event of a delay in the EA process) would also be subject to a detailed review for foreseeability in Hydro One's first rate proceeding.

To address questions that NextBridge raised about the fact that the contract between

[45] EB-2011-0140, Phase 1 Decision and Order, July 12, 2012, p. 19.
[46] Hydro One's response to OEB Staff Interrogatory 7, Exhibit I, Tab 1, Schedule 7, p. 2.

SNC-Lavalin and Hydro One remains unsigned, OEB staff also proposes a condition of approval for Hydro One that its “executable” EPC contract with SNC-Lavalin be signed without any material changes to the price, schedule or scope of work.

OEB staff also submits that the OEB should, for clarity and consistency, consider adding a condition to whichever Applicant is granted leave to construct that states that the capital costs approved by the OEB in this proceeding are assumed to be in nominal 2021 dollars. OEB staff is of the view that this will avoid any potential confusion in the future as to whether the approved costs did or did not include escalation. OEB staff submits that 2021 dollars are appropriate given that, as discussed below, this appears to be the most realistic in-service date for both Applicants as a result of delays in securing EA approvals for the station work. OEB staff wants to ensure that escalation is included in the stated capital costs.

3.3.2 Comparability of Construction Costs

OEB staff notes that costs of the project as submitted by NextBridge and Hydro One can be compared on a more relative basis if the cost differential due to line route variance and Hydro One’s potential use of NextBridge’s Provincial Individual EA material are considered.

Hydro One intends to utilize EA-specific development work already completed by NextBridge, thereby avoiding certain work activities and costs that it would otherwise have to incur to complete its project. Hydro One has indicated on the record that in the event that NextBridge’s EA is not available for its use, Hydro One would have to incur approximately $20 M to complete its own Provincial Individual EA.

Hydro One also intends to rebuild its existing infrastructure in Pukaskwa National Park to accommodate four circuits (two existing and two new) on one set of towers, which would not require corridor widening through Pukaskwa National Park and results in Hydro One’s route being shorter than NextBridge’s. This option is not available to NextBridge. Hydro One has stated that if it does not receive approval from Parks Canada for the segment of the line that passes through Pukaskwa National Park, it would have to modify its route and thereby incur additional costs of approximately $40.6 M.

OEB staff has prepared the following table, based on information on the record, to demonstrate four scenarios where the total cost of Hydro One’s price is increased to account for possible risks, and to provide for a more ‘apples to apples’ comparison of the two projects. When certain risks are accounted for, the total construction costs (including

development costs) that ratepayers would have to bear in the event that Hydro One were to be granted leave to construct is reasonably close to the costs of the NextBridge proposal.

Table 1: Cost Differential Scenarios[47]

	NextBridge	Hydro One				
	Base Scenario	**Base Scenario**	**Scenario 1** Hydro One not able to use NextBridge's EA work (adding $20 M for Provincial Individual EA)	**Scenario 2** Hydro One around the Park (adding $40.8 M)	**Scenario 3** Hydro One's Proposed Route plus NextBridge awarded recovery of costs incurred up until leave to construct decision (adding $79.1 M[48])	**Scenario 4** Hydro One (i) not able to use NextBridge's EA work (adding $20 M for Provincial Individual EA), (ii) going around the Park (adding $40.8 M) and (iii) NextBridge recovers costs incurred up until the leave to construct decision (adding $79.1 M).
Route Length (km)	443	403	403	443	403	443
Total Cost ($M)	777[49]	642[50]	662	682.8	721.1	781.9
Cost per km ($M/km)	1.75	1.59	1.64	1.54	1.79	1.77

The above table illustrates that under certain scenarios, the costs of the Hydro One project are not much lower and could even potentially exceed NextBridge's costs. For rate impacts, see Section 3.3.7.

[47] Costs are based on OEB Staff Summary of the Evidence on Costs, Exhibit K4.2, October 9, 2018 and include both construction and development costs.
[48] This amount presumes full recovery of the $40.2 M in development costs, $34.4 M in construction costs up to the end of September (see Exhibit K7.1, October 12, 2018), and an estimated spend of $1.5 M per month for October-December 2018 (see Oral Hearing Transcript, October 11, 2018, p. 194).
[49] This is comprised of development costs of approximately $40 M plus construction costs of approximately $737 M.
[50] This is comprised of development costs of approximately $17 M plus construction costs of approximately $625 M.

3.3.2.1 Factors Impacting Construction Costs Estimates

In addition to the quantum of construction estimates, OEB staff submits that a number of other factors are important to consider from a price perspective.

Cost Estimate Classifications

The AACE classification is a common method of assessing the cost accuracy of a project as it considers the maturity level of a project in providing an evaluation of the accuracy range of the project's cost estimate. As the completed project deliverables and AACE Class estimate progress, the cost estimates become more accurate. While NextBridge has indicated that its construction costs estimate is "a mature AACE Class 2 estimate" and that it is expecting a Class 1 estimate (i.e. the most accurate cost accuracy classification) by February 2019, NextBridge has also argued that Hydro One's construction costs estimate is currently a Class 3 estimate, which has an accuracy range of minus 20% to plus 30%. NextBridge argues that Hydro One's upper end of its cost range essentially amounts to a higher project cost than its own.[51] However, as noted above, Hydro One states that it is committed to an upper range of 6% rather than 30%.

Project Contingency

NextBridge has indicated that it has incorporated $49.3 M of contingency in its construction budget.[52] Hydro One explained that its contingency of $5.4 M is in addition to $54 M of contingency that is already embedded in the fixed price contract with SNC-Lavalin[53], for a total of roughly $60 M.[54]

Transmission Procurement and Construction Experience

Hydro One is Canada's largest electricity transmission and distribution service provider – transmitting and distributing electricity across Ontario since 1906. As the incumbent transmitter in the province of Ontario, Hydro One has significant local experience with transmission procurement, construction and maintenance. NextBridge is a partnership between Enbridge, NextEra Energy Canada and OMERS Infrastructure. Despite a lack of Ontario-specific electricity transmission experience, NextBridge is backed by NextEra, an experienced electricity transmitter that has knowledge of operating in the electricity sectors of both the United States and Canada. Further, NextBridge is backed by Enbridge, an

[51] NextBridge's Argument-in-Chief, October 22, 2018, p. 21.
[52] OEB Staff Summary of the Evidence on Costs, Exhibit K4.2, October 9, 2018.
[53] Oral Hearing Transcript, October 9, 2018, p. 81 and Hydro One's Exhibit JT2.21, p. 3.
[54] Oral Hearing Transcript, October 2, 2018, p. 21.

experienced utility that operates in the gas distribution sector in Ontario. OEB staff submits that NextBridge and Hydro One are experienced entities that are capable of constructing, owning and operating the transmission line. Both Applicants bring unique skillsets and experience to the proposed projects. NextBridge can rely on experience gained from partners who have projects completed throughout North America, while Hydro One has a specialized, in-depth knowledge of operating in the Ontario electricity sector.

The examination of NextBridge's and Hydro One's previous comparable projects illustrates that the costs proposed by each of NextBridge and Hydro One are reasonable. Table A1 in Appendix A provides an aggregated overview of comparable line projects that the Applicants provided in their respective Applications. Updated Line Cost values have been included for NextBridge-EWT and Hydro One-LSL Applications. Based on this evidence, along with the thorough review of costs conducted as part of this proceeding, OEB staff does not take issue with the reasonableness of costs outlined by each of NextBridge and Hydro One.

For a number of these projects, information was not provided comparing budgeted to actual costs. While there is some evidence comparing actual and budgeted costs for different projects, not all the examples are for comparable projects. In Hydro One's one comparable project example, construction of the Bruce to Milton transmission line, actual construction costs were 10% above the estimate.[55] NextBridge provided examples of five NextEra transmission projects greater than 100 km – three of which were over budget and two of which were under budget.[56]

Corridor Widening and ROW issues

Hydro One states that its route "reduces the required corridor width by 50%" compared to NextBridge's route.[57] OEB staff recognizes that this factor lowers the land acquisition costs and clearing costs during construction for Hydro One. This in turn reduces the total cost of Hydro One's proposal and the risk of construction cost overruns.

NextBridge stated that it had early discussions with Hydro One to request that its new ROW overlap with Hydro One's existing ROW in order to minimize the width required, but NextBridge was told to keep its easement entirely separate.[58]

[55] Hydro One's response to NextBridge Interrogatory 16, September 24, 2018.
[56] NextBridge's response to OEB Staff Interrogatory 9, January 25, 2018, Attachment 1, p. 4. The three over-budget projects were 18%, 12.4% and 5.8% above estimates. The two under-budget projects came in at 8.5% and 16% under budget.
[57] Hydro One's Argument-in-Chief, October 22, 2018, p. 26, para. 94.
[58] Oral Hearing Transcript, October 12, 2018, p. 46.

Based on the evidence in this proceeding, OEB staff is unable to come up with a dollar figure for NextBridge's costs for having a wider ROW or the costs arising from NextBridge not being able to overlap Hydro One's ROW. Presumably, if NextBridge was able to overlap Hydro One's ROW as Hydro One can, its costs would be lower, further reducing the cost differential between the two Applications.

3.3.3 Operations, Maintenance and Administration (OM&A) Costs

NextBridge forecasts its OM&A costs to be $3.92 M per year, if the NextBridge-EWT Application is approved by the OEB.[59] NextBridge's initial evidence had stated that OM&A costs were forecast to be $7.4 M, and later $4.7 M, but these cost estimates have been reduced throughout the course of the proceeding. For the purposes of emergency response, NextBridge has indicated that it will have one facility, situated in Thunder Bay, with two employees stationed in that facility, who will be responsible for maintenance and emergency response for the entire 443 km line. NextBridge has indicated that it will have contractors supporting the restoration activities and that it is currently in negotiations with Valard to be able to utilize Valard's staff in Manitoba in case of an emergency. NextBridge also stated that it is working with West Air on a helicopter contract and with Celtic Power on an overall restoration plan.[60]

Hydro One's OM&A costs are estimated at $1.5 M annually.[61] Hydro One explained that it has the advantage of operational and maintenance efficiencies due to resources that are already in use for Hydro One's existing transmission lines and associated ROW.[62]

Submission

While the difference in the annual OM&A cost estimate is a relevant price consideration for the OEB, there is no certainty that further changes – in either direction – may not be forthcoming. The lack of certainty is evident from the designation proceeding where (i) NextBridge's OM&A estimate was in fact higher than its current $3.9 M[63]; and (ii) EWT LP

[59] OEB Staff Summary of the Evidence on Costs, Exhibit K4.2, October 9, 2018.
[60] Oral Hearing Transcript, October 11, 2018, pp. 56-57.
[61] OEB Staff Summary of the Evidence on Costs, Exhibit K4.2, October 9, 2018.
[62] Hydro One Application and Evidence, Exhibit B, Tab 7, Schedule 2, p. 1.
[63] In the designation proceeding, NextBridge's OM&A estimate was $4.4 M (see UTC Designation Application, EB-2011-0140, Figure 2: Cost Forecast and Recovery Proposal Summary, p. 11, January 4, 2013).

(the partnership involving Hydro One) proposed OM&A costs more than double what are currently included in the Hydro One-LSL Application.[64]

That being said, NextBridge's OM&A amount is more than double that of Hydro One. OEB staff submits that if NextBridge is granted leave to construct, it should exhaust all opportunities to further lower its OM&A costs through cost savings, including shared services agreements, outsourcing, or other means. These costs will be subject to a detailed prudence review in the subsequent rates proceeding, if applicable. NextBridge should be required to file evidence in its first revenue requirement application of its attempts to lower its OM&A costs.

3.3.4 Development Costs

On September 10, 2018, NextBridge filed its Argument-in-Chief on its development costs. In that submission, NextBridge asked for recovery of $40.2 M, almost double its original $22.4 M estimate for development costs that had been approved by the OEB in the designation proceeding. NextBridge argued that the evidence demonstrates that it prudently incurred all costs. Among other things, NextBridge pointed to an Ontario Power Authority (OPA) recommendation to delay the in-service date of the transmission line and to undertake a major re-route of the transmission line as two of the major causes for cost escalation. For the reasons provided in the OEB staff submission of September 19, 2018 on NextBridge's development costs, OEB staff submitted that NextBridge should only be allowed recovery of approximately $30.7 M for its development costs as it has not established the prudence of additional costs beyond that amount.[65]

Hydro One defines development costs as costs incurred up to receiving a decision on its leave to construct application from the OEB. Currently, Hydro One estimates development costs to be $17 M, which is $4.7 M higher than when the Hydro One-LSL Application was filed in February 2018.[66] Hydro One explained that $1.9 M of this increase is related to costs that were shifted from the construction budget to the development budget as a result of the expected change in OEB approval date (from October 2018 to January 2019).[67] Further, it was explained that $2.8 M of the development cost increase was associated

[64] See Exhibit K4.3 (EWT LP's Response to OEB Staff Interrogatory 29 on OM&A Costs) which showed EWT LP OM&A ranging from $4.17 M to $7.12 M depending upon whether the services were contracted out or performed by EWT LP.
[65] OEB Staff Submission on NextBridge's Development Costs, September 19, 2018, p. 2.
[66] The development cost amount included in its original application was $12.2 M (Exhibit B, Tab 7, Schedule 1, p. 3).
[67] Oral Hearing Transcript, October 2, 2018, pp. 21-22.

with additional costs of a Provincial Individual EA process, which is being pursued by Hydro One in parallel in the event the MECP declaration order is not granted.[68] Hydro One has stated that it will not seek recovery of its development costs if it is not granted leave to construct approval.

Submission

OEB staff's position with respect to NextBridge's development costs was previously set out in its submission on development costs. Given that issues have been raised about NextBridge potentially seeking to withdraw its EA if it is not granted leave to construct approval, OEB staff submits that NextBridge should be expected to secure EA approval given that it wishes to seek recovery of EA costs from ratepayers.

OEB staff does not take issue with Hydro One's development costs, but submits Hydro One's overall construction costs should include all of Hydro One's development costs, in the event the OEB approves the Hydro One-LSL Application with a NTE condition. In other words, OEB staff does not believe that incremental costs in excess of $697.761 M should be submitted to the OEB for recovery, be it construction costs or development costs.

3.3.5 In-Service Delays for Station Facilities and Associated Additional System Costs

In-Service Delays Associated with Station Facilities

As previously noted, NextBridge states that it is still committed to the December 2020 in-service date for its proposed line in the NextBridge-EWT Application and will do its best to make that timeline if granted leave to construct.[69] Hydro One states that it expects an in-service date of December 2021 for its proposed line.[70]

The Hydro One-Station Upgrades Application, filed on July 31, 2017, seeks leave to upgrade Lakehead TS, Marathon TS and Wawa TS. Based on the evidentiary record, it is understood that regardless of which transmission line project is approved (either the NextBridge-EWT Application or the Hydro One-LSL Application), the Marathon TS, Wawa

[68] Hydro One stated in Exhibit C, Tab 1, Schedule 2 of its pre-filed evidence that it was looking to work collaboratively with MECP to implement a regulatory measure, such as a declaration order to exempt typical EA requirements, which would allow it to utilize the EA-specific development work already completed by NextBridge, and to address changes in the proposed route through additional study, consultation and regulatory approval.
[69] Oral Hearing Transcript, October 11, 2018, p. 21.
[70] Oral Hearing Transcript, October 2, 2018, p. 45.

TS and Lakehead TS upgrades need to be completed by Hydro One to allow for the new transmission line to be energized and operational.

During the course of the proceeding, it was revealed that Marathon TS is a critical path in the station upgrade work as it requires the largest infrastructure and land expansion. Permits required by Hydro One to start the upgrade of the stations have been delayed due to the requirements placed by the MECP for Notice of Completion for a Class EA for Marathon TS.

During the oral hearing, Hydro One indicated that given the expected date for the station Class EA approval for Marathon TS, it will not be able to have its station work complete prior to 2021. It did, however, agree to go back to see whether it could find ways to move up this date. After the close of the oral hearing, Hydro One provided an updated stations construction schedule[71] based upon NextBridge's Provincial Individual EA approval and final station Class EA Notice of Completion by March 1, 2019. The projected in-service date based on the updated schedule is September 23, 2021.

On October 29, 2018, Hydro One filed a letter with the OEB notifying that the MECP has now required Hydro One to complete a full Class EA for the Wawa TS. Hydro One states that this process takes approximately 12-18 months to complete, which will mean that Wawa TS is also on the critical path from an in-service date perspective. Hydro One noted that it would use "best efforts to ensure that the in-service date is not delayed beyond 2021 for either proponent".[72]

The MECP has confirmed that approval of Hydro One's station Class EAs will not be granted until a Provincial Individual EA for a transmission line project (either the NextBridge-EWT Application or the Hydro One-LSL Application) is granted.[73]

Hydro One's position is that "the station work should proceed upon [EA] approval of the [NextBridge] line, regardless of which Applicant is awarded the leave to construct."[74] This is not consistent with the evidence provided by the MECP, which indicated that if the OEB granted Hydro One leave to construct the new transmission line, work on the Marathon TS and Wawa TS would need to wait for Hydro One's EA approval (estimated to be between October-December 2019 for Marathon TS and even later for Wawa TS).[75] As a result, it

[71] Hydro One Undertaking J4.1, October 12, 2018.
[72] Hydro One Correspondence, October 29, 2018, p. 2.
[73] Oral Hearing Transcript, October 12, 2018, pp. 123-126.
[74] Hydro One's Argument-in-Chief, p. 32, para. 129.
[75] Oral Hearing Transcript, October 12, 2018, p. 126.

appears that Hydro One's in-service date for the Hydro One-LSL Application may be pushed into the Spring of 2022.

Submission

OEB staff notes that the anticipated timing required for Hydro One to complete its stations work no longer allows for an in-service date of December 2020 for NextBridge given that both the line and stations are required in order for the line be used and useful. Given this, it would appear from the evidentiary record that an in-service date of December 2020 is no longer realistic, regardless of who is granted leave to construct the new transmission line. Hydro One's October 29, 2018 letter reinforced the reality of likely delays associated with the upgrading of stations.

NextBridge indicated during the oral hearing that its cost for the proposed line in the NextBridge-EWT Application would be lower if it did not need to complete the line until 2021 and testified "…we believe we could come in much closer to our 737 number and potentially save some additional money on it."[76] OEB staff notes that based on NextBridge's statements during the oral hearing, it appears that a later in-service date for the proposed line in the NextBridge-EWT Application has the potential to allow NextBridge to stretch its project schedule and find cost-saving opportunities.

OEB staff submits that in the event that NextBridge is granted leave to construct by the OEB, NextBridge and Hydro One should be required to coordinate the in-service date of the line with the Hydro One station upgrades. This way, neither project will be fully constructed well in advance of the other, and any potential cost-saving opportunities can be pursued.

OEB staff does not take issue with Hydro One's updated stations project schedule. The delay is related to EA approval, which falls into the MECP's jurisdiction. However, Hydro One should continue to look at ways to expedite the stations work after the EA approval is granted wherever possible.

Additional System Costs Quantified by the IESO

On June 29, 2018, the IESO issued an addendum to its 2017 updated needs assessment[77] at the request of the OEB and provided a summary of potential costs of delay to the in-service date for 2020, 2021, 2022, 2023 and 2024, respectively. The IESO

[76] Oral Hearing Transcript, October 12, 2018, p. 52, lines 3-4.
[77] Addendum to the 2017 Updated Assessment for the Need for the East-West Tie Expansion Reliability Impacts and the Projected System Costs of a Delay to the Project In-service Date, June 29, 2018.

further updated the cost summary table in response to interrogatories to account for high water conditions, as illustrated in Table 2, below.[78]

Table 2: Updated Summary of Potential Cost of Delay to the In-service Date for 2020-2024

Year	Potential Capacity Cost (2017$ millions)	Energy Cost (2017$ millions)		Foregone Loss Savings (2017$ millions)	Total Potential Cost of Delay (2017$ millions)	
		Median Water	*High Water*		*Median Water*	*High Water*
2020	$16	$0.5	$1.9	$0.7	$17	$19
2021	$18	$0.5	$1.9	$0.7	$19	$21
2022	$22	$0.5	$1.9	$0.7	$23	$25
2023	$38	$0.6	$3.8	$0.7	$39	$42
2024	$44	$0.6	$4.2	$0.7	$45	$49

In its addendum to the 2017 updated needs assessment, the IESO stated that:

> [t]he IESO continues to recommend an in-service date of 2020 for the E-W Tie Expansion. If a delay is to be incurred, relying on interim measures will result in additional risks to reliability and increased costs. In this case, the IESO does not support delaying the in-service date of the East-West Tie Expansion beyond the end of 2022 as the increased risks to system reliability and the associated cost uncertainties are unacceptable.[79]

Submission

Both NextBridge and Hydro One are confident that they will be able to have the transmission line in service by the end of 2021 (or sooner, in the case of NextBridge). OEB staff submits that the OEB should place as a condition on its approval (to either NextBridge or Hydro One, whichever is granted OEB approval) that the amounts that the Applicant may apply to recover from ratepayers as described in section 3.3.1 be reduced by the IESO's forecast system costs of the delay, should the Applicant be delayed beyond 2021 other than for reasons beyond its control.[80] OEB staff is of the view that this is an

[78] The IESO's response to NextBridge Interrogatory 20, September 24, 2018.
[79] Addendum to the 2017 Updated Assessment for the Need for the East-West Tie Expansion Reliability Impacts and the Projected System Costs of a Delay to the Project In-service Date, June 29, 2018, p. 6.
[80] For example, if NextBridge or Hydro One (whichever is granted OEB approval) does not meet a December 2021 in-service date other than for reasons beyond its control, the limit for which it will apply for recovery (i.e. $810.7 M for NextBridge and $697.761 M for Hydro One) will be reduced by the IESO's forecast system costs of the delay pro-rated to the month that the line comes into service (i.e. $19 M for 2021, assuming median water). OEB staff does not propose that this condition would apply in the event of a delay caused by the Hydro One station upgrade work, if NextBridge had been granted leave to construct approval for the line.

appropriate incentive to ensure that the project remains on schedule, and that this recognizes that there are real system costs for ratepayers to bear if the project is delayed. OEB staff submits that 2021 should be the relative reference point given that a December 2020 date is no longer realistic, regardless of who is granted leave to construct the new transmission line.

3.3.6 Potential Additional Costs Associated with the Delay in the EA Approval

EA approvals have been considered in terms of additional development costs that may potentially be recovered from ratepayers. Also, delays in environmental approvals may cause delays in the construction schedule and in-service date, which may add to the overall impact on ratepayers either through increased construction costs or additional system costs for interim measures.

One of the main risks of delay for either proposal is the uncertainty in acquiring timely EA approvals to commence construction to meet the projected in-service date.

NextBridge is further along in its EA approval process and expects to receive EA approval from the MECP by February 2019, although it is unclear whether this approval will be delayed until the MECP is in a position to grant EA approval for the Wawa TS.

There is significantly more uncertainty, however, around EA approvals for the project proposed in the Hydro One-LSL Application. Hydro One is pursuing the following EA approvals in parallel:[81]

1. Provincial Individual EA approval under the Ontario *Environmental Assessment Act* for Transmission Line Projects for the Hydro One-LSL Application. Hydro One discussed with the MECP the option of getting an exemption from the EA by way of applying for a declaration order with the MECP. The MECP witness stated that Hydro One has not formally applied to take this path.[82]

2. Provincial Individual EA approval under the Ontario *Environmental Assessment Act* for Transmission Line Projects for the Hydro One-LSL Application. Hydro One has commenced the process of a Provincial Individual EA approval in parallel. Hydro One's Provincial Individual EA relies on the availability of public information in the NextBridge-EWT Application EA. According to the MECP's witnesses in the October 2018 oral hearing, Hydro One can access and use the information in the

[81] Hydro One Application and Evidence, Exhibit I, Tab 1, Schedule 15, pp. 1-2 and Hydro One's Response to OEB Staff Interrogatory 14, September 24, 2018.
[82] Oral Hearing Transcript, October 12, 2018, p. 116.

> NextBridge-EWT Application EA either if it is on the public record or by means of a request under the *Freedom of Information and Protection of Privacy Act,* and that it can use the NextBridge-EWT Application EA for the purpose of EA approvals for the Hydro One-LSL Application only once the NextBridge-EWT Application EA is complete and approved by MECP.[83]

Hydro One expects to receive approval for its Provincial Individual EA (for the route segments outside of Pukaskwa National Park) by October 2019 if the declaration order process is pursued and by December 2019 if Hydro One's Provincial Individual EA path is followed.

Hydro One maintains that it can use the NextBridge-EWT Application EA information as the MECP informed them that the EA is granted to the project and not to the Applicant.[84] Hydro One also indicated that it could take up to two years and $20 M in study costs alone to complete a Provincial Individual EA in the event that it cannot use NextBridge's EA information. Hydro One maintains that this scenario (i.e. not being able to rely on NextBridge's EA), however, is "highly unlikely".[85]

In addition to the Provincial Individual EA approval, the Hydro One-LSL Application is also subject to Parks Canada EA requirements and a Federal Detailed Impact Assessment for the route segment through Pukaskwa National Park is also needed. Hydro One is optimistic that it would receive approval from Parks Canada on the Federal EA for the 35 km segment going through Pukaskwa National Park. Hydro One stated that the EA process with Parks Canada is ongoing. On October 5, 2018, Hydro One received comments from Parks Canada on the Terms of Reference for its EA and characterized the comments as minor.[86] Hydro One expects to receive Federal EA approval (for the segment through the Park) immediately after the Provincial Individual EA approval in October 2019, assuming Hydro One is able to use NextBridge's EA.

In the event Hydro One is denied approval to pursue the route through Pukaskwa National Park, Hydro One would follow NextBridge's route around Pukaskwa National Park, which would increase Hydro One's construction costs by approximately $40.8 M (to $665.83 M) from $625 M that is attributable to the through Pukaskwa National Park option.[87]

[83] Oral Hearing Transcript, October 12, 2018, pp. 107-110.
[84] Hydro One's Argument-in-Chief, p. 27, para. 105.
[85] Oral Hearing Transcript, October 9, 2018, p. 35.
[86] Oral Hearing Transcript, October 9, 2018, p. 37.
[87] OEB Staff Summary of the Evidence on Costs, Exhibit K4.2, October 9, 2018.

Submission

OEB staff notes that in addition to the increased costs of a route around Pukaskwa National Park, if Hydro One does not obtain Parks Canada's approval to allow the route through Pukaskwa National Park, Hydro One would have to ask the OEB for approval of the new route. This would present a material change to the Hydro One-LSL Application and may result in delay to the Hydro One proposed December 2021 in-service date.

Indigenous Consultation Progress

Although agreements to cross First Nation reserves are not yet finalized and some issues with affected Indigenous communities remain unresolved, NextBridge's Indigenous consultation and participation are at a more advanced stage than Hydro One's. For example, NextBridge has signed Economic Participation Agreements with Bamkushwada Limited Partnership (BLP) and the Métis Nation of Ontario (MNO).

Although Hydro One has started its Indigenous consultation and participation negotiations with 18 communities identified by the Ministry of Energy (as it was known at that time), it has not reached equity participation agreements with any of the Indigenous groups involved. This is partly due to exclusivity clauses in the agreements that NextBridge has signed with BLP and MNO, which prevent those parties from discussing equity partnerships with any competing transaction. Hydro One says that it is committed to offering 34% equity ownership of the line proposed in the Hydro One-LSL Application to BLP and that it is confident that, if it is granted leave to construct, it can reach the necessary agreements.[88] Hydro One highlighted that its plan to offer a 34% equity partnership to BLP will also benefit ratepayers as 34% of return on equity earnings would be exempt from tax. This is a result of the tax-free status of First Nations.[89] Hydro One noted that the NextBridge-EWT Application includes a 20% equity partnership to the First Nations, which would result in lesser tax-exemption benefits for ratepayers.[90]

Submission

It is clear that NextBridge is more advanced in terms of Indigenous consultation and participation, and that the relatively early stage of Hydro One's Indigenous consultation increases the risk of potential cost increases or delays.

OEB staff accepts that, if Hydro One was to be granted leave to build the transmission line, ratepayers would likely benefit from higher tax exemptions associated with Hydro

[88] Oral Hearing Transcript, October 4, 2018, p. 7.
[89] Oral Hearing Transcript, October 4, 2018, pp. 111-112.
[90] Hydro One Argument-in-Chief, October 22, 2018, p. 156, para. 55.

One's project, should its proposed 34% equity partnership approach materialize, than would be the case for NextBridge.

3.3.7 Overall Rate Impact

NextBridge argues that the impact of NextBridge's proposal on prices paid by ratepayers is "modest" and that a typical Ontario residential customer will pay approximately 35¢ more each month if the NextBridge-EWT Application is approved and its project is built. NextBridge further argues that the 35¢ monthly increase "is modestly overstated" as NextBridge's OM&A cost estimates were reduced by almost $1 M during the course of the proceeding, but the rate impact calculations that were filed as part of NextBridge's July 31, 2017 filing were not updated accordingly.[91]

Hydro One submitted that its project will result in an increase of 20¢ per kW per month to the network pool, utilizing the 2018 rates, over a 25-year time horizon. Hydro One states that a typical residential customer's monthly bill will increase by about 0.21%, while the network pool provincial uniform rates will increase by 5.74%, if the Hydro One-LSL Application is approved and constructed.[92]

OEB staff notes that since rate impact calculations provided by both NextBridge and Hydro One may not have used the same assumptions and considerations, OEB staff performed its own rate impact analysis based on the proposals included in the NextBridge-EWT and Hydro One-LSL Applications.

Table 3 illustrates OEB staff's analysis of the approximate rate impacts for a typical Ontario residential customer based on the scenarios identified in Table 1 and outlined below. The analysis includes system costs of any delays to the in-service date as provided by the IESO.

Consistent with Table 1, scenarios 1 to 4 assume that Hydro One is granted leave and are defined as follows:

- Scenario 1 – If Hydro One is unable to use NextBridge's EA work, an additional $20 M is added
- Scenario 2 – If Hydro One is unable to go through Pukaskwa National Park, an additional $40.8 M is added

[91] NextBridge's Argument-in-Chief, October 22, 2018, p. 10, para. 27.
[92] Hydro One Application and Evidence, Exhibit B, Tab 9, Schedule 1, February 15, 2018 pp. 4-5, Table 2 and Table 3. Note that this calculation was based on Hydro One's original project cost of $636 M.

- Scenario 3 – If Hydro One goes through Pukaskwa National Park and NextBridge is awarded recovery of costs incurred up until the leave to construct decision, an additional $79.1 M is added
- Scenario 4 – Hydro One is unable to use NextBridge's EA work (adding $20 M for its Provincial Individual EA), is unable to go through Pukaskwa National Park (adding $40.8 M by going around the park) and NextBridge is awarded recovery of costs incurred up until the leave to construct decision (adding $79.1 M), a total of $139.9 M is added

OEB staff's rate analysis illustrated in Table 3 is based upon the following assumptions:

- Base scenarios for both NextBridge and Hydro One assume a 2021 in-service date, due to Hydro One's updated station work schedule
- Scenarios 1, 2 and 4 assume a 2022 in-service date due to potential delays associated with Hydro One's Provincial Individual EA. Scenarios 2 and 4 also include potential delays due to Hydro One's re-route around Pukaskwa National Park
- Scenario 3 assumes a 2021 in-service date as proposed in the Hydro One-LSL Application
- The additional system cost of $36 M is the sum of the additional system costs for the years 2020 ($17 M) and 2021 ($19 M), which were quantified by the IESO for an end of 2021 in-service date
- The additional system cost of $59 M is the sum of the additional system costs for the years 2020 ($17 M), 2021 ($19 M) and 2022 ($23 M), which were quantified by the IESO for an end of 2022 in-service date
- OEB staff's analysis includes the full quantum of additional system costs and does not imply how these costs should be treated for the purposes of rate recovery as described in Section 3.3.5
- The revenue requirement used in this analysis includes OM&A costs and the IESO's additional system costs

Table 3: OEB Staff's Rate Impact Analysis[93]						
	NextBridge	**Hydro One**				
	Base Scenario	**Base Scenario**	**Scenario 1**	**Scenario 2**	**Scenario 3**	**Scenario 4**
Total Cost ($M)	777	642	662	682.8	721.1	781.9
In-service Date	2021	2021	2022	2022	2021	2022
Additional System Costs ($M)	36	36	59	59	36	59
Estimated Bill Impact in First Year of Service [94]	$0.95 or 0.53% increase	$0.81 or 0.46% increase	$1.02 or 0.57% increase	$1.03 or 0.58% increase	$0.88 or 0.49% increase	$1.11 or 0.62% increase
Estimated Bill Impact in Subsequent Years of Service[97]	$0.66 or 0.37% increase	$0.53 or 0.30% increase	$0.54 or 0.30% increase	$0.56 or 0.31% increase	$0.59 or 0.33% increase	$0.64 or 0.36% increase

For the purposes of this analysis, estimated bill impacts include the effect of additional system costs as a one-time OM&A cost in the first year of service. This has the result of increasing the revenue requirement in the first year relative to subsequent years.

3.4 Reliability and Quality of Service

During the course of this proceeding, Hydro One's proposal has been scrutinized for reliability risks related to the quad-circuit towers that are proposed to replace the existing towers in the section of line that goes through Pukaskwa National Park. The IESO testified that it has no major reliability concerns with either of the two Applications and also has no issues with the reliability of the proposed configuration for the segment through Pukaskwa National Park in the Hydro One-LSL Application. The IESO stated that:

> HONI's proposed four-circuit line in the Park complies with NERC, NPCC and ORTAC planning standards and as long as Hydro One meets the conditions set out in the System Impact Assessment [(SIA)], Hydro One's proposed Lake Superior Link Project will not have an adverse impact to reliability. [95]

[93] For details of OEB staff's analysis, see Table B1 in Appendix B.
[94] For a typical Hydro One customer (R1) using 750 kWh/month, assuming that transmission represents 6.8% of distribution connected customer's total bill.
[95] IESO's response to NextBridge Interrogatory 22, September 24, 2018, p. 1, lines 11-14.

Although the IESO expressed no reliability concerns in respect of either Application, it did note that there is potential for there to be higher system operational costs, due to the IESO's lack of experience with the operational aspect of Hydro One's proposal, if the Hydro One-LSL Application is approved. The IESO did not quantify those costs.[96]

In its Argument-in-Chief, NextBridge raises a number of technical concerns about Hydro One's design including galloping, no anti-cascade towers and blow-out.[97] Hydro One's Argument-in-Chief refutes concerns about the technical aspects of its project, stating "[T]he Lake Superior Link design is a modern design that complies with the OEB specifications, Canadian Standards and relevant industry practices and norms in a cost effective manner…".[98]

In terms of NextBridge's application, as noted above, NextBridge has indicated that it will have one facility, situated in Thunder Bay, with two employees stationed in that facility, who will be responsible for maintenance and emergency response for the entire 443 km line. NextBridge has indicated that it will have contractors supporting restoration activities.

Submission

OEB staff does not take issue with the System Impact Assessment (SIA) and Customer Impact Assessment (CIA) reports for either the NextBridge-EWT or Hydro One-LSL Application and does not object to either proposal from a reliability or service quality perspective.

With respect to NextBridge-EWT Application, OEB staff notes that having just one facility for emergency maintenance and response, situated at one end of a very long line, and with contractors supporting restoration activities, may be less than optimal. Negotiation of a shared services agreement with Hydro One is one means that could potentially reduce annual OM&A costs while at the same time provide reliability and quality service for customers.

OEB staff also submits that the approval of either line should include a requirement for the selected Applicant to provide a formal sign-off and approval from a Professional Engineer in Ontario ensuring compliance of its project's technical specifications and design with the OEB's Technical Standards outlined in the designation proceeding. This will ensure that any concerns about galloping or other technical aspects of either project are properly addressed.

[96] Oral Hearing Transcript, October 9, 2018, pp. 109-119.
[97] NextBridge's Argument-in-Chief, October 22, 2018, p. 29, para. 76.
[98] Hydro One's Argument-in-Chief, October 22, 2018, p. 38, para. 149.

3.5 Land Matters

Section 97 of the Act stipulates the following:

> In an application under section 90, 91 or 92, leave to construct shall not be granted until the applicant satisfies the Board that it has offered or will offer to each owner of land affected by the approved route or location an agreement in a form approved by the Board.

In addition to the above noted requirements of section 97, OEB staff submits that the OEB should consider the status of land right acquisition as it has the potential to delay the project schedule and could result in a need to obtain land rights through expropriation. If land is obtained through expropriation, it could cause increases in land right costs, construction costs and possibly other costs caused by in-service date delay.

Hydro One

Part of Hydro One's proposed route in the Hydro One-LSL Application is along Hydro One's existing East-West Tie transmission line which enables it to use existing permanent land rights, so that where overlap of the existing ROW is feasible, the additional width of land required is approximately 37 metres (m). Along segments where overlap is not feasible, Hydro One will require approximately 46 m of additional land width. Hydro One will require new land rights in respect of municipally-owned, provincially-owned and privately-owned properties.

Permanent rights and a description of all other land right requirements, along with the forms of easement agreements, are provided in Hydro One's evidence.[99] Hydro One requires new permanent rights from individual or corporate landowners for about 290 hectares or 2.9 km^2 of land along about 19% of the route.

Regarding the progress of land right acquisitions, Hydro One has started negotiations with private landowners and has completed about 40% of property valuation appraisals. Upon completion of the appraisals, Hydro One plans to offer land right agreements to affected landowners.

As of October 2, 2018, Hydro One has not offered agreements to any of the landowners along the route, but stated it would do so by the end of November 2018. In its budget, Hydro One assumed complete voluntary settlement with the affected landowners, but also stated

[99] Hydro One Application and Evidence, Exhibit E, Tab 1, Schedule 1, pp. 1-9 and Attachments.

that expropriation may be required and that the expropriation process could take 14 months.[100]

NextBridge

NextBridge would need approximately 5.51 km^2 of permanent easement from 69 landowners in respect of 153 parcels of land. The typical width of NextBridge's ROW is 64 m.

In response to OEB staff interrogatories, NextBridge noted that the forms of agreement filed by NextBridge in its evidence at Exhibit E, Tab 5, Schedule 1, Attachments 1 to 8, have not been previously approved by the OEB. However, NextBridge confirmed that the clauses identified in Appendix A to the OEB's *Filing Requirements for Electricity Transmission Applications* (Chapter 4) have been incorporated in the forms of agreements submitted for approval in its evidence.[101]

NextBridge is in the process of negotiating and acquiring permanent easement agreements with private landowners. As of January 2018, it had secured Option Agreements with 74% of private landowners. NextBridge stated that in the event that agreements cannot be reached, it would pursue expropriation and aims to complete the process by the first quarter of 2020.[102]

Submission

OEB staff has reviewed the forms of permanent easement agreements that NextBridge and Hydro One each will offer, or have offered, to affected landowners and it appears that the forms adhere to the minimum requirements in the OEB's filing requirements.[103]

OEB staff notes that NextBridge stated that the forms of easement agreements have not been previously approved by the OEB, while Hydro One did not indicate if its forms of easement agreements have been previously approved by the OEB.

OEB staff notes that Hydro One has fewer land right requirements than NextBridge. This is because Hydro One does not need new land rights for the entire width of ROW as it can widen its own existing line ROW along the entire length of the proposed route.

[100] Oral Hearing Transcript, October 2, 2018, p. 137.
[101] NextBridge's response to OEB Staff Interrogatory 35(b), January 25, 2018.
[102] NextBridge's response to OEB Staff Interrogatory 35(d), January 25, 2018.
[103] OEB's *Filing Requirements for Electricity Transmission Applications* (Chapter 4), Appendix A: Draft Form of Lease or Easement Agreement, pp. 28-30, July 31, 2014.

3.6 Hydro One-Station Upgrades Application

The Hydro One-Station Upgrades Application seeks leave from the OEB to upgrade existing transmission stations for use with the new transmission line proposed to be built. Specifically, the Hydro One-Station Upgrades Application is needed to perform necessary station work on Lakehead TS, Marathon TS and Wawa TS in northwestern Ontario. The evidentiary record indicates that station work is required to connect the new transmission line and is estimated by Hydro One to cost approximately $157.3 M.[104]

Throughout the course of the proceeding, Hydro One revised the project schedule for the station work.

Submission

OEB staff agrees with both NextBridge and Hydro One that the Hydro One-Station Upgrades Application is needed to support the new transmission line between Wawa and Thunder Bay, and should be approved by the OEB, regardless of who is granted leave to build the new transmission line. Hydro One provided information on a previous comparable project – a station reconfiguration at Orangeville TS – which was shown to have similar costs once differences in scope and timing were taken into account. OEB staff does not take issue with the cost specified in the Hydro One-Station Upgrades Application. OEB staff also does not take issue with the Hydro One-Station Upgrades Application from a reliability or quality of electricity service perspective. As noted above, however, Hydro One should continue to look at ways to expedite the station work after the Class EA approval for the station work is granted wherever possible.

3.7 OEB Staff's Proposed Conditions of Approval

The Act permits the OEB, when making an order, to "impose such conditions as it considers proper."[105] OEB staff proposes that standard conditions of approval, as well as certain additional project-specific conditions of approval, be placed on NextBridge or Hydro One, in the event that either is granted leave to construct the new transmission line.

OEB staff recognizes that the project-specific conditions of approval proposed below are novel. OEB staff proposes that if the OEB intends to grant leave to construct to one of the Applicants, it should issue a decision granting leave to that party and the conditions under which leave is being granted. The selected Applicant should then have a short time period

[104] Hydro One's Station Application and Evidence, Exhibit B, Tab 1, Schedule 1, pp. 1-5.
[105] *Ontario Energy Board Act, 1998*, s. 23(1).

(e.g., two weeks) to advise the OEB as to whether it accepts the conditions attached to the leave to construct approval and intends to proceed in building the line.

After the selected Applicant advises the OEB as to whether it will proceed with building the line, the OEB should then issue its decision with respect to the second Applicant. In the event that the selected Applicant has declined to proceed with building the line, the OEB would consider whether the other Applicant should be granted leave to construct and under what conditions.

Standard Conditions of Approval[106]

OEB staff proposes the following standard conditions of approval to be placed on the entity granted leave to construct the new transmission line (NextBridge or Hydro One, whichever is granted leave):

1. Granted leave pursuant to section 92 of the Act to construct the proposed project in accordance with the OEB's Decision and Order in the proceeding and subject to fulfillment of the requirements of the System Impact Assessment and Customer Impact Assessment and all other necessary approvals, permits, licences, certificates and rights required to construct, operate and maintain the proposed facilities.

2. Unless otherwise ordered by the OEB, authorization for leave to construct shall terminate 18 months from the date of the Decision and Order, unless construction has commenced prior to that date.

3. The Applicant shall advise the OEB of any proposed material change in the project, including but not limited to changes in: the proposed route, construction schedule or the necessary environmental assessment approvals, and all other approvals, permits, licences, certificates and rights required to construct the proposed facilities.

3.7.1 Additional Conditions for NextBridge

OEB staff submits that the following additional conditions of approval should be placed on NextBridge, should NextBridge be granted leave to construct by the OEB:

[106] Hydro One's West Toronto Transmission Enhancement Project (EB-2016-0325) Decision and Order, April 27, 2017.

1. Absent an event accepted by the OEB to be a genuine *force majeure* event (e.g. an earthquake), NextBridge shall not apply to recover more than $810.7 M (in nominal 2021 dollars), plus any development costs approved for recovery by the OEB, during its first revenue requirement proceeding.

2. In the event that NextBridge does not have its transmission line in service by the end of 2021 other than for reasons beyond its control, NextBridge shall reduce the maximum amount it would apply to recover, as per condition 1, by the IESO's forecast system costs of the delay.[107,108]

3. NextBridge shall file evidence in its first revenue requirement application of its attempts to lower its OM&A costs through cost saving opportunities, including but not limited to, outsourcing, shared services agreements, or other means.

4. NextBridge shall coordinate the in-service date of its line with the Hydro One station upgrades.

5. NextBridge shall provide a formal sign-off and approval from a Professional Engineer in Ontario ensuring compliance of the NextBridge project's technical specifications and design with the OEB's Technical Standards outlined in the designation proceeding.

3.7.2 Proposed Conditions for Hydro One

OEB staff proposes the following additional conditions of approval to be placed on Hydro One, should the Hydro One-LSL Application be granted leave to construct by the OEB:

1. Absent an event accepted by the OEB to be a genuine *force majeure* event (e.g. an earthquake), Hydro One shall not apply to recover more than $697.761 M (in nominal 2021 dollars, inclusive of any development costs) during its first revenue requirement proceeding.

2. In the event that Hydro One does not meet a 2021 in-service date other than for reasons outside its control, Hydro One shall reduce the maximum amount it would

[107] For clarity, OEB staff does not propose that this condition would apply in the event of a delay caused by the Hydro One Station Upgrade work.
[108] See costs for "Median Water" set out above in Table 2: Updated Summary of Potential Cost of Delay to the In-service Date for 2020-2024.

apply to recover, as per condition 1, by the IESO's forecast system costs of the delay.[109]

3. Hydro One shall provide a formal sign-off and approval from a Professional Engineer in Ontario ensuring compliance of the Hydro One project's technical specifications and design with the OEB's Technical Standards outlined in the designation proceeding.

4. The "executable" EPC contract between Hydro One and SNC-Lavalin is signed without any material changes to the price, schedule or scope of work.

3.7.3 Proposed Conditions for Hydro One (Stations)

OEB staff proposes that the following conditions be placed on the Hydro One-Station Upgrades Application, regardless of the entity that is granted leave to construct the new transmission line (NextBridge or Hydro One, whichever is selected):

1. Hydro One shall notify the OEB of any proposed material change in the project, including but not limited to changes in: the proposed route, construction schedule or the necessary environmental assessment approvals, and all other approvals, permits, licences, certificates and rights required to construct the proposed facilities. For greater certainty, this shall specifically include notification to the OEB if the in-service date for the project is delayed beyond 2021.

2. In the event that NextBridge is granted leave to construct the new transmission line, Hydro One shall coordinate the in-service date of its station upgrades with NextBridge's line.

3.8 Conclusions

OEB staff submits that both the NextBridge-EWT and Hydro One-LSL Applications address the project need and are viable options. Although OEB staff does not endorse one proposal over the other, it has highlighted the merits and drawbacks of each proposal and puts forward specific conditions of approval (in addition to standard conditions of approval), should either the NextBridge-EWT Application or the Hydro One-LSL Application be approved by the OEB.

All of which is respectfully submitted.

[109] See costs for "Median Water" set out above in Table 2: Updated Summary of Potential Cost of Delay to the In-service Date for 2020-2024.

OEB Staff Submission

Appendix A

Upper Canada Transmission Inc.
(on behalf of NextBridge Infrastructure)
Application for Leave to Construct an Electricity Transmission Line between Thunder Bay and Wawa, Ontario

and

Hydro One Networks Inc.
Application for Leave to Construct an Electricity Transmission Line between Thunder Bay and Wawa, Ontario

and

Hydro One Networks Inc.
Application to Upgrade Existing Transmission Station Facilities in the Districts of Thunder Bay and Algoma, Ontario

EB-2017-0182, EB-2017-0194 and EB-2017-0364
(Combined Proceeding)

October 31, 2018
Revised on November 1, 2018

Table A1: Cost of Comparable Line Projects										
	Hydro One-LSL Relative to Comparable Projects Provided by Hydro One				**NextBridge-EWT Relative to Comparable Projects Provided by NextBridge**					
Project	Niagara Reinforcement Project	Foothills Area Transmission Development	Southern Alberta Transmission Reinforcement	Lake Superior Link	New East-West Tie	Bruce to Milton	BC Hydro's Northwest Transmission Line	2014 Western Electricity Coordinating Council	AESO Project 1	AESO Project 2
Location	Southern Ontario	Southern Alberta	Southern Alberta	Northwestern Ontario	Northwestern Ontario	Southern Ontario	Northwest British Columbia	Alberta	Alberta	Alberta
Voltage (kV)	230 kV	240 kV	240 kV	230 kV	230 kV	500 kV	287 kV	230 kV	240 kV	240 kV
Length (km)	76 km	123 km	240 km	403 km	443 km	180 km	344 km	450 km	450 km	450 km
Line Cost ($M)	$133.51	$204.11	$369.46	$683[110]	$810[111]	$395	$824	$794	$1,621	$1,474
Cost ($M)/km	$1.75	$1.66	$1.54	$1.69	$1.83	$2.19	$2.39	$1.76	$3.60	$3.27

[110] Based on Hydro One's NTE price.
[111] Based on NextBridge's $737 M price plus 10%.

OEB Staff Submission

Appendix B

Upper Canada Transmission Inc.
(on behalf of NextBridge Infrastructure)
Application for Leave to Construct an Electricity Transmission Line between Thunder Bay and Wawa, Ontario

and

Hydro One Networks Inc.
Application for Leave to Construct an Electricity Transmission Line between Thunder Bay and Wawa, Ontario

and

Hydro One Networks Inc.
Application to Upgrade Existing Transmission Station Facilities in the Districts of Thunder Bay and Algoma, Ontario

EB-2017-0182, EB-2017-0194 and EB-2017-0364
(Combined Proceeding)

October 31, 2018
Revised on November 1, 2018

Table B1: OEB Staff's Rate Impact Analysis for Various Scenarios[112]						
	NextBridge	**Hydro One**				
	Base Scenario	**Base Scenario**	**Scenario 1**	**Scenario 2**	**Scenario 3**	**Scenario 4**
OM&A Costs ($M)	4.7	1.5	1.5	1.5	1.5	1.5
Capital Cost ($M)	777	642	662	683	721.1	781.9
Total Incremental Revenue Requirement (10% of Capital + OM&A + Additional System Costs) ($M)	118.4	101.7	126.7	128.8	109.6	138.7
Base Transmission Revenue Requirement Based on Hydro One's 2018 rates ($M)	1,510.7	1,510.7	1,510.7	1,510.7	1,510.7	1,510.7
Per cent Incremental Transmission Revenue Requirement	7.8%	6.7%	8.4%	8.5%	7.3%	9.2%
Transmission as % of Distribution Connected Customer's Total Bill	6.8%	6.8%	6.8%	6.8%	6.8%	6.8%
Per cent Estimated Average Bill Impact	0.5%	0.5%	0.6%	0.6%	0.5%	0.6%
Current Typical Hydro One (R1) Customer, Based on 750 kWh/month Consumption	$178	$178	$178	$178	$178	$178
Impact on Typical Hydro One (R1) Customer, Based on 750 kWh/month Consumption	$0.95	$0.81	$1.02	$1.03	$0.88	$1.11
Per cent Impact on Typical Hydro One (R1) Customer, Based on 750 kWh/month Consumption	0.53%	0.46%	0.57%	0.58%	0.49%	0.62%
Transmission Revenue Requirement for Subsequent Years after In-Service ($M)	82.4	65.7	67.7	69.8	73.6	79.7
Per cent Incremental Transmission Revenue Requirement	5.5%	4.3%	4.5%	4.6%	4.9%	5.3%
Per cent Estimated Average Bill Impact	0.4%	0.3%	0.3%	0.3%	0.3%	0.4%
Impact on Typical Hydro One (R1) Customer, Based on 750 kWh/month Consumption	$0.66	$0.53	$0.54	$0.56	$0.59	$0.64
Per cent Impact on Typical Hydro One (R1) Customer, Based on 750 kWh/month Consumption	0.37%	0.30%	0.30%	0.31%	0.33%	0.36%

[112] Assumptions: Variables, such as the transmission portion of the typical bill, the level of the typical customer bill and the 2018 Hydro One transmission revenue requirement are taken from the OEB's Uniform Transmission Rate (UTR) rate order EB-2017-0359. Hydro One's 2018 transmission revenue requirement is used as the provincial proxy.