JUNE 2, 2025

GTA West Regional Electricity Planning

Webinar #2 – Demand Forecast

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Territory Acknowledgement

The IESO acknowledges that the GTA West is the traditional territory of many nations including the Mississaugas of the Credit, the Anishnabeg, the Chippewa, the Haudenosaunee and the Wendat peoples, including those covered by the Williams Treaties.

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

- 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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Connecting Today.
Powering Tomorrow.

We work with:

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

<<< **Communities** >>>

Summary

- Regional electricity planning has advanced in the GTA West electrical area with a draft forecast developed for the GTA West Integrated Regional Resource Plan (IRRP).
- Electricity demand in the area is primarily being driven by urban growth, economic development, and the electrification of buildings and vehicles. The draft forecast accounts for new developments, economic growth, data centers, and insights from municipal plans, community energy plans, climate action plans and decarbonization.
- Meeting the pace of growth forecasted in the GTA West Region will require significant investments in new electricity infrastructure, including a mix of wires and non-wires solutions.
- The IRRP will evaluate a scenario in which local natural gas generation is phased out to better understand the options to facilitate the energy transition.
- Understanding feedback and community perspectives is important throughout the process. The regional plan will examine the region's distinct electricity needs and consider a range of options to meet the growing electricity demand.

Seeking Input

As you listen today, your input is being sought to assist with:

Determining the electricity demand forecast for your region

- What additional insights, if any, should be considered in the draft forecast scenario?
- Are there any other scenarios that should be considered?

Identify needs to be addressed

- What areas of concern or interest about electricity should be considered as part of the planning process?

Engaging with communities and interested parties

- What information is most important for you to receive throughout the engagement?
- Does the proposed Engagement Plan offer adequate opportunities to stay informed and to provide meaningful input? What other engagement activities or methods should be considered?

Please submit your written comments by email to engagement@ieso.ca by June 23, 2025.

Regional Electricity Planning Process

Electricity Planning in Ontario

Provincial/Bulk System Planning

Addresses provincial electricity system needs and policy directions

Underway: South and Central Bulk Study

Regional Planning

Addresses local electricity system needs at the transmission system level

Underway: GTA West Integrated Regional Resource Plan

Distribution Planning

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

Led by local distribution companies

Ontario's Regional Electricity Planning Process

Regional electricity planning aims to ensure affordable and reliable electricity to local regions across Ontario, considering the unique needs of each region, and a range of integrated resource options to keep the lights on. Typically, regional planning is completed on a cycle.

The GTA West electricity plan is being developed by a Technical Working Group, led by the IESO, with:

- Alectra Utilities Inc.
- Burlington Hydro Inc.
- Milton Hydro Distribution Inc.
- Oakville Hydro Electricity Distribution Inc.
- Halton Hills Hydro Inc.
- Hydro One Networks Inc.

Background on Electricity Planning in GTA West

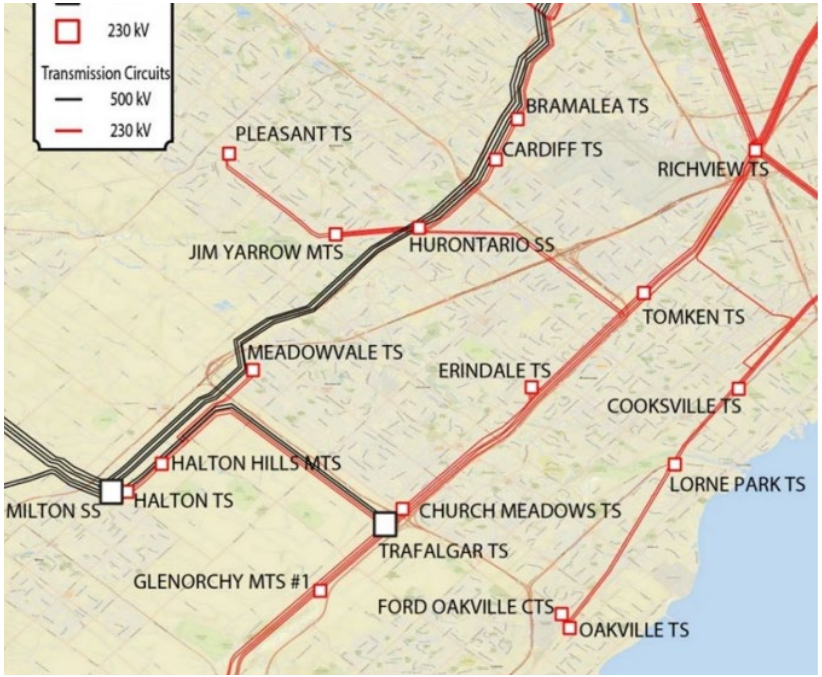
Since 2015, the IESO has undertaken electricity planning work to address capacity needs to the GTA West electrical area. The previous regional plan was completed in 2022 and recommended upsizing of circuits and building of new stations to meet growing electricity demand.

These solutions ensured a reliable supply of electricity to the area. However, continued demand growth will require more planning:

- A new South and Central Bulk Study will determine the bulk transmission required to enable economic development in the GTA and decrease reliance on local natural gas-fired generation from Halton Hills Generating Station, Sithe Goreway Generating Station, and other stations in the GTA. Learn more here.
- The IESO and the Ministry of Energy and Mines are conducting a joint study to identify land to be protected for a future transmission corridor (adjacent to Highway 413) to support anticipated long-term electricity demand growth in the western and northern GTA regions.

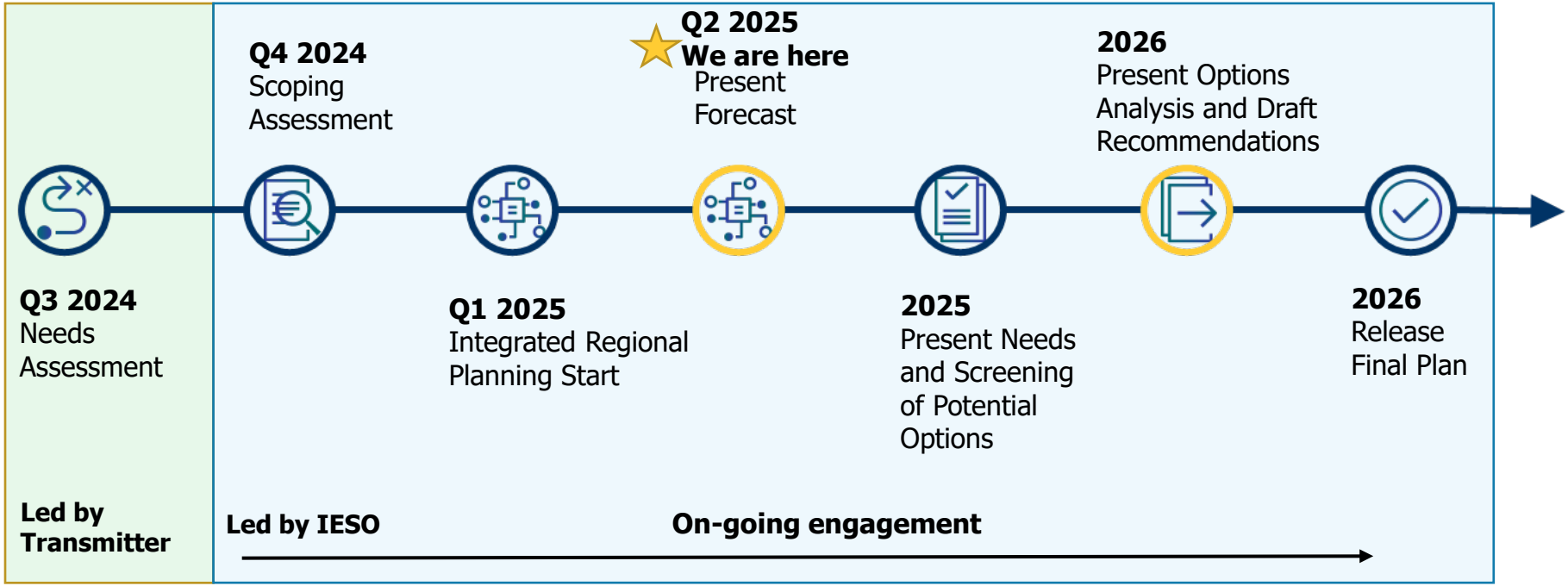
GTA West Region Electricity System Overview

- The area is supplied by 230 kilovolt (kV) lines and transformer stations (TS).
- A significant portion of the electricity consumed in the region is generated outside of the region and brought to the region via the transmission network.
- Local generation includes two natural gas power plants: Sithe Goreway and Halton Hills.
- These facilities are crucial for meeting local and provincial reliability during periods of peak demand and transmission outages.



Map for illustrative purposes.

Regional Planning Milestones for GTA West



Components of a Regional 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?

Draft Electricity Demand Forecast

Developing the Demand Forecast

Forecast data is provided by the local distribution companies (LDCs) based on established forecasting assumptions and customer connection requests. Forecast includes:

- Both summer and winter electricity demand broken down by transformer station.
- Insights from municipal and community energy plans.

In addition, the IESO, alongside the Technical Working Group:

- Adjusts for impacts of existing demand side management programs, distributed generation, and the effects of extreme weather on electricity demand.
- Works directly with customers and industry stakeholders to account for large electricity consumers that may seek connection on the transmission system.
- Engages to ensure additional insights from municipalities, customers, and other interested parties are incorporated in the demand forecast.

Draft Forecast Details

A reference forecast has been developed for the GTA West electrical area. Key demand drivers include:

- Business plans of major electricity consumers or large projects, such as data centers
- Climate change action plans
- Community energy plans
- Municipal/regional growth plans
- Distributed energy resources/energy projects

Local Distribution Company (LDC) Demand Forecast Methodologies

LDCs have provided detailed documentation of their load forecast methodologies, which has been published on the IESO's website.

Highlights include:

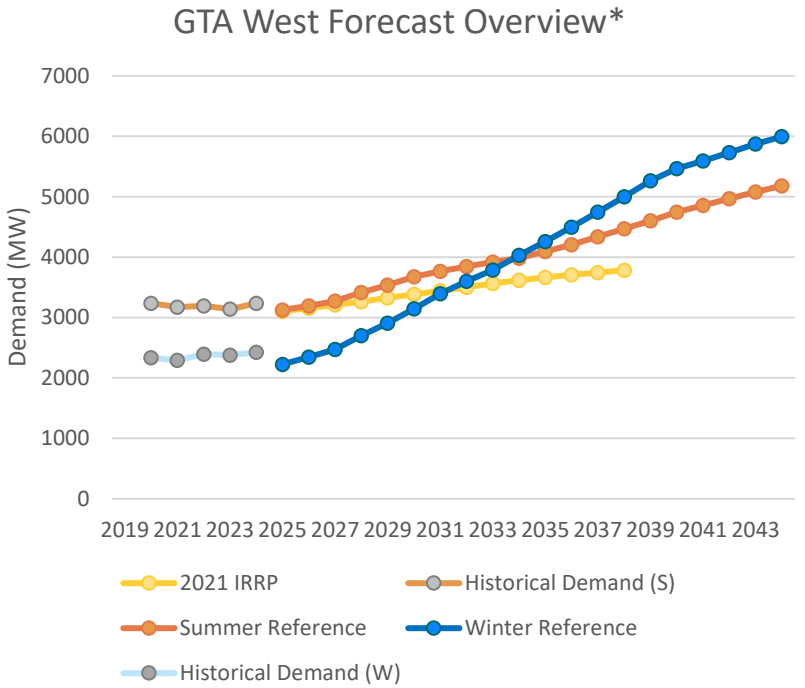
- Reliance on assumptions from Federal, Provincial, Regional, and Municipal plans and targets for longer term forecasting, with connection applications, building permits, ICI and housing activity informing near term forecasts.
- Forecasting techniques included Econometric, Trending, End Use, and Bottom-up analysis.
- Electrification is driven by fuel switching for heating and transportation, informed by government mandates and initiatives.

Overview of Scenario Assumptions

Load	Reference Forecast
Residential	Growth rate applied by each local distribution company (LDC), informed by municipal input
Electrification and energy plans	Growth incorporated by each LDC, informed by municipal input
Industrial	Growth incorporated by each LDC, informed by municipal input
Data Centers	Connection requests with reasonable certainty incorporated by each LDC

GTA IRRP Demand Forecasts

- The electricity demand forecasts are developed in partnership between local distribution companies and the IESO.
- The forecast is informed by municipal policies, including decarbonization plans, municipal growth plans, community energy plans, economic development, data centers, etc.
- In GTA West Region, the forecast growth rate is 3.5% (**growth of 92% by 2044**) – by comparison, the current provincial growth rate is 2% (growth of 45% by 2044).
    - Electrification of buildings, vehicles, and numerous expected projects are a significant contributor to increasing electricity demand.



* The forecasts shown are GTA West coincident, net, extreme weather cases. This forecast also doesn't include potential transmission-connected large-scale customers.

Summary of Drivers Behind Electricity Demand Growth

A reference forecast has been developed for the GTA West electrical area. Key demand drivers include:

- Growth in the residential/commercial sectors, industrial development, data centres, and electrification of vehicles and transit.
- Local municipalities expecting rapid growth with land rezoning underway for tens of thousands of residential units and potential large industrial loads stemming from Highway 413 developments.
- For more information, the Technical Working Group has provided a forecast methodology document with details on the drivers for each Local Distribution Company.

Meeting Demand Growth

- The pace of growth forecasted in GTA West Region and the province is significant.
- Nearly 3,000 MW increase in the peak demand is forecasted in GTA West Region, equivalent to adding two cities roughly the size of Ottawa.
- Meeting this demand growth will require significant investments in new electricity infrastructure, including large scale wires and non-wires solutions.
- Informed by feedback, the IRRP will examine the region's distinct electricity needs and consider a range of options and resources to meet the growing electricity demand.
- Large-scale solutions can have longer lead times. If the forecasted increase in electricity demand materializes before infrastructure is in place, system reliability could be impacted, and limits to new customer connections to the grid could be reached.
- The IESO will also evaluate a scenario for a future without Sithe Goreway GS and Halton Hills GS, by understanding the options and timing to ensure a reliable and affordable supply of power.

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 website –> select GTA West

Follow the GTA West regional planning activities online

Engagement Milestones for Stakeholder Input

Milestone	Timeline	Community Input
Electricity demand forecast and Engagement Plan	Current	What economic development or other growth or project plans might influence the regional load forecast? What additional information should be considered?
Electricity needs	2025	What additional information should be considered?
Screening of high-level potential options	2025	What additional information should be considered in the study assumptions? What community feedback is there to the potential solutions? What other options should be considered?
Options analysis and draft recommendations	2026	What community feedback is there on the draft recommendations? What information should be considered in the recommendations?
Final IRRP	2026	

Next Steps

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

June 23, 2025 – Written feedback on the draft electricity demand forecast and Engagement Plan due.

IRRP Timelines

2025: Needs and options screening are presented during a public engagement webinar with an opportunity for participants to provide feedback.

2026: Options analysis and draft recommendations are presented during in a public engagement webinar with an opportunity for participants to provide feedback.

2026: IRRP report will be completed and published on the GTA West engagement webpage.

We Want to Hear From You

Determine the electricity demand forecasts for your region

- What additional insights, if any, should be considered in the draft forecast?
- Are there any other growth scenarios that should be considered?

Identify needs to be addressed

- What areas of concern or interest about electricity should be considered as part of the planning process?

Engage with communities and interested parties

- What information is most important for you to receive throughout the engagement?
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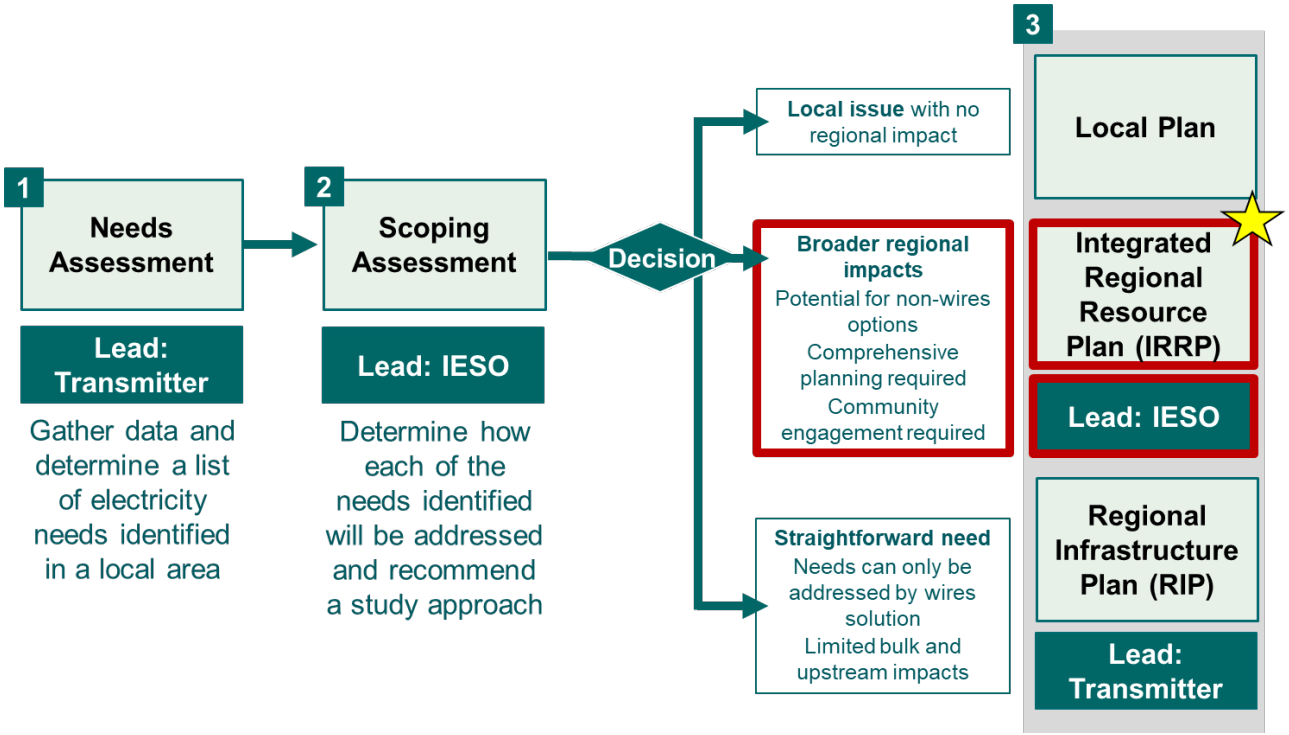
Appendix

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 Transmitter	• Hydro One Networks Inc. (Transmission)
Local Distribution Companies	• Alectra Utilities Inc. • Burlington Hydro Inc. • Milton Hydro Distribution Inc. • Oakville Hydro Electricity Distribution Inc. • Halton Hills Hydro Inc. • Hydro One Networks Inc. (Distribution)

Determine the Need for an IRRP



Data Gathering – Demand Forecast

The region's needs are assessed based on a 20-year forecast of peak electricity demand. The peak demand forecast is created by:

1. **Collecting** gross demand forecast information from local distribution companies:
   - Near term informed by customer connection requests
   - Longer term informed by demographic/employment targets, and various official plans and policy direction affecting electricity use assumptions
2. **Estimating** impact of conservation and demand management targets and median peak weather conditions (demand is weather-sensitive).
3. **Calculating** the forecast peak demand contribution of contracted distributed generation.
4. **Adjusting** the forecast to account for extreme peak weather conditions.

Preliminary Electricity Needs Identified for GTA West (1)

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	Halton TS	2026	Milton Hydro forecasts rapid load growth, potential for new Halton TS #2 station.
	2	Bramalea TS: T1/T2	2031	Similar capacity needs in medium term with *other stations*, potential for new station.
	3	Erindale TS: T1/T2	2030	Similar capacity needs in medium term with other stations, potential for new station.
	4	Cardiff TS	2030	Similar capacity needs in medium term with other stations, potential for new station.
	5	Cooksville TS	2030	Number of new projects may drive need for potential new station.
	6	Pleasant TS: T5/T6	2026	Heavily loaded at present, steady growth expected, potential for new station.

Preliminary Electricity Needs Identified for GTA West (2)

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.	7	Jim Yarrow TS: T1/T2	2030	Capacity need with adjacent station in assessment period, potential for new station.
	8	Goreway TS: T5/T6	2026	Will exceed LTR soon, steady growth expected, potential for new station.
Load Supply Security Maximum amount of power that can be lost during select contingencies.	9	230 kV T38B/T39B Circuit	2029	Will exceed load security limit of 600 MW in 2029.
Supply Capacity Ability of the system to supply power through the transmission lines to a local area.	10	230 kV T38B/T39B Circuit	TBD	Rapid organic load growth forecasted, multiple proponents requested to connect large-scale loads in Milton area, combined capacity of requests exceed 1000 MW, work being done on new corridor.