DECEMBER 18, 2025

Sudbury/Algoma Regional Electricity Planning

Scoping Assessment Webinar

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Territory Acknowledgement

The IESO acknowledges that area of Sudbury/Algoma is the traditional territory of the Anishinaabe, including the Ojibwe, the Odawa and the Potawatomi peoples, encompassing areas covered by the Manitoulin Island Treaty and the Robinson-Huron 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

- IESO's Role in the Electricity Sector
- Regional Electricity Planning Process and the Sudbury/Algoma Electrical Region
- Draft Scoping Assessment
- Next Steps and Engagement
- Discussion

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Powering Tomorrow.

We work with:

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

<<< **Communities** >>>

Summary

- Regional planning has kicked-off in the Sudbury/Algoma electrical area, and the Technical Working Group (TWG) has recommended the best planning approach to understand needs and propose solutions to meet electricity needs.
- In the Sudbury/Algoma 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 implications on the upstream bulk power system
  - Opportunity for public engagement
- The IESO will develop forecast scenarios to determine the unique electricity needs of the region and consider a range of options and resources to meet electricity demand.
- As work progresses, the IESO will share more information, answer questions and seek input on key milestones.

Seeking Input

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

- What additional information should be considered as part of the Scoping Assessment?
- What additional considerations, informed by local developments, should be taken into account for the areas identified as needing further analysis?
- What other areas or specific considerations should be examined through regional planning?

Please submit your written comments by email to engagement@ieso.ca by January 12, 2026

Regional Electricity Planning Process and the Sudbury/Algoma Region

Electricity Planning in Ontario

Provincial/Bulk System Planning

Addresses provincial electricity system needs and policy directions.

Underway: North of Sudbury Bulk Plan

Completed: Northern Ontario Bulk Plan and Northeast Bulk Plan

Regional Planning

Addresses local electricity system needs at the transmission system level.

Underway: Sudbury/Algoma Scoping Assessment

Distribution Planning

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

Led by local distribution companies.

21 Electricity Planning Regions

The regional system planning process ensures an affordable and reliable supply of electricity across Ontario.

The process is completed on a cycle and assesses the unique needs of each region and considers a range of options and resources to keep the lights on.

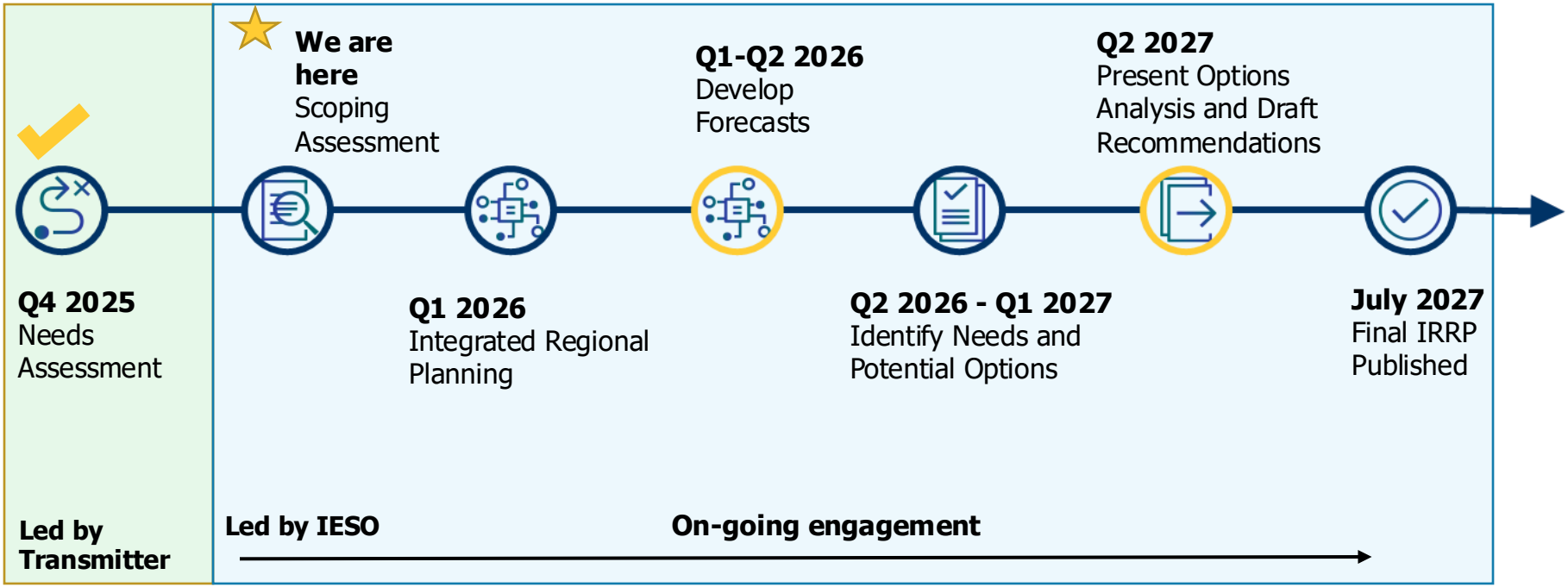
A key step of this work, is completing a scoping assessment to determine the best planning approach.

Technical Working Group

The scoping assessment is conducted by a Technical Working Group, consisting of:

Team Lead, System Operator	• Independent Electricity System Operator
Lead Transmitter	• Hydro One Networks Inc. (Transmission)
Local Distribution Companies	• Greater Sudbury Hydro Inc. • North Bay Hydro • Hydro One Networks Inc.

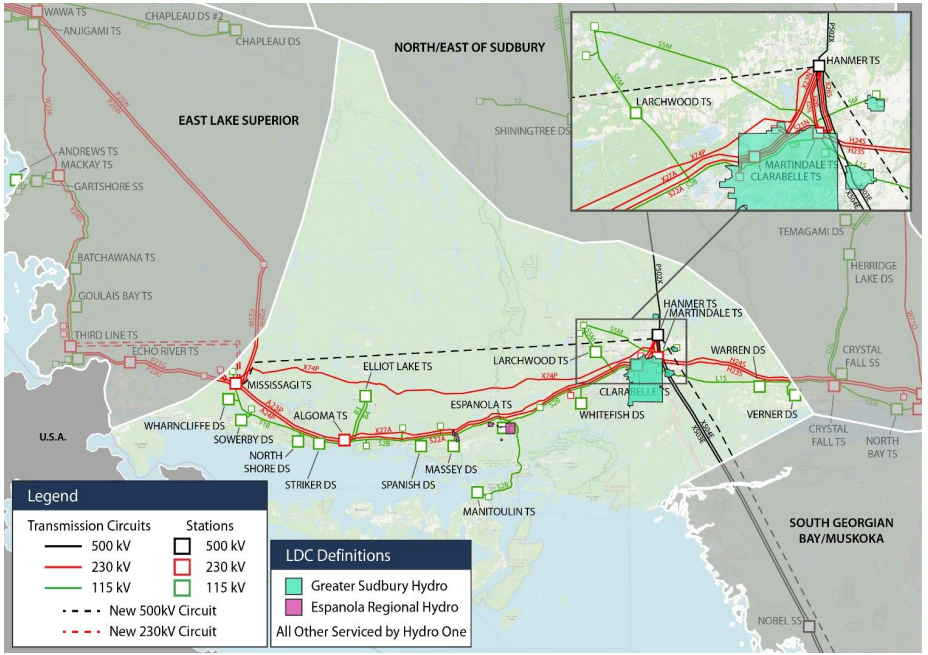
Regional Planning Milestones for Sudbury/Algoma



Sudbury/Algoma Electrical Region

The Sudbury Algoma region is supplied from a mix of transmission lines, Transformer Stations (TS) and local generation.

- There are a number of 230 kV circuits between Hanmer TS, Martindale TS, and Mississagi TS serving both load stations and serving as the bulk transmission path connecting the East Lake Superior and Northwest Planning Regions to the remainder of the power system via 500/230 kV autotransformers at Hanmer TS.
- Two additional more local areas operated separate from one another.
  - 230/115 kV autotransformers at Martindale TS and subsequent 115 kV circuits emanating from Martindale TS.
  - 230/115 kV autotransformers at Algoma TS and subsequent 115 kV circuits emanating from Algoma TS.
- Area generation includes transmission connected generation McLean's Mountain WF, Rayner, Red Rock Falls, Serpent River and Aux Sauble hydroelectric facilities.



https://www.oeb.ca/ontarios-energy-sector/ontario-electricity-and-natural-gas-utilities-service-area-map

*Please refer to the Appendix for a detailed list of municipalities and Indigenous communities in the Sudbury/Algoma electrical region.

Electricity Planning in Sudbury/Algoma

In 2016 and 2020, regional planning did not proceed to an IRRP, as the needs were largely end-of-life (EOL) and appropriately addressed through a Regional Infrastructure Plan (RIP).

Previous recommendations EOL Autotransformer replacement at Martindale and Algoma, EOL transformer replacements at Elliot Lake, Clarabelle and Martindale, separating the 230 kV X25S circuit into two separate circuits, increasing Manitoulin TS station capacity.

Two recent bulk plans, the Northeast Bulk Plan and Northern Ontario Bulk Plan made recommendations which enable demand growth and enable resources in this region as well as others in Northern Ontario by addressing upstream and downstream bottlenecks.

Draft Scoping Assessment

What is a Scoping Assessment?

A Scoping Assessment is the stage within the planning process where the Technical Working Group determines the best planning approach to meet the electricity needs of the Sudbury/Algoma electrical region.

Key Elements of a Scoping Assessment:

- Review needs that require comprehensive planning
- Determine the geographic grouping (sub-regions) of needs, if required
- 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 the composition of the Technical Working Group

Preliminary Needs Identified

The Technical Working Group, led by Hydro One, recently completed a Needs Assessment that looked at changes in demand and performed an initial screening to identify needs. The following electricity needs were identified:

- **Station capacity needs**: Ability of a station to deliver power from the grid down to the distribution system.
- **Supply capacity needs**: Ability of the system to supply power through the transmission lines to a local area.
- **Voltage Concerns:** Issues related to maintaining voltage levels within acceptable limits across the power system to ensure reliable operation and prevent equipment damage or service interruptions.

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 Hydro One's Needs Assessment Report.

Preliminary Electricity Needs Identified for Sudbury Algoma

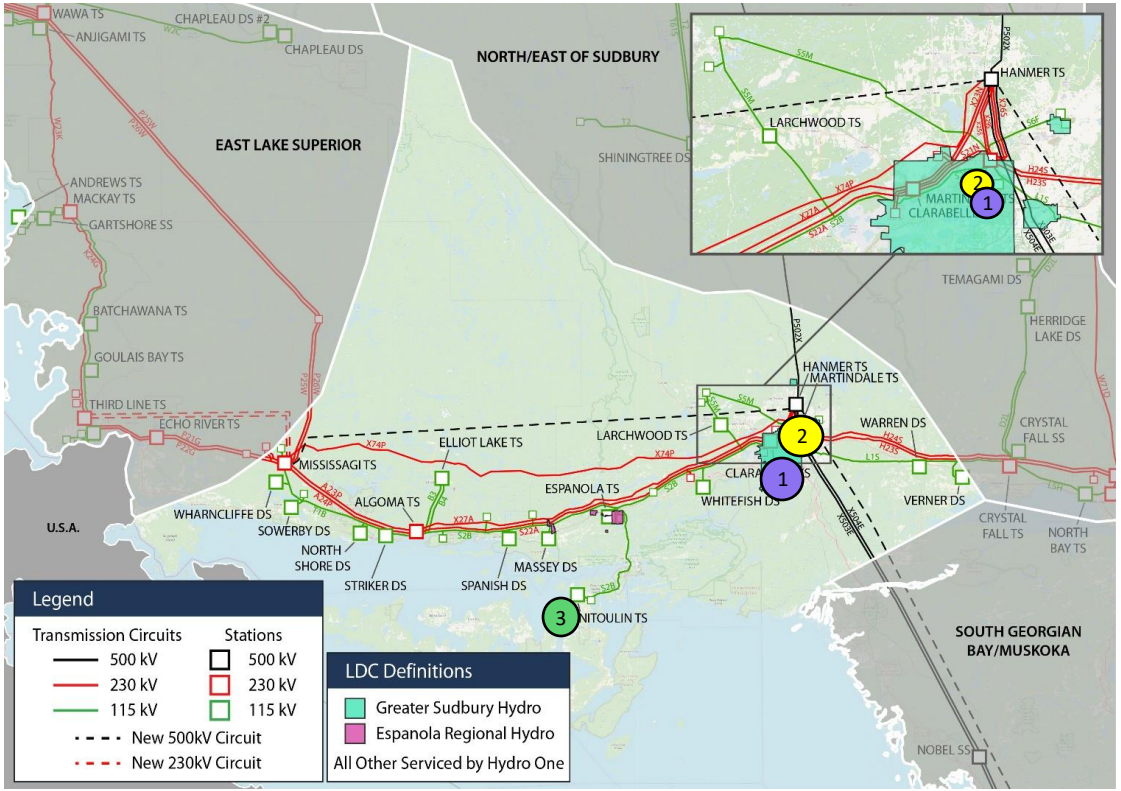
Preliminary electricity needs identified in the Needs Assessment:

Need Type	#	Impacted Equipment	Timing	Considerations
Station Capacity Ability of a station to deliver power from the grid down to the distribution system.	1	Martindale TS 230/44 kV step-down transformers (T25 & T26)	2034	The load exceeds the 10-day LTR of the step-down transformers, T25 and T26, based on winter demand forecast at the station. (Replacement of EOL assets with like-for-like)
Supply Capacity through the transmission lines/auto transformers to a local area	2	Martindale TS 230/115 kV Autotransformers (T21, T22, & T23)	2030	With one autotransformer out-of-service and subsequent failure of another unit, the third autotransformer will exceed its winter 10-day LTR.
Voltage Concerns through the transmission lines to a local area.	3	Manitoulin TS 115 kV Voltage	Near Term	The 115 kV bus at Manitoulin TS experiences low voltage under peak demand conditions at the station.

Geographic Areas with Identified Needs

Legend

- Station Capacity Needs
- Voltage Concerns
- Supply Capacity Needs



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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

Draft Scoping Assessment Recommendations

An Integrated Regional Resource Plan (IRRP) is recommended for all electricity needs identified in the Sudbury/Algoma region, due to:

- 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 implications on the upstream bulk power system
- Opportunity for public engagement

Detailed information is available for review in the draft Scoping Assessment Outcome Report and Terms of Reference, which can be found on the Sudbury/Algoma engagement webpage here.

Components of an IRRP

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?

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, electricity Demand Side Management (eDSM) 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 IESO's Guide to Assessing NWAs.

Engagement and Next Steps

Next Steps

The IESO will continue to engage and inform at these milestones:

January 12, 2026: Written feedback due

January 23, 2026: Feedback and the IESO's response to feedback posted, along with Final Scoping Assessment Report

IRRP Timelines

Q1-Q2 2026: Demand forecasts presented in a public engagement webinar

Q2 2026 – Q1 2027: Needs and options screening presented in a public engagement webinar

Q2 2027: Options analysis and draft recommendations are presented in a public engagement webinar with an opportunity to provide feedback

Q3 2027: IRRP report will be completed and published on the engagement webpage.

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 website by selecting the Sudbury/Algoma Region

Follow the Sudbury/Algoma regional planning activities online.

Seeking Input

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

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Please submit your written comments by email to engagement@ieso.ca by:
January 12, 2026

Thank You

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Appendix

Communities within Sudbury/Algoma Region

The electrical region encompasses the:

- The District of Algoma including the City of Elliot Lake, the Municipality of Huron Shores, the Towns of Blind River and Spanish, and the Township of the North Shore. The District of Manitoulin including Municipalities of Central Manitoulin and Gordon/Barrie Island, the Town of Northeastern Manitoulin & Islands and the Townships of Assiginack, Billings, Burpee and Mills, Cockburn Island and Tehkummah. The Municipality of West Nipissing in the District of Nipissing, the City of Greater Sudbury and the District of Sudbury including, the Municipalities of French River, Killarney, Markstay–Warren, St. Charles, the Town of Espanola, and the Townships of Baldwin, Nairn and Hyman, and Sables-Spanish Rivers.
- Indigenous communities that may be potentially impacted or may have an interest based on treaty territory, traditional territory, or traditional land uses are: Atikameksheng Anishnawbek First Nation, Aundeck Omni Kaning First Nation, Brunswick House First Nation, Dokis First Nation, Garden River First Nation, Henvey Inlet First Nation, M'Chigeeng First Nation, Mississauga First Nation, Nipissing First Nation, Sagamok Anishnawbek First Nation, Serpent River First Nation, Sheguiandah First Nation, Sheshegwaning First Nation, Thessalon First Nation, Whitefish River First Nation, Wiikwemkoong Unceded Territory.

Customer Reliability

Customer reliability refers to how often and how long customers experience power interruptions. It is measured by **frequency** and **duration** of interruptions.

Interruptions can occur at any stage: **generation**, **transmission**, or **distribution**.

Key roles:

Local Distribution Companies (LDCs) are responsible for delivering electricity directly to homes and businesses. If you're experiencing issues like frequent outages, flickering lights, low voltage, or damage to electrical equipment, these are typically caused by problems in the local distribution system, such as power lines, transformers, or substations, and should be reported to your LDC, since they own and maintain this infrastructure.

The Independent Electricity System Operator (IESO) manages the reliability of Ontario's broader electricity grid and leads long-term regional planning through the Integrated Regional Resource Plan (IRRP). While the IESO can document reliability concerns and explore system-wide solutions, issues related to local infrastructure and day-to-day service disruptions fall outside its scope and should be directed to your LDC.

Electricity Investment Costs

Cost allocation for transmission investment is set by the Ontario Energy Board (OEB), using two key principles:

1. Approved projects have to be "just and reasonable"
   - Firm loads will drive near-term expenditures
   - Other scenarios will be used to develop plans for additional growth, but conditional on the load materializing, so as to not overburden the customers ahead of commitments
2. Benefactor pays approach
   - Costs associated to connection facilities are allocated to the connecting customer since they are dedicated to one or a small group of customers
   - Costs associated with network facilities are typically allocated to all ratepayers since they form part of a transmission system that is shared by all users