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Transmitter Selection Framework: Focused Engagement Session #2

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Purpose

- Highlight key system planning insights from other Independent System Operators (ISO) that informed the IESO's preliminary TSF design considerations
- Provide an overview of the Transmission Planning process at the IESO and review how system needs are determined and solutions identified
- Present preliminary transmission project eligibility considerations under a potential Transmitter Selection Framework (TSF)

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Agenda

1. IESO Transmitter Selection Framework Overview
2. Transmission Planning Insights from Other Jurisdictions
3. IESO Transmission Planning Overview
4. Transmitter Selection Framework Project Eligibility Considerations
5. Next Steps and Conclusion

IESO Transmitter Selection Framework Overview

Transmitter Selection Framework

To meet Ontario's growing needs, the development of a competitive transmitter selection framework to support new transmission and provide participation opportunities to communities and transmitters will be important.

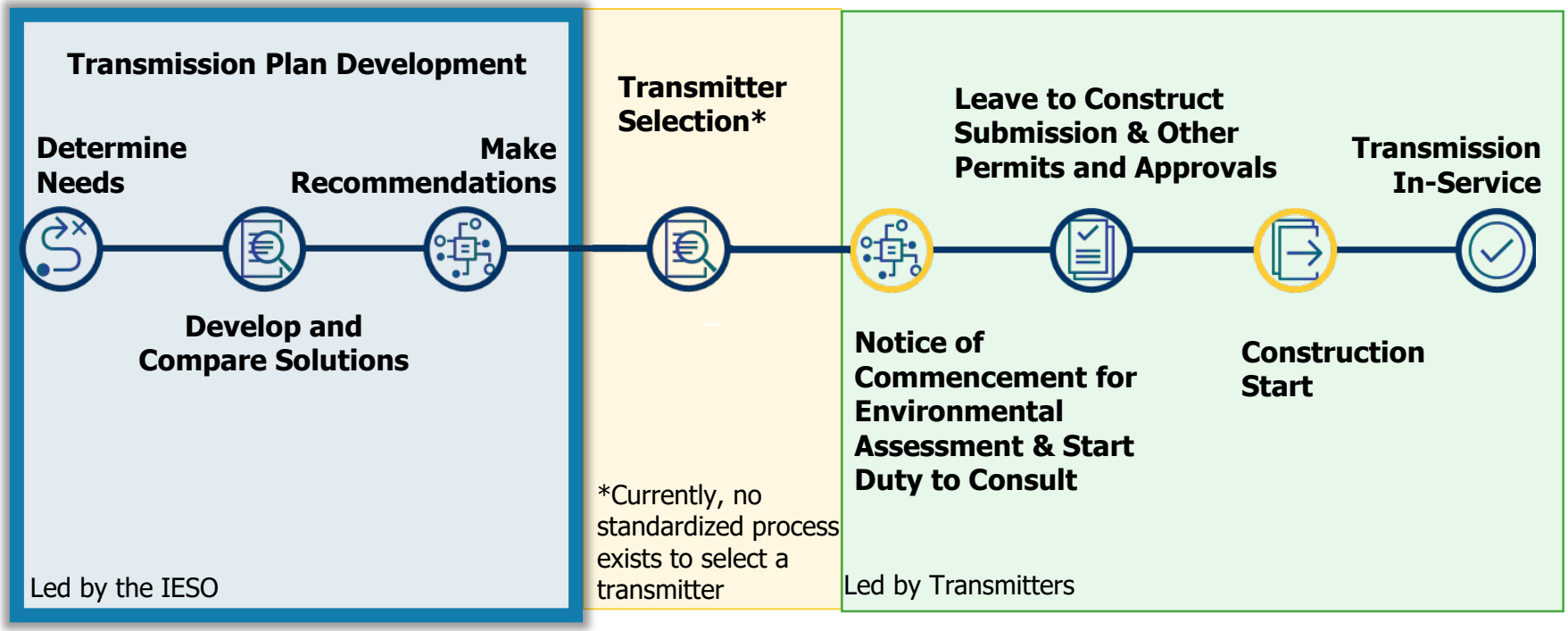
Key details include:

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.

TSF – Transmission Development Overview



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TSF Engagements – Stakeholder Feedback

Feedback from the initial Focused Engagement Session can be summarized as follows:

- The IESO noted general support for a developer qualification process that shortens procurement timelines, values relevant experiences, employs an RFP approach, and supports a flexible framework that can evolve.
- Multiple developers acknowledged and expressed concerns about the possibility of existing transmitters having inherent incumbent advantages. This should be a key design consideration to ensure fairness and transparency and to prevent these advantages from skewing the process prematurely.

TSF Engagements – Indigenous Community Feedback

- Communities have noted that participation opportunities form an integral component of a successful TSF.
- Numerous communities have expressed a keen interest in continuous engagement in the transmission planning process to stay informed about potential projects affecting them and to identify opportunities within the TSF.
- Some communities recommend the IESO establish clear and predictable participation pathways, especially for Treaty Nations, to ensure that impacted communities can access the economic benefits of transmission projects.

Transmission Planning Insights from Other Jurisdictions

Transmission Planning Approaches

	Planning Considerations
Prescriptive Approach (Bid-based)	• Defined the scope, technical, reliability, and/or functional requirements of transmission solution • Limited opportunities to propose design and alternative solutions after recommendations • Minimum reliance on external consultancy • Accommodate for shorter planning timelines (18 months)
Solicitation Approach (Needs-based)	• Supported by an open transmission planning process • Planning forecasts, data sets (from existing transmitters), and models are shared • Broadly defined scope and functional requirements (e.g. from point A to B) • Multiple windows to propose designs solutions • Opportunities to propose innovative or alternative solutions • Longer assessment period to evaluate all proposed solutions

Transmission Planning Participation

ISOs utilize different strategies to ensure adequate stakeholder engagement and participation during the system planning windows. While market rules dependent, some of the mechanisms available for existing transmission operators and developers include:

- Market rules mandates existing transmission operators to provide data and solutions that address reliability needs.
- To foster participation and innovation, jurisdictions may offer procurement incentives, including additional points for proposing solutions and alternatives.
- Jurisdictions using a commercial qualification approach may impose mandatory participation requirements to maintain their status.

Competitive Eligibility Considerations

- Specific criteria for determining between competitive transmission projects versus those assigned to incumbent transmitters varies across jurisdictions, but generally fall under a limited number of broad categories or classifications of facility:
  - Type – new vs. upgrades
  - Function – network vs. local area or radial supply
  - Size – above a pre-determined voltage class
  - Timing – not needed urgently
- The review of approaches used in other jurisdictions informed the IESO's TSF eligibility considerations.

IESO Bulk Transmission System Planning Overview

Electricity Planning in Ontario

Provincial/Bulk System Planning

Addresses provincial electricity system needs and policy directions to ensure the bulk power system is adequate and reliable to support long-term needs

Led by the IESO

Regional Planning

Addresses local area transmission needs, to ensure local reliability, community growth and customer connections

Undertaken jointly by the IESO, transmitters and local distribution companies

Distribution Planning

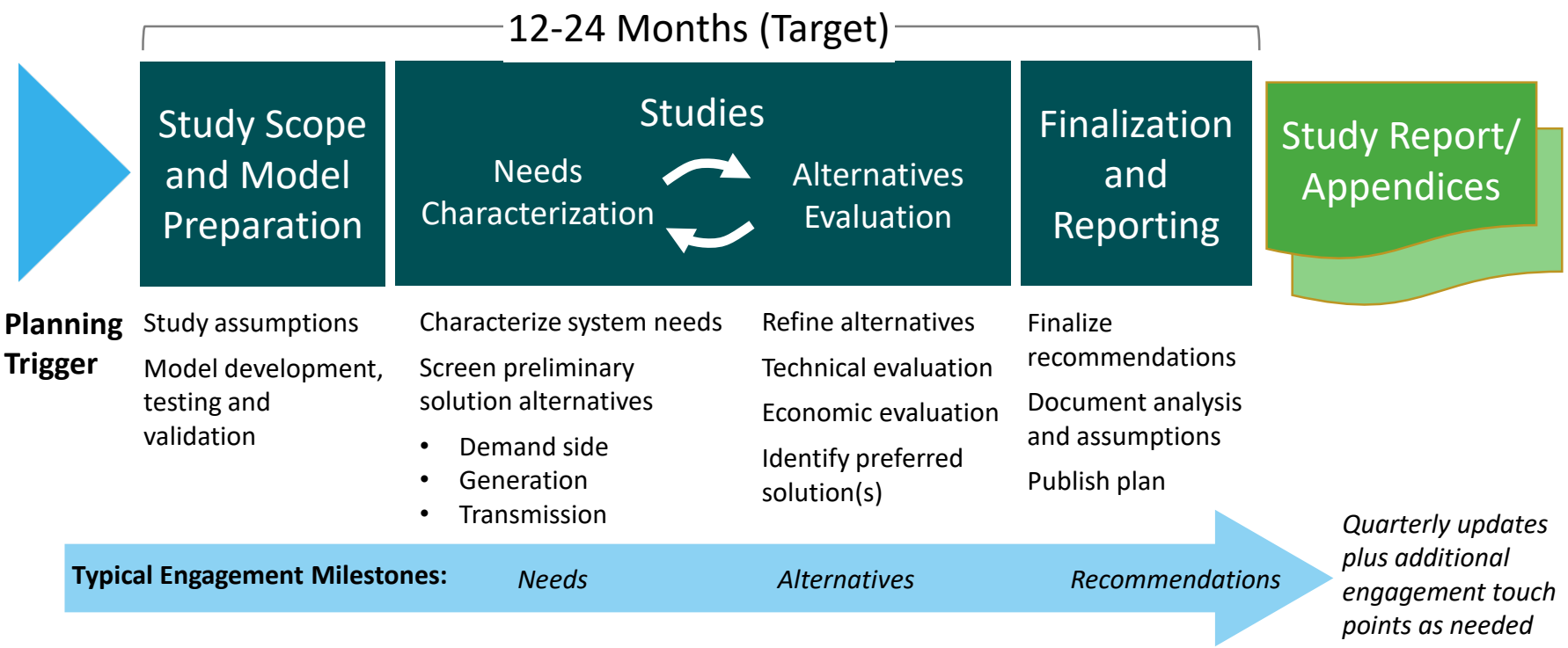
Addresses local distribution system needs and priorities

Led by local distribution companies

Triggering a Bulk System Planning Study

- The IESO's Schedule of Planning Activities summarizes the plans that are underway and plans the IESO will work on in the future
  - It is reviewed and updated with the Annual Planning Outlook every year, considering the most recent demand and supply forecasts, and changes to reliability standards and public policy objectives
  - Based on these changes, the scope of existing plans may be adjusted, planning work may be re-prioritized, or new planning studies may be initiated
- Bulk system plans may be triggered based on anticipated reliability, economic, or public policy needs or drivers

Life-cycle of a Typical Bulk System Planning Study



Phase 1: Study Scope and Model Preparation Steps

- Study scope contains key plan assumptions such as study timelines, transmission elements and years/scenarios to be studied, etc.
- Power flow models are developed to reflect future "snapshots" – the models are the basis for technical studies, and must be fully tested and validated before the study phase can commence
- A formal commencement of study is announced to communities
- An engagement plan lays out the timing and topics of engagement
- This phase of the study can take from **3-6 months** to complete

Phase 2: Planning Studies

- Power system simulations are run to define and characterize the system needs
  - The IESO applies planning criteria consistent with NPCC planning criteria and NERC standards
- A preliminary set of possible solutions is prepared that includes demand-side measures, generation resources, transmission options, or a combination
- Alternatives are tested in simulations and refined through sensitivity analyses
  - Technically feasible alternatives are selected based on the system simulations studies
- Study work can take from approximately **6-12 months** to complete (timing can vary considerably based on scope and complexity)

Phase 2: Evaluation of Solution Alternatives

Feasible alternatives are evaluated based on key considerations (examples):

Technical Feasibility	Can the alternative be executed? Is it operable? Will the
Community Acceptance	Proximity, route/site/environmental considerations
Reliability	Does it address the system need without causing new reliability concerns, i.e., meets reliability standards?
Lead Time	Can the alternative be completed in time to address the need?
Cost	How does the cost compare among the alternatives?

Phase 3: Finalize the Plan

- A final bulk study report describes the system needs, the alternatives that were evaluated, and the proposed solution(s)
  - Details about the technical and economic assumptions used, demand forecast data, etc., are published in the report
- In the case of transmission expansion recommendations, these may go on to inform the scope of a TSF, if they meet eligibility considerations
- This can take **3-6 months** to complete

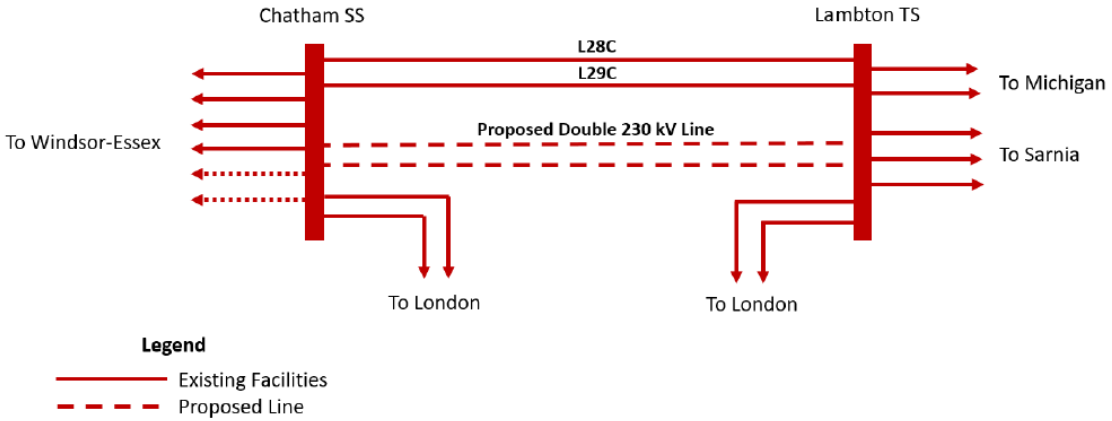
Bulk Plan Stakeholder and Community Engagement

- Each bulk planning study is guided by an Engagement Plan that is posted to the IESO website at the beginning of the study
- The minimum number of engagement touch-points during the development of a plan are during:
  - Phase 1: to inform and seek feedback on the scope of the plan
  - Phase 2: to inform about the needs and seek feedback on possible solution options
  - Phase 3: to involve participants by seeking feedback on the draft recommendations
  - Bulk plan engagements are scheduled to align with the IESO's regular monthly engagement days; however, additional engagements may be scheduled

Scope of an IESO Transmission Recommendation

Example: a point-to-point, double 230 kV circuit line (from IESO, *Need for Bulk System Reinforcements West of London*, September 2021)

- Plan identifies high-level characteristics of the facilities to be developed
- Specific route(s) not determined at this stage
- Plans and/or follow-up products accompanying a procurement may specify certain additional performance requirements

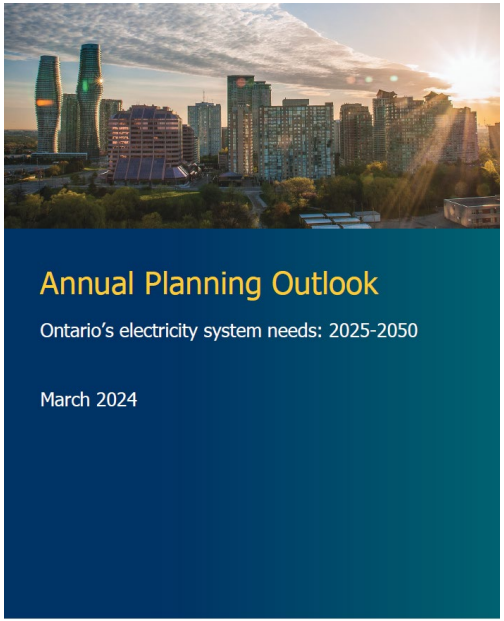


Recent Transmission Recommendations

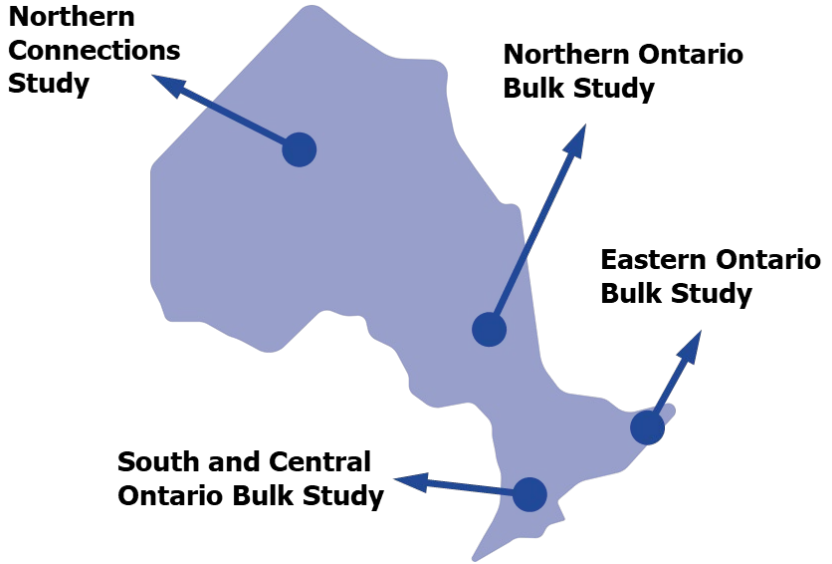
*The TSF will **not** affect the development of these projects as they are already in various stages of project development*

Project (Region)	In-service
Watay Power (NW)	2024
Waasigan Line (NW)	2025-2027
Mississagi to 3rd Line (NE)	2029
Hanmer to Mississaugi (NE)	2029
Porcupine to Wawa (NE)	2030
West of Chatham Reinforcements (SW)	2025
West of London Reinforcements (SW)	2028-2030
Phase Angle Regulators Replacement (ON-MI)	2030
FETT Upgrade (GTA)	2026
Etobicoke Greenway (GTA)	2026
GTA to Dobbin (East)	2029

The APO and Schedule of Planning Activities



Bulk Planning Studies (2024-2026)



Transmitter Selection Framework Project Eligibility Considerations

Project Eligibility Background

- The IESO is exploring a principled approach for determining the attributes of transmission projects that would be suitable for a competitive transmitter selection process
- The IESO is contemplating a clear and simple set of project eligibility criteria for the first version of the TSF
- As the IESO and potential transmission developers gain experience with the competitive transmission selection in Ontario, the eligibility criteria could evolve to include additional type of projects in future selection processes

TSF Eligibility Considerations

Project Attributes	TSF Eligibility Considerations
New Facilities vs. Upgrades	• New facilities would be eligible • Upgrades to existing facilities would not be eligible because the owner of these facilities is in a better position to carry out work on their own equipment. This includes upgrades within existing stations and upgrades to existing lines • Non like-for-like replacement of end-of-life of existing facilities could be considered eligible in future
Network vs. Connection Facilities	• Facilities that benefit all electricity ratepayers would be eligible • Connection facilities that are paid for by the benefiting customer would not be eligible • Transmission facilities that serve a "dual-function" may be considered in future transmission selection processes

TSF Eligibility Considerations

Project Attributes	TSF Eligibility Considerations
Estimated Facility Cost	• Facilities with an estimated cost of $100M or greater would be eligible for competitive procurement • A minimum estimated cost threshold is considered because small facilities are less likely to generate much market interest, and there is less headroom to save costs once the costs of administering a procurement is taken into account • A transmitter selection may be considered for smaller projects that are combined into a larger package in future transmission selection processes
Facility Size	• Facilities at a nominal voltage of 200 kV and greater would be eligible • Facilities at voltages below 200 kV may be considered for future transmission selection processes
Timing of the System Reliability Need	• The minimum lead-time for a reliability-driven facility would be 6 years to the recommended in-service date • Urgent reliability-driven projects would not be eligible

Other Considerations

- In some parts of Ontario, location/siting options may be limited, and a competitive transmitter selection may not be feasible, for example:
  - If a proponent already has exclusive land or access rights (i.e., usage rights or ownership); or
  - Where station facilities can only be sited along an existing right-or-way, and will not allow for sufficient safety clearances, etc.

Initial TSF Planning Considerations

For the initial transmission selection, the IESO is recommending:

- A bid-based process framework that ties into the IESO's existing transmission planning process, that recommends specific projects to address system needs
- Initial project eligibility considerations per slide 29 & 30, subject to stakeholder feedback and evolution along with the process.
- Flexibility to evolve the TSF in the future to capture more projects, and/or be expanded to a need-based solicitation

Next Steps and Conclusion

Questions

Your feedback is important. The IESO is hoping to understand:

1. Do you have feedback on the IESO's transmission planning process, e.g., in terms of opportunities to get informed or to participate in the development of plans or plan alternatives, and/or in terms of the scope and detail of transmission recommendations?
2. Do you have feedback regarding the proposed TSF eligibility considerations?
3. Are there additional considerations not captured in the initial considerations that the IESO should consider?
4. From the perspective of Indigenous communities and stakeholders, how can the IESO better enable you to effectively participate in IESO transmission plans?
5. Do you have any suggestions for future topics for Focused Engagement Sessions or one-on-one discussions?

Future Engagements

- Focused Engagement Sessions:
  - Indigenous Participation Considerations (April 24, 2024)
  - TSF and Bulk System Planning Integration Considerations (May)
  - Commercial Framework and TSF Implementation Considerations (June)
- One-on-One Meetings and Targeted Engagement Sessions
  - As requested by Indigenous Communities, Stakeholders, or Developers

For more information, please visit the TSF Engagement Page

Conclusion

- A Feedback Form will be made available on the TSF Engagement Page, IESO is requesting community and stakeholder feedback by **April 19, 2024**
- All written feedback should be submitted to engagement@ieso.ca.
- We will remain flexible on receiving input throughout TSF engagement process – if you are **interested in setting up a 1:1 meetings directly with the IESO to discuss transmission procurement approaches** prior to the next session and feedback deadline, please contact IESO Engagement.

Thank You

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