JULY 09, 2025

East Lake Superior Regional Electricity Planning

Engagement Webinar: Electricity Demand Forecast

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Land Acknowledgement

The IESO acknowledges that the East Lake Superior region is the traditional territory of the Anishinaabe, including the Ojibwe, the Odawa and the Potawatomi peoples, including those covered by the Robinson-Huron Treaty and Robinson-Superior Treaty.

The IESO would also like to acknowledge all First Nations, Inuit and Métis peoples and their valuable past and present contributions to this land.

Agenda

- Land Acknowledgement
- Ontario's Electricity Sector and the IESO's Role
- Regional Electricity Planning Process
- Draft Electricity Demand Forecast
- Engagement and Next Steps
- Discussion

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Powering Tomorrow.

We work with:

Generators >>> **Transmitters** >>> **Local Distribution Companies** >>> **Energy Consumers**

<<< **Communities** >>>

Seeking Input

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

- What additional information, if any, should be incorporated in the demand forecast scenarios?
- What concerns or interests about electricity should be considered as part of the regional planning process?
- What information is important to provide throughout the engagement and draft Engagement Plan?

Please submit your written comments by email to engagement@ieso.ca by July 30, 2025.

Regional Electricity Planning Process

Electricity Planning in Ontario

Provincial/Bulk System Planning

Addresses provincial electricity system needs and policy directions.

Completed: Northeast Bulk Plan

Underway: Northern Ontario Bulk Planning

Regional Planning

Addresses local electricity system needs at the transmission system level.

Underway: East Lake Superior IRRP

Distribution Planning

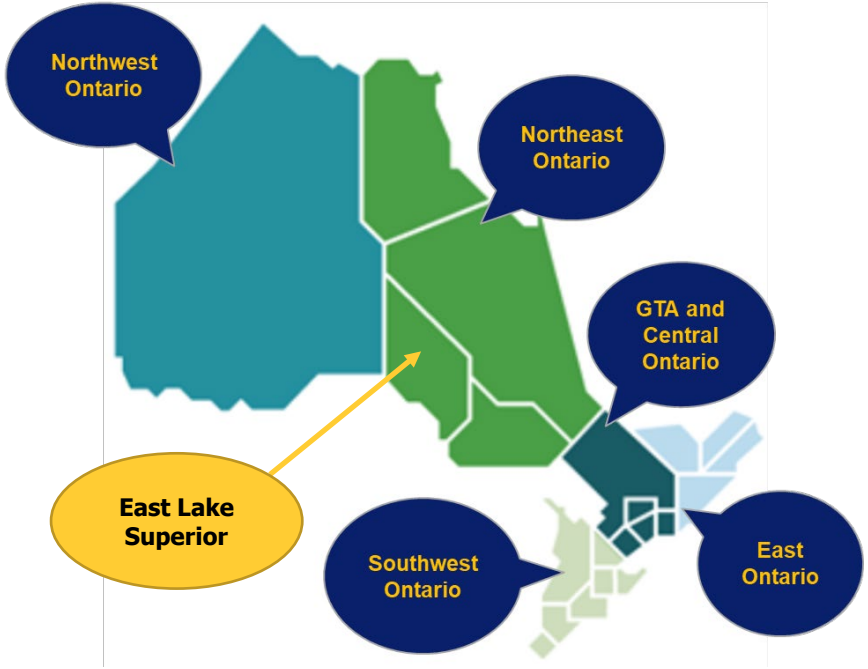
Addresses local electricity system needs and priorities at the distribution system level.

Led by local distribution companies.

Regional Electricity Planning Process

The regional system planning process ensures an affordable and reliable supply of electricity across Ontario. The process considers the unique needs of each region and evaluates a range of options and resources to ensure a reliable electricity supply.

The regional plan for the East Lake Superior electrical area will be developed by a Technical Working Group, led by the IESO, and consisting of Hydro One Networks Inc., Hydro One Networks Sault Ste. Marie L.P., PUC Transmission LP., Algoma Power Inc., and PUC Distribution.



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 increase capacity between Northeast and Northwest Ontario (in-service 2022).
- **The April 2021 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) to increase capacity to the area and a subsequent **voltage study** to identify locations for static and dynamic reactive devices (in-service from 2025-2029).
- **Northern Ontario Bulk Plan:** new transmission line to address bottlenecks and increase capacity in Northeastern Ontario.

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 East Lake Superior region extends from the Township of Dubreuilville in the north to the town of Bruce Mines and includes the City of Sault Ste. Marie and the Township of Chapleau.
- 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.

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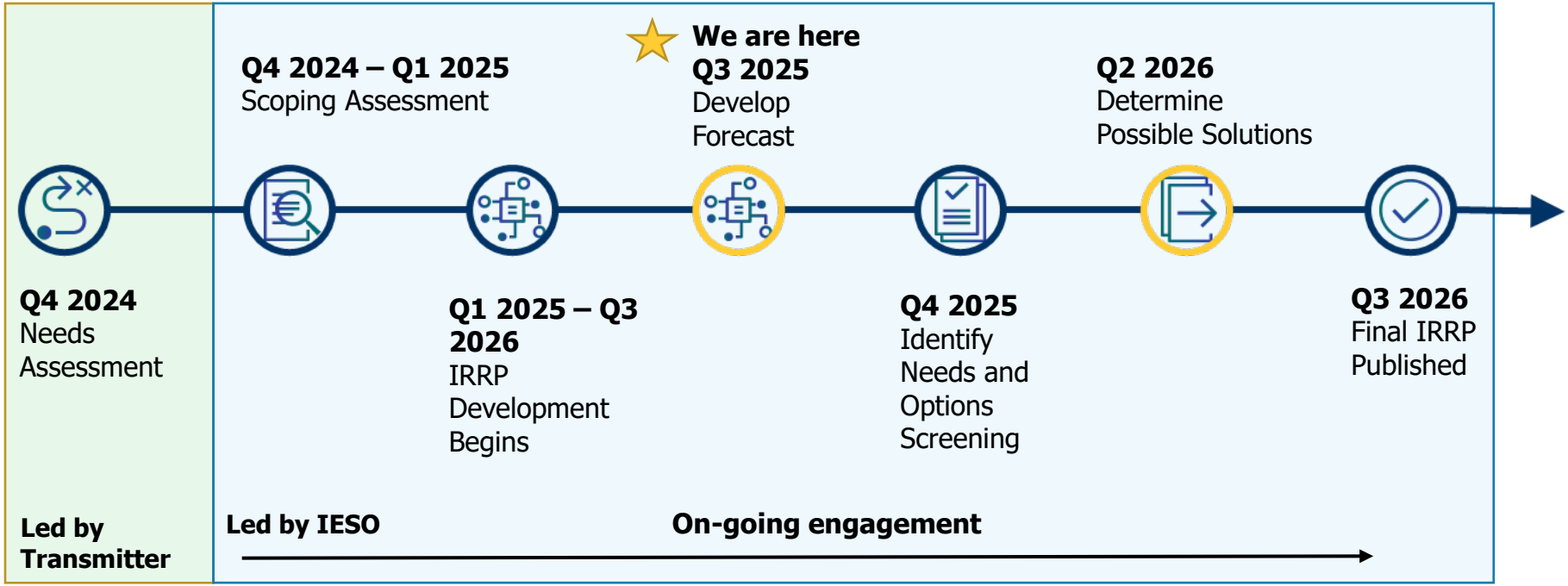
2024-2026 East Lake Superior Planning Timeline



Components of an Integrated Regional Resource Plan

Demand Forecast	Needs	Potential 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?

Summary of Feedback Received

Feedback	Consideration of Feedback into Scoping Assessment Outcome Report
Consider coordinated energy planning between the electric and gas sectors.	The Technical Working Group acknowledges the potential benefits of coordination between energy planning processes and welcomes input and data on options that can reduce demand. As work progresses, the IESO will continue to host opportunities to share more details, including additional webinars and opportunities for feedback.

To review the feedback and IESO response, please visit the East Lake Superior engagement webpage.

Draft Electricity Demand Forecast Scenarios

Developing the Demand Forecast

Local distribution companies (LDCs) are the main source for the demand forecast, and they:

- Provided summer and winter demand forecasts for each station their areas are supplied from,
- Incorporated municipal and community plans into their forecasts, and
- Established forecasting assumptions based on customer growth plans.

In addition to LDC forecast, the IESO and the Technical Working Group:

- Accounts for impacts of existing demand side management programs, planned distributed generation, and extreme weather conditions in the electricity demand forecasts.
- Works directly with customers and industry stakeholders to create demand forecasts for large electricity consumers that may seek connection on the transmission system.
- Works with the LDC to ensure that additional insights from municipalities, customers, and other interested parties have been incorporated in the demand forecasts for the regional planning process.

Local Planning Drivers

The following drivers have been incorporated into the electricity demand forecast by your local distribution companies:


Municipal/regional growth plans


Climate change action plans


Community energy plans


Business plans of major electricity consumers or large projects


Distributed energy resources/energy projects

Demand Forecast Methodology

Local distribution companies (LDCs) have provided detailed documentation of their load forecast methodologies, which has been published on the IESO's engagement webpage. Key insights include:

- PUC Distribution Inc.'s forecast is primarily based on historical load data and is augmented by known electrification trends and planning inputs from municipal energy projects. The industrial growth from minerals processing and data centres are driving inputs in the high forecast.
- Algoma Power's forecast indicates that load growth is primarily driven by electric vehicles, residential household electrification, agricultural greenhouses, mining expansion, steel producer electrification and continued residential sector growth. Algoma Power has aligned its forecasted annual planning outlook with the federal government's targets on zero-emissions vehicle sales targets.
- Hydro One Networks Inc.'s forecast includes assumptions in the growth rate such as Ontario GDP growth rate, housing statistics, intensification of urban developments and electrification trends.

Forecast Scenarios

Two forecast scenarios have been developed for East Lake Superior:

- The **reference** scenario will drive firm recommendations.
- The **high** scenario will help plan for potential load growth, guide early development work and identify triggers for further investment.

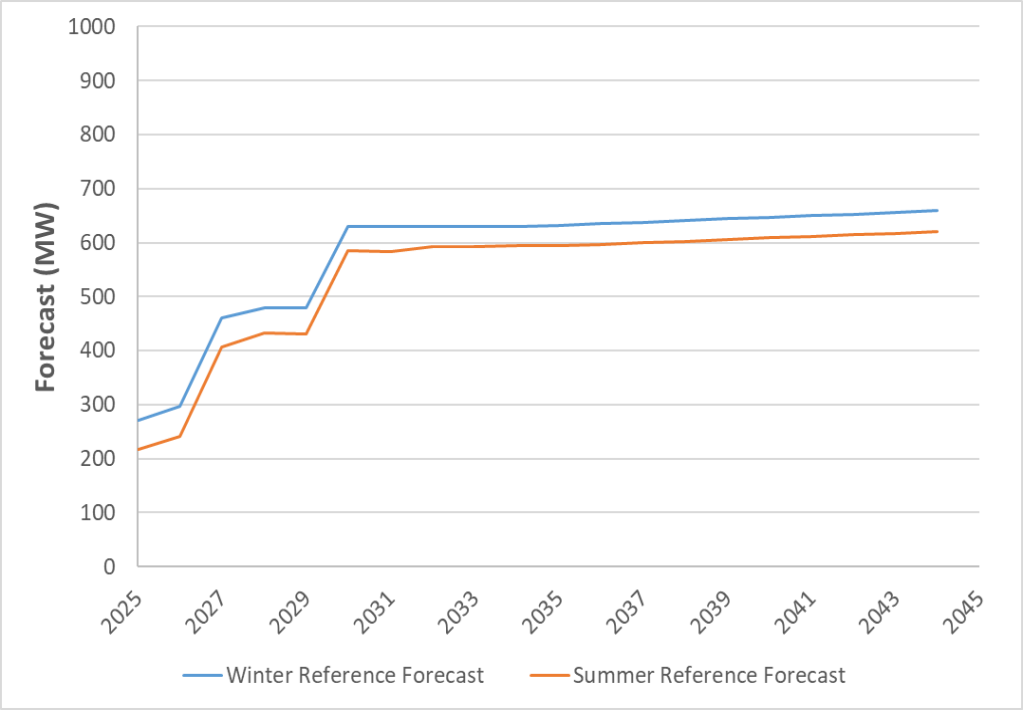
While plan recommendations will primarily be driven by the reference demand forecast, the high forecast scenario will be considered to test the robustness of the plan, identify signposts to monitor changes, and contemplate additional actions required if higher demand growth materializes.

Overview of the Scenario Assumptions

Load	Reference Forecast	High Forecast
Residential	Growth applied by each local distribution company (LDC), informed by municipal input	Same as reference
Electrification and Energy Plans	Growth incorporated by each LDC, informed by municipal input	Same as reference with higher levels of electrification
Industrial	Growth incorporated by each LDC, informed by municipal input	Potential new industrial customers

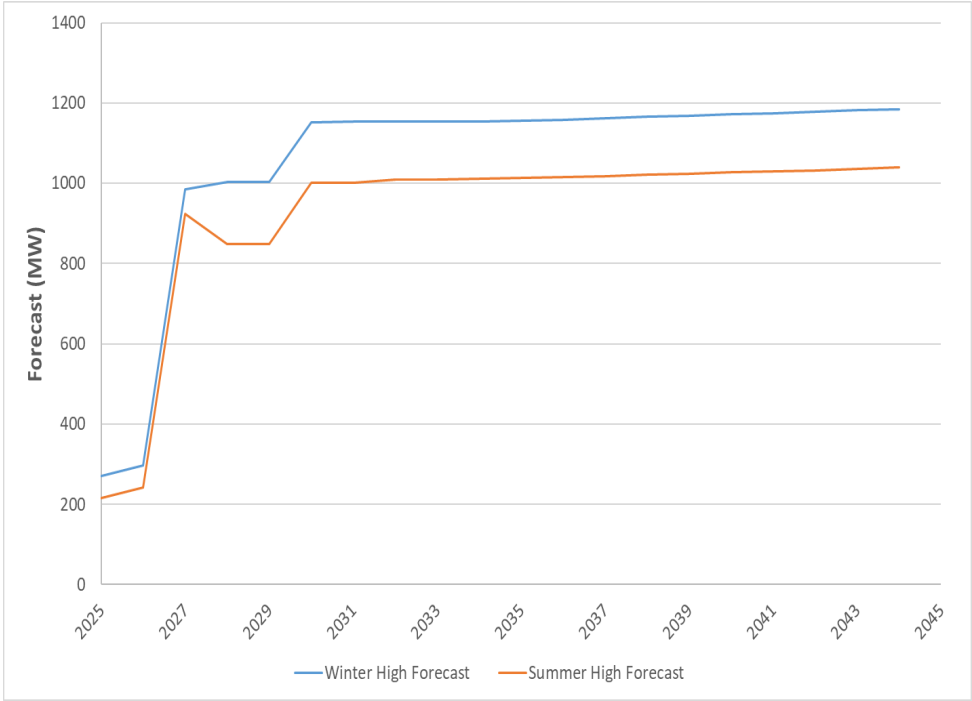
Reference Demand Forecast

- The reference forecast grows significantly by 2026 and stabilizes by year 2030.
- Demand could increase by 112% from 2026 to 2030.
- The primary drivers of the reference forecast are electrification initiatives, including Algoma Steel's Electric Arc Furnace (EAF) transformation project.



High Demand Forecast

- The high forecast grows significantly higher than the reference forecast by 2026 and stabilizes by year 2030.
- In this scenario, demand could grow by 288% from 2026-2030.
- To inform planning, the high forecast scenario encompasses potential customer connections in minerals processing, data centres and construction.



Engagement and Next Steps

Energy Efficiency Opportunities

- To help meet the province's rapidly growing demand for electricity, the IESO's energy efficiency programs, through Save on Energy, has been expanded from $1 billion over four years, to $10.9 billion over 12 years.
- Key programs of interest to your municipality, residents and small businesses include:
  - Peak Perks – Residential and small business electricity customers with an eligible smart thermostat can be rewarded for reducing their energy use when demand for electricity is high in the summer.
  - Home Renovation Savings – Homeowners can get rebates up to 30% for home energy efficiency renovations and improvements.
  - Retrofit – Facility/building owners and lessees can get up to 50% of eligible project costs covered for targeted energy efficiency retrofits.
  - Energy Affordability Program – Support for income-eligible electricity customers to better manage monthly electricity costs and increase their home comfort.
- Some programs will expand later in 2025 – to stay informed, sign up for the quarterly newsletter.

Next Steps

The IESO will continue to engage throughout the IRRP's development. Upcoming milestones include:

- **July 30:** Feedback from Public Engagement Webinar due
- **Q4 2025:** Share Needs and Screened-in Options, and seek feedback
- **Q2 2026:** Share Option Analysis and Draft Recommendations, and seek feedback
- **Q3 2026:** IRRP will be completed and published on the engagement webpage.

After IRRP: Depending on the recommendations of the IRRP, the following next steps can be expected:

- For wired solutions, the transmitter will lead the development of a Regional Infrastructure Plan, which assesses and develops a detailed plan on how wire options can be implemented.
- For non-wire solutions, implementation mechanisms for new resources and energy efficiency programs will be determined following plan publication.

Seeking Input

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Thank You!

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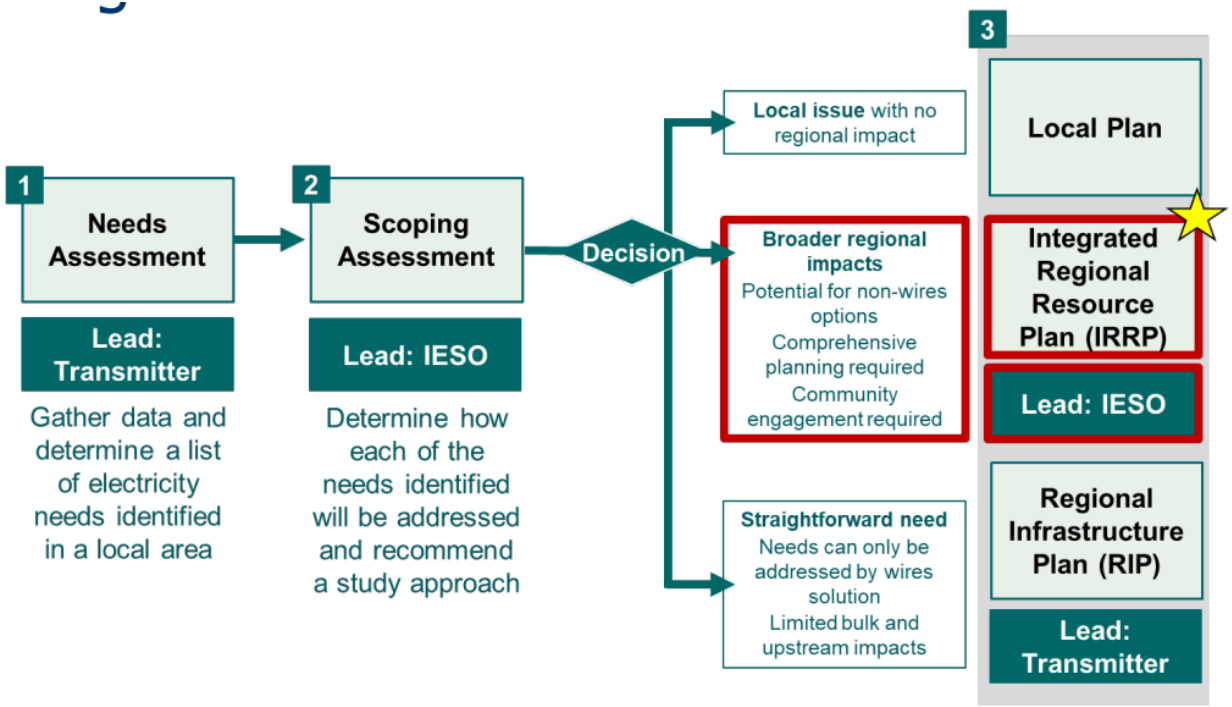
Appendix

Technical Working Group

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

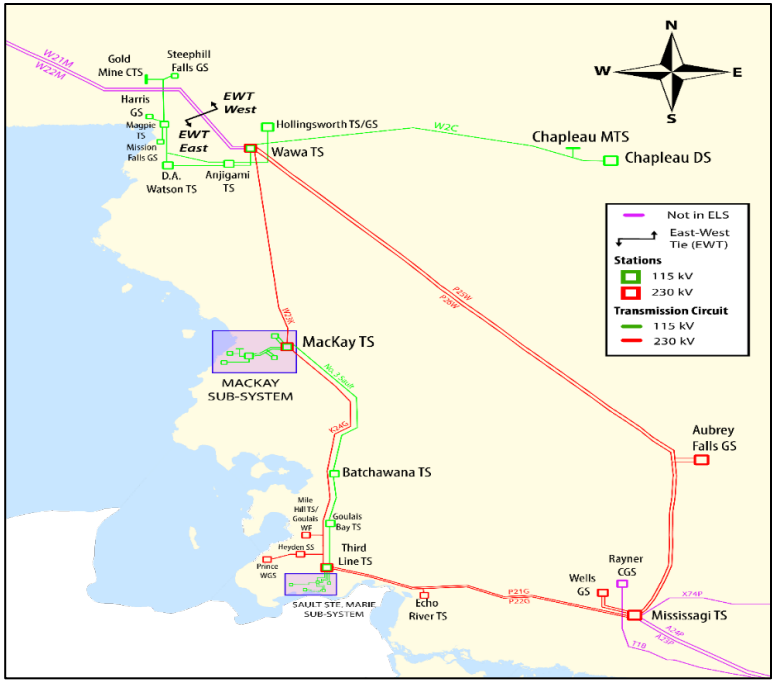
Team Lead, System Operator	• Independent Electricity System Operator
Lead Transmitters	• Hydro One Sault Ste. Marie (HOSSM) • Hydro One Networks Inc. (HONI) • PUC Transmission LP
Local Distribution Companies	• Algoma Power Inc. • Hydro One Distribution • PUC Distribution

Determining the Need for an IRRP



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.



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Identifying 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.

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

Legend

- Supply Capacity Needs
- Asset Replacement
- * Pressing Needs