DECEMBER 1, 2025

London Area Regional Electricity Planning

Webinar #1: Draft Demand Forecast and Scenarios

ieso
Connecting Today. Powering Tomorrow.

Territory Acknowledgement

The IESO acknowledges that the London Area is the traditional territory of Anishinaabek, Attawandaron, Haudenosaunee, and Lūnaapéewak peoples.

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

1. Ontario's Electricity Sector and IESO's Role
2. Regional Electricity Planning Process
3. Draft Electricity Demand Forecast and Scenarios
4. Engagement and Next Steps
5. Discussion

ieso

Connecting Today.
Powering Tomorrow.

We work with:

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

<<< **Communities** >>>

Seeking Input

As you listen today, consider any additional factors for:

Determining the electricity demand forecast and scenarios for your region
What additional information, if any, should be incorporated in the proposed scenarios? How can the proposed scenarios best capture the range and uncertainty of growth potential while informing near-term infrastructure investments?

Identifying 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 important to provide throughout the engagement? Does the proposed Engagement Plan provide sufficient scope and opportunities for input? What other engagement activities or methods should be considered?

Please submit your written comments by email to engagement@ieso.ca by Dec. 15, 2025.

Regional Electricity Planning Process

Electricity Planning in Ontario

Provincial/Bulk System Planning

Addresses provincial electricity system needs and policy directions.

Complete: Central-West Bulk Plan
Underway: South and Central Bulk Plan

Regional Planning

Addresses local electricity system needs at the transmission system level.

Underway: London Area 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 looks at the unique needs of each region, and considers a range of options and resources to keep the lights on.

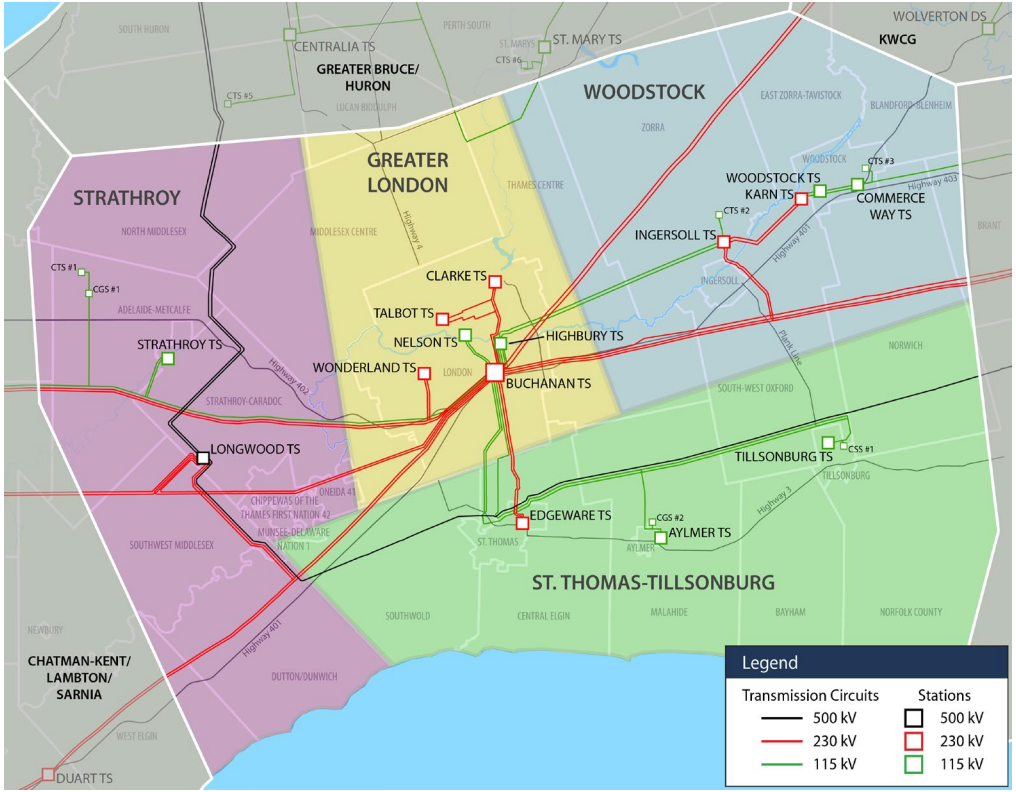
The regional plan for the London electrical area will be developed by a Technical Working Group, led by the IESO, and consisting of the local distribution companies and the transmitter.

Technical Working Group

Team Lead, System Operator	• Independent Electricity System Operator
Lead Transmitter	• Hydro One Networks Inc. (Transmission)
Local Distribution Companies	• Entegrus Powerlines Inc. • ERTH Power Inc. • London Hydro Inc. • Tillsonburg Hydro Inc. • Hydro One Networks Inc. (Distribution)

London Electrical Region

- Most of the electricity consumed in the region is generated outside of the region and brought into the region through bulk transmission infrastructure at Longwood Transformer Station (TS) and Buchanan TS.
- The area is serviced by several TS supplied from 115 or 230 kilovolt (kV) lines.
- Regional electricity needs are subdivided into 4 sub-regions: Strathroy, Greater London, and Woodstock, and St. Thomas-Tillsonburg.



Electricity Planning in the London Area

- Since 2015, the IESO has undertaken electricity planning work to address capacity needs in the London electrical area. The previous Integrated Regional Resource Plan (IRRP) was completed in 2017 and the most recent Regional Infrastructure Plan (RIP) was published in 2022.
- In 2024, the Central-West Bulk Study was undertaken to ensure a continued reliable electricity supply to support to the London Area, driven by the Volkswagen EV plant plus spin-off and associated growth. Key outcomes included:
    - Rebuilding a 2-5 km section of a transmission line in the City of London to meet the bulk system needs, as 600 MW of load is added.
    - Should more load materialize, additional options were identified. These recommendations would address the need as 900 MW of load is added.
    - Linkages were identified at regional and bulk levels. Additional bulk study implications of further economic growth will be evaluated through a new South and Central Bulk Plan.
- The ongoing South and Central Bulk Plan will determine bulk transmission needs required to enable economic development between the Hamilton and Windsor areas.

Regional Planning Milestones for London Area

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?

Feedback Received

Key Areas of Feedback	Incorporating Feedback/Considering Feedback
Station capacity needs to enable new connections like Distributed Energy Resources (DERs), and the grid's ability to respond to extreme weather	Regional Planning is focused on addressing electricity system needs at the transmission system level, while Local Planning would consider distribution level concerns, including short-circuit issues. We encourage you to engage with your Local Distribution Companies (LDCs) to resolve any barriers to connecting new DERs through the LDC's Distribution Planning process. The Technical Working Group aims to integrate climate forecasts into the forecast methodology, so that anticipated changes to extreme weather are captured.
To ensure the forecast captures anticipated growth and development	The Technical Working Group appreciates municipalities, customers and Indigenous communities keeping their LDCs up to date on any new local developments to ensure electricity planning is aligned. The IESO conducted a municipal survey in May 2025 to understand growth and development plans. Those surveys were shared with the LDCs to ensure the Technical Working Group captured projected load in the draft demand forecast and scenarios.
Ensure effective assessment of all solutions, including non-wire alternatives (NWAs), to meet identified needs	Once the forecast and needs have been finalized, the IESO will screen and evaluate wire and non-wire options to meet the needs and consider reliability, cost, technical feasibility, maximizing the use of the existing electricity system (where economic), and community preferences. District heating and cooling will be considered on a case-by-case basis.

Draft Electricity Demand Forecast and Scenarios

Local Planning Drivers

Important considerations that influence the load forecasts:


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

Local Distribution Companies incorporate these drivers into the electricity demand forecast.

Developing the Demand Forecasts

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

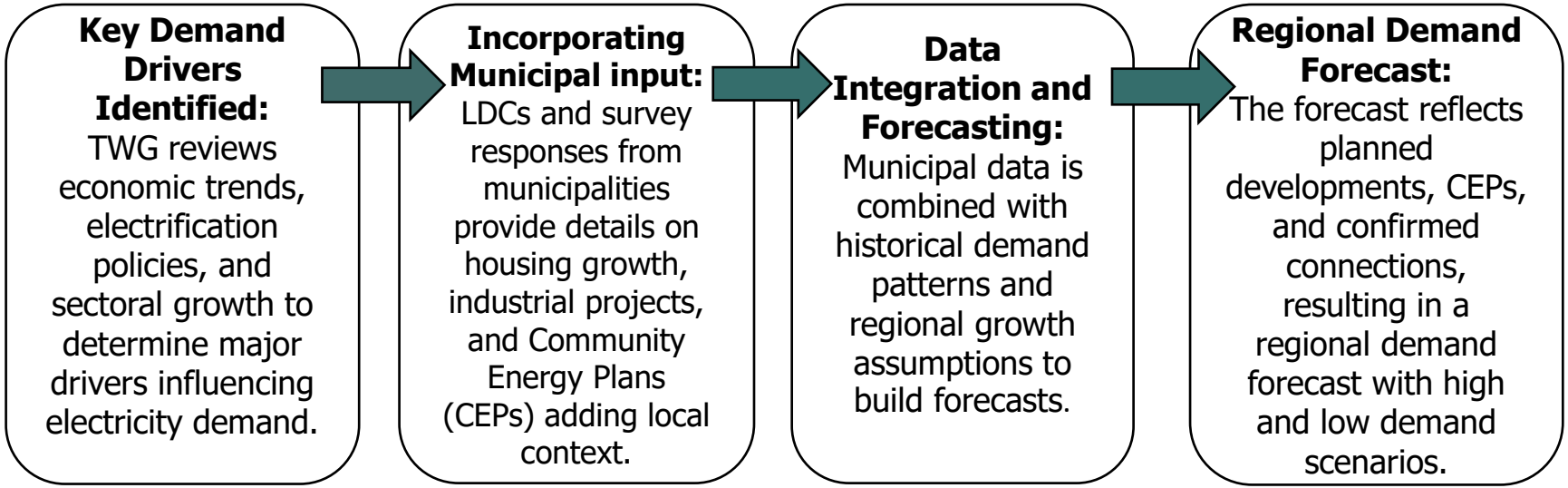
- Provided summer and winter demand forecasts for each station their areas are supplied from,
- Incorporated municipal/regional growth plans, climate change action plans, community energy plans, business plans of major electricity consumers or large projects into their forecasts, and
- Established forecasting assumptions based on customer growth plans.

In addition to LDC forecasts, the IESO:

- 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.

Incorporating Demand Drivers into the Forecast

LDCs provide localized demand forecasts based on committed loads and serve as conduits for municipalities to communicate growth, development, and electrification plans, ensuring regional forecasts reflect local initiatives.



Forecast Scenarios

The TWG has prepared a reference demand forecast and two additional scenarios for consideration in this IRRP.

- **Low:** A low electricity demand scenario that incorporates the risk of potential economic downturn, delayed and/or reduced growth.
- **Reference:** a demand forecast that reflects current trends and policies in electrification of transportation, space heating, industry, and other areas that impact electricity, while considering business-as-usual factors such as firm loads (current and planned), growth trends, and existing plans.
- **High:** A high electricity demand scenario that reflects a reasonable incremental increase in the foregoing trends, while incorporating potential demand growth that is less certain.

Overview of Scenario Assumptions

Consideration	Low Scenario	Reference Forecast	High Scenario
Overview	Reasonably certain, but potential doubt	Reasonably certain	Could reasonably happen
Pacing	Low scenarios used when provided to LDCs, or lower historical trends	As provided to LDCs, or existing historical trend	As provided to LDCs, or higher historical trend
Impact to demand	Lower-range values based on targets or trends	Average or mid-range values based on targets or trends	Upper-range values based on targets or trends

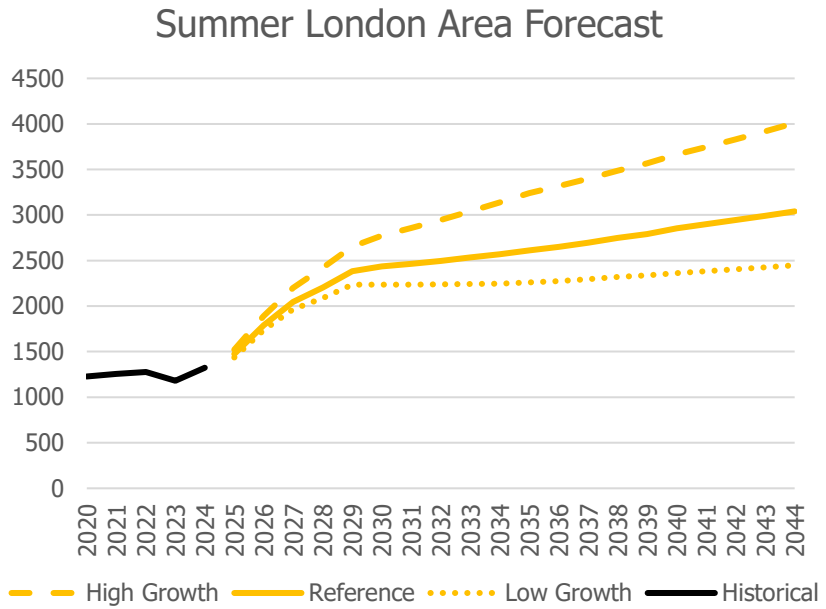
Reference forecast will drive firm near- and mid-term recommendations. High forecast will be used to establish plan based on load thresholds rather than need years, direct early development work, and identify sign-posts to trigger further investments.

Draft Summer London Area Forecast and Scenarios

- Summer demand is growing by 130% (up to 200% in high scenario) over the next 20 years
- Growth is primarily driven by new industrial demand followed by new residential demand

Key takeaways:

- Firm connections to LDCs and firm new industrial customers are driving near-term growth
- Reference forecast growth continues in the mid- to long-term due to anticipated industrial and residential growth plans
- High scenario reflects larger load assumptions and faster growth expectations

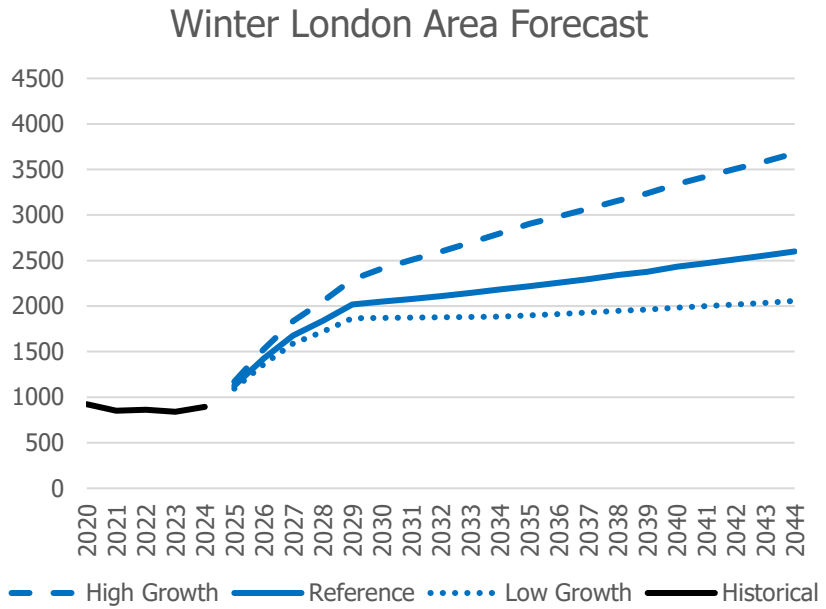


Draft Winter London Area Forecast and Scenarios

- Winter demand is growing by 190% (up to 310% in high scenario) over the next 20 years
- Growth is primarily driven by new industrial demand followed by new residential demand
- Electric heating plays a small role regionally, but is forecasted to affect some sub-regions more than others

Key takeaways:

- Firm connections to LDCs and firm new industrial customers are driving near-term growth
- Reference forecast growth continues in the mid- to long-term due to anticipated industrial and residential growth plans
- High scenario reflects larger load assumptions and faster growth expectations
- Summer needs remain predominant over winter needs



Considerations and Linkages

In addition to the London Area IRRP, the IESO is also conducting a South and Central Bulk Plan, which is examining broader system-level needs and opportunities across southern and central Ontario.

- The South and Central Bulk Plan will determine bulk transmission needs for enabling growth from economic development, electrification and decarbonization in the London Area.
- By aligning regional and bulk planning efforts, the IESO aims to develop a coordinated and cost-effective approach to meeting electricity demand across the province.

To stay informed on the South and Central Bulk planning work, please visit the engagement page. For more information on the IESO's bulk planning, please visit our Bulk Planning Overview webpage.

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. Communities can expect to hear from the IESO at these milestones:

December 15, 2025: deadline for feedback to the IESO on the draft demand forecast webinar.

Q1, 2026: Needs and options screening analysis are presented in a public engagement webinar with an opportunity to provide feedback.

Q3, 2026: Options analysis and draft recommendations are presented in a public engagement webinar with an opportunity to provide feedback.

Q4, 2026: IRRP report 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 wires 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, incremental eDSM programs would be implemented through the IESO's electricity Demand Side Management Framework.

Seeking Input

Local considerations and feedback are a critical component to the development of an Integrated Regional Resource Plan (IRRP). The IESO wants to hear your perspectives about:

- What additional information, if any, should be incorporated in the proposed scenarios? How can the proposed scenarios best capture the range and uncertainty of growth potential while informing near-term infrastructure investments?
- What areas of concern or interest about electricity should be considered as part of the planning process?
- What information is important to provide throughout the engagement? Does the proposed Engagement Plan provide sufficient scope and opportunities for input? What other engagement activities or methods should be considered?

IESO welcomes written feedback until December 15, 2025.
Please submit feedback to engagement@ieso.ca using the feedback form.

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 London Area

Follow the London Area regional planning activities online

Visit the Powering Southwest Ontario website

Thank You

STAY INVOLVED

- Learn more at www.ieso.ca/learn
- Subscribe to updates at IESO.ca/subscribe
- Download the IESO's Municipal Toolkit
- Join an engagement

CONTACT

- IndigenousRelations@ieso.ca
- CommunityEngagement@ieso.ca

FOLLOW

- LinkedIn.com/company/IESO
- @OntarioIESO
- LinkedIn.com/showcase/SaveOnEnergy-Ontario
- @SaveOnEnergy

ieso
Connecting Today. Powering Tomorrow.

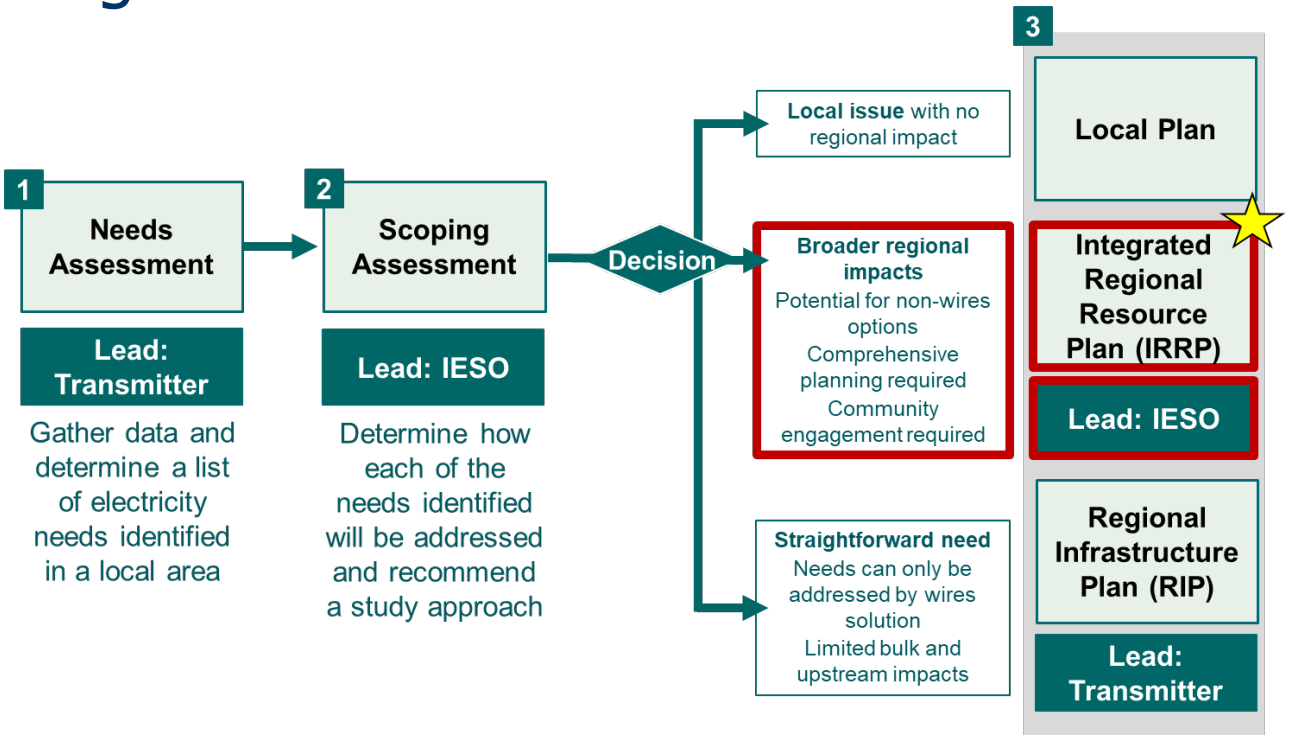
Appendix

Communities within the London Area

The electrical region encompasses the:

- Municipalities of Oxford County, Middlesex County, Elgin County, City of London, City of St. Thomas, and part of Norfolk County.
- Indigenous communities that may be potentially impacted or may have an interest based on treaty territory, traditional territory, or traditional land uses:
  - Aamjiwnaang First Nation
  - Caldwell First Nation
  - Chippewas of Kettle and Stony Point First Nation
  - Chippewas of the Thames First Nation
  - Eelūnaapèewi Lahkèewiit (Delaware Nation)
  - Grand River Métis Council
  - Haudenosaunee Confederacy Chiefs Council
  - Mississauga of the Credit First Nation
  - Munsee-Delaware Nation
  - Oneida Nation of the Thames
  - Six Nations of the Grand River
  - Walpole Island First Nation (Bkejwanong Territory)

Determining the Need for an IRRP



Recap: Objectives of the South and Central Bulk Study

The study focuses on supporting economic growth and enabling new supply resources by:

1. **Confirming transmission reinforcements required to enable the connection of:**
   - Small modular reactors at the existing Darlington nuclear GS and expanded nuclear at Bruce NGS.
   - Considering potential pumped storage at Meaford and Marmora.
2. **Determining transmission required to enable decreased reliance on emitting resources, specifically:**
   - York Energy Center in York Region; Portlands Energy Center in city of Toronto; Halton Hills GS in GTA West; Sithe Goreway GS in GTA West.
3. **Determining transmission required to enable reliable supply under various long-term high growth/ economic development/ electrification scenarios within key growth areas:**
   - Greater Toronto Area.
   - Windsor to Hamilton corridor.
4. **Ensuring transmission reinforcements recommended through the Northern Ontario Bulk Study are coordinated with bulk system improvements in the GTA.**

Recap: Development of Preliminary Portfolios

The IESO developed three distinct preliminary portfolio of options, representing different approaches to meeting the study objectives. Each portfolio addressed the identified needs emerging between 2035 and the early 2040s (later dates tied to the timing of Bruce C). Study of 2050 needs and options will be studied in Phase 2 in 2026.

Portfolios of options were used due to the volume of system changes being contemplated. Assessing the costs and benefits of a portfolio of options that meet the plan's objectives allows the evaluation of alternatives to better consider the impact of the uncertainties in how the power system will evolve (e.g., the impact of different load and generation futures on overall system costs for the different transmission build out options).

Each portfolio shares a common backbone (i.e., strategic, future-ready investments), critical for achieving key plan objectives under several futures. In each portfolio, these "future-ready" investments are paired with additional reinforcements to meet the overall objectives of the South and Central bulk plans. Variations between portfolios are focused on different options for supporting growth (e.g., economic development) in the load centres.

Recap: Preliminary Portfolio A

New 500 kV Transmission Lines (grey):

- Bruce to Essa double-circuit (potential bypass to Kleinburg)
- Bruce to Longwood double-circuit (potential bypass to Lakeshore)
- Potential Longwood to Nanticoke single-circuit
- Bowmanville to Parkway double-circuit
- Essa to Kleinburg single-circuit

New 230 kV Transmission Lines (red):

- Trafalgar to Oakville
- Meadowvale to Hurontario
- Potential Orangeville to Detweiler

New Stations (blue):

- Kleinburg TS and potential St. Thomas TS

Station Upgrades (purple)

ieso
Connecting Today. Powering Tomorrow.

Recap: Preliminary Portfolio B

New 500 kV Transmission Lines (grey):

- Bruce to Essa double-circuit (potential bypass to Kleinburg)
- Bruce to Longwood double-circuit
- Potential Longwood to Detweiler to Milton
- Bowmanville to Parkway double-circuit
- Essa to Kleinburg single-circuit

New 230 kV Transmission Lines (red):

- Trafalgar to Oakville
- Meadowvale to Hurontario

New Stations (blue):

- Kleinburg TS and St. Thomas TS

Station Upgrades (purple)

Recap: Preliminary Portfolio C

New 500 kV Transmission Lines (grey):

- Bruce to Essa double-circuit (potential bypass to Kleinburg)
- Bruce to Longwood double-circuit
- Potential Longwood to Detweiler to Milton
- Bowmanville to Parkway double-circuit
- Essa to Kleinburg single-circuit

New 230 kV Transmission Lines (red):

- Trafalgar to Oakville
- Meadowvale to Hurontario
- Potential Buchanan to Middleport

New Stations (blue):

- Kleinburg TS

Station Upgrades (purple)

ieso
Connecting Today. Powering Tomorrow.

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"
   - Reference forecast based on firm loads will drive near-term to medium-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

Identifying Needs

Once the electricity demand forecast has been created, the IESO conducts an assessment to determine needs. Generally, needs studied in this process fall under the following categories:

- **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.