

IESO Resource Adequacy Update – August 23, 2022

A status report on meeting Ontario's future supply needs

Overview

The IESO is on track in the implementation of a comprehensive plan to acquire the electricity supply needed to meet provincial demand that is growing at a pace of almost two per cent a year. After years of stable supply, the IESO has moved forward with a series of procurements to secure more than 5,000 MW of capacity.

Ontario's electricity system is undergoing a significant transformation, as strong economic development and electrification of transportation are driving up demand and increasing regional needs. At the same time, upcoming retirements and refurbishments in nuclear supply, along with many expiring generation contracts, are contributing to growing electricity requirements emerging later this decade and continuing into the 2030s.

After issuing a request for qualifications from potential developers for long-term supply projects, the IESO has qualified 55 applicants. Collectively, these applicants demonstrate a broad international interest in investing in Ontario's energy sector and reinforces the value of competitive procurements to meet the province's reliability needs cost-effectively. Qualified applicants include a significant number of potential energy storage projects, a resource that will be critical to long-term decarbonization goals.

A separate competitive procurement for existing generators has also concluded, and the IESO has offered new five-year commitments that secure these critical resources at a lower cost than their previous contracts, reducing the impact on ratepayers. In addition, the IESO has also extended contracts with biomass facilities and is developing a program for existing small hydro facilities.

The third annual capacity auction will take place this December, seeking a minimum of 1,200 MW next summer and 750 MW for the subsequent winter period. The auction has proven to be a critical tool for acquiring a diverse range of supply cost-effectively, including large consumers providing demand response, energy storage, and generation.

In addition, energy efficiency continues to play a critical role in ensuring the reliability and sustainability of our grid. As a result of energy-efficiency efforts over the last 15 years, provincial

demand was 12 per cent lower in 2021 than it otherwise would have been. The IESO is currently exploring new and enhanced programs to further reduce growth in energy demand.

The Ontario Minister of Energy has [asked](#) the IESO to submit a report to inform the eligibility of emitting resources in the upcoming procurements while considering the need to preserve a reliable, affordable and sustainable electricity system.

Background

The following outlines the work underway to ensure system reliability in the coming decade.

Annual Capacity Auction

The IESO annual capacity auction is a highly flexible way for the IESO to respond quickly and transparently to meet electricity system needs as they change in the short-term. It allows a variety of resources to compete to provide capacity for the system over six-month periods.

The 2021 auction secured 1,286.7 MW for the 2022 summer period from May 1 to October 31, and 841.9 MW for the winter of 2022-2023, from November 1 to April 30. Successful participants included electricity generators, industrial and commercial consumers providing demand response, electricity imports from outside of Ontario, and energy storage.

The next auction, to be held in December 2022, will aim to acquire a minimum of 1,200 MW for the 2023 summer period and 750 MW for the 2022-23 winter. It will also increase competition and cost effectiveness by allowing more imports to participate.

The annual auction will continue to be relied upon to help meet Ontario's electricity needs over the next few years, with both summer and winter target capacities expected to grow. The IESO is also exploring adding three independent annual capacity auctions, to be run consecutively in 2023, for three separate one-year commitments covering the 2025 – 2028 time period.

Medium-Term RFP

The IESO has just concluded the first in a series of medium-term RFPs, acquiring new five-year commitments from existing resources that are currently off-contract or coming off contract. The continued use of existing facilities is a cost-effective way to help address immediate electricity supply needs, as well as ensuring these facilities continue to support reliability in Ontario.

This year's medium-term RFP has offered contracts to six wind, storage and natural gas facilities. Together these facilities contribute more than 700 MW of capacity to the system, ensuring ongoing value from previous investments in supply. This supply will be available between 2024 – 2026, at a lower cost than previous contracts. This procurement will complement other supply acquisition activities to meet reliability targets over the same timeframe.

More detail about the successful proponents in the MT I RFP can be found [here](#).

Long-Term Procurements

The IESO's long-term RFPs are being designed to provide development time for building new resources or facilitating major upgrades to existing ones. The first Long-Term RFP intends to acquire

new capacity from resources that can be in service no later than 2027, and is being developed alongside an Expedited Process for those who can have new resources available as early as 2025. Together the procurements are targeting approximately 3,500 MW of capacity through long-term contracts.

The IESO has qualified 55 applicants who will be eligible to participate in the Long-Term RFP and Expedited Process. Applicants seeking to participate in the Expedited Process have proposed a wide array of projects, including a significant amount of energy storage solutions, in addition to hybrid generation/storage options, natural gas and biofuels. Ahead of proposal submission the IESO will assess these projects to ensure that they are able to deliver electricity to where it is needed and effectively contribute to Ontario's emerging system needs.

Given current supply chain challenges with batteries and other materials, securing a diversity of supply types will help minimize the risks that could affect the ability of some projects to be completed on time.

Draft RFP documents will be posted shortly and contracts for the Expedited Process will be offered in early 2023. The IESO is also investigating a targeted, competitive process for upgrades to existing facilities already under contract, to provide additional capacity to the grid in 2025. A call for project proposals will be issued later this year.

A second Long-Term RFP is targeted for launch in 2023 to address further system needs emerging in the early 2030s. It is anticipated that this second procurement will address broader system needs and allow a wider array of supply options to compete, including variable resources and additional storage technologies.

More details about the qualified applicants to participate in the Long-Term RFP can be found [here](#).

Energy Efficiency

Energy efficiency is a highly cost-effective option for reducing system demand, particularly as an alternative to building new resources or transmission. In response to a request from the Minister of Energy, the IESO is proposing a near-term expansion of current conservation and demand management programs. These new or enhanced programs would offer incentives for both residential and business consumers and would target provincial and regional system needs, particularly in the mid-decade.

The IESO also continues to build on its suite of Save on Energy programs. It is currently undertaking a Mid-Term Review of the current 2021-2024 CDM Framework to consider opportunities for changes to current and planned conservation programs, based on performance as well as system and consumer needs. In addition, given the ongoing success of its Grid Innovation Fund, the IESO is exploring innovative approaches for consumers to conserve and manage energy use.

Small Hydro

A new potential program to allow for the continued availability of existing small hydroelectric facilities is currently in development. The program design is focused on providing a reasonable revenue stream for facilities to continue operations, and highlights and enhances, where possible, the value

that hydroelectric resources bring to the electricity system. It is also intended to incent resources to align and evolve their operations to be responsive to system needs and markets as they evolve.

Biomass Facilities

To address the needs of the forestry sector in northern Ontario and support a longer-term transition to alternative uses for waste biomass, the IESO is continuing to explore possible options for signing new contracts for Chapleau, Thunder Bay Resolute, Hornepayne, and Atikokan biomass plants. Procuring resources for short-term contracts helps to ensure cost-effective system reliability while balancing the need of investment certainty for generators and forestry companies.

Other initiatives

The IESO is also securing resources, often at the regional level, that cannot be addressed in a practical and timely way through competitive processes. Initiatives in place or underway include:

- A new five-year contract for the Calstock Generating Station to support a longer-term transitional plan for the forestry sector.
- A new contract for the Lennox Generating Station that will run until May 1, 2029, ensuring this critical resource for maintaining grid reliability continues to be available.
- Contract renewal negotiations with Brighton Beach GS near Windsor with an anticipated extension to 2029.

The IESO's approach to procurement provides different contract lengths and in-service dates, ensuring that needs will be met over the long term while also giving different options for project developers to pursue. Additional procurements will continue to be run in the years ahead, allowing the IESO to incorporate enhancements and adapt to changing system needs as required.

Next Steps

Looking toward the next stage, community input and involvement are essential to the process of supporting and building new resources. The IESO has been and will continue to engage throughout 2022 with municipalities, Indigenous communities, and industry stakeholders as it works to create a broader understanding of the needs and options available to meet those needs. Municipal support will also be required for a project to move forward.

The IESO's work also includes actively studying how to reduce reliance on natural gas generation over the longer-term and transition to a decarbonized electricity system. While Ontario has one of the cleanest electricity systems in the world, continued natural gas generation will be required in the near term to meet overall reliability needs, particularly during periods of peak demand.

The upcoming Pathways to Decarbonization study is exploring possible scenarios to achieve reliable and affordable decarbonization of Ontario's electricity grid. It is examining the potential for increasing Ontario's non-emitting resources over the years to come, and detailing how options such as wind, solar, storage and energy efficiency could contribute to a system that will support growing economic development and electrification.