

Regional Electricity Planning – Toronto

Engagement Plan

Background

This Engagement Plan outlines the background, objectives and proposed timelines to engage with communities and other interested parties in the development of an electricity plan –Integrated Regional Resource Plan (IRRP) – for the Toronto region.

Examples of the input the IESO is seeking to inform the IRRP include:

- Information to inform the electricity demand forecast and needs of the area including details about projected growth, economic development, and planned energy projects and initiatives
- Local options that might address needs identified within the planning period – over the near term (up to five years) to medium term (up to 10 years)
- Opportunities to align future goals within community energy plans, community-based energy solutions, and other economic development plans for consideration in the medium to long term (up to 20 years)

All interested parties are invited and encouraged to participate in this engagement initiative. Interested parties may include, but are not limited to, local municipalities, Indigenous and Métis communities, businesses, stakeholders and members of the general public.

This engagement plan may be subject to review and update as the process evolves.

ABOUT REGIONAL ELECTRICITY PLANNING

Regional electricity system planning is about identifying and meeting local electricity needs to ensure the reliability of electricity supply in each of the 21 electricity regions across the province. Planning for each region involves the creation of a 20-year outlook, considering the region's unique needs and characteristics, conservation initiatives and opportunities, local generation, transmission and distribution, and innovative resources. Regional planning is, however, only one part of system planning, which includes bulk and distribution system planning that also has the goal of maintaining a reliable and cost-effective electricity supply.

Each of these regions goes through a formal planning process at least once every five years, though at different times. The process unfolds differently each time depending on the region's unique needs and concerns.

More information about the regional electricity planning process can be found in the Appendix.

REGIONAL ELECTRICITY PLANNING IN TORONTO

The Toronto electricity planning region, shown in the Figure 1, includes the area within the municipal boundary of the City of Toronto. A small number of distribution feeders from Toronto also supply customers in the City of Mississauga and City of Pickering. The region also includes a number of Indigenous communities. Toronto is home to Indigenous peoples from across Canada. Located near Toronto are the Mississaugas of the Credit, Six Nations of the Grand River, the Haudenosaunee Confederacy Chiefs Council (HCCC), Mississaugas of Scugog Island First Nation, Alderville First Nation, Beausoleil First Nation, Chippewas of Georgina Island First Nation, Curve Lake First Nation, Hiawatha First Nation, MNO Toronto and the York Region Métis Council. The Huron Wendat of Wendake, Quebec have archaeological resources in southern Ontario, including the Toronto area, due to their historical presence there.

The region is supplied by a network of 230 kV lines that run along the northern and western edges of the city, and into the core from the east, providing supply points for step-down stations that supply these areas. The central core of the City of Toronto is supplied by a 115 kV network that connects to the 230 kV system through two 230/115 kV autotransformer stations (Leaside Transformer Station (TS) and Manby TS).

In addition to the transmission infrastructure described above, the Portlands Energy Centre (550-megawatt (MW) summer capacity) is a natural gas-fired combined cycle power plant that provides a major source of supply to Toronto. This station is located near the Eastern waterfront and is connected to the Hearn Switching Station (SS) shown in Figure 1.

Numerous distributed energy resource (DER) facilities are located throughout the city. For example, through previous procurements such as the Feed-in Tariff program, Renewable Energy Standard Offer Program, and Combined Heat and Power (CHP) Standard Offer Program, approximately 1,900 individual renewable and CHP facilities have been placed in service in the City of Toronto. As of 2022, the total combined electrical supply capacity of these DERs is 305 MW.

This region, shown in Figure 1 below, is served by Toronto Hydro as the local distribution company (LDC). The lead transmitter of the region is Hydro One. The IESO, Toronto Hydro, and Hydro One form part of the Technical Working Group (TWG) tasked with developing the IRRP.

Figure 1. Electricity Infrastructure in the Toronto Region



The current regional planning cycle began with the [Needs Assessment](#) report published by Hydro One in December 2022, which identified areas that require further review and assessment and may need to be coordinated with broader regional planning.

Following the Needs Assessment, the IESO engaged on and led the development of the [Scoping Assessment Outcome Report](#) that was published in March 2023. The report determined that a comprehensive and integrated approach is needed to address local identified needs. The TWG led by the IESO will develop this IRRP by taking into consideration input from communities and stakeholders.

The IRRP will include recommendations to maintain reliability of supply to the region over the next 20 years (2023-2042). To develop the IRRP, the TWG will work to gather data, identify needs and issues, examine integrated options, recommend actions, and develop an implementation plan.

The goal of the IRRP is to illustrate the integration of forecast electricity demand growth, conservation and demand management (CDM) with transmission and distribution system capability, relevant community plans, other bulk system developments, and the potential of distributed energy resources (DERs). Both non-wires and wires solutions will be examined, and communities and stakeholders will be engaged on the options.

The previous cycle of regional planning for the Toronto region was carried out during 2018-2019. An IRRP was released that identified new electricity system needs, particularly transmission asset renewal needs, and preparing to address local and regional capacity needs emerging in the longer term. Further, in 2021, the IESO undertook an updated analysis for the Richview to Manby Upgrade project (now known as the “Etobicoke Greenway Project”). This analysis reaffirmed the findings in the 2019 IRRP and 2020 RIP and recommended the project go ahead. Further details about previous cycle recommendations are summarized in the [2023 Toronto Scoping Assessment Outcome Report \(Section 3.2\)](#), which includes a combination of wires and non-wire recommendations.

More details can be found on the Toronto regional planning [webpage](#).

Toronto Integrated Regional Resource Plan

The TWG is responsible for gathering data and assessing the adequacy and security of the electricity supply to the region, and, through this engagement, recommending an integrated set of actions to meet the needs of the region.

Their work is intended to focus on, but is not limited to the following areas, as outlined in the 2023 Toronto Scoping Assessment Outcome Report (Section 3.3):

- Station capacity needs
- Line/system capacity needs
- Load restoration needs
- Asset renewal needs

Through the IRRP process additional needs may be identified or the ones identified may be revised.

ENGAGEMENT OBJECTIVES AND SCOPE

The objective of this engagement plan is to ensure that interested communities and stakeholders understand the scope of the IRRP and are able to provide input into the development of the document.

The IESO is seeking input to ensure the IRRP:

- Aligns with community perspectives on local needs
- Incorporates options to meet the growing electricity demand in the Toronto region taking into consideration local energy priorities
- Ensures a reliable source of electricity in the region over the next 20 years.

As a general principle in engagement, the IESO strives to make useful information available throughout the development of an IRRP to enable meaningful feedback to the process and decisions

to be made. Through the planned initiatives to engage communities and stakeholders, the IESO will seek input on:

- Local and regional growth and economic development
- Plans and projects that may have an impact on local growth rates and electricity demand (e.g. community development, regional transit expansion, electrification, large incremental loads connecting to the system, significant DER projects, etc.)
- Options for addressing local electricity needs, including non-wires alternatives (e.g., CDM and DERs) and local support and interest for developing those options in the near- (five year), medium- (10 year) and long-term (20 year)
- Information from municipal plans including the implementation of those projects that could impact electricity use, specifically from community energy plans, energy reporting/CDM plans, official plans and secondary plans

Topics out of scope for discussion include:

- Projects and plans already underway as part of the previous planning cycle
- Community energy plans
- Policy-level decisions or direction
- Provincial procurements
- Existing program rules
- Local connection requirements of any individual projects unless there is an opportunity to align with broader regional needs

INTERESTED PARTIES

Input into the development of the IRRP is encouraged and welcomed from any community members or interested stakeholders, however, those that may be particularly interested include:

- Municipalities (e.g., elected officials and staff in planning, sustainability, climate change and economic development)
- Indigenous and Métis communities
- Consumer groups and associations (e.g., community/resident associations, business improvement areas, home builders' associations, etc.)
- Economic development agencies, local boards of trade and/or chambers of commerce
- Academia and research organizations (e.g., colleges and universities)
- Environmental groups and associations
- Other public sector organizations (e.g., hospitals and school boards)
- Energy service providers
- Generators
- Businesses and other private entities

The IESO will also conduct targeted outreach to specific stakeholders and communities where unique local needs and issues need further investigation. The content and outcome of these discussions will be shared through the other activities that will be undertaken as part of this engagement initiative.

APPROACH AND METHODS FOR DEVELOPING THE IRRP

Any engagement with communities and interested stakeholders will be conducted in accordance with the IESO's [Engagement Principles](#).

This is a public engagement process. A [dedicated engagement webpage](#) will house all of the information for the IRRP while the plan is in development. Engagement sessions will be held throughout the engagement initiative to keep all interested parties informed and provide opportunities to provide input into IRRP development. Typically, engagement sessions are carried out at three major junctures during IRRP development:

- First engagement on the draft engagement plan and the regional load forecast
- Second engagement on the defined needs and potential options; and
- Third engagement on the options evaluation and draft recommendations.

Based on planning and engagement results and progress, the engagement may include additional engagement sessions.

A feedback form will be provided for interested parties to provide their input typically over a three-week period for consideration in the planning process. Written feedback will be posted (with consent) along with IESO responses on the engagement webpage.

In addition to public engagement sessions, one-on-one discussions with key communities and stakeholders, as identified, may take place to help progress through each stage of the IRRP.

Following completion of an IRRP, the full report, including all accompanying appendices and associated datasets, will be archived on the IESO's Toronto regional planning webpage. A high-level schedule of these items is provided below, and it should be noted that these activities and timing may evolve as the IRRP work progresses:

PROPOSED ENGAGEMENT SCHEDULE

Date	Event/Objective	Expected Actions/Notes
April 2023 to February 2024	One-on-one discussions with key communities and stakeholders, as identified	• Seek input on needs and development to inform demand forecasts • Consider input to inform next engagement phase
March 2024	IRRP engagement launches	• Register to attend public webinar #1
April 2024	Public Webinar #1: • Summary of input from targeted discussions • Provide update on planning activities underway • Summarize preliminary regional demand forecasts, draft engagement plan	• Seek input to inform electricity demand forecast • Seek input on draft engagement plan • Post feedback and IESO response to feedback, including rationale
May 2024	Feedback due for Public Webinar #1	• Feedback posted

Date	Event/Objective	Expected Actions/Notes
April 2023 to February 2024	One-on-one discussions with key communities and stakeholders, as identified	• Seek input on needs and development to inform demand forecasts • Consider input to inform next engagement phase
2024	One-on-one discussions with key communities and stakeholders, as identified	• Seek input on local priorities, preferences and development to inform potential needs and solutions • Consider input to inform next engagement phase
2024	Public Webinar #2: • Summary of input from targeted discussions • Overview of defined needs and range of potential options/solutions to be examined	• Seek input on options and potential solutions to be examined • Post feedback and IESO response to feedback, including rationale
2024	One-on-one discussions with key communities and stakeholders, as identified	• Seek input on local priorities, preferences and development to inform recommendations • Consider input to inform next engagement phase
2024	Public Webinar #3: • Summary of input from targeted discussions • Overview of options analysis and draft IRRP recommendations • Discuss considerations for communities and interested parties to consider in the medium- to long-term planning	• Seek input on proposed recommendations • Post feedback and IESO response to feedback, including rationale
March 2025	• Finalize IRRP	• Post final report online • Engagement will close but the webpage will remain live for one year • Conduct survey on engagement process

Toronto IRRP Engagement Appendices

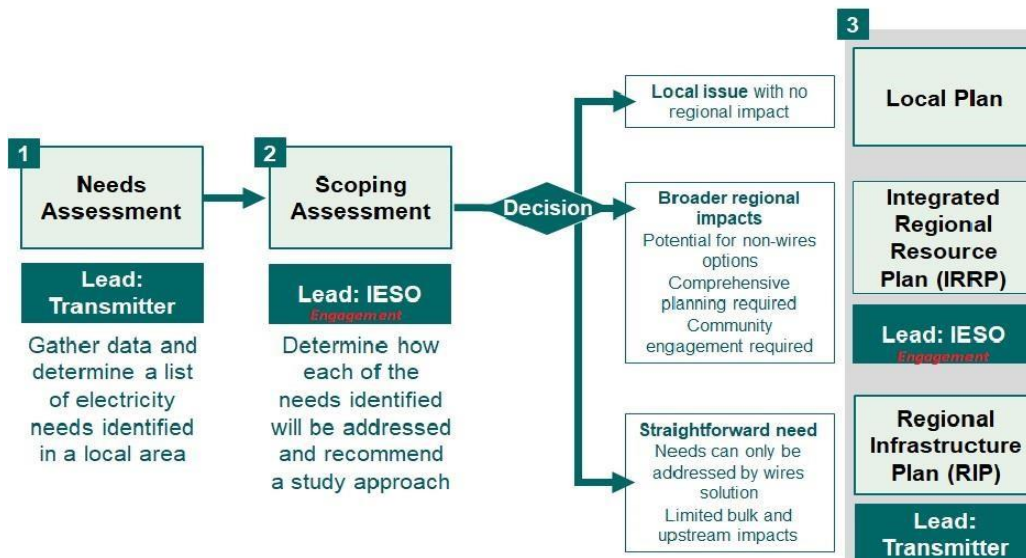
Appendix

Regional Planning Process

Regional planning is ongoing, with electricity reliability evaluated at least once every five years in each region. Community engagement is a critical part of the planning process and the IESO encourages all interested parties to join this discussion to:

- Learn more about the regional planning process and local electricity needs
- Provide input into shaping a community's electricity future by discussing options for meeting local needs, including applicable non-wires alternatives, and discussing the local community's support for development of these options
- Share perspectives for future growth in the area, and how to work together to shape the area's future electricity supply
- Determine opportunities for coordinating and aligning local planning activities and initiatives with the regional planning process

The following diagram illustrates the steps, parties and outcomes of the regional planning process.



For more information, visit the Regional Planning Process webpage at:

<https://www.ieso.ca/en/Get-Involved/Regional-Planning/About-Regional-Planning/How-the-Process-Works>

Regional Planning Information and Data Availability

Table 1 describes the categories of regional planning information and data and the opportunity for input and timing in which it is typically made available during an IRRP.

Table 1 | Summary of Regional Planning Information

Data	Description of Data	Opportunity for Input	Details Regarding Input/Availability
Regional Planning Dashboard	Provides comprehensive overview and status update of the various regional planning activities across Ontario, including the planned engagements for the next two quarters	No	Updated biannually and available for download on the IESO website: Regional Planning (ieso.ca)
Engagement Plan	Describes number of engagements and topics to be discussed at each engagement	Yes	Draft engagement plan posted prior to first IRRP engagement; the final engagement plan is published following a comment period
Planning Assessment Criteria	Technical requirements and performance criteria used to determine needs, including load supply, load security, load restoration etc.	No	Referenced in the IRRP report; and available in the IESO's Market Rules & Manuals Library: Market Rules & Manuals Library (ieso.ca)
Load Forecast (PDF)	LDC's methodologies for forecast development; and methodologies for considering the contribution of energy efficiency savings and embedded generation resources	Yes	High-level summary provided at first IRRP engagement to solicit input on load forecast; detailed methodologies are published with the IRRP report
Load Forecast (Spreadsheet)	Forecast annual station peak electricity demand (in megawatts), power factor	Yes	Overview of preliminary forecast is delivered with first IRRP engagement;

Data	Description of Data	Opportunity for Input	Details Regarding Input/Availability
	assumptions; information is subject to redaction and/or aggregation to protect against identifying specific customer electricity usage		draft data published following engagement comment period; final dataset published with IRRP report
Load Forecast – Energy Efficiency (Spreadsheet)	Forecast of annual peak demand reductions from energy efficiency (in megawatts), at a level of granularity consistent with the forecast annual station peak electricity demand	No	Provided with the forecast annual station peak electricity demand (draft data after the first engagement, and final data with IRRP report)
Load Forecast – Embedded Generation (Spreadsheet)	Forecast of annual peak demand reductions from embedded generation resources (contracted embedded generation, in megawatts), at a level of granularity consistent with the forecast annual station peak electricity demand	No	Provided with the forecast annual station peak electricity demand (draft data after the first engagement and final data with IRRP report)
Historical Demand	Historic electricity demand data (in megawatts), may be summer, winter, or both depending on peak load characteristics of the region, and may include select years and/or focus on select stations/areas; information is subject to redaction and/or aggregation to protect against identifying specific customer electricity usage	Yes	Data posted prior to first IRRP webinar to solicit input on load forecast; published with the IRRP report
Transmission end-of-life (EOL) Information	Asset age data for major transmission facilities owned by Hydro One; a ten-year outlook of other transmission asset owner EOL information	No	Hydro One data is updated every five years and is available to interested stakeholders via the IESO website; a consolidated list

Data	Description of Data	Opportunity for Input	Details Regarding Input/Availability
	to be provided as part of the Needs Assessment at the outset of each regional planning cycle		of EOL information for all transmission asset owners will be updated annually
Transmission System Assumptions	Includes transmission facilities assumed in the IRRP analysis such as new facilities and expected in-service dates, transmission infrastructure ratings (e.g., line conductor, transformer ratings, etc.), seasonality, etc.; some information may be redacted to mitigate potential system security risks	No	Facilities in scope of the IRRP and expected in-service dates are published in the Scoping Assessment Outcomes Report that precedes the IRRP, with additional detail published in the IRRP report
Resource Assumptions	May include operational assumptions such as hydroelectric output, capacity factor assumptions, power factor assumed in the analysis, etc. Operational performance of individual facilities may be deemed commercial sensitive	No	General and/or aggregate assumptions by resource type are published with the IRRP report
Planning Scenarios	Planning contingencies studied in the analysis; some contingencies and extreme events are subject to redaction to mitigate potential system security risks	No	Summary published with the IRRP report
System Needs	Summary of needs identified, timing and location of needs, including any applicable capacity requirements, EOL considerations, load	No	Presented in materials provided in advance of the second IRRP engagement about the needs identified in the region; and

Data	Description of Data	Opportunity for Input	Details Regarding Input/Availability
	restoration and supply security needs, etc.		published with the IRRP report
Non-Wires Options Evaluation (PDF)	Energy efficiency potential for areas with system needs, if applicable as a feasible option (annual and/or cumulative potential, in kilowatts and/or megawatts); sources of energy efficiency information and data	Yes	Preliminary information discussed at the third engagement with opportunity for stakeholders to provide feedback; and published with the IRRP report
Non-Wires Options Evaluation (Spreadsheet and/or PDF)	Detailed characterization of system needs, i.e., load and energy not served, for areas with system needs where non-wires options are feasible (for select years within the study period, in megawatts); information is subject to redaction and/or aggregation to protect against identifying specific customer electricity usage	Yes	Summary provided with engagement materials prior to the third engagement, where options are presented and discussed; draft data provided following comment period; and final data published with the IRRP report
Economic Assessment Assumptions	Cost of each alternative considered, expressed in terms of Net Present Value; and including assumptions such as the following: Year which cash flows are expressed Discount and inflation rates (in percent) Life expectancy of the options considered (in years) Exchange rates Identification of the least cost resource for a region	Yes	Preliminary information provided and discussed at the third IRRP engagement on solution options, with an opportunity to provide feedback; and final assumptions are published with the IRRP report