SEPTEMBER 11, 2025

Peterborough to Kingston Electricity Planning

Engagement Webinar #1

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Territory Acknowledgement

The IESO acknowledges that the Peterborough to Kingston Region is the traditional territory of the Anishnabeg, Haudenosaunee, and 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

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

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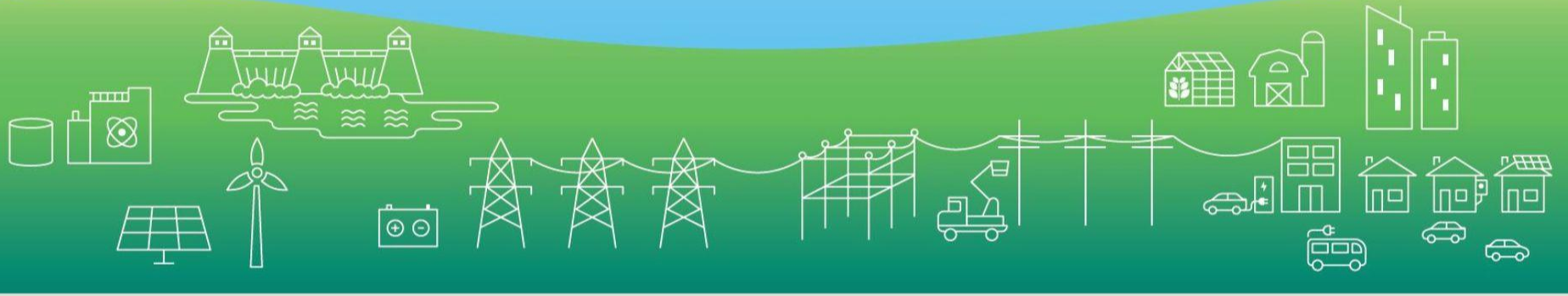

We work with:

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

<<< **Communities** >>>

Seeking Input

Determining the electricity demand forecast 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
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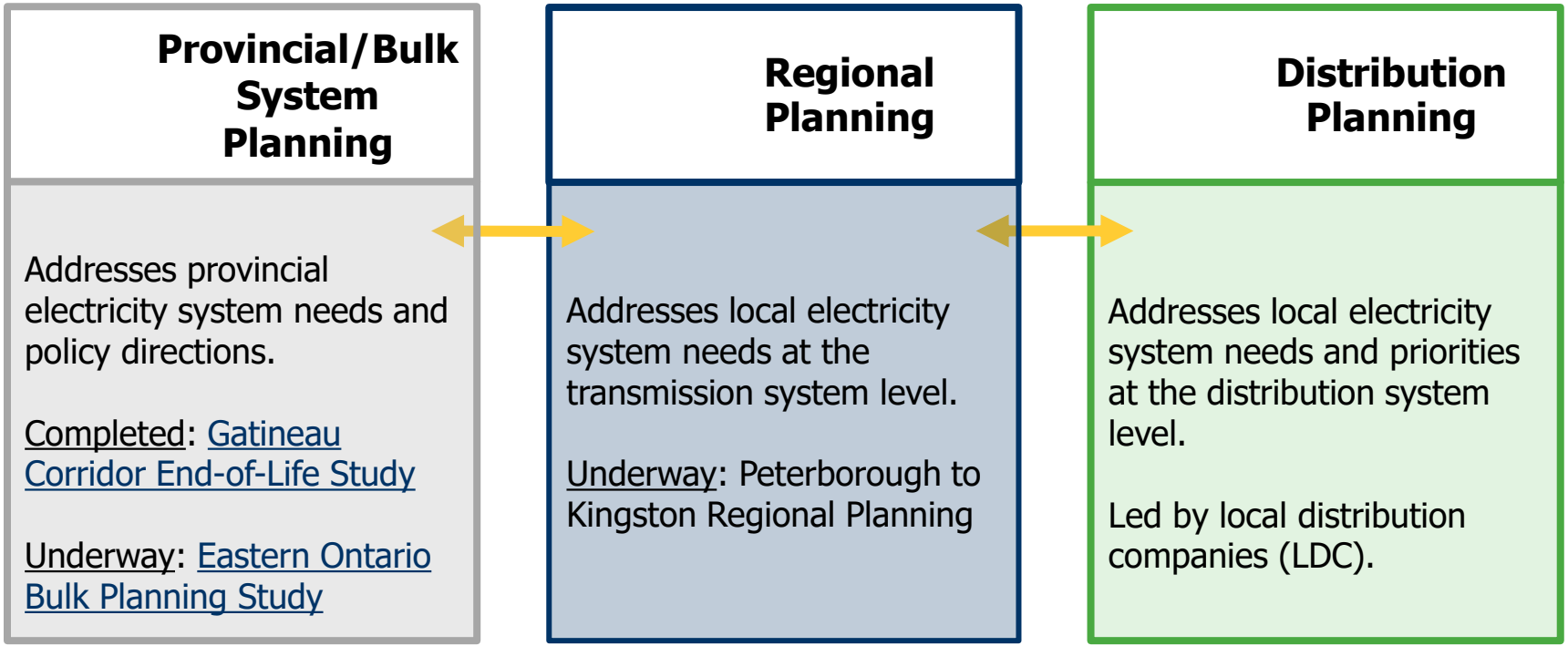
Please submit your written comments by email to engagement@ieso.ca by October 2, 2025.

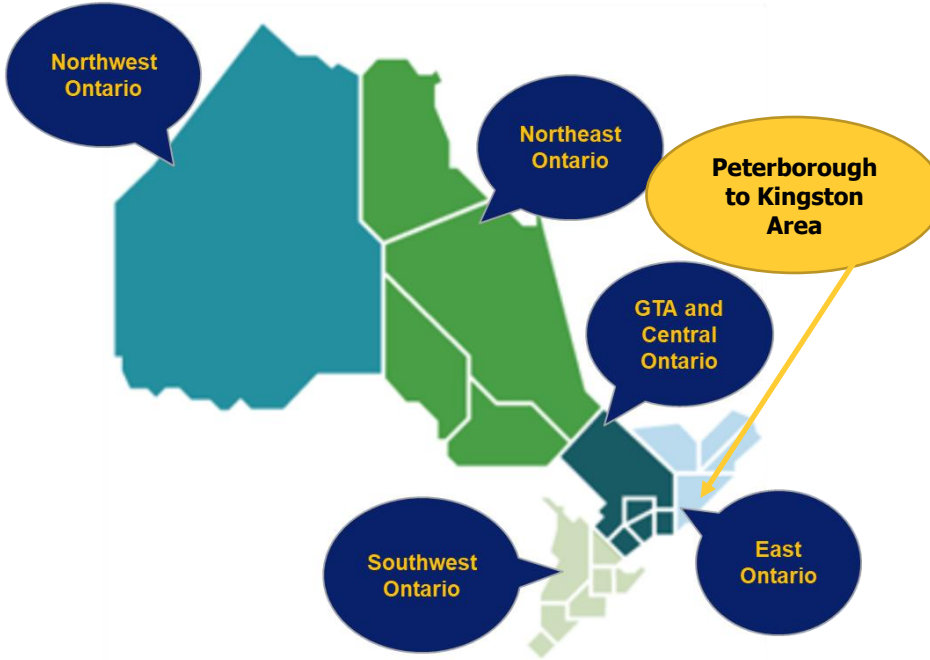
Regional Electricity Planning Process

Electricity Planning in Ontario



21 Electricity Regional Planning Regions

- 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.
- A comprehensive planning approach to develop an Integrated Regional Resource Plan (IRRP) is underway for the Peterborough to Kingston electrical region.
- The regional plan for the Peterborough to Kingston electrical area will be developed by a Technical Working Group, led by the IESO, and consisting of the local distribution companies and the transmitter.

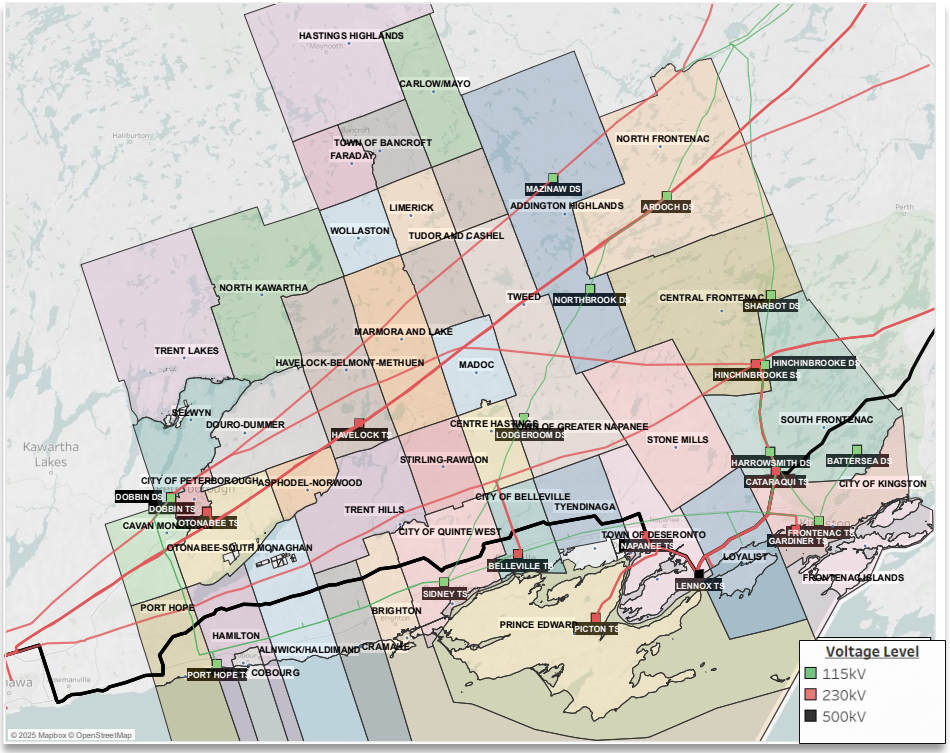


Technical Working Group (TWG)

Team Lead, System Operator	• Independent Electricity System Operator
Lead Transmitter	• Hydro One Networks Inc. (Transmission)
Local Distribution Companies	• Hydro One Networks Inc. (Distribution) • Elexicon Energy Inc. • Utilities Kingston

The Peterborough to Kingston Electrical Region

- The electrical area is served by several transformer stations (TS) from the 230 kilovolt (kV) and 115 kV transmission lines network.
- Area includes several local generation stations, and they play a crucial role in meeting local and provincial reliability during periods of peak demand, or transmission outages.
- The 500 kV system is part of the bulk power system and is not studied as part of regional planning.



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Communities within the Peterborough to Kingston Region

The electrical region encompasses the:

- The Cities of Belleville, Kingston, Peterborough, Quinte West, Prince Edward County, the Municipality of Clarington in the Region of Durham, and the Counties of Frontenac, Hastings, Lennox and Addington, Northumberland, and Peterborough.
- Indigenous communities that may be potentially impacted or may have an interest based on treaty territory, traditional territory or traditional land uses include:
  - Alderville First Nation,
  - Algonquins of Ontario
  - Algonquins of Pikwakanagan
  - Beausoleil First Nation
  - Chippewas of Georgina Island First Nation
  - Chippewas of Rama First Nation
  - Curve Lake First Nation
  - Hiawatha First Nation
  - Kawartha Nishnawbe First Nation
  - Mississaugas of Scugog Island First Nation
  - Mohawks of the Bay of Quinte
  - Métis Nation of Ontario

Background on Electricity Planning in Peterborough to Kingston

- Since 2013, the IESO has undertaken regional planning work to address electricity needs.
- Recommendations included energy efficiency, distributed generation, transmission refurbishments, and replacing end-of-life equipment to ensure a continued reliable supply of electricity.
- More electricity planning on the way:
  - A new Eastern Ontario Bulk Planning Study will assess the adequacy of the bulk transmission system supplying eastern regions, with key focus areas including Ottawa and Belleville, over the next 20 years. The study will also explore opportunities to enhance transmission capability to deliver new resources located in Eastern Ontario.
  - The third regional electricity planning cycle is underway, with an Integrated Regional Resource Plan (IRRP) currently being developed to outline electricity needs and recommended solutions to ensure a reliable supply of electricity over the next 20 years.

Peterborough to Kingston Regional Planning Milestones

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Components of an IRRP

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[1]
Ensure the forecast captures anticipated growth, development and additional variables shared by respondents.	As part of the regional planning process, the IESO hosted individual meetings with members of the TWG to confirm feedback received was considered when the forecasts were developed. The TWG appreciates municipalities, customers and Indigenous communities keeping their LDCs up to date on any new local developments to ensure electricity planning is aligned.
Explore both wire and non-wire options.	Various wire and non-wire options will be screened and evaluated considering the unique characteristics of the region to address its future electricity needs. The IESO will present needs and options in upcoming engagement sessions and encourages all interested parties to attend.
Engage with Indigenous communities in the region to incorporate their needs and perspectives into the planning process.	The IESO is committed to helping ensure interested parties are kept informed and are provided with opportunities for purposeful engagement to contribute to electricity planning initiatives. Throughout the IRRP process the IESO will host a series of engagements to answer questions and seek input. We encourage Indigenous communities, municipalities and interested parties to join these engagements. Interested parties are welcome to subscribe to receive updates about timing of these engagements.

[1] Webpage to view all feedback received and the IESO's responses can be found here.

Draft Electricity Demand Forecast Scenarios

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 and community plans into their forecasts, and
- Established forecasting assumptions based on customer growth plans.

In addition to LDC forecasts, 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.

Local Planning Drivers

The following drivers have been incorporated into the electricity demand forecast by your local distribution companies:


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

Forecast Scenarios

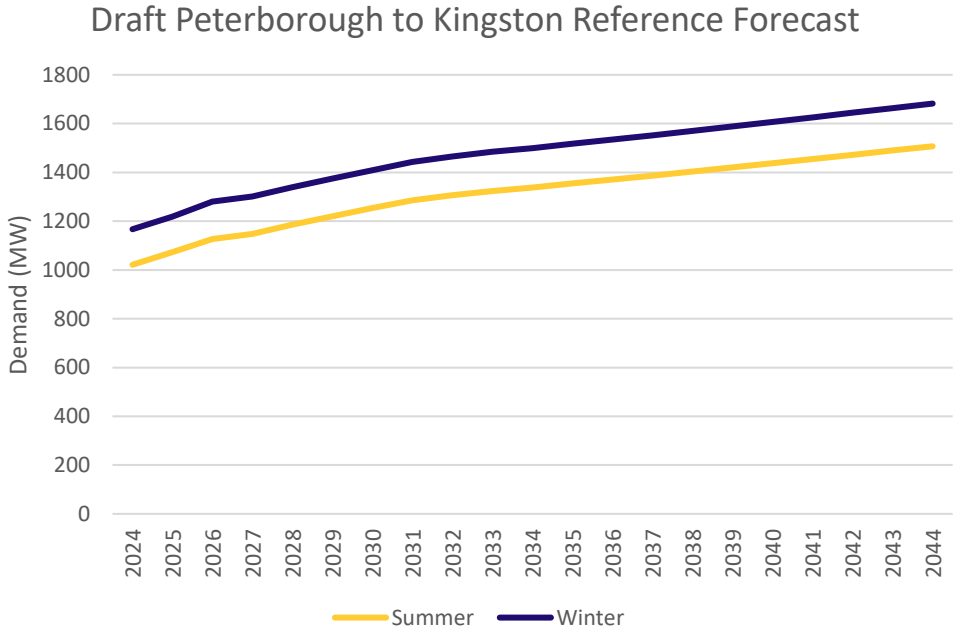
Two scenarios have been developed for Peterborough to Kingston:

- **Reference:** Committed loads (current and planned), organic growth, etc.
- **High:** incorporate potential demand growth that is less certain, in terms of timelines, magnitude, and location.

While plan recommendations will primarily be driven by the reference demand forecast, the high forecast scenario will be considered to test the robustness of the plan, identify signposts to monitor forecast changes, and contemplate additional actions required if higher demand growth materializes.

Draft Reference Demand Forecast

- Electricity demand within Peterborough to Kingston is expected to grow by 48% in summer and 44% in winter.
- The primary drivers of growth are electrification and growth across several sectors including residential, commercial and industrial.
- Local distribution companies (LDCs) have provided additional details on their load forecast methodologies, which will be published on the **IESO's engagement webpage** in advance of the webinar**.**



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Engagement & 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 Peterborough to Kingston

Follow the Peterborough to Kingston regional planning activities online

Engagement Key Areas for 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?
Identify electricity needs and screened-in Options	Q1 2026	What additional information should be considered? What community feedback can be shared regarding screened in options? What other options should be considered?
Option Analysis and Draft Recommendations to meet needs.	Q2 2026	What additional information should be considered? What community feedback can be shared regarding screened in options? What other options should be considered? What community feedback is there on the draft recommendations? What information should be considered in the recommendations?
Final IRRP	Q4 2026	

Next Steps

The IESO will continue to engage and inform throughout the IRRP's development. Participants can expect to hear from the IESO at these milestones:

October 2, 2025: feedback due regarding the Draft Forecasts shared at Public Webinar #1 on September 11, 2025.

IRRP Timelines

Q1 2026: Present needs and potential options screening in a public engagement webinar, and solicit feedback.

Q2 2026: Present options analysis and draft recommendations in a public engagement webinar and solicit feedback.

Q4 2026: IRRP report to 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 wired 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, implementation mechanisms for new resources and energy efficiency programs will be determined following plan publication.

We Want to Hear From You

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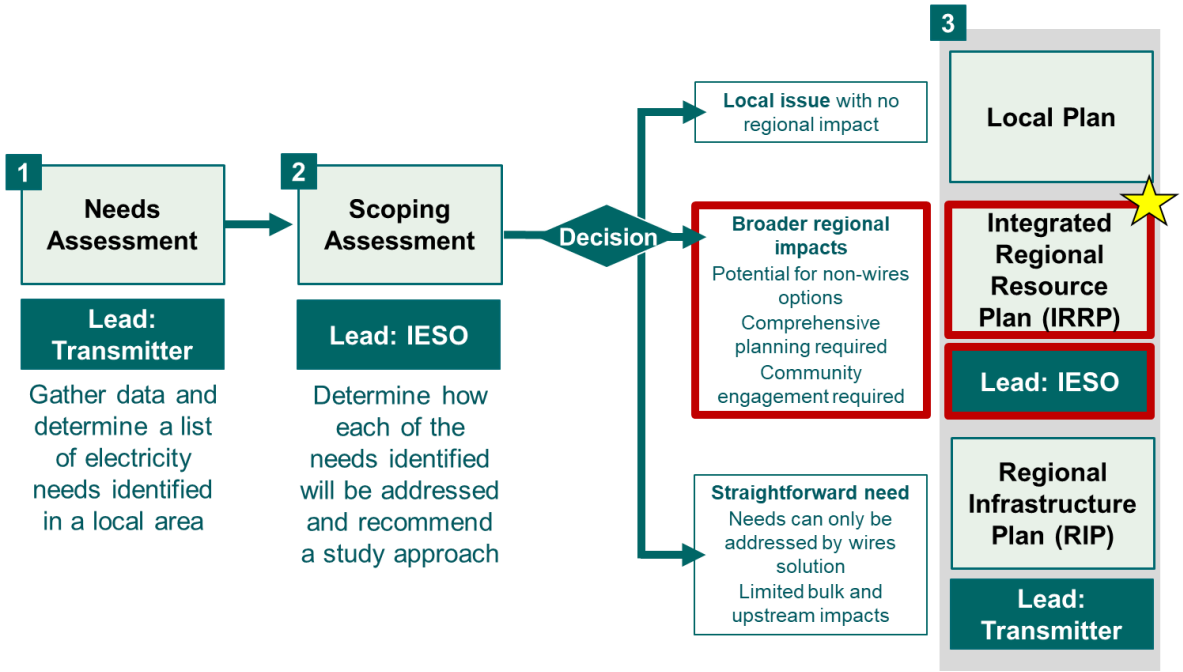
Appendix

Determining the Need for an IRRP



Needs to be Reviewed in the IRRP (1)

Need Type	#	Impacted Equipment	Time of Need – Normal Growth	Time of Need – High Growth
Station Capacity: ability of a station to deliver power from the grid down to the distribution system.	1	**Dobbin TS**	2032	2029
	2	**Gardiner TS**	Now and 2028 (after new transformer replacement)	Now
	3	**Napanee TS**	2026	2026
	4	**Picton TS**	2026	2026
	5	**Hinchinbrooke DS**	2028	2027
	6	**Sidney TS**	-	2031
	7	**Otonabee TS**	-	2026
	8	**Frontenac TS**	2027	2026

Needs to be Reviewed in the IRRP (2)

Need Type	#	Impacted Equipment	Description
Supply Capacity: ability of the system to supply power through the transmission lines to a local area.	9	**B1S (Q6S Out)**	Thermal overload occurs after the loss of Q6S with high local hydro generation
	10	**P4S**	Will be reviewed during IRRP
	11	**Belleville TS**	An under-voltage issue identified and is currently being studied as part of Eastern Ontario Bulk Study.
	12	**Cataraqui TS**	Review station/supply capacity
	13	**Peterborough to Quinte West (P15C/Q6S)**	In progress, new corridor is being built from Dobbin to Clarington

Needs to be Reviewed in the IRRP (3)

14. In the second regional planning cycle, there was a long-term need identified for the circuit B5QK (in the year 2038). As recommended in the second cycle IRRP, IESO will re-evaluate this capacity need in next phases of current Regional Planning cycle, when 20-year load forecast will be developed. Given the potential of a large transmission connected customer in Central Kingston, the supply capacity of both Q3K and B5QK will be reviewed.

15. The IESO will review in the upcoming IRRP regarding the 230kV circuits X2H and X4H that serve Gardiner TS DESN1 & DESN2. If the area experiences higher load growth and a large transmission customer connection, there will be a potential supply capacity need.

- For more details, please refer to the draft Scoping Assessment Outcome Report or Hydro One's Needs Assessment Report which can be found on the Peterborough to Kingston engagement webpage.

Needs to be Reviewed in the IRRP (4)

Need Type	#	Impacted Equipment	Estimated Year of Need	Considerations
End-of-life asset replacement needs: station or transmission equipment has reached end of life.	17	**Cataraqui TS**	2034	T1/T2 replacement

Indigenous Energy Support Program (IESP)

Funding for Community-Led Energy Capacity-Building Projects

Learn more at ieso.ca/IESP or contact the IESO's Indigenous Engagement team at iesp@ieso.ca

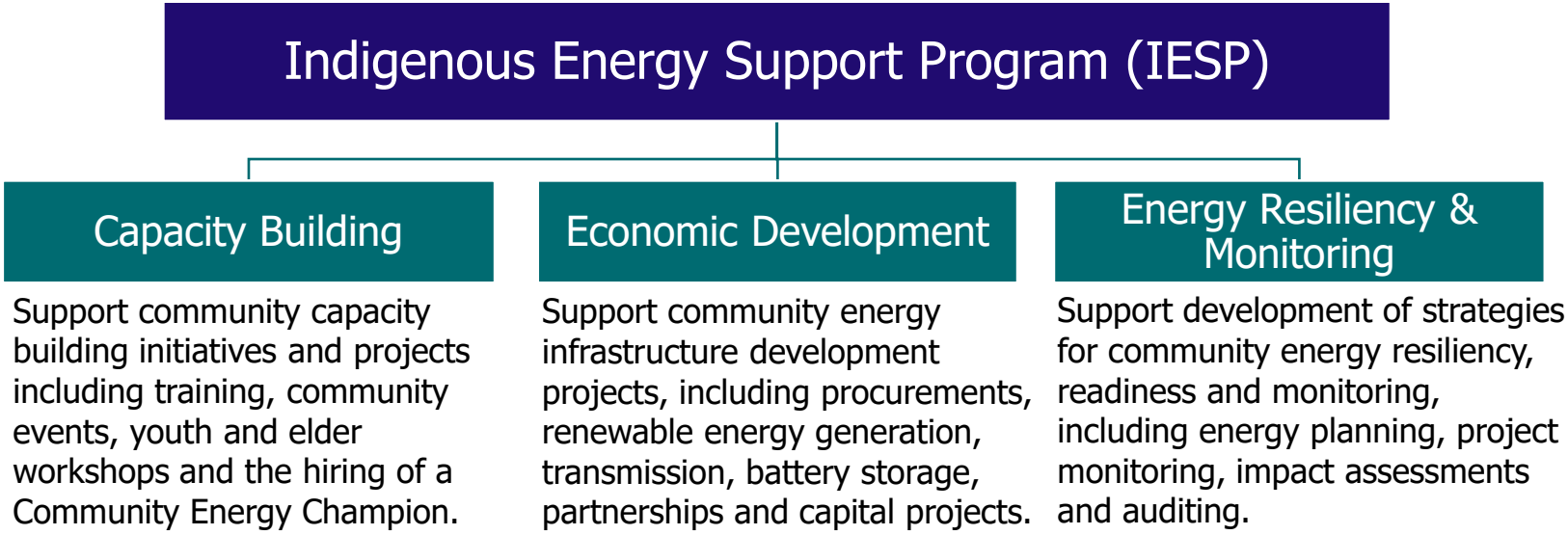
Indigenous Energy Support Program (IESP) Overview

The Indigenous Energy Support Program (IESP) promotes broad equitable participation in Ontario's energy sector by supporting community capacity building. Funding is available to eligible Indigenous communities and organizations across Ontario for:

- Community energy planning
- Energy skills-building, education and awareness
- Hiring of a Community Energy Champion (CEC)
- Energy infrastructure development

IESP Areas of Funding

The IESP provides support through three Areas of Funding (AOF).



IESP Maximum Funding Amounts

Area of Funding	Capacity Building	Economic Development	Energy Resiliency & Monitoring
Maximum Funding Amount	**Part A**: Up to $195,000	Up to $250,000	Up to $135,000
	Part B: Up to $150,000	Up to $500,000* (Remote Projects Development)	

Funding support for eligible expenses associated with supporting diesel reduction initiatives in **Identified Remote First Nations Communities**

IESP Project Types

Capacity Building (Part A) Up to $195,000	Capacity Building (Part B) Up to $150,000	Economic Development Up to $250,000*	Energy Resiliency & Monitoring Up to $135,000
CEC Salary Up to $165,000 for 3 years	**Community Energy Engagement** Up to $75,000	**Feasibility Study** Up to $50,000	**New Community Energy Plan** Up to $135,000
Additional Qualification Top Up (if applicable) Up to $15,000 for 3 years	**Energy Skills Building** Up to $75,000	**Partnerships** Up to $85,000	**Update Community Energy Plan** Up to $75,000
CEC Expenses Up to $15,000 for 3 years	**Innovative Knowledge & Data Sharing** Up to $60,000	**Project Development** Up to $250,000	
		Innovation Up to $250,000	
		Remote Projects Development Up to $500,000	

Except for an additional $500,000 available to **Identified Remote First Nations Communities under "Remote Projects Development" within the Economic Development Area of Funding*