DECEMBER 4, 2024

East Lake Superior Regional Electricity Planning

Engagement Webinar



Objectives

- Ontario's Electricity Sector and the IESO's Role
- Regional Planning Activities and the East Lake Superior Region
- Draft Scoping Assessment
- Components of an Integrated Regional Resource Plan (IRRP)
- Engagement and Next Steps
- Discussion





We work with:



Summary

- Regional planning has kicked-off in the East Lake Superior electrical area and the Technical Working Group has
 recommended the best planning approach to understand needs and propose solutions to meet the growing
 electricity demand.
- In the East Lake Superior region, the Technical Working Group is recommending to develop a new Integrated Regional Resource Plan (IRRP) given the:
 - Potential to address needs in an integrated manner
 - Potential for exploring multiple types of options to meet the needs (including non-wires alternatives)
 - Potential for regional changes having implication on the upstream bulk power system
 - Opportunity for public engagement
- The IRRP will look at the unique electricity needs of the region and consider a range of options and resources to meet the growing demand.
- As work progresses, the IESO will share more information, answer questions and seek feedback at key milestones.





Local considerations and feedback are a critical component the planning process. The IESO wants to hear from you:

- What additional information should be considered as part of the Scoping Assessment?
- What other considerations based on local developments should be made regarding the areas identified as requiring further study?
- What other areas or specific considerations should be examined through regional planning?

Please submit your written comments by email to engagement@ieso.ca by December 18, 2024



Regional Electricity Planning Process and the East Lake Superior Region



Electricity Planning in Ontario



Addresses provincial electricity system needs and policy directions.

<u>Underway</u>: <u>Northern</u> <u>Ontario Bulk Planning</u> <u>Study</u>



Regional Planning

Addresses local electricity system needs at the transmission system level.

<u>Underway</u>: East Lake Superior Scoping Assessment Addresses local electricity system needs and priorities at the distribution system level.

Distribution

Planning

Led by local distribution companies.



21 Regional Electricity Planning Regions

The regional system planning process ensures an affordable and reliable supply of electricity across Ontario. The process looks at the unique needs of each region and considers a range of options and resources to keep the lights on.

A comprehensive planning approach to develop an Integrated Regional Resource Plan (IRRP) is underway for the East Lake Superior region located in Northeast Ontario.

The first step is completing a scoping assessment to determine the best planning approach.



Technical Working Group

The regional planning process is conducted by a Technical Working Group, consisting of:





Previous Electricity Planning for East Lake Superior

East Lake Superior has been at the centre of several significant transmission recommendations to meet increased economic growth and electricity demand within the region and Northern Ontario.

Previous recommendations includes:

- **The East-West Tie Expansion:** new 230kV transmission line parallelling the existing East-West Tie Line between Wawa and Thunder Bay to connect Northeast and Northwest Ontario (in-service 2022).
- The <u>April 2021</u> East Lake Superior IRRP: monitor and utilize operational measures to manage the gradual demand locally while deferring electricity needs due to large industrial growth to the Northeast Bulk Plan.
- Northeast Bulk Plan: three transmission lines (planned completion in 2029-2030) and a subsequent voltage study to identify locations for static and dynamic reactive devices (in-service from 2025-2029).

These solutions have ensured a reliable supply of electricity to the area and more broadly in Northern Ontario. Continued demand growth within the East Lake Superior electrical region will require more electricity planning.



East Lake Superior Electrical Region

- The area is serviced by 230 and 115 kilovolt (kV) lines and transformer stations (TS).
- The 230kV circuits in the region provides bulk electric power to the region and facilitates power flow across the province.
- The region has over 1,200 MW of generation, including numerous hydroelectric facilities, solar and wind farms, and thermal generating facilities.





Communities in the East Lake Superior Region

- The East Lake Superior Region includes the town of Bruce Mines, Township of Chapleau, Hilton Township, Municipality of Huron Shores, Township of Jocelyn, Township of Johnson, Laird Township, Township of Macdonald, Meredith & Aberdeen Additional, Township of Plummer Additional, Prince Township, City of Sault Ste. Marie, Township of St. Joseph, Tarbutt Township & Tarbutt Additional, Township of Dubreuilville and Municipality of Wawa.
- The electrical region also encompasses Chapleau Cree First Nation, Chapleau Ojibwe First Nation, Garden River First Nation, Michipicoten First Nation, Brunswick House First Nation and Batchewana First Nations.



2024-2026 East Lake Superior Planning Timeline



*Reflects typical 18-month IRRP timeline. Working Group has the flexibility to extend to 24 months where required.



Draft Scoping Assessment



What is a Scoping Assessment?

As part of the Scoping Assessment, the Technical Working Group will be determining the best planning approach to meet the electricity needs of the East Lake Superior electrical region.

Key Elements:

- Review needs that require comprehensive planning
- Determine the geographic grouping (sub-regions) of needs, if needed
- Determine the appropriate regional planning approach and scope
- Establish the draft Terms of Reference for an Integrated Regional Resource Plan, if one is required, and composition of the Technical Working Group



Preliminary Needs Identified in East Lake Superior

Hydro One recently completed a Needs Assessment report that identified the following needs:

- **Supply capacity:** Ability of the system to supply power through the transmission lines to a local area.
- **Asset replacement:** Station or transmission equipment has reached end of life.

These needs will be confirmed, and additional needs may be identified as the IRRP progresses. For more details, please refer to the draft Scoping Assessment Outcome Report or <u>Hydro One's Needs Assessment</u> <u>Report</u>, available on the <u>East Lake Superior engagement webpage</u>.



Preliminary Electricity Needs Identified

Need Type	#	Impacted Equipment	Considerations
Supply Capacity Ability of the system to supply power through the transmission lines to a local area.	1	Algoma circuit overload	New Remedial Action Scheme (RAS) being installed in Q1 2025
	2	Sault No. 3 circuit overload	Supplies Batchawana TS and Goulais Bay TS. Sault No. 3 to be refurbished by Q2 2026
	3	Voltage concerns at Third Line TS	Third Line TS supplies most of the load in the city of Sault Ste. Marie
Asset Replacement Station or transmission equipment has reached end of life.	4	St Mary's MTS and Tarentorous MTS	Tarentorous is being retired, and load is moving to new Tagona West TS



Location of Identified Needs

3

Legend

- Supply Capacity Needs
- Asset Replacement
- * Pressing Needs



Draft Scoping Assessment Considerations

When determining the planning approach for needs requiring coordination, consideration was given to whether these needs:

- Could be impacted by varying bulk systems flows
- Have the potential to be addressed by non-wires solutions
- Could potentially be addressed in an integrated manner
- Impact multiple local distribution companies (LDCs) in the sub-region
- Would require engagement and coordination with community-level energy planning activities



Scoping Assessment Recommendations

An Integrated Regional Resource Plan (IRRP) is recommended for several electricity needs identified in the East Lake Superior Region, due to:

- The preliminary needs identified impact both the bulk and distribution systems.
- These needs have opportunities for diverse types of solutions involving both wires and non-wires options.
- There is opportunity for public engagement.
- Asset replacement needs at St. Mary's TS and Tarentorous TS are the most pressing. This may
 introduce the need to use a hand-off letter to allow an expedited initiation of projects to address the
 imminent needs.

This information is available for review in the draft Scoping Assessment and Terms of Reference, which can be found on the <u>East Lake Superior engagement webpage</u>.



Components of an Integrated Regional Resource Plan (IRRP)



Components of an IRRP

Demand Forecast	Needs	Screening Solutions	Recommendations
How much power is needed over the planning timeframe?	What needs are emerging in the region that need to be addressed?	What kinds of solutions can meet the future needs for the region?	Based on an assessment of potential options, what recommended actions will ensure a reliable and adequate electricity supply for the region over the long-term?
22			ieso

Connecting Today. Powering Tomorrow.

Determining Options as Part of the IRRP Process

Over the course of the planning process, the IESO will:

- Evaluate various wire and non-wire options, to address the region's near, medium and long-term electricity needs including:
 - Traditional wire options to supply local area



- Non-wire alternatives (NWA), such as distributed generation, conservation & demand management, demand response or transmission connected generation facilities*
- Seek community feedback to enhance development and evaluation of options before making a final recommendation.

*More information regarding screening NWAs can be found in the <u>IESO's Guide to Assessing NWAs</u>.



Engagement and Next Steps



Ongoing Engagement

Your input plays an important role in developing the electricity plan.



Participate in upcoming public webinars



Subscribe to receive updates on the IESO <u>website</u> by selecting the East Lake Superior region



Follow the East Lake Superior regional planning activities online





The IESO will continue to engage and inform throughout the IRRP's development. Participants can expect to hear from the IESO at these milestones:

December 18, 2024: Feedback due

January 9, 2025: IESO response to feedback and final Scoping Assessment Outcome Report posted IRRP Timelines

Q2 2025: Present demand forecast in a public engagement webinar, and solicit feedback

2025: Present needs and potential options in a public engagement webinar, and solicit feedback

2026: Present options analysis and draft recommendations in a public engagement webinar, and solicit feedback

Q3 2026: IRRP report will be completed and published on the <u>engagement webpage</u>





Local considerations and feedback are a critical component the planning process. The IESO wants to hear from you:

- What additional information should be considered as part of the Scoping Assessment?
- What other considerations based on local developments should be made regarding the areas identified as requiring further study?
- What other areas or specific considerations should be examined through regional planning?

Please submit your written comments by email to <u>engagement@ieso.ca</u> by December 18, 2024.





ieso.ca

1.888.448.7777

customer.relations@ieso.ca

engagement@ieso.ca





Appendix



Identifying the Planning Approach

Approach	Typical Considerations	Parties Involved
Integrated Regional Resource Plan (IRRP)	A greater range of options exist such as non-wires and/or closer coordination with communities and stakeholders	IESO (lead) Transmitter LDCs
Regional Infrastructure Plan (RIP)	Considers more straight-forward wires-only options with limited engagement	Transmitter (lead) LDCs IESO
Local Planning	No further regional coordination required	Transmitter LDCs



Background: Demand Forecast

Developing a 20-year electricity demand forecast included:

- Information from the region's local distribution companies (LDCs) such as:
 - Demand forecasts for each station in their service territory,
 - Municipal and community plans incorporated into their forecast, and,
 - Forecasting assumptions based on customer growth plans.
- Engaging with municipalities, customers, and other interested parties to understand and incorporate potential growth and decarbonization plans.
- Accounting for the impacts of existing demand side management programs, planned distributed generation, and extreme weather conditions in the electricity demand forecast.



Background: Electricity Needs

Once the demand forecast is finalized, the Technical Working Group will assess if the existing infrastructure can meet the forecasted growth within safe operating standards. If it cannot, the shortfall is categorized into one of five needs:

- **Station capacity:** Ability of a station to deliver power from the grid down to the distribution systems.
- **Supply capacity:** Ability of the system to supply power through the transmission lines to a local area.
- **Asset replacement:** Station or transmission equipment has reached end of life.
- Load restoration: Ability of the system to restore power after select contingencies.
- Load supply security: Maximum amount of power that can be lost during select contingencies.

