



SEPTEMBER 14, 2026

GTA East Regional Electricity Planning

Engagement Webinar: Options Analysis and Draft Recommendations

Land Acknowledgement

The IESO acknowledges that the GTA East is the traditional territory of many nations including the Mississaugas, the Anishnabeg, the Chippewa, the Haudenosaunee, and the Wendat peoples, and those covered by the Williams Treaties, which include the Mississaugas of Scugog Island, Hiawatha, Curve Lake, and Alderville First Nations, and the Chippewas of Georgina Island, Rama and Beausoleil First Nations.

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. Recap: Regional Electricity Planning, the Demand Forecast, Electricity Needs and Screening of Options
2. Options Analysis and Draft Recommendations
3. Next Steps & Discussion

Our Commitment to Respectful Participation

- One speaker at a time; please raise your hand to enter the speaking queue.
- Keep remarks concise (approximately 60-90 seconds) and focused on the agenda topic.
- Avoid repeating points already covered; detailed feedback may be submitted in writing for follow-up.
- Maintain a respectful tone at all times.
- The IESO may redirect discussion to keep the agenda on track.
- Participants that are unable to participate respectfully by adhering to these principles may have their microphone disabled.

Seeking Input

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

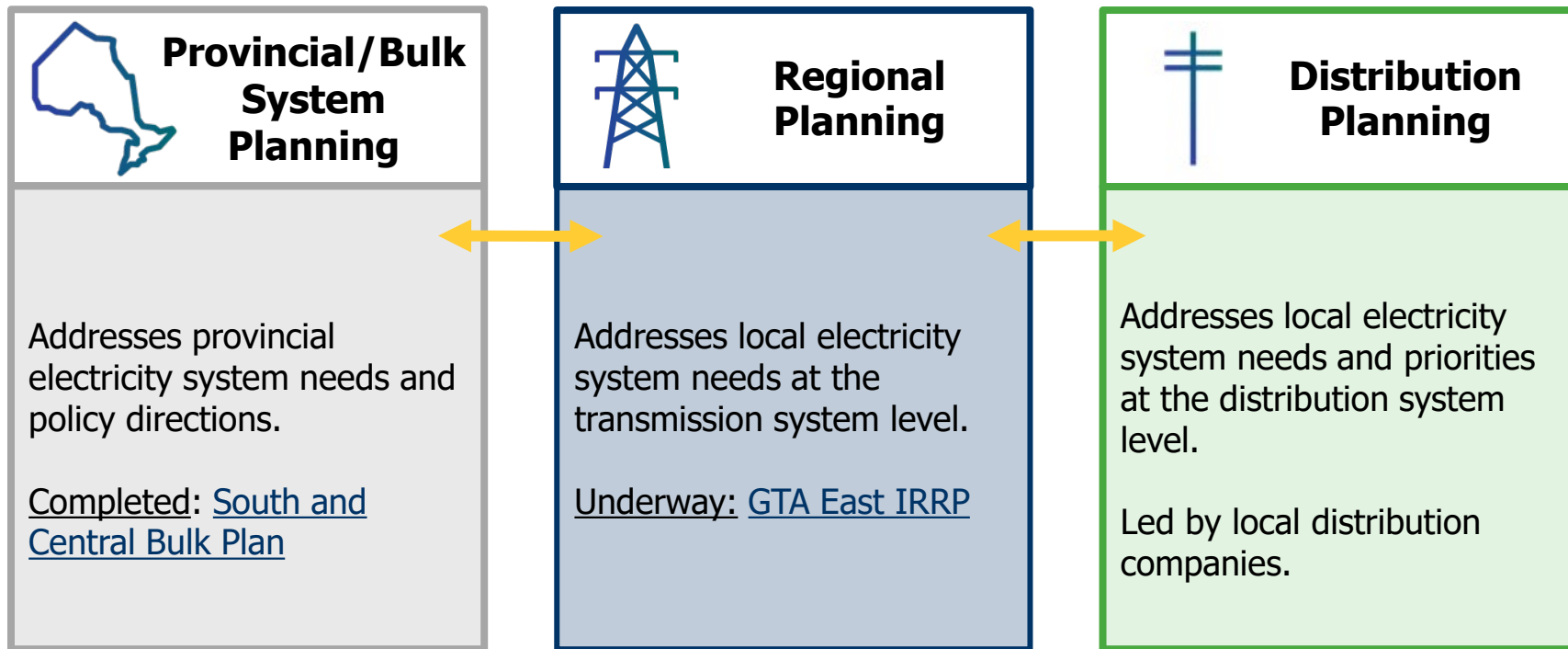
- What feedback is there on the draft recommendations?
- What information needs to be considered in the draft recommendations?
- How can the IESO continue to engage with communities and stakeholders as these recommendations are implemented, or to help prepare for the next planning cycle?

The IESO welcomes written feedback until **Monday, October 5, 2026**. Please submit feedback to engagement@ieso.ca.



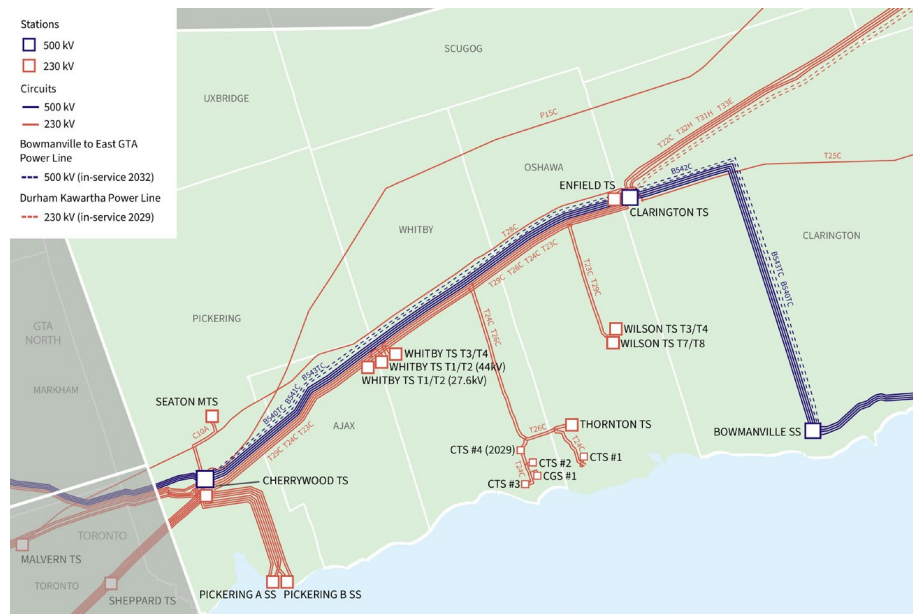
Recap: Regional Electricity Planning Process, Demand Forecast, Electricity Needs and Screening of Options

Electricity Planning in Ontario



Regional Planning in GTA East Region

- Regional planning is carried out at regular intervals to ensure planning is flexible and responsive to a range of future outcomes.
- As part of the regional planning process, an IRRP is being developed for the GTA East region by a Technical Working Group comprising the IESO, Hydro One Networks Inc., Elexicon Energy Inc., and Oshawa Power Utilities Corp.
- The GTA East region is serviced by 500 kV and 230 kV transmission lines and stations. The region is also home to Pickering Nuclear Generating Station (NGS) and Darlington NGS which provides power to the region and province.

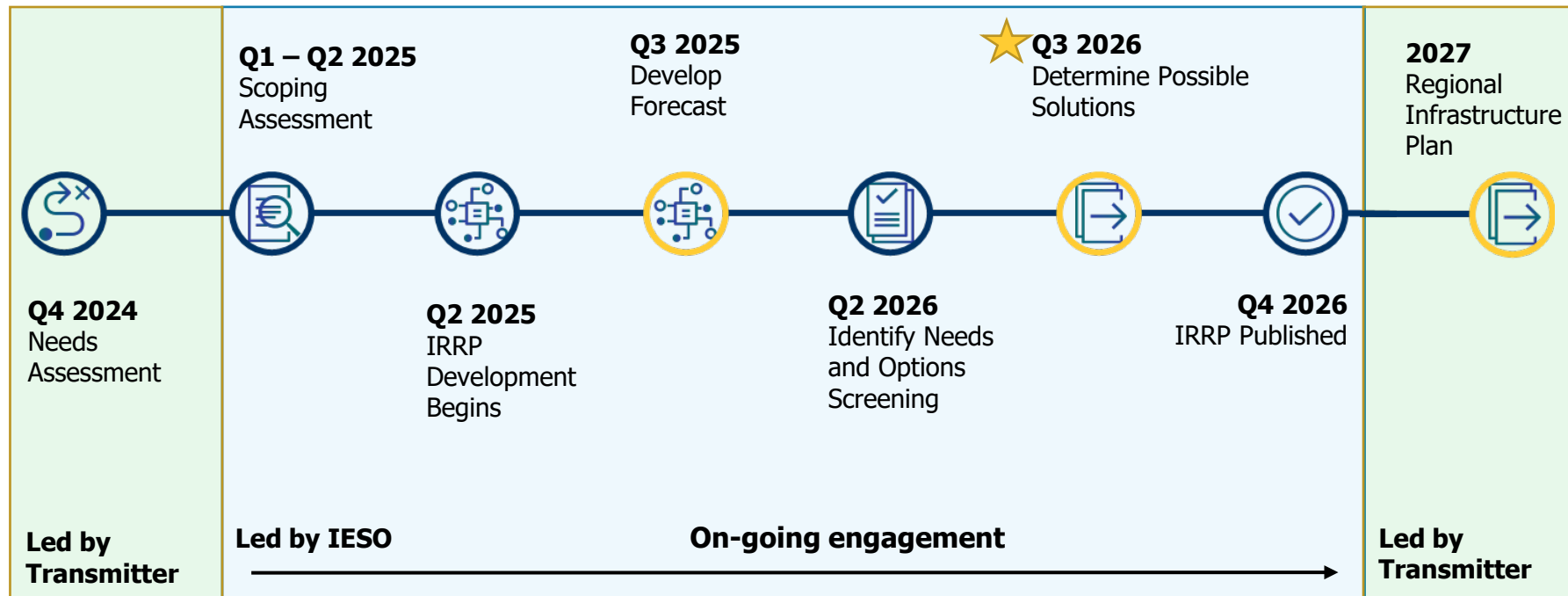


Note: Regional Planning focuses on the electricity system within a defined electrical boundary, which may not align with municipal boundaries. Therefore, some cities may appear partially within the map's coverage areas.

Background on Electricity Planning for GTA East

- Previous electricity studies have recommended two new stations (Enfield TS, in-service 2019 and Seaton MTS, in-service 2023); a new double-circuit 230 kV transmission line ([Durham-Kawartha Power Line](#), in-service by the end of 2029); and a new double-circuit 500 kV transmission line ([Bowmanville to East GTA Power Line](#), in-service by 2032).
- These recommendations will enable customer connections, maintain reliability, and increase economic development and growth in and around the region.
- Continued demand growth within the GTA East electrical region will require more electricity planning through the regional planning process.

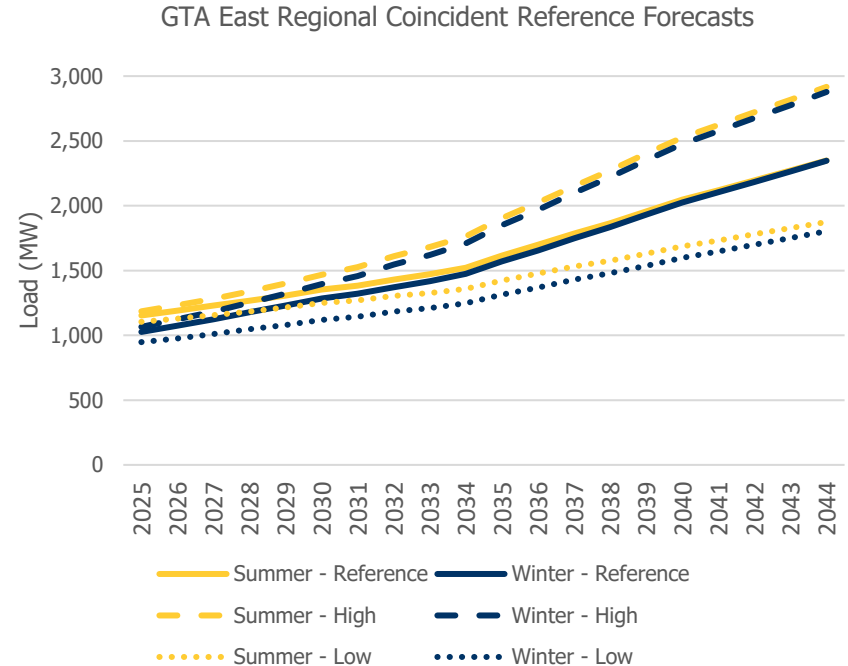
GTA East Regional Planning Timeline*



*Reflects typical 18-month IRRP timeline. Working Group has the flexibility to extend to 24 months where required

Final GTA East Demand Forecast

- Electricity demand in GTA East is expected to grow significantly, increasing by approximately 104% in summer and 129% in winter by 2044.
 - High-growth scenario: 146% in summer and 170% in winter
 - Low-growth scenario: 70% in summer and 90% in winter
- The growth is primarily driven by electrification and economic growth across several sectors including new residential development, commercial and industrial.
- Planning recommendations will primarily be based on the reference forecast. High and low scenarios will be developed and used to inform the potential timing of options.



Recap: Electricity Needs

The Technical Working Group used the final demand forecast to assess if the existing transmission lines and stations can meet the forecasted growth within reliability requirements as part of NERC, NPCC, and ORTAC.

GTA East is characterized by station capacity needs and growing supply limitations driven by concentrated load growth, with several areas expected to fully utilize the capacity of recently established or planned stations, including Seaton MTS and Enfield TS, over the planning horizon.

To support planning efforts, the region was divided into two areas: Pickering-Ajax-Whitby and Oshawa-Clarington.



Recap: Options Screening

As part of the regional planning process, wire and non-wires options are either screened in or screened out, based on the type of need, the traits of the need, and any additional considerations. More information is available on the IESO's [Guide to Assessing Non-Wires Alternatives](#).

Key findings on the options screening include:

- **Distribution-level load transfers, demand response, and eDSM measures** are best suited for small, localized needs (~0-5 MW). Given the significant station capacity needs, targeted eDSM was screened in to help reduce peak demand, however, it is not expected to meet the need on its own.
- **Distributed generation and energy storage** are best suited for small- to medium-sized needs (up to ~20-50 MW). These resources were screened in as they can reduce demand on the electricity system, however, existing station capacity constraints may limit the ability to connect additional resources in the near term.
- **Wires solutions** are generally best suited for large capacity needs and accommodating sustained load growth. Given the scale of the identified station capacity needs, wires solutions were screened in.

Feedback Received

Key Areas of Feedback	Outcome
Ensure the GTA East IRRP is aligned with municipal growth anticipated across the Region of Durham.	The forecast scenarios for the IRRP consider and include known drivers from municipal plans such as Official Plans, growth plans and community energy plans, including Envision Durham. Specific municipal planning inputs received throughout the development of this plan have been considered.
Consider non-wire alternatives to reduce electricity demand, address identified capacity constraints and support decarbonization initiatives.	The IRRP's draft recommendations were informed by a detailed evaluation of wires and non-wires options to meet those needs, considering reliability, cost, technical feasibility, and opportunities to maximize the use of the existing electricity system (where economic), as well as feedback from communities and other interested parties. Wires and non-wires options such as additional eDSM and resources including Battery Energy Storage Systems (BESS), solar or wind generation, or any combination, are being explored to meet or reduce the region's electricity needs.

Please see the [GTA East engagement webpage](#) for the feedback and IESO response.



Options Analysis and Draft Recommendations

Options Evaluation

Wire and Non-Wire Options are evaluated based on the following key considerations:

Technical Feasibility

- Can the option be executed? i.e., outlook for technology, proximity to customers, routing and spacing considerations, operation

Ability to Address Needs

- Does it address the need while complying with the established reliability standards and criteria for the electric power system?

Cost-Effectiveness

- Is there the ability to solve multiple needs simultaneously?
- How much can it cost and what are the benefits?

Lead Time

- New transmission infrastructure is expected to take at least 5-7 years – how does this compare to the timing of needs?

Community Considerations

- Input from community preferences and feedback regarding potential options, for example does it improve resilience for extreme weather?

Electricity Needs in Pickering-Ajax-Whitby Area

- Station capacity needs have been identified across five stations in the Pickering-Ajax-Whitby area, driven by residential growth in North Brooklin and Northeast Pickering, as well as electrification across the area.
- A load security need was identified on both double circuits supplying the GTA East region which spans both areas (Tx-C corridor).
- The timing of these needs varies, with two stations requiring additional capacity in the near term, one in the medium term, and two in the long term.
- To address these requirements, the Technical Working Group evaluated options that can provide additional station capacity to support future growth.



Technical Summary of Electricity Needs

Load growth is occurring across all stations in the Pickering-Ajax-Whitby area, increasing both the magnitude and urgency of the identified station capacity needs. While Seaton MTS entered service in 2023 and provides significant capacity for the 27.6 kV system, demand on the 44 kV system continues to grow.

Need Type	Impacted Infrastructure	Timing	Magnitude*		
			2026	2035	2044
Station Capacity: The ability of a station to deliver power from the grid down to the distribution system	Cherrywood TS (44kV)	Immediate	6 MW	10 MW	26 MW
	Whitby TS T3/T4 (44kV)	Immediate	3 MW	44 MW	106 MW
	Whitby TS T1/T2 (44kV)	Medium-Term	-	15 MW	77 MW
	Whitby TS T1/T2 (27.6kV)	Long-Term	-	-	123 MW
	Seaton MTS (27.6kV)	Long-Term	-	-	115 MW

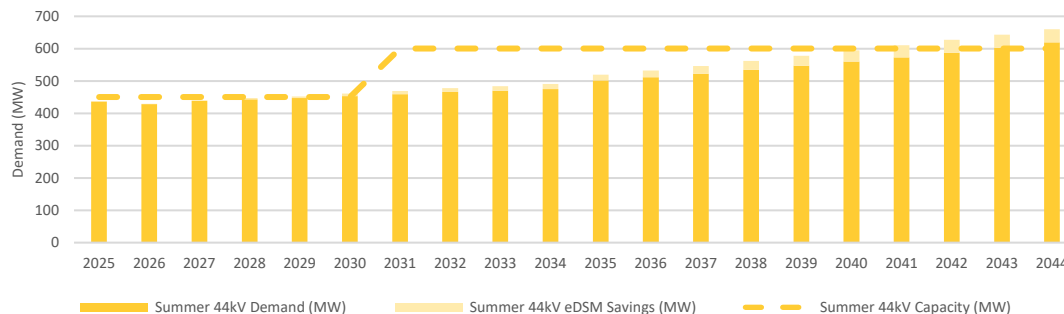
Near-Term Options Analysis

Option	Incremental eDSM	A 230/44 kV DESN (New Station) in North Whitby or Pickering Area
Technical Feasibility	✓ Feasible (near-term)	✓ Feasible (near- to medium-term)
Ability to Address Need	✓ This option could reduce demand at Cherrywood TS by approximately 10 MW and at Whitby TS by approximately 45 MW by 2044 ✗ Given the magnitude of the need, this option would not fully meet the needs	✓ Offloads Cherrywood TS and Whitby TS stations' load growth ✓ Delay load supply security needs by growing loads outside of TxC corridors ✓ Leverages existing transmission corridor of P15C and T28C
Net Cost to Ratepayer (2026 CAD)	System Cost Effective	\$85M
Lead-Time	1-2 years	5 years

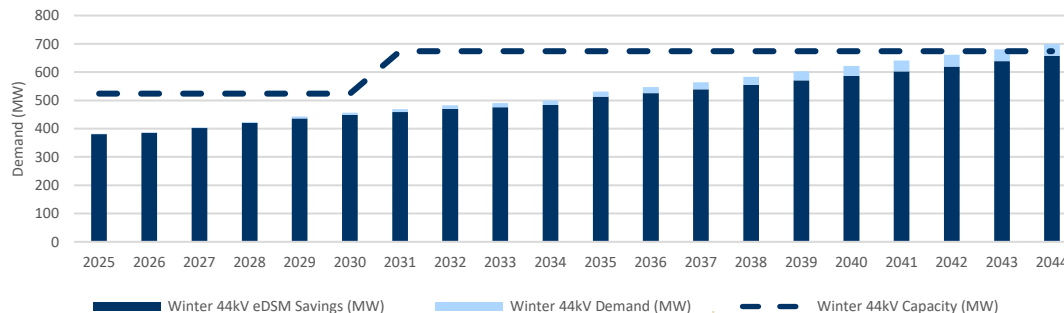
Pickering-Ajax-Whitby Area Capacity Outlook

- A 230/44 kV DESN (new station), in-service in 2031, in combination with targeted eDSM, can meet identified station capacity needs.
- While this reinforcement provides approximately 150 MW of additional capacity, load growth forecasts indicate that the area could require further capacity enhancements beyond 2043.
- As a result, additional long-term reinforcement options may need to be considered in future planning cycles.
- In the near term, the system's existing constraints prevent non-wires alternatives from reducing or fully supporting the need. However, the addition of a new station will enhance system capability and create the capacity necessary to support future resource connections, including non-wire resources, helping to address medium- and long-term needs.

Pickering-Ajax-Whitby Non-Coincident Summer Reference Forecast



Pickering-Ajax-Whitby Non-Coincident Winter Reference Forecast



Considerations for Medium- to Long-Term Needs

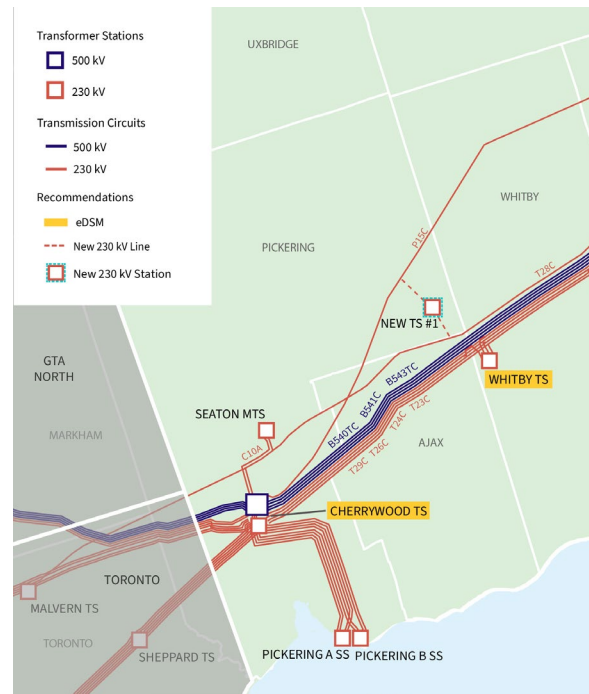
Option	New Station + eDSM + Dispatchable Resource	New Station + Wind + Solar + BESS + eDSM	New Station + BESS + eDSM
Technical Feasibility	✓ Feasible	✗ Not Feasible	✓ Feasible
Ability to Address Need	✓ A portfolio of 175 MW of Dispatchable Resource facility is needed to fully meet the residual needs and requirements over the long term	✗ A portfolio of 610 MW of distributed energy resources* is needed to fully meet the residual needs and requirements over the long term ✗ Significant land requirements (1,400 hectares)	✓ Able to address residual needs after a new station and eDSM are implemented ✓ A portfolio of 120 MW (1,330 MWh) of BESS is needed to meet the residual needs up to 2043
Lead-Time	4-6 years	4-6 years	4-6 years

Draft Recommendations for Pickering-Ajax-Whitby Area

Significant electricity needs have been identified across the Pickering-Ajax-Whitby area as electricity demand continues to grow. A combined approach of targeted non-wire and wire options are recommended to maintain reliability and support future growth.

The Technical Working Group recommends:

- Additional targeted incremental eDSM on Cherrywood TS and Whitby TS to reduce peak demand and defer station capacity needs where feasible.
- Build a 230/44 kV DESN (new station) in North Whitby or Pickering area* to provide additional station capacity required to meet electricity needs.
- Monitor overall load growth, electrification trends and eDSM performance to inform future planning and identify timing to study long-term options.



Electricity Needs in Oshawa-Clarington Area

- Station capacity needs have been identified at four stations across the Oshawa-Clarington area, with three stations requiring capacity in the near term and one station in the long term.
- These needs are driving two supply capacity needs in the area and one load security need across the GTA East region.
- Continued population and economic growth are increasing demand and advancing the timing of station investments, including at Enfield TS, which is already showing long-term capacity requirements.
- The Technical Working Group evaluated options that can provide additional capacity to support ongoing growth.



Technical Summary of Electricity Needs

Load growth is occurring across all stations in the Oshawa-Clarington area and driving both supply and load security needs. While Enfield TS added significant station capacity to the area and is expected to meet forecast requirements over the near term, continued regional growth are driving longer-term capacity needs. Planned reinforcements, including the DKPL Power Line, expected to be in-service in 2029, will strengthen the supply network and provide additional flexibility to accommodate future system expansion.

Need Type	Impacted Infrastructure	Timing	Magnitude*		
			2026	2035	2044
Station Capacity: The ability of a station to deliver power from the grid down to the distribution system	Thornton TS (44kV)	Immediate	26 MW	58 MW	87 MW
	Wilson TS T7/T8 (44kV)	Immediate	15 MW	71 MW	128 MW
	Wilson TS T3/T4 (44kV)	Immediate	51 MW	146 MW	267 MW
	Enfield TS (44kV)	Long-Term	-	-	41 MW
Supply Capacity: The ability of the system to supply power through the transmission lines to a local area	T23C, T29C (connecting Wilson TS)	Medium-Term	-	37 MW	254 MW
	T24C, T26C (connecting CTS sub-region)	Medium-Term	-	16 MW	110 MW
Load Supply Security: Maximum amount of power that can be lost during select contingencies	Wilson TS and Whitby TS T3/T4	Medium-Term	-	73 MW	346 MW
	Whitby TS T1/T2, Thornton TS, and CTSs	Long-Term	-	-	214 MW

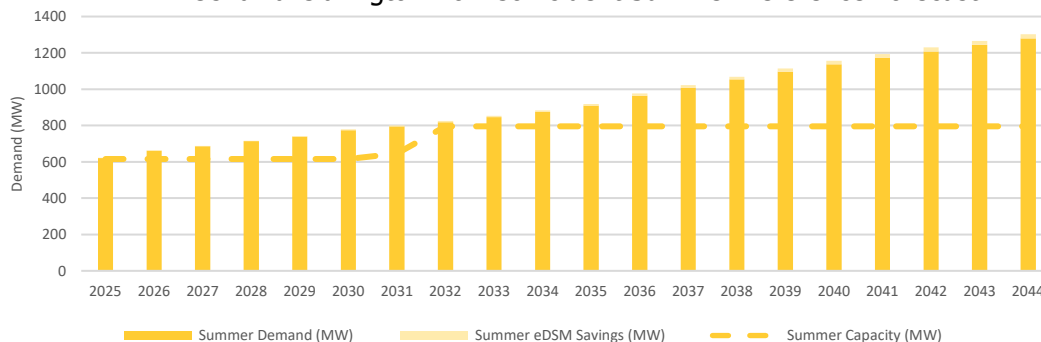
Near-Term Options Analysis

Option	Additional Electricity Demand-Side Management	A 230/44 kV DESN (New Station) in Clarington
Technical Feasibility	✓ Feasible	✓ Feasible ✓ Connect to new DKPL circuits near Clarington TS
Ability to Address Need	✓ This option could reduce demand at Wilson TS by approximately 16 MW and Thorton TS by approximately 3 MW by 2044 ✗ Given the magnitude of the need, this option would not fully meet the needs	✓ Offloads Thornton TS and Wilson TS stations' load growth ✓ Delay load supply security needs by growing loads outside of TxC corridors ✓ Delay supply capacity needs by growing loads outside of CTS and Wilson sub-regions
Net Cost to Ratepayer (2026 CAD)*	System Cost Effective	\$75M - \$110M
Lead-Time	0-2 years	6-8 years
Other Considerations	Demand reductions depend on customer participation Minimal footprint	

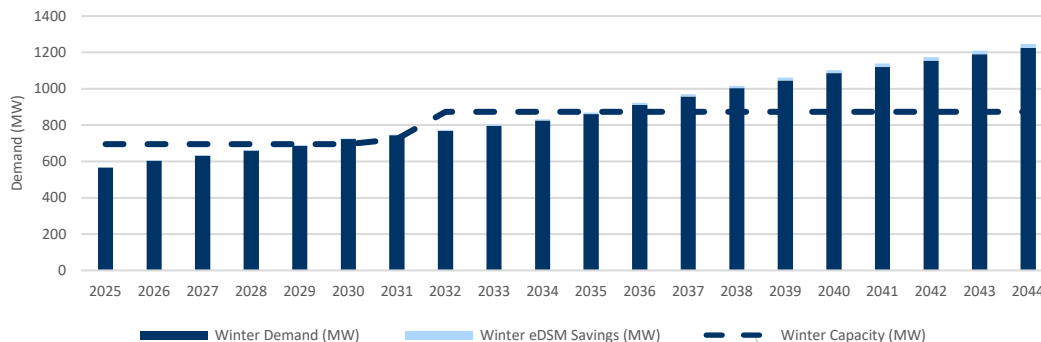
Oshawa-Clarington Capacity Outlook

- A 230/44 kV DESN (new station), in-service in 2032, in combination with targeted eDSM, can meet the identified station capacity, supply capacity, and load supply security near-term needs.
- While this reinforcement provides approximately 150 MW of additional capacity, load growth forecasts indicate that the area could require further capacity enhancements beyond 2033.
- As demand in this area continues to grow, additional station capacity solutions may be required in the Oshawa-Clarington area.

Oshawa-Clarington Non-Coincident Summer Reference Forecast



Oshawa-Clarington Non-Coincident Winter Reference Forecast



Considerations for Medium- to Long-Term Needs (1)

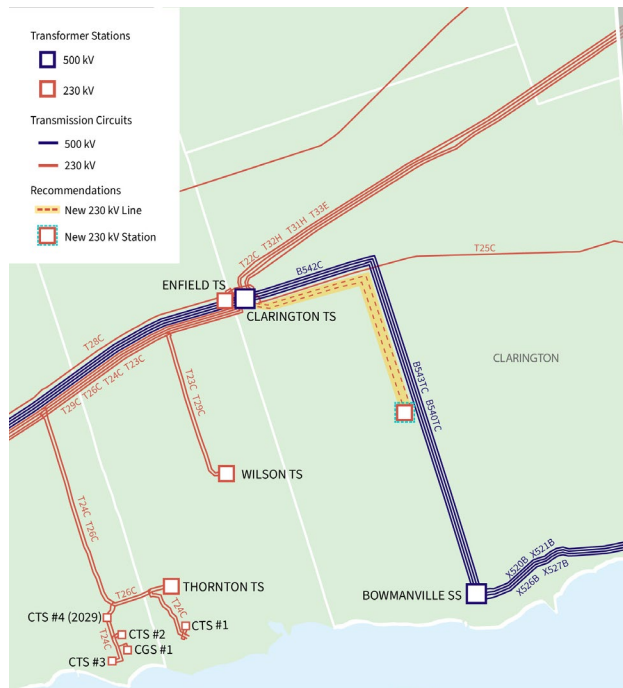
Option	Clarington TS Expansion + New Line	Bowmanville TS Expansion + New Line	New Station + Dispatchable Resource + eDSM	New Station + Solar + BESS + eDSM	New Station + BESS + eDSM
Technical Feasibility	✓ Feasible	✓ Feasible	✓ Feasible	✗ Not Feasible	✗ Not Feasible
Ability to Address Need	✓ New double-circuit transmission lines support up to 600 MW of additional load and support future resource connections. ✓ *Clarington TS 230kV switchyard expansion required, GIS would be most feasible	✓ New 230 kV switching station enables new transmission lines to the region (minimum 600 MW) beyond the forecasted need, enables further non-wires alternatives	✓ A portfolio of 202 MW of Dispatchable Resource facility can meet residual needs of Wilson sub-region and requirements over the long term ✓ Less than 100 hectares required to site resources	✗ A portfolio of 335 MW of energy resources* is needed to meet the residual needs of Wilson sub-region needs ✗ Large amount of land required (~500 hectares)	✗ A portfolio of 625 MW of BESS can meet the residual needs of Wilson sub-region needs ✓ Less than 100 hectares required to site resources
Lead-Time	5-10 years	5-10 years	4-6 years	4-6 years	4-6 years

Considerations for Medium- to Long-Term Needs (2)

The Technical Working Group will continue to monitor load growth and system performance to determine the appropriate timing to study future reinforcements, including new transmission reinforcements*.

The purpose of this expansion is to enable the continued growth of the region beyond the existing system as residential and commercial interests intensify.

Option #1 – Clarington TS Expansion



Option #2 – Bowmanville TS Expansion



Draft Recommendations for Oshawa-Clarington Area

Significant electricity needs have been identified across Oshawa-Clarington area, driven by rapid community growth, new development, and increasing electrification. A combined approach of targeted non-wire and wire options are recommended to maintain reliability and support future growth.

To meet growing demand, the Technical Working Group recommends:

- Additional targeted incremental eDSM on Wilson TS and Thorton TS to reduce peak demand and defer station capacity needs where feasible.
- Build a new 230/44 kV DESN in Clarington area* to provide the additional transformation capacity required to serve the forecast growth.
- Monitor overall load growth, electrification trends and eDSM performance to inform future planning and identify timing to study long-term options.



Summary of Draft Recommendations

The Technical Working Group recommends a combination of targeted non-wire and wire options to meet identified electricity needs and support continued growth across the GTA East.

- Pursue additional targeted eDSM savings opportunities to reduce peak demand at Cherrywood TS, Whitby TS, Thornton TS and Wilson TS and defer station capacity needs where feasible.
- Build two new 230/44 kV DESN in North Whitby/Pickering and Clarington to provide additional station capacity required to meet forecast electricity needs.
- Continue monitoring load growth, electrification trends and eDSM performance to inform future regional planning cycles including timing to study identified considerations, including potential transmission reinforcements if required.

These recommendations will meet the identified electricity needs while supporting continued growth, electrification, and new customer connections across the GTA East electrical area.



Next Steps & Discussion

Energy Efficiency Opportunities

- To help meet the province's rapidly growing demand for electricity, the IESO's energy efficiency programs through Save on Energy have been expanded from \$1 billion over four years, to \$10.9 billion over 12 years, beginning in 2025.
- 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. [Learn how Lear Corporation in Ajax used the retrofit program to save on annual costs.](#)
 - [Energy Affordability Program](#) – Support for income-eligible electricity customers to better manage monthly electricity costs and increase their home comfort.
- Use the [Funding Finder](#) to easily identify which Save on Energy programs can best suit your needs.

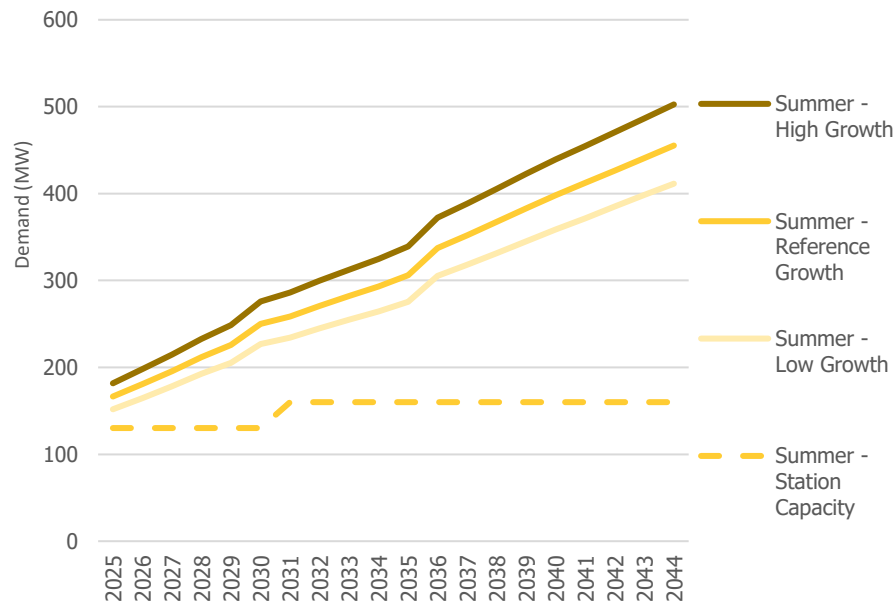
Durham Region — District Energy Project

Durham Region is developing a District Energy project as part of the Courtice Transit Oriented Community.

Expected impacts of the project have been incorporated into the reference forecast used in this IRRP — as a result, timing and energy savings currently anticipated from this project are reflected in the timing of the draft recommendations.

If the project achieves greater energy savings than currently assumed, electricity demand could be reduced further, potentially delaying the timing of future station capacity needs and reinforcements identified in this plan.

The Technical Working Group will continue to engage with Durham Region on the progress, timing and expected impacts of this and other energy projects in between and during future planning cycles.



Next Steps

Participants can expect to hear from the IESO at these milestones:

- **October 5, 2026:** Deadline for feedback to the IESO on the options analysis and draft recommendations.
- **November 2026:** IRRP will be completed and published on the [engagement webpage](#).

Depending on the recommendations of the IRRP, the following next steps can be expected:

- For wires solutions, the local 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, implementation mechanisms for new resources and energy efficiency programs will be determined following plan publication.

Discussion

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

- What feedback is there on the draft recommendations?
- What information needs to be considered in the draft recommendations?
- How can the IESO continue to engage with communities and stakeholders as these recommendations are implemented, or to help prepare for the next planning cycle?

The IESO welcomes written feedback until **Monday, October 5, 2026**. Please submit feedback to engagement@ieso.ca.

Thank You

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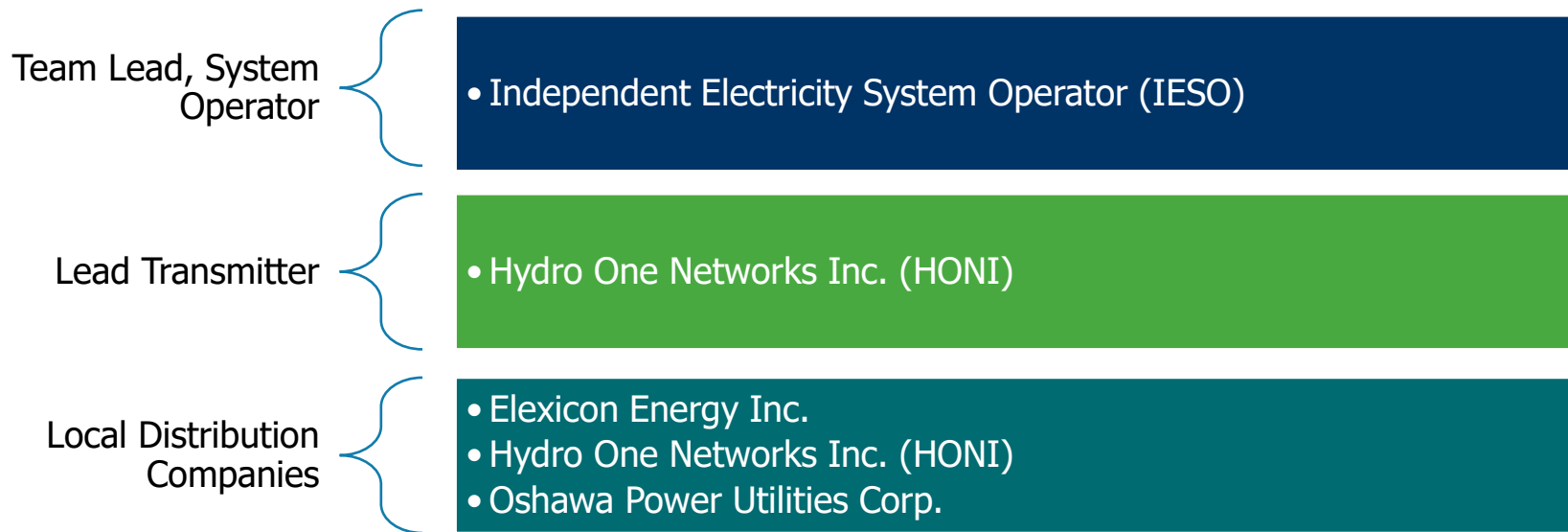
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Appendix

Technical Working Group

The regional planning process is conducted by a Technical Working Group, consisting of:



Components of an IRRP



Demand Forecast

How much power is needed over the planning timeframe?



Needs

What needs are emerging in the region that need to be addressed?



Potential Solutions

What kinds of solutions can meet the future needs for the region?



Recommendations

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?

Developing the Demand Forecast

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

- Provided summer and winter demand forecasts for each station their areas are supplied from,
- Incorporated municipal and community plans into their forecasts, and
- Established forecasting assumptions based on customer growth plans.

In addition to LDC forecast, the IESO and the Technical Working Group:

- 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.

Overview of Electricity Needs

The Technical Working Group used the final demand forecast to assess if the existing transmission stations and lines can meet the forecasted growth within reliability requirements as part of NERC, NPCC and ORTAC. If it cannot, the shortfall is categorized into one of five needs:

- **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 an interruption or loss of load.
- **Load supply security:** Maximum amount of power that can be lost during select contingencies.

Options Overview

In the regional planning process, the following wire and non-wire options are considered to meet the region's needs:

- **Distribution-level load transfers:** Moving load from one station to another station that has available capacity – these are typically low cost and can be quickly implemented.
- **Demand Response:** Reducing or eliminating electricity use during times where the electricity system is experiencing high demand.
- **Electricity demand-side management (eDSM):** Implementing additional eDSM programs and initiatives to reduce electricity needs.
- **Transmission and/or distribution-connected storage and/or generation:** Exploring opportunities for new or expanded local generation, including battery storage, that can provide capacity, energy or voltage support to the area.
- **Wire options:** Considering system reinforcements such as new and/or upgraded transmission lines/stations and voltage support devices to improve system capability and reliability.

Recap: Electricity Needs in GTA East Region

#	Need Type	Location of Need	Description
1-2,7	Station Capacity	Pickering-Ajax-Whitby (44kV) Cherrywood TS Whitby TS T3/T4 Whitby TS T1/T2 (44kV)	• 44 kV stations in Pickering-Ajax-Whitby area is expected to reach their capacity limit in near to medium term. • Cherrywood TS and Whitby TS T3/T4 has immediate need in summer • Whitby TS T1/T2 (44kV) has medium-term need in both summer and winter
3-5	Station Capacity	Oshawa-Clarington Thornton TS Wilson TS T3/T4 Wilson TS T7/T8	• 44 kV stations in Oshawa-Clarington area is expected to reach their capacity limit in near term • Thornton TS and Wilson TS has immediate need in summer

Recap: Electricity Needs in GTA East Region

#	Need Type	Location of Need	Description
6,8-9	Station Capacity (longer term)	Whitby TS T1/T2 (27.6kV) Enfield TS Seaton MTS	• Enfield TS and Seaton MTS are recently built stations and are reaching their station capacity in long-term • Whitby TS T1/T2 (27.6 kV) is reaching station capacity in medium-term
10	Supply Capacity	CTS sub-region in Oshawa	• Circuits supplying Thornton TS and CTSs are expected to exceed its thermal capacity by 2035 in summer
11	Supply Capacity	Wilson TS in Oshawa	• Circuits supplying Wilson TS are expected to exceed its thermal capacity by 2033 in summer and 2038 in winter
12-13	Load Security	230 kV TxC corridors in the GTA East region T23C/T29C T24C/T26C	• The loss of these lines can result in an interruption to over 600 MW of customer load, which is more than permitted by planning criteria

Non-Wires Options Analysis: Pickering-Ajax-Whitby

Option	Dispatchable Resource + eDSM	Wind + Solar + Battery Energy Storage System (BESS) + eDSM
Technical Feasibility	✗ Not Feasible	✗ Not Feasible
Ability to Address Need	✓ Able to defer station capacity needs to the end of the study period. ✗ A portfolio of 325 MW of Dispatchable Resource facility is needed to fully meet the needs and requirements over the long term, which can't be connected to the existing stations without considerable station enhancements.	✓ Able to defer Whitby station capacity needs to the end of the study period. ✗ A portfolio of 3,020 MW of distributed energy resources* is needed to fully meet the needs and requirements over the long term. ✗ Large amount of land required.
Land Requirement	< 100 hectares	15,000 hectares
Net Cost to Ratepayer	N/A	N/A
Lead-Time	4-6 years	4-6 years

Non-Wires Options Analysis: Clarington-Oshawa

Option	Dispatchable Resource + eDSM	Wind + Solar + Battery Energy Storage System (BESS)	Solar + BESS + eDSM
Technical Feasibility	✗ Not Feasible	✗ Not Feasible	✗ Not Feasible
Ability to Address Need	✗ The required Dispatchable Resource portfolio exceeds available capacity: approximately 352 MW is needed for needs at Wilson TS and 109 MW for the CTS sub-region, compared to only 98 MW of available capacity	✗ A portfolio of 1,040 MW of energy resources* is needed to fully meet the Wilson sub-region needs and requirements over the long term ✗ Large amount of land required	✗ A portfolio of 450 MW of energy resources** is needed to fully meet the CTS sub-region needs and requirements over the long term ✗ Large amount of land required
Land Requirement	< 100 hectares	8,500 hectares	900 hectares
Net Cost to Ratepayer	N/A	N/A	N/A
Lead-Time	4-6 years	4-6 years	4-6 years

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(s) since the facilities 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

Connection Assessment Process

- Projects larger than 10 MW are required to undertake a [connection assessment](#) to determine whether a new facility (generation, storage, large load, transmission connection, etc.) or a modification to an existing facility can connect to the provincial electricity system without adversely affecting reliability.
- This requirement applies even where the project is encompassed within an ongoing regional plan.
- An optional technical feasibility study can be undertaken that is used to determine whether an applicant's project will introduce reliability or operability issues and to determine if the potential new or modified connection has the technical characteristics needed to address an operability or reliability issue.
- If the load is exploring connection options and is not ready to submit a formal request, they can start with the IESO's [Major Projects Identification Committee \(MPIC\)](#) process, which helps provide the IESO with early insight into connection requirements and timelines, supporting long-term forecasting and planning.