MAY 14, 2024

Transmitter Selection Framework

Municipal Focused Session

Thank you for joining today's session
Please keep your cameras off and microphones muted

Steven Norrie, Sr Transmission Planning Specialist
Sushil Samant, Sr Advisor Resource Acquisition

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Agenda

1. Recap: The Role of the Independent Electricity System Operator (IESO) and Municipalities
2. Recap: Addressing Ontario's Electricity Needs
3. Overview of the Existing Transmission Landscape
4. Transmitter Selection Framework Overview and Considerations
5. Case Study: Meeting Southwest Ontario's Electrical Needs
6. Discussion
7. Next Steps

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We work with:

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

<<< **Communities** >>>

Communities Have a Key Role

Significant electricity system needs are expected over the next decade, and Indigenous communities and municipalities are amongst the most influential voices to advance, manage, and shape the ongoing energy transformation, including:

- **Informing** electricity planning to ensure a reliable and adequate supply
- **Shaping** the province's energy transition by ensuring the system is prepared for future needs
- **Hosting** new generation, transmission and storage
- **Working** with project developers on the applicable approvals, and partnerships, where applicable

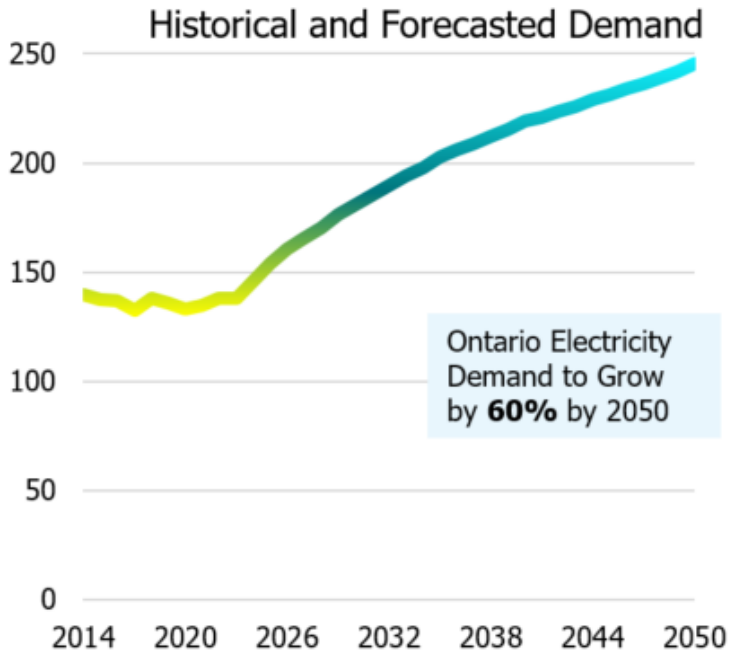
Ontario's Changing Electricity Landscape

This is a **pivotal point** for the electricity system. Ontario is entering a period of growing needs – by 2050, electricity demand to grow by 60%.

These needs are being driven by **economic growth, population growth and increased electrification**.

This demand growth is happening in the midst of expiring generator contracts, nuclear refurbishments and the elimination of emissions from the grid.

To meet the emerging needs, **Ontario will require additional new electricity infrastructure**, including new supply and transmission.



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The Path Forward – Meeting Electricity Needs and Building an Emissions-Free Grid

Note: New transmission will be needed throughout this timeline to enable all the changes in the supply mix. Planning is underway.

2024–2025

- New commitments to small hydro facilities
- First large battery facility comes online
- Launch expanded energy-efficiency programs
- New capacity exchange agreement with Hydro Quebec
- New market opportunities for local energy projects
- New transmission lines bring power to Southern and Northeast Ontario (2025–2030)

2026–2028

- Battery fleet grows, contributing to Ontario's system needs

2029

- First small nuclear reactor powers up

2032

- Darlington and Bruce nuclear refurbishments largely complete
- New non-emitting generation deployed

2030–2034

- Proposed Pickering refurbishment
- Non-emitting generation fleet continues to grow

2040

- Most Ontario natural gas generation reach end of life

Overview of the Existing Transmission Landscape

Steven Norrie, Sr Transmission Planning Specialist

IESO Transmission Planning Overview

The IESO is accountable for planning the long-term reliability of Ontario's power grid to meet future electricity needs. Key details include:

- Planning Ontario's high-voltage transmission system at the bulk and regional levels
  - Bulk Studies ensure electricity is delivered from where it's generated to an electrical region
  - Regional Plans ensures that electricity is delivered within an electrical region
- Planning includes forecasting, identifying needs, and recommending solutions, including transmission solutions, and/or generation resources or demand-side measures
- Engagement is planned at key milestones to inform and understand feedback and insights
- The Annual Planning Outlook contains the most up-to-date snapshot of bulk transmission needs - four new bulk planning studies are planned for 2024

Key Sector Participants for Transmission Projects

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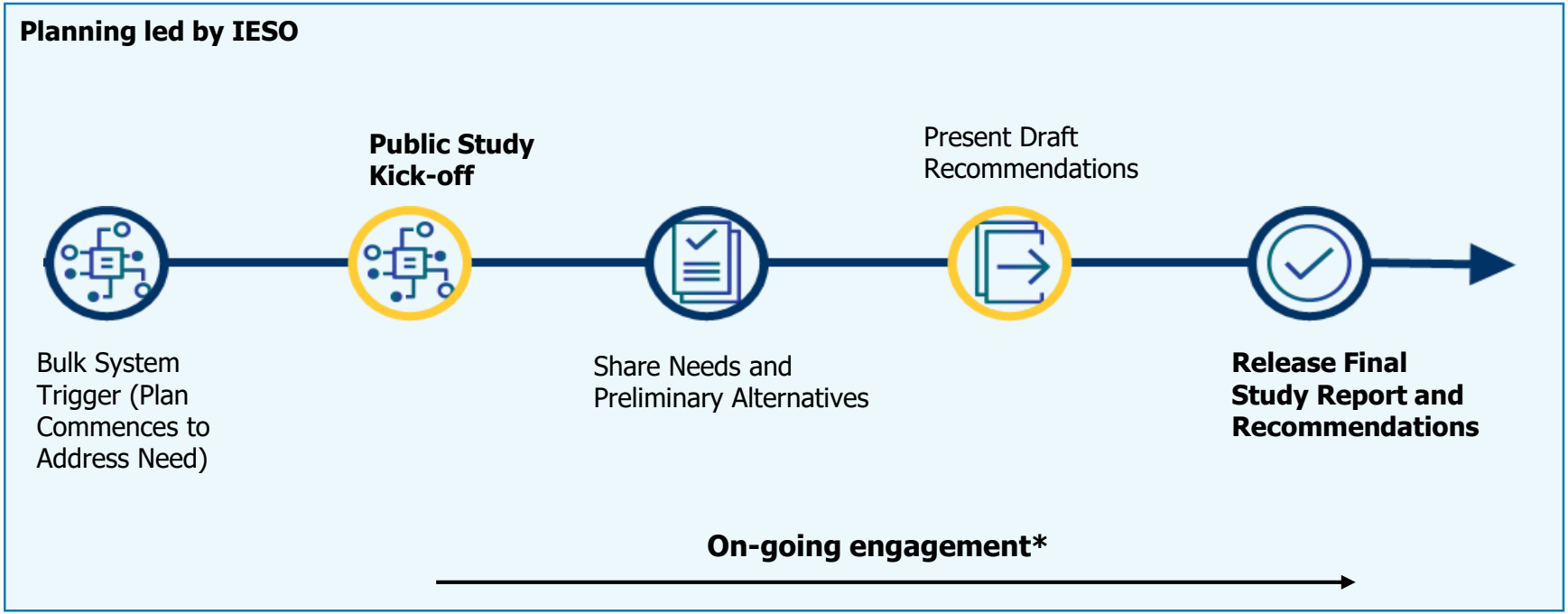
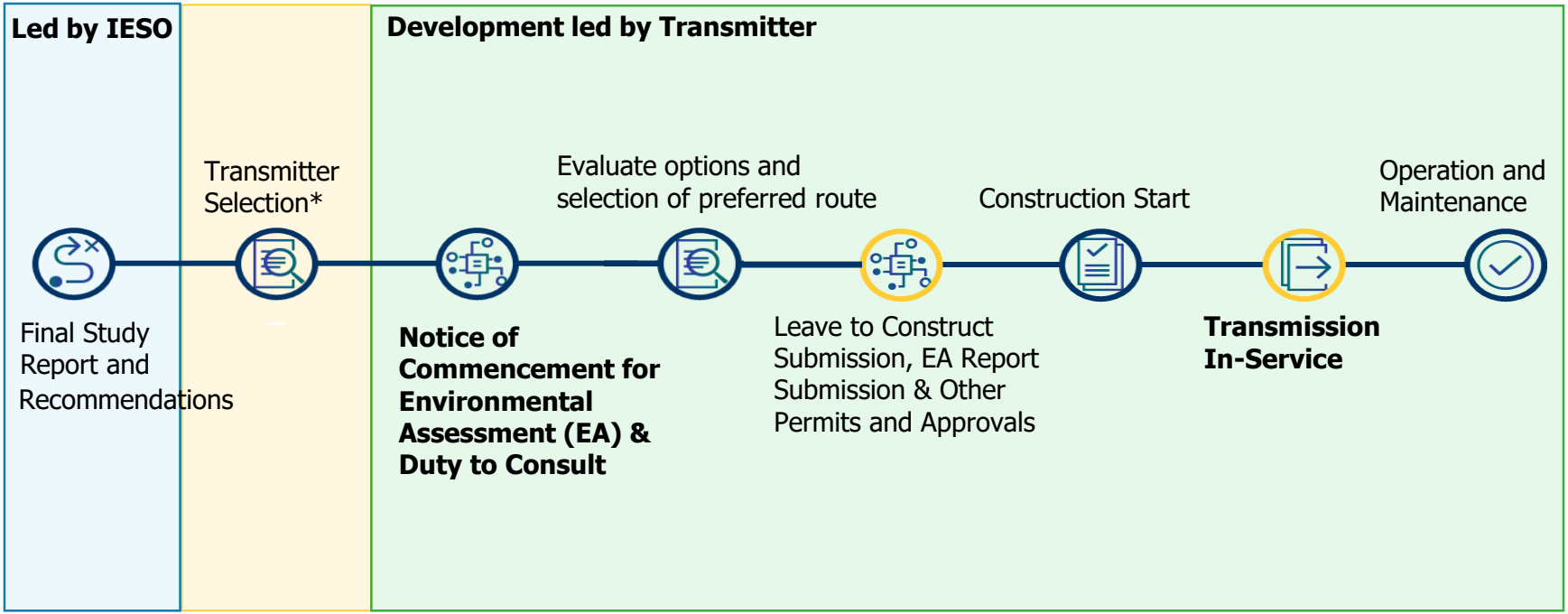
Transmitters	Build and maintain Ontario's high-voltage transmission system.
ONTARIO ENERGY BOARD	Regulates the energy sector in the public interest and grants approval to construct transmission lines.
Ministry of Energy	Sets overall policies for the electricity sector.
Ministry of the Environment, Conservation and Parks	Legislative authority for environmental assessments in Ontario.

Typical Process for Bulk Planning



*Format of engagements may vary depending on study scope.

Typical Process for Transmission Development



*Currently, no standardized process exists to select a transmitter

Key Roles and Responsibilities for Transmission Projects

Planning (led by IESO*)

Planning the high-voltage transmission system, including forecasting, needs identification, and recommending solutions.

Hosting engagements to understand feedback and insights regarding needs and recommendations from Indigenous communities, municipalities, market participants and stakeholders.

Development (led by Transmitter)

Developing and building the recommended solution, including but not limited to:

- Detailed siting and routing
- Engaging, and approach to engagement, with communities and stakeholders to build the line.
- Securing approvals and permitting, including, but not limited, from the Ontario Energy Board, the Ministry of Environment, Conservation and Parks, and Duty to Consult.

Operation and Maintenance (led by Transmitter)

Responsibilities include routine maintenance of facilities and rights-of-way, operation of the line and end-of life considerations.

Any engagements, approvals or permitting required for the above responsibilities.

***Future State**: The IESO may competitively select the transmitters to build certain high-voltage transmission projects.

Bulk Transmission Schedule of Planning Activities

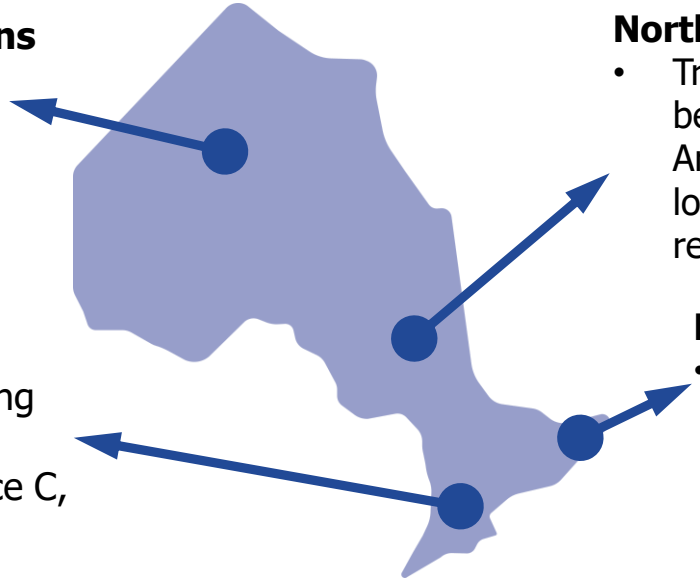
To keep pace with Ontario's economic and population growth, elimination of emissions from the grid, and electrification, the IESO is initiating four bulk planning studies in 2024:

Northern Ontario Connections

- Options for connecting First Nations communities, loads, and generation in remote northwestern Ontario

South and Central Ontario

- Decarbonization, incorporating new non-emitting resources, small modular reactors, Bruce C, supply to the GTA



Northern Ontario

- Transmission expansion options between the Greater Toronto Area and Sudbury to facilitate load growth and enable renewable resources

Eastern Ontario

- Evaluate aging transmission, supply to Ottawa, interconnections with Quebec/New York, supply around Lennox and Addington County

Transmitter Selection Framework Considerations

Sushil Samant, Sr Advisor Resource Acquisition, Resource Development and Procurement

Transmitter Selection Framework Background

To meet the emerging needs, Ontario will require additional new electricity infrastructure, including new supply and transmission.

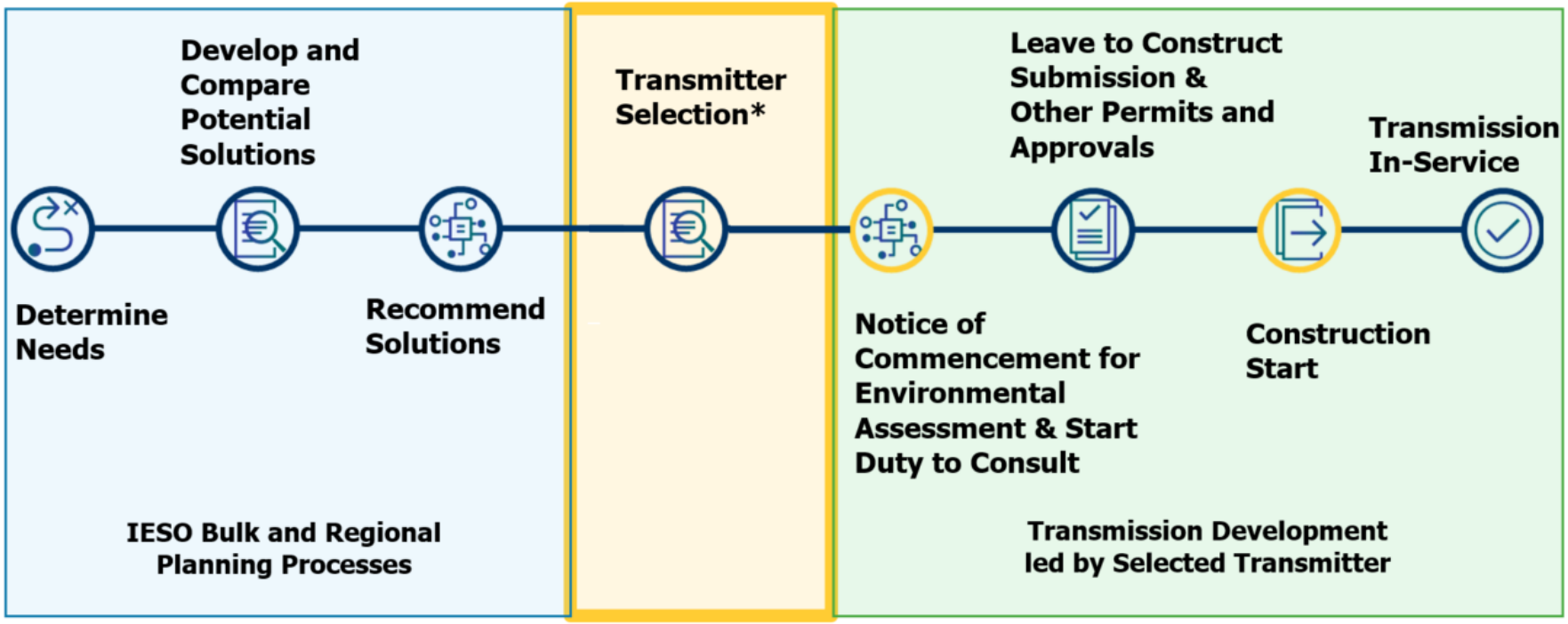
The Minister of Energy asked the IESO to **develop a transparent, competitive and well-understood process for selecting transmitters**, and to report back in summer 2024.

The competitive transmission framework will aim to align with IESO planning processes, provide participation opportunities to Indigenous communities, ensure infrastructure development accommodates growth and supports broader generation project siting.

Insights, input and recommendations from Indigenous communities, municipalities, and stakeholders is critical for the design of the framework and evolution of the current process for transmission development.

To date, the IESO has developed recommendations for project eligibility, initial design parameters, and Indigenous participation principles.

Transmission Development Process – Missing Piece



Milestones and Engagement Approach

January 2024
Kick-off

February-July
Focused Engagement Sessions

April – Q3 2024
Final Process Design and Report Development

Summer 2024
Report back to Minister of Energy

Q4 2024 & Onward
Framework implementation or refinement (pending Minister direction)

Understand input from Indigenous communities, municipalities and stakeholders through:

- Focused engagement sessions, started in February
- 1:1 discussions, as needed
- Targeted discussions with Indigenous communities, and municipalities, as needed

On-going engagement

Procurement Design Features

To develop a Transmitter Selection Framework, procurements require outlining designed specifications and requirements. Current design considerations include:

- **Registry of qualification:** To help reduce timelines while ensuring proponents are qualified, a database with prequalified transmitters will be recommended.
- **Request for Proposals (RFP) approach**: It is expected that an RFP will be issued outlining key requirements, including evaluation criteria, and terms and conditions. Each procurement will undergo a public RFP design and engagement process to understand input and feedback prior to launch.
- **Bid-based approach:** Competitive proposals will be assessed for the development of specific transmission facilities, with the possibility to evolve to a solicitation/innovation-focused approach at a later time.
- **Commercial considerations**: Still assessing options for commercial considerations, but the aim is use a cost containment approach and allocating risks in a manner that fosters competition yet safeguards against development risks.

Project Eligibility Recommendations

In order for a project to be eligible, the IESO will establish attributes of transmission projects that would be suitable. In future selection processes, eligibility criteria could evolve to include additional types of projects. Considerations include:

Current Proposed Eligibility	Potential Future Eligibility
• New Facilities • Benefit all electricity ratepayers • Estimated cost of $100M or greater • Voltages of 200 kilovolt (kV) or greater • Lead-time of at least 6 years	• Certain line expansions • Facilities that are both customer connections and benefit all electricity ratepayers • Smaller projects that are combined into a larger package • Voltages below 200 kV

In some parts of Ontario, location/siting options may be limited, and a competitive transmitter selection may not be feasible.

Principles for Indigenous Participation

To ensure Indigenous participation expectations are well understood, the IESO has developed the following principles for future transmission projects:

- **Meaningful economic participation** opportunities.
- **Purposeful engagement** with Indigenous communities through the transmission planning and procurement process.
- **Capacity building** to enable greater participation and engagement among Indigenous communities.
- **Transparency and predictability** with respect to future transmission project opportunities for developers and communities.

Initial Community and Stakeholder Feedback

What we've heard so far from stakeholders during public engagements:

- Interest in being engaged early, especially related to transmission plans or projects affecting traditional territories.
- Opportunity to review and comment on the proposed framework, and provide input on any planned transmission procurements under the future Transmission Selection Framework.
- Generally less familiar with transmission development issues and opportunities than generation.
- IESO to establish clear and predictable terms of participation for Treaty Nations to ensure impacted communities can share in the economic benefits associated with transmission projects.
- Capacity building and awareness-building for communities and municipalities will continue to be important.

Case Study: Meeting Southwest Ontario's Electrical Needs

Andreea Nicoara, Advisor, Regional and Community Engagement

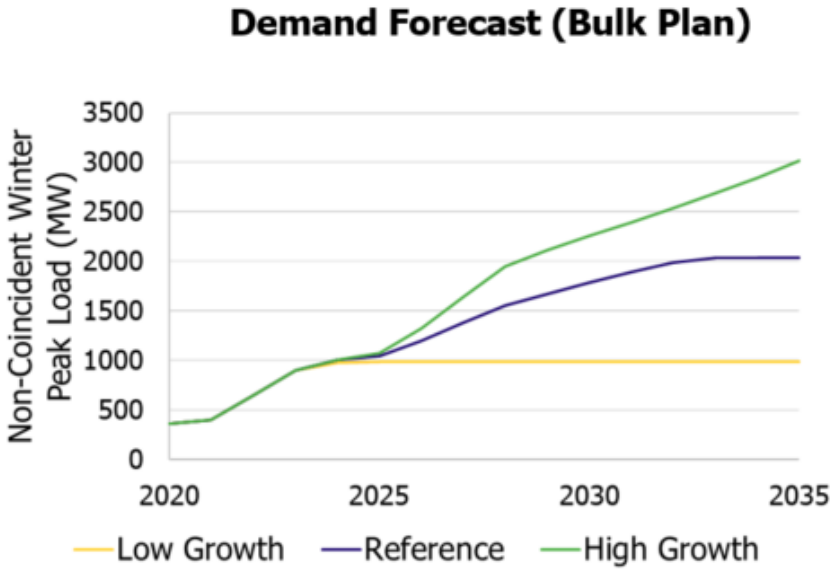
Background: Southwest Ontario

Electricity demand is quadrupling from 500 MW to 2,300 MW by 2035 in southwest due to agriculture growth and manufacturing sectors.

Due to rapid growth, the IESO initiated the West of London Bulk Plan to:

- assess the emerging electricity needs,
- evaluate options and
- recommend actions required to reinforce the bulk system.

Engagement was an important element. IESO had engaged with municipalities, greenhouses, Indigenous communities, and other local stakeholders to understand preferences and answer questions.



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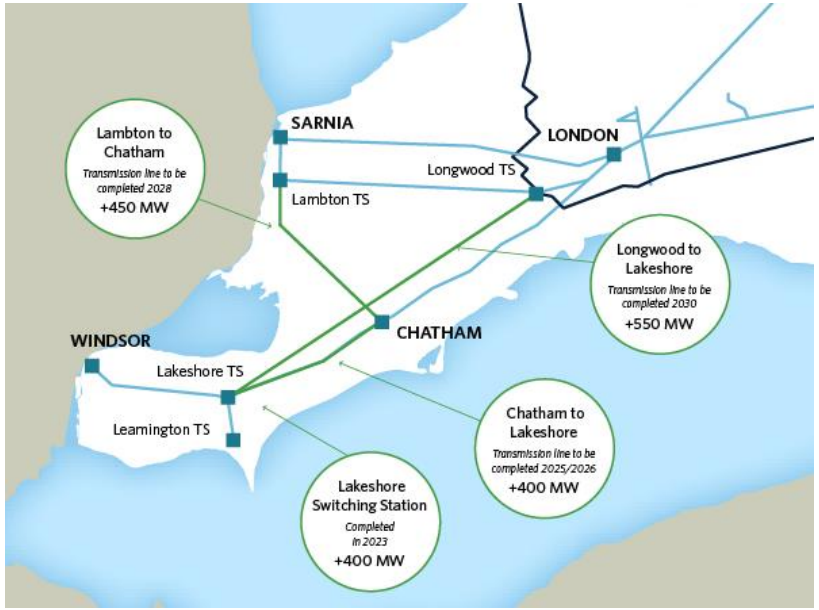
Southwest Bulk Plan Recommendations

To meet electricity needs, a multi-pronged approach is being implemented, including:

- Building a new 230 kilovolt (kV) transmission line from Lambton to Chatham to be in-service no later than 2028
- Continuing the operation of the Brighton Beach Generating Station to support immediate local need in the near-term until the Lambton to Chatham transmission line is in-service
- Building a new 500 kV transmission line from Longwood to Lakeshore to be in-service in 2030
- Reacquiring or acquiring 550 MW of local resources by 2035



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Seeking Feedback and Next Steps

Seeking Input: Transmitter Selection Framework

Insights and input will be considered for the design of the framework. As framework development advances, we want understand:

- Are there aspects to the transmission planning process that you need to know in more detail, specifically, in terms of opportunities to be informed and/or participate in the development of transmission plans?
- Based on your experiences, what are your key considerations to develop the Transmission Selection Framework?
- Do you have feedback regarding the proposed procurement design recommendations and features?
- Do you have feedback regarding the proposed transmission project eligibility considerations?

Written feedback can be submitted to engagement@ieso.ca by June 11, 2024.

Next Steps

- The IESO invites written feedback by June 11. All written feedback should be submitted to engagement@ieso.ca.
- To stay informed, please subscribe to receive email communications at www.ieso.ca/subscribe.
- The IESO will continue engaging before submitting the report back to government by summer 2024.

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

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