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BY EMAIL AND RESS

November 15, 2022

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

Dear Ms. Marconi,

EB-2022-0142 – Hydro One Networks Inc.'s Southwest Ontario Transmission Line Projects – Bi-annual Reporting for the Period: May 1, to October 31, 2022

Please find attached Hydro One Networks Inc.'s, ("Hydro One") bi-annual reporting for four Southwest Ontario Transmission Line Projects, for the reporting period May 1, to October 31, 2022, consistent with the direction provided to Hydro One by Ontario Energy Board in its letter dated May 24, 2022.

An electronic copy of the Bi-annual reports has been submitted using the Board's Regulatory Electronic Submission System.

Sincerely,

A handwritten signature in black ink, appearing to read "Joanne Richardson", with a stylized flourish at the end.

Joanne Richardson



Southwest Ontario Transmission Line Projects

**Ontario Energy Board
Progress Report**

May 1, to October 31, 2022

EXECUTIVE SUMMARY

On April 6, 2022, the Ontario Energy Board (“OEB”)¹ amended Hydro One Network Inc.’s (“Hydro One”) transmission licence (ET-2003-0035) to include a requirement for Hydro One to develop and seek all necessary approvals for four new transmission projects located in Southwestern Ontario as per the Directive approved by the Lieutenant Governor in Council on March 31, 2022, as Order in Council (“OIC”) No. 875/2022. The four transmission projects (the “Projects”), being; 1) a new 230 kilovolt (kV) transmission line from Lambton Transformer Station (“TS”) to Chatham Switching Station, including associated station facility expansions or upgrades required at the terminal stations; 2) a new 500 kV transmission line from Longwood TS to Lakeshore TS, including associated station facility expansions or upgrades required at the terminal stations; 3) a second new 500 kV transmission line from Longwood TS to Lakeshore TS, including associated station facility expansions or upgrades required at the terminal station and; 4) a new 230 kV transmission line that connects the Windsor area to the Lakeshore TS, including associated station facility expansions or upgrades required at the terminal station.

On May 24, 2022², the OEB requested that Hydro One prepare semi-annual reporting to the OEB that provides an update for each of the Projects on: Overall Project Progress, Development Cost, Development Work Schedule, Risks and Issues Log, and Project Scope and Timing Recommendations provided by the IESO. Reporting for the period May 1 to October 31, should be filed in November, and the reporting for the period November 1 to April 30, should be filed in May.

This document includes the project reporting for the four individual projects and represents Hydro One’s first semi-annual report, dated November 15, 2022. It provides a forecast development cost for the new 230 kV transmission line from Lambton TS to Chatham Switching Station, which has been renamed by Hydro One as the “St. Clair Transmission Line Project” and will be referred to as such herein. Hydro One estimates the known forecast development phase costs for the St. Clair Transmission Line Project to be \$38.4M. As of October 31, 2022, the costs spent to date are \$6.6M.

The second project, a new *500 kV transmission line from Longwood Transformer Station to Lakeshore Transformer Station*, has just recently launched development activities therefore only minor expenses have incurred to-date.

The remaining two transmission projects, listed above as project’s #3 and #4, both require further IESO study and direction in terms of timing of the in-service date. As such, to-date very little active project development work has been undertaken on these projects, and likewise no identifiable separate expenditures have incurred.

¹ EB-2022-0142

² EB-2022-0142 (The letter is attached at **Attachment 1** to this document)

Each of the projects in the active development stage is being monitored continually for risks, and risk mitigation is implemented as a matter of routine activity by the Project teams. Delays in regulatory approvals remain an active risk that Hydro One is working with regulators to manage. Should these risks have a greater impact on any of the Projects, they will be included in greater detail in subsequent progress reports.

Hydro One's guiding recommendations for the four transmission reinforcement projects in the Southwestern Ontario Area are driven by two specific reports by the IESO:

1. [West of London Bulk Study – Need for Bulk System Reinforcements West of London](#) (Sept 2021)
2. [Windsor-Essex IRRP Addendum Report](#) – (February 2022)

The West of London Bulk Study references these projects in Section 7.3 Near Term Recommendations (Project #1), Section 8.3 Long Term Recommendations (Projects #2 and #3) and Section 9.3 Interdependency with Regional Planning (Project #4). The *West of London Bulk Study* identified the need and timing of Project #2. Section 6.1.2 *Coordination with the West of London Bulk Plan of the Windsor-Essex IRRP Addendum Report* also references Project #4.

These four transmission line projects are expected to be owned by and included in the rate base of a new partnership, as a licenced transmitter, such that line costs will be included in the Affiliate Transmission Projects Account ("ATP Account") and will not form part of Hydro One's rate base. On October 7, 2021, the OEB approved Hydro One's application for an accounting order to establish the new regulatory ATP Account for a project where Hydro One has, or will, receive a letter from the IESO identifying transmission system needs, and/or an Order in Council or direction of the Ministry of Energy for the development or construction of a transmission line project, that is expected to form a new partnership. The associated station work for the Projects is expected to form part of Hydro One's transmission rate base.

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BACKGROUND

On April 4, 2022, the Minister of Energy under the cover of a letter, issued a Directive to the OEB under section 28.6.1 of the Ontario Energy Board Act (“Directive”) requiring the OEB to amend Hydro One’s electricity transmission licence to require Hydro One to develop and seek approvals for four transmission line projects located in Southwest Ontario (collectively referred to as the Projects), that were approved by the Lieutenant Governor in Council on March 31, 2022, as Order in Council No. 875/2022. The four projects are as follows:

1. A new 230 kilovolt (kV) transmission line from Lambton Transformer Station to Chatham Switching Station, including associated station facility expansions or upgrades required at the terminal stations;
2. A new 500 kV transmission line from Longwood Transformer Station to Lakeshore Transformer Station, including associated station facility expansions or upgrades required at the terminal stations;
3. A second new 500 kV transmission line from Longwood Transformer Station to Lakeshore Transformer Station, including associated station facility expansions or upgrades required at the terminal stations; and
4. A new 230 kV transmission line that connect the Windsor area to the Lakeshore Transformer Station, including associated station facility expansions or upgrades required at the terminal stations.

The Directive also required the OEB to amend Hydro One’s licence to include a condition that the scope and timing for the Projects accord with the recommendations of the Independent Electricity System Operator (“IESO”), and it also directed the OEB to require that Hydro One provide such reporting to the OEB as the OEB may consider appropriate with respect to budget, timing, and risks in relation to the development of the Projects.

The Order in Council accompanying the Directive states that expansion of Ontario’s transmission system is critical to provide a reliable and adequate supply of electricity to Southwestern Ontario to support economic growth in the region, including the rapidly growing agricultural sector and the potential for growth in the electric vehicle and broader automotive sectors.

Two of the projects listed in the Directive (Project #1 and #2 above) have been declared to be needed as priority projects pursuant to section 96.1 of the Act in Order in Council 876/2022 dated March 31, 2022. The third project, a new 230 kV electricity transmission line from the existing Chatham Switching Station to the new Lakeshore TS, was the subject of a previous Directive issued to the OEB on December 17, 2020. The OEB

amended Hydro One's transmission licence in respect of that project by Decision and Order dated December 23, 2020.

In a letter dated May 24, 2022, the OEB requested that Hydro One prepare semi-annual reports to the OEB that updated on the following matters:

- Overall Project progress,
- Development cost
- Development work schedule
- Risks and Issues Log
- Project scope and timing recommendations provided by the IESO.

The reports should be filed as follows:

- May 1 to October 31 for reporting in November
- November 1 to April 30 for reporting in May.

All reports are to be filed by the 15th business day of the month following the end of each reporting period. The first report was requested to be filed on November 15, 2022.

Hydro One's OEB-Approved Affiliate Transmission Projects Regulatory Account

On October 7, 2021, the OEB approved Hydro One's application for an accounting order to establish a new regulatory account, the Affiliate Transmission Projects Account. The ATP Account will be used for a transmission line project where:

1. Hydro One has, or will, receive a letter from the IESO identifying transmission system needs, and/or an Order in Council or direction of the Minister of Energy for the development or construction of a transmission line project and,
2. All or part of the transmission line project is expected to be owned by and included in the rate base of a new partnership, as a licenced transmitter, such that costs included in the ATP Account Project will not form part of Hydro One's rate base.

The four new transmission line projects, as reported on in this document, are expected to be owned by and included in the rate base of a new partnership, as a licenced transmitter, such that costs included in the ATP Account Project will not form part of Hydro One's rate base. On October 7, 2021, the OEB approved Hydro One's application for an accounting order to establish the new ATP Account for use where Hydro One has, or will, receive a letter from the IESO identifying transmission system needs, and/or an Order in Council or direction of the Minister of Energy for the development or construction of a transmission line project.

In this, Hydro One's first inaugural bi-annual reporting to the OEB for the four OIC projects, as listed above, Hydro One is including individual updates for all four projects, to the extent that there are updates on which to provide. For the purposes of maintaining regulatory efficiency, Hydro One has included four reports, by project, in this document. Hydro One's intention is to continue to prepare and submit a single document that will include separate bi-annual reports for each project, in line with the OEB's expectations.

Project Summary Table

For ease of reference, and comparison, Table 1 below provides a summary of the four individual projects. A Map of southwestern Ontario and the new transmission projects can be found at **Attachment 3** to this document.

Table 1 - Summary of the Four Southwest Ontario Transmission Line Projects

Status	Line Name	Voltage (kV)	Length (KM)	Circuit Type	Completion	Project Stage	Notes
Under Development and Planned for Construction	St. Clair Transmission Line (Lambton to Chatham)	230 kV	60	Double	2028	Under development Construction to begin in Spring 2027	Stakeholder Engagement is underway. A preferred route has not been established
To Be Developed and Prioritized for Construction	Longwood to Lakeshore Transmission Line	500 kV	135	Single	2030	Under development	Preliminary Development underway
To Be Developed	2 nd Longwood to Lakeshore Transmission Line	500 kV	135	Single	No current Timeline established	To be developed	Further Study by IESO Required
	Windsor to Lakeshore Transmission Line	230 kV	42	Double	No current Timeline established	To be developed	Further Study by IESO Required

PROJECT REPORT

Project 1 - St. Clair Transmission Line Project Report

OVERALL PROGRESS BY PROJECT

In a letter dated March 26, 2020³, (the “IESO Letter”) the IESO directed Hydro One to initiate project work to develop and construct a new 230 kV double-circuit line from Lambton TS southwards to Chatham SS and associated station facility expansions or upgrades required at the terminal stations. In terms of timing, the IESO’s Letter identified the need for the facilities no later than 2028, however, the IESO also stated there is benefit in streamlining the implementation of this Project and completing it earlier if possible. Between April 1, 2022, and October 31, 2022, Hydro One continued to proceed with development work on the Project, advancing environmental approvals, consultation, engineering, and design activities. The following summarizes the work that was undertaken to-date and within the reporting period.

Environmental Approvals

On February 10, 2022, Hydro One distributed the Notice of Commencement of the Environmental Assessment (“Notice”) to Indigenous communities, government officials/agencies, interested persons and organizations, signifying the start of the Class Environmental Assessment (“EA”) activities. Since that time, Hydro One has continued to engage with Indigenous communities, stakeholders, and members of the public.

A comprehensive environmental field survey program is underway which will collect data along the alternative transmission line routes to help inform the evaluation and selection of the line Project’s preferred route, as well as the assessment of the Project footprint. The Project team are working closely with Indigenous communities to ensure that their involvement in the field surveys is encouraged and that opportunities to share Indigenous knowledge during field surveys are possible.

Indigenous Engagement and Consultation

The Project team has worked and continues to engage with interested Indigenous communities to advance information sharing and engagement activities.

Key activities have included:

- New Engagement Opportunities. The focus for engagement during the spring and summer months was on field work plans and field work surveys. Some of the engagement opportunities offered to Indigenous communities included: in-person and virtual Community Open Houses; notices and posters; community

³ Attachment 1

presentations to Chief & Council and Environmental Protection Committees to monitor field studies and the issuance of the Stage 1 Archaeological study report to review.

- **Community Meetings with Indigenous Communities.** A community meeting was hosted with the Chippewas of the Thames First Nation in September 2022. The project team is in active conversations with other communities to organize community meetings with them.
- **Hydro One** has continued to work with interested communities to support and develop frameworks for their Indigenous Knowledge (“IK”) studies. Communities have expressed varying degrees of interest in undertaking IK studies at this point. Hydro One has further developed its approach and tools with the input from an external advisor. The approach is designed to be flexible, and community led. Hydro One is offering its assistance to communities to advance IK studies and to ensure that communities have capacity to retain the resources they need to undertake studies that they deem important and significant.

Other Consultation

The Project team continued to engage the public, municipal officials, government agencies and elected officials across the period of this report. On March 9th and 10th, 2022, following the release of the Notice, virtual community open houses were held supported by mail-out flyers and social media (such as Facebook etc.) to increase awareness in the areas around the route alternatives. These were well-attended events. During the virtual open house sessions a survey was conducted to members of the public to collect additional feedback. More than 5,000 people participated, and their responses directly feed into the route evaluation process, which supports our continued collaborative approach to public engagement.

Engineering and Design

In support of the Project’s development phase activities Hydro One undertook an extensive competitive procurement process in Q1 2022, to engage the services of two Engineering Procurement and Construction (“EPC”) contractors for an Early Contractor Involvement (“ECI”) procurement model. The ECI model has continued to:

- Provide necessary design and engineering information into the environmental assessment and Hydro One’s overall development of the Project;
- Advance preliminary identification of Project specific Indigenous and non-Indigenous employment, procurement and training opportunities and requirements through continuing meetings with Indigenous communities and organizations; and

- Identify opportunities for innovation in design, materials, and procurement early in the Project to enable the development of the best project delivery solution.

COSTS

In the IESO Letter directing Hydro One to start development of the SCTL Project, the planning allowance for project's capital expenditure was indicated to be in the range of \$210-\$290M. Hydro One's estimate for known development costs⁴ for the project are expected to be \$38.4M with an accuracy of Association for the Advancement of Cost Engineering ("AACE") Class 3 (with a range/tolerance of +20%/-15%). Table 2 below summarizes the Project development costs incurred against that overall budget for the current reporting period.

⁴ Development costs are those projects costs incurred up to the point of the submission by Hydro One of a s.92 leave to construction application to the OEB.

Table 2 - Project Development Costs – Project 1 - St. Clair Transmission Line Project

	Actuals Spent		C	Forecast Budget Variance					
	A	B		D	E	F	G	H	I
	Spent this Reporting Period (Millions)	Total Spent to Date (Millions)	Budget per Nov 15, 2022 Report (Millions)	Forecast Budget Change from Last Report (Millions)⁵	Forecast Budget Change from Last Report (%)	Revised Total Budget (Millions)	G = F - B Budget Remaining (Millions)	H = G/F * 100 Budget Remaining (%)	Reasons for Change
Real Estate	\$0.1	\$0.2	\$11.7	\$0.0	0%	\$11.7	\$11.5	98.3%	
Engineering and Design	\$0.5	\$1.6	\$3.0	\$0.0	0%	\$3.0	\$1.4	46.7%	
Environmental Approvals	\$0.5	\$0.8	\$4.2	\$0.0	0%	\$4.2	\$3.4	81%	
Indigenous Consultation	\$0.2	\$0.3	\$6.0	\$0.0	0%	\$6.0	\$5.7	95%	
Project Management	\$0.3	\$0.7	\$1.4	\$0.0	0%	\$1.4	\$0.7	50%	
Contingency	\$0.00	\$0.00	\$3.0	\$0.0	0%	\$3.0	\$3.0	100%	
Other Consultation	\$2.0	\$2.3	\$4.2	\$0.0	0%	\$4.2	\$1.9	45.2%	
Interest and Overhead	\$0.4	\$0.7	\$4.9	\$0.0	0%	\$4.9	\$4.2	85.7%	
Total	\$4.0	\$6.6	\$38.4	\$0.0	0%	\$38.4	\$31.8	82.8%	

⁵ Not Applicable in this first Report

PROJECT SCHEDULE

Table 3 - Project 1 – St. Clair Transmission Line

<i>Milestones</i>	<i>Schedule</i>	<i>Completed</i>	<i>Adjusted to</i>
<i>Class EA Notice of Commencement</i>	February, 2022	February 10, 2022	-
<i>Virtual Community Open House #1</i>	Feb/Mar, 2022	March 9 and 10, 2022	-
<i>Community Open House #2</i>	Fall 2022	-	-
<i>Community Open House #3 and Selection of Preferred Route</i>	Spring 2023	-	-
<i>Release of draft Environmental Study Report (ESR)</i>	Fall 2023	-	-
<i>Submit final ESR and complete Class EA process</i>	Late 2023	-	-
<i>Leave to Construct (Sec. 92) application approval</i>	Fall 2025	-	-
<i>Construction starts</i>	Spring 2027	-	-
<i>In-Service</i>	Late 2028	-	-

The Project team completed environmental field studies on the alternative routes. These studies are pertinent in supporting the selection of the preferred route of the Project. A selection of a preferred route is expected to materialize in the first quarter of 2023. Preliminary design and engineering will continue to provide support into development phase activities. Consultation and engagement on the Project continue, including Project-specific capacity building (training, funding, procurement, and employment) for Indigenous communities, information sharing, IK gathering and participation in development activities. The Project is on schedule to complete development work by the second quarter of 2024.

RISKS AND ISSUES LOG

The Project is being monitored continually for risks and risk mitigation implemented as a matter of routine activity by the Project team. Risks are formally re-evaluated on a quarterly basis. Table 5, below, lists major development risks actively being managed. Project execution risks will be identified at a later date and will be included in Hydro One's Leave to Construct (Section 92) application that will be submitted to the OEB.

The Minister of Energy issued a Duty to Consult ("DTC") letter to Hydro One in July 2022. Hydro One and Ministry of Energy ("Energy") have a Memorandum of Understanding (MOU) that outlines the DTC roles and responsibilities of the two parties regarding major projects. Hydro One meets monthly with Energy and other agencies to provide Indigenous consultation and engagement updates, to keep the Crown apprised of any potential challenges in the consultation process and to discuss how Energy and Hydro One can work together to find solutions to those challenges. At the height of the COVID-19 pandemic it provided unprecedented challenges across the industry, not just for Hydro One, in the development of infrastructure projects. The timely adaptation from the more traditional in-person to virtual engagement has proven to be effective. Hydro One has developed and successfully implemented a wide variety of versatile virtual tools including the use of telepresence meetings, webinars, virtual town-halls and the use of USB storage sticks and tablets to distribute project materials safely. With increasing vaccination rates and the implementation of effective health and safety protocols a return to in-person engagement with a need to continue to provide virtual tools has become the new practice. Health and safety are a priority to Hydro One and our project activities will continue to be monitored and adapted, however; at this time the COVID-19-discrete risk has been retired.

As the Project matures government agencies such as Energy, Ministry of Environment, Conservation and Parks ("MECP"), Ministry of Northern Development, Mines, Natural Resources and Forestry and other government agencies may influence the schedule and scope of the Project. Hydro One meets regularly with these agencies and provides information to keep them apprised of Project progress and to work with them to manage expectations.

Table 4 - Project 1 – St. Clair Transmission Line Project

<i>Risk Description</i>	<i>Likelihood of Occurrence</i>	<i>Impact of Risk on the Project</i>	<i>Mitigation</i>
<i>Consultation</i>	Moderate	Scope, Schedule and cost	Risk remains that the scope of Indigenous and non-Indigenous consultation could change as the Project matures. Hydro One meets regularly with Energy and MECP.
<i>Health & Safety</i>	realized; Covid-19	retired	Alternative engagement activities, sensitive to health and safety, have been implemented and have proven to be effective. The risk has been retired at this time. Monitoring will continue.
<i>Regulatory approvals</i>	<i>Moderate</i>	<i>Scope, Schedule and cost</i>	Decisions by various Regulators may result in changes to scope, schedule and cost of the Project. This includes delays to the approval of the Class environmental assessment by the MECP and the Minister of ECP imposing conditions on Hydro One/SCTL Project as a result of receipt of Section 16 Order requests. Mitigation involves meeting with Regulators to discuss and address issues and providing sufficient time and opportunity for Regulators to undertake their reviews, comments and approvals. Conducting extensive and thorough notification and outreach to those rights-holders and conducting a thorough and robust First Nations consultation program and working to involve First Nations in the Class EA process.
<i>Real Estate</i>	moderate	Schedule and Cost	Expropriation and compensation for Business Disruption/Loss associated in the grant of permanent land rights. Mitigation involves engagement with potential landowners and commercial business operators at the outset of engagement (after route announcement) to determine scope of any potential business loss requirements.
<i>Environment</i>	Moderate	Schedule and Cost	Species at Risk - Project has the potential to come into conflict with Species at Risk (SAR) habitat. Mitigation involves conducting research and field studies during the Class EA to characterize SAR habitat within the study area and consulting with SAR Ontario Branch of the MECP during the Class EA Archaeology - Project has the potential to conflict with both known and unknown archaeological sites and risk of encountering heritage structures (i.e. buildings, bridges, monuments, etc.) requiring additional studies and/ or additional action to avoid or preserve. Mitigation involves consulting with MHSTCI and FNs, Conducting Stage 1 Arch and preliminary HIA assessment during the class EA.

PROJECT SCOPE AND TIMING RECOMMENDATIONS PROVIDED BY THE IESO

Should the IESO provide an update to the scope and/or timing recommendations to Hydro One for the St. Clair Transmission Line Project, these will be provided to the OEB and summarised in this section of the Report going forward. Information in this section will reflect any update/s provided to Hydro One within the semi-annual reporting period to which the report pertains, by Project.

Updates - Nothing to report during the period.

PROJECT REPORT

Project 2 - 500 kV Transmission Line from Longwood TS to Lakeshore TS

(This Project is also known as “Phase 1” of the total circuits and work that will occur between Longwood TS to Lakeshore TS, because the Directive called for two new 500 kV transmission lines between these two stations, and the two lines will potentially have different development, construction and in-service timelines.)

OVERALL PROGRESS BY PROJECT

In the IESO’s “Need for Bulk System Reinforcements West of London” report issued in September 2021, among other things, the IESO identified a need for a single-circuit 135 km, 500 kV transmission line from Longwood TS to Lakeshore TS (also known and referred to as “Phase 1”, due to another 500 kV circuit project of the same nature also being defined between those two TS’s) in 2030. In the same report, the IESO also indicated a second 500 kV single-circuit transmission line (also known and referred to as “Phase 2”), approximately 135 km in length in the area should be considered as an option to address higher growth. By OIC, dated March 31, 2022, the Government declared the first single-circuit 500 kV line a priority project, and designated Hydro One as the transmitter. To better coordinate stakeholder consultations for the adjacent 500 kV circuit, the development work for this Project, consisting of environmental assessment activities and preliminary engineering, will commence and include those elements for both 500 kV projects. However, Hydro One will seek regulatory approval for only Phase 1 (a single 500 kV line) at that time. As part of ongoing regional and bulk planning assessments, as lead by the IESO, the IESO are expected to determine the timing of the Phase 2 project in the future, and then inform Hydro One of its expectations. When further details are known, Hydro One will include those details in its future Southwest Project reporting.

Hydro One’s development work for this Phase 1 project is in its infancy. To October 31, 2022, Hydro One undertook initial planning work, identifying required environmental approvals, consultation, engineering, and design activities necessary. The following summarises the work that was undertaken within the reporting period.

Environmental Approvals

As this Project’s planning activities have only commenced within the last month, Hydro One is currently developing the major project deliverables and a project schedule. At the date of reporting, these items have not been completed. Hydro One will provide updates in future reports identifying the major milestones for the project.

Other Consultation

Hydro One has identified the potential need for the Phase 1, a 500 kV circuit, with its ongoing broad consultation in the region in relation to the projects identified in the Order in Council and the integration of these projects to each other. This is demonstrated by the St Clair Transmission Line Project's website⁶ having been created and launched and Hydro One having identified the St Clair Transmission line in the following manner, "This project is part of a network of electricity infrastructure projects that will support the regions' economic growth", and provided a map showing the South West Ontario Transmission projects.

Engineering and Design

As the project planning activities have only commenced within the last month Hydro One is currently developing major project deliverable along with the project schedule. Once this preliminary schedule for the Project has been developed Hydro One will update this section to identify the major project milestones.

COSTS

The IESO indicated that the planning level allowance used in the economic assessment of solution for the "*Need for Bulk System Reinforcements West of London report September 2021*" utilized a range of between \$800 - \$1,150M with a contingency allowance of 50% for the transmission line portion of the Project.

Hydro One has only recently commenced work on this Project and is in the process of developing the project deliverables and high-level schedule. Once these elements have been completed Hydro One will commence determining a project development cost estimate.

⁶ <https://www.hydroone.com/abouthydroone/CorporateInformation/majorprojects/saint-clair>

Table 5 - Project Development Costs – Project 2 - 500 kV transmission line from Longwood TS to Lakeshore TS (Phase 1)

	Actuals Spent		C	Forecast Budget Variance					
	A	B		D	E	F	G	H	I
	Spent this Reporting Period (Millions)	Total Spent to Date (Millions)	Budget per TBD Report (Millions)	Forecast Budget Change from Last Report (Millions)	Forecast Budget Change from Last Report (%)	Revised Total Budget (Millions)	G = F - B Budget Remaining (Millions)	H = G/F * 100 Budget Remaining (%)	Reasons for Change
Real Estate	\$0.00	\$0.00	TBD	\$0.00	0%	\$0.00	TBD	TBD	
Engineering and Design	\$0.04	\$0.04	TBD	\$0.00	0%	\$0.00	TBD	TBD	
Environmental Approvals	\$0.06	\$0.06	TBD	\$0.00	0%	\$0.00	TBD	TBD	
Indigenous Consultation	\$0.00	\$0.00	TBD	\$0.00	0%	\$0.00	TBD	TBD	
Project Management	\$0.02	\$0.02	TBD	\$0.00	0%	\$0.00	TBD	TBD	
Contingency	\$0.00	\$0.00	TBD	\$0.00	0%	\$0.00	TBD	TBD	
Other Consultation	\$0.01	\$0.01	TBD	\$0.00	0%	\$0.00	TBD	TBD	
Interest and Overhead	\$0.01	\$0.01	TBD	\$0.00	0%	\$0.00	TBD	TBD	
Total	\$0.14	\$0.14	TBD	\$0.00	0%	\$0.00	TBD	TBD	

PROJECT SCHEDULE

In the IESO “*Need for Bulk System Reinforcements West of London report September 2021*” the IESO indicated that the Longwood to Lakeshore Transmission Line would be required to be in service by 2030. Given the infancy of the project’s planning activities (i.e. within the last month) Hydro One is currently in the process of developing the project execution plan, along with the project schedule. Once this preliminary schedule for the project has been developed Hydro One will update this section to identify major project milestones, in subsequent bi-annual reporting.

RISKS AND ISSUES LOG

The Project Risks and Issues Log for this Project has not yet been prepared due to the infancy of the project in its development phases. Hydro One’s future semi-annual reports will include information for the project when those specific activities have been undertaken and elements identified.

PROJECT SCOPE AND TIMING RECOMMENDATIONS PROVIDED BY THE IESO

Should the IESO provide update to the scope and/or timing recommendations to Hydro One for the project, these will be provided to the OEB and summarised in this section of the Report going forward. Information in this section will reflect any update/s provided to Hydro One within the semi-annual reporting period to which the report pertains, by Project.

Updates - Nothing to report during the period.

PROJECT REPORT

Project 3 - A second new 500 kV transmission line from Longwood TS to Lakeshore TS

OVERALL PROGRESS BY PROJECT

As at the reporting date, no meaningful, and / or separately identifiable planning or development activities have commenced pertaining to this project's individual scope. This Project is pending further technical studies, to be led by the IESO.

COSTS

As at the reporting date, no planning or development cost activities have commenced pertaining to this project's individual scope.

RISKS AND ISSUES LOG

the Project Risks and Issues Log for this Project has yet been prepared due to the infancy of the Projects in its development phases. Hydro One's future semi-annual reports will include information for this project when those specific activities have been undertaken and elements identified.

PROJECT SCHEDULE

Consistent with the description of the status of the project, above, due to the infancy of the projects in its development phase, a Schedules has not yet been prepared. Hydro One's future semi-annual reports will include a project Schedule the Project when those specific activities have been identified and project plans developed.

PROJECT SCOPE AND TIMING RECOMMENDATIONS PROVIDED BY THE IESO

Should the IESO provide update to the scope and/or timing recommendations to Hydro One for the Project, these will be provided to the OEB and summarised in this section of the Report going forward. Information in this section will reflect any update/s provided to Hydro One within the semi-annual reporting period to which the report pertains, by Project.

Additional IESO studies for this Project will add more definition to the project and provide in-service timing, prior to Hydro One commencing further meaningful project development work. Hydro One's future semi-annual reports will include more details.

Updates - Nothing to report during the period.

PROJECT REPORT

Project 4 - A new 230 kV Transmission line that connect the Windsor area to the Lakeshore TS

OVERALL PROGRESS BY PROJECT

As at the reporting date, no meaningful, and / or separately identifiable planning or development activities have commenced pertaining to this project's individual scope. This Project is pending further technical studies, to be led by the IESO.

COSTS

As at the reporting date, no planning or development cost activities have commenced pertaining to this project's individual scope.

RISKS AND ISSUES LOG

The Project Risks and Issues Log for this Project has yet been prepared due to the infancy of the Projects in its development phases. Hydro One's future semi-annual reports will include information for this project when those specific activities have been undertaken and elements identified.

PROJECT SCHEDULE

Consistent with the description of the status of the project, above, due to the infancy of the projects in its development phase, a Schedules has not yet been prepared. Hydro One's future semi-annual reports will include a project Schedule the Project when those specific activities have been identified and project plans developed.

PROJECT SCOPE AND TIMING RECOMMENDATIONS PROVIDED BY THE IESO

Should the IESO provide update to the scope and/or timing recommendations to Hydro One for the Project, these will be provided to the OEB and summarised in this section of the Report going forward. Information in this section will reflect any update/s provided to Hydro One within the semi-annual reporting period to which the report pertains, by Project.

Additional IESO studies for this Project will add more definition to the project and provide in-service timing, prior to Hydro One commencing further meaningful project development work. Hydro One's future semi-annual reports will include more details.

Updates - Nothing to report during the period.

ATTACHMENT #1

OEB Letter to Hydro One Re: New Transmission Lines in Southwestern Ontario

Dated May 24, 2022

OEB File Number: EB-2022-0142



BY EMAIL

May 24, 2022

Ms. Joanne Richardson
Director, Major Projects and Partnerships
Hydro One Networks Inc.
483 Bay Street, 7th Floor South Tower
Toronto, ON M5G 2P5
Joanne.Richardson@HydroOne.com

Dear Ms. Richardson:

**Re: New Transmission Lines in Southwestern Ontario
Board File Number: EB-2022-0142**

This letter acknowledges receipt of your letter of April 12, 2022 in which Hydro One Networks Inc. (Hydro One) provided a copy of the Independent Electricity System Operator's (IESO's) recommendations regarding the scope and timing of four new transmission line projects, as required by the Ontario Energy Board (OEB) in its April 6, 2022 Decision and Order.

The four transmission line projects (collectively referred to as the Projects) are:

1. A new 230 kilovolt (kV) transmission line from Lambton Transformer Station to Chatham Switching Station, including associated station facility expansions or upgrades required at the terminal stations;
2. A new 500 kV transmission line from Longwood Transformer Station to Lakeshore Transformer Station, including associated station facility expansions or upgrades required at the terminal stations;
3. A second new 500 kV transmission line from Longwood Transformer Station to Lakeshore Transformer Station, including associated station facility expansions or upgrades required at the terminal stations; and
4. A new 230 kV transmission line that connect the Windsor area to the Lakeshore Transformer Station, including associated station facility expansions or upgrades required at the terminal stations.

Section 19.8.1 of Hydro One's licence, as amended on April 6, 2022, requires Hydro One to develop and seek approvals for the Projects.

In addition to requiring the amendment of Hydro One's licence, the Minister's Directive, dated March 31, 2022, also directed the OEB to require that Hydro One provide such reporting to the OEB as the OEB may consider appropriate with respect to budget, timing and risks in relation to the development of the Projects. This letter sets out the OEB's reporting requirements for the Projects.

Separate reports shall be provided by Hydro One for each of the four transmission line projects. Reports for a specific transmission line project shall be provided until a leave to construct application for that transmission line project is filed. The reports should be filed as follows:

- May 1 to October 31 for reporting in November
- November 1 to April 30 for reporting in May

All reports are to be filed by the 15th business day of the month following the end of each reporting period. The first set of reports should be filed on November 15, 2022.

In each report, Hydro One shall provide an update on the following matters:

- *Overall Project Progress:* An executive summary of work progress, cost and schedule status, and any emerging issues/risks and proposed mitigation.
- *Development Cost:* Development costs shall be reported in the form of the attached table. A forecast of the development cost is to be provided in the first set of reports (in column 'C' of the table) and will be used as the reference for future reports. A future hearing will examine the prudence of development costs incurred by Hydro One for the Projects.
- *Development Work Schedule:* The milestones completed and the status of milestones in-progress. The schedule and milestones for development work provided in the first report will be used as the reference for future reports. For milestones that are overdue or delayed, the reasons for delay, the magnitude and impact of the delay on broader project timelines and cost, and any mitigating steps that have or will be taken to complete the task.
- *Risks and Issues Log:* An assessment of the risks and issues with respect to project development, potential impact on schedule, cost or scope, as well as potential options for mitigating or eliminating the risk or issue.
- *Project scope and timing recommendations provided by the IESO:* If the IESO updates its scope and timing recommendations these should be included.

Any questions relating to this letter should be directed to Andrew Pietrewicz at Andrew.Pietrewicz@oeb.ca.

Yours truly,

Brian Hewson
Vice President, Consumer Protection & Industry Performance

Attachment: Project Development Cost Reporting Table

Project Development Cost Reporting Table for Use in Bi-annual Reports

All bi-annual reports should include the following table that summarizes budgeted vs. actual expenditures to date, as well as any forecast changes in budget and the revised total budget. Percentage values in the cost table should be used to two decimal places.

Project Development Cost Reporting Table

	Actuals Spent			Forecast Budget Variance					
	A Spent this Reporting Period (millions)	B Total Spent to Date (millions)	C Budget per November 15, 2022 Report (millions)	D Forecast Budget Change from Last Report (millions)	E Forecast Budget Change from Last Report (%)	F Revised Total Budget (millions)	G = F – B Budget Remaining (millions)	H = G/F *100 Budget Remaining (%)	Reasons for Change
Real Estate									
Engineering and Design									
Environmental Approvals									
Indigenous Consultation									
Project Management									
Contingency									
Other Consultation									
Interest and Overhead									
Total									

Notes on the Project Development Cost Reporting Table

- Column 'A' should reflect expenditures since the last reporting period.
- Column 'B' should reflect all expenditures to date for the specific transmission line project.
- Budgeted costs in Column 'C' should be those reported in Hydro One's first bi-annual report and are to be held fixed.

ATTACHMENT #2

**IESO Letter to Hydro One Re: Building a new 230 kV double-circuit line from Lambton TS
to Chatham SS**

Dated May 26, 2020

March 26, 2020

Robert Reinmuller
Director, Transmission System Planning
Hydro One Networks, Inc.
483 Bay Street
Toronto, ON M5G 2P5

Dear Robert:

Re: Building a new 230 kV double-circuit line from Lambton TS to Chatham SS to supply forecasted load growth in the Windsor-Essex region and surrounding Chatham area

The purpose of this letter is to identify the need for a new 230 kV double-circuit line from the Lambton transformer station ("TS") to the Chatham switching station ("SS") and the associated station facility expansions or upgrades required at the terminal stations. This reinforcement is needed to ensure that the system can meet the near- to mid-term needs for the Windsor-Essex region. These facilities are required no later than 2028, but there is benefit in streamlining the implementation of this project and completing it earlier if possible.

The purpose of these new facilities is to:

- Ensure sufficient bulk transfer capability east of Chatham to supply the forecast load in the Windsor-Essex region and surrounding Chatham area in the near- to mid-term; and
- Improve the deliverability of resources in the Lambton-Sarnia area for intra-zonal and provincial supply.

Background

The west of London area, as shown in Figure 1, encompasses a 230 kV and 115 kV high voltage network stretching from the western edge of the City of London, to Lambton-Sarnia in the northwest, and the City of Windsor in the west. This system interconnects large generators in the Lambton-Sarnia and Windsor areas with existing load centres, and encompasses the growing Kingsville-Leamington and Chatham-Kent areas. It provides four interconnection points with Michigan's power system via Windsor and Lambton-Sarnia. The area also encompasses a connection to the 500 kV system at Longwood within the Municipality of Strathroy Catadoc, providing a strong path for supply to and from the region and the rest of the province.

There are two main pockets of load growth and economic development in the area west of London – in the Town of Kingsville and Municipality of Leamington, and in the community of Dresden, located within the Municipality of Chatham-Kent. This growth is driven by strong indoor agricultural growth, mainly in vegetable greenhouses, as well as in part, cannabis, specifically through the intensification of existing greenhouses switching to lit indoor facilities, expansion of greenhouse facilities, and supplemental load to support the agricultural sector.

In 2019, the IESO published a bulk transmission study for the area, [*Need for Bulk Transmission Reinforcement in the Windsor-Essex Region*](#), which recommended transmission upgrades to supply this increased electricity demand in the region. More specifically, the upgrades addressed bulk transmission system limitations west of Chatham, between Chatham SS and the Kingsville-Leamington area. These included a new switching station at Leamington Junction (Lakeshore SS) and a new 230 kV double-circuit line from Chatham SS to the new Lakeshore SS. At that time, transmission system constraints east of Chatham were also identified but additional assessments were required before further recommendations could be made.

Recent studies conducted by the IESO with input from Hydro One, local distribution companies (LDCs), stakeholders and communities concluded that bulk electricity demand west of London region will be adequately supplied by the previous recommendations for transmission reinforcements and existing resources until the beginning of 2028.

To supply the forecasted electricity demand beyond 2028 and to maintain the capability of the transmission system to deliver the output of generation resources in the Lambton-Sarnia area, the IESO recommends a new 230 kV, double-circuit transmission line be built between Lambton TS and Chatham SS. Prior to this reinforcement coming into service as new loads connect, operational actions such as arming Remedial Action Schemes (RAS) for load or generation rejection, or temporarily allowing higher operating ratings, may be required to address the potential congestion of generation resources in the Lambton-Sarnia area. This would be outlined in potential exemptions to reliability standards, as required.

Due to the rapid and constantly evolving nature of the load growth in the area, and the need to occasionally rely on operating actions to reduce congestion of generating resources, there is benefit in streamlining the implementation of this project to complete it earlier if possible.

The analysis found that this transmission solution is the most cost effective next step to supplying the increasing demand in the region.

In arriving at this recommendation alternate transmission options and local supply options were considered. The analysis of the different options will be described in the IESO's west of London bulk study report, to be published in Q2 2021. This report will also make additional recommendations around further transmission or resource solutions, as required, to continue meeting bulk system needs into the long-term.

Lambton South (Lambton to Chatham) Transmission Line Project Scope

Based on the above considerations, the IESO recommends that Hydro One initiate the work, engagement and activities, including seeking Environmental Assessment and Leave-to-Construct approvals, that are required to develop and construct a new 230 kV double-circuit line from Lambton TS southwards to Chatham SS and associated station facility expansions or upgrades

required at the terminal stations. Single-line diagrams of the existing and proposed facilities are shown in Figure 2.

The project and its related costs and timelines have been discussed with Hydro One. The IESO understands that, if approvals are received, an in-service date of 2028 is achievable and recommends the transmitter investigate options for an accelerated implementation if possible, for the reasons mentioned previously. Hydro One has indicated costs for the project may range between \$210 million to \$290 million. If there is any delay or suspension of the targeted in-service date and/or project costs are forecasted to exceed the upper end of this range, Hydro One will notify the IESO as soon as possible so that the assessment of the bulk system reinforcement plan in the west of London can be updated appropriately.

The IESO is aware that there are Indigenous communities in Southern Ontario that may have an interest in this project. The IESO encourages Hydro One to meaningfully engage with these communities in a way that recognizes the unique interest of each community in this project, and to discuss their concerns about potential impacts to their Aboriginal or treaty rights.

Future Activities

This transmission line is the next stage of a number of improvements to the bulk transmission system required to support load growth and ensure reliability in the area. Planning for the west of London bulk system is still underway and additional recommendations along with a final report are planned for spring 2021. In parallel, long-term planning also continues at the regional level through the on-going Windsor-Essex addendum study and forthcoming Chatham-Kent/Lambton/Sarnia regional planning cycle in Q2 2021. Engagement with Indigenous and municipal communities and sector stakeholders will continue to inform these activities.

IESO will continue to work with Hydro One in the implementation of this project. We look forward to an ongoing exchange of information as Hydro One proceeds with the development of the project.

Yours truly,

Ahmed Maria

Ahmed Maria

Cc: Terry Young, IESO
Leonard Kula, IESO
Candice Trickey, IESO
Chuck Farmer, IESO
Bruno Jesus, Hydro One
Mark Brodie, Hydro One
IESO Records

Figures: System Maps

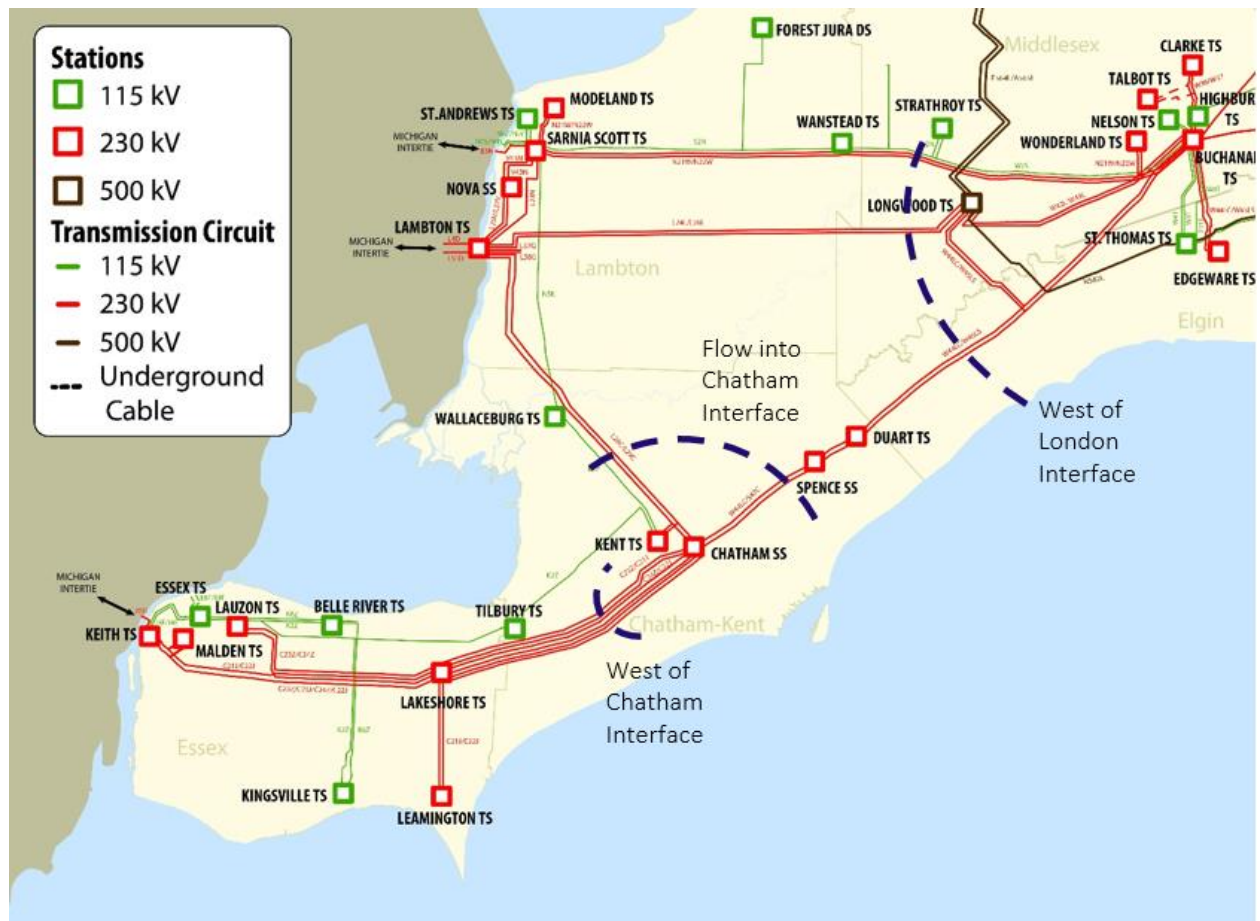


Figure 1: Geographical map of West of London

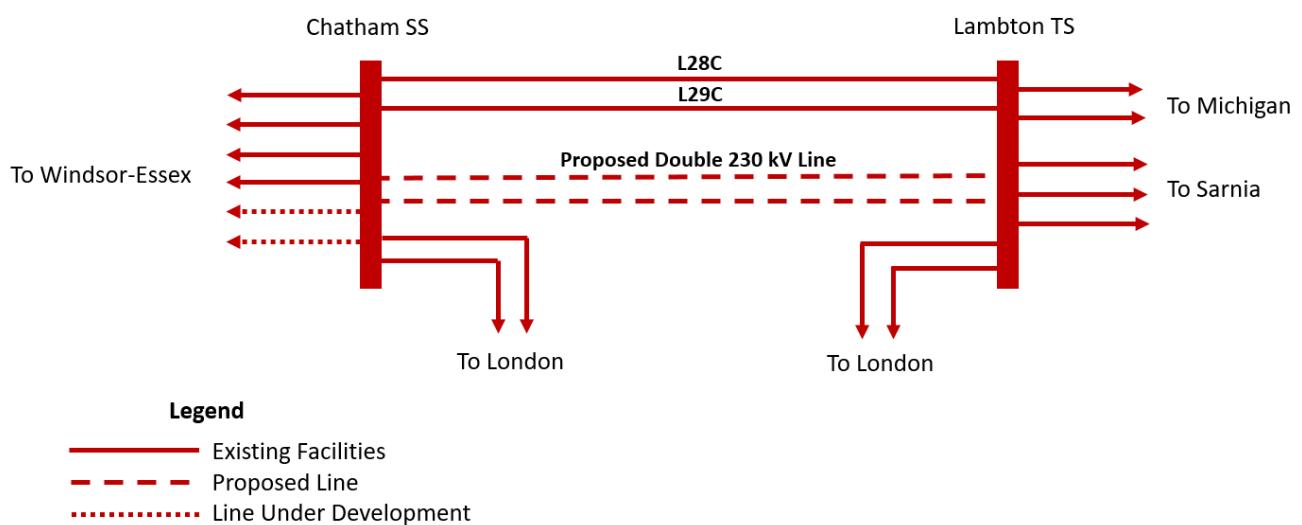


Figure 2: Single line diagram of existing and proposed facilities in West of London

ATTACHMENT #3
Map of the New Transmission Lines in Southwestern Ontario

Southwest Ontario Transmission Projects

- 1 St. Clair 230 kV Transmission Line (2028)
- 2 Longwood to Lakeshore 500 kV Transmission Line (2030)
- 3 Longwood to Lakeshore 500 kV Transmission Line (TBD)
- 4 Windsor to Lakeshore 230 kV Transmission Line (TBD)

Map Legend

- 230 kV Existing Transmission Line
- 500 kV Existing Transmission Line
- Existing Transformer Station
- City/Town
- Highway
- First Nation

