

York Region NWA Demo Project – Auction Results Background

Introduction

Distributed energy resources – which include small-scale energy storage, gas generation, combined heat and power facilities, demand response and renewables such as wind and solar – are changing the energy landscape around the world.

By disrupting the status quo, they are also upending established approaches to managing power systems and creating new revenue opportunities for their owners. They have the potential to yield cost-effective alternatives to meet local and regional needs, allow for the more effective use of traditional electricity infrastructure, provide choice and control to customers, and enhance energy resilience.

As part of this transition, many consumers – and communities – are becoming more involved in energy matters. Instead of relying on traditional grid-supplied electricity, many are taking a more active role in energy planning and management. For example, many large industrial customers now have the ability to reduce their demand for electricity by switching to on-site generation, installing an energy storage system and/or altering their production processes and schedules. Similarly, clusters of residential customers with controllable devices such as smart thermostats may be aggregated together to reduce consumption when the grid is strained or prices are high.

A key objective of the IESO York Region Non-Wires Alternatives Demonstration Project is to better understand the potential of using these resources in place of traditional wires-based infrastructure by enabling them to operate in real-world applications. The demonstration will leverage both existing and new energy resources in York Region, where electricity demand is growing rapidly and is expected to exceed system capability over the next 10 years. It is intended to help the local distribution company, Alectra Utilities, manage the electrical impacts of population growth, including peak demand on hot summer days when air conditioning load is at its highest.

Development of the project is being informed by two [IESO-led white papers](#), one of which describes how [transmission and distribution systems will need to function and interact](#) with each other. The second paper considers different [market-based approaches for procuring these resources](#), explores how the resources can operate to meet local needs and wholesale market needs, and outlines the coordination required to ensure they can do both without adversely impacting reliability.

In addition to providing a new source of revenue for participating resources, this project will also advance industry understanding of how distributed energy resources may contribute to grid planning,

operations and market evolution as well as the coordination required between the IESO and local distribution companies.

Project Overview

This two-year demonstration project will enable the partners to explore market-based approaches to secure services from distributed energy resources to meet local energy needs, while coordinating across the electricity system. It is focused on the fast-growing southern part of York Region, including Markham, Richmond Hill and Vaughan, where some of the electrical infrastructure will reach its limits in the coming years.

For the purposes of this demonstration, eligible resources include demand response, battery storage and gas-fired generation. Participants can take part in the project directly or through an aggregator, and will be compensated for their efforts.

These resources will provide both capacity and energy through separate competitive mechanisms. Capacity auctions are held in the fall of 2020 and 2021, for delivery in the summer of 2021 and 2022 respectively. Through the two capacity auctions, generators commit to being available to produce electricity for the five-month summer commitment period, while consumers commit to being available to reduce their usage during the same period. The two real-time energy markets will determine the final hourly schedules for participating resources, which will be dispatched by Alectra.

The first auction procured 10 megawatts (MW) of capacity and was highly competitive with 34 MW of capacity registered to participate. The final clearing price, which will be paid to all successful auction participants, was \$0.64/kilowatt-day. This translates to \$80,000/MW for the May 1 to October 31, 2021 period when the demonstration will run, during which participants will have the opportunity to earn additional revenue through a daily local energy auction.

A second auction, with a target of 15 MW of capacity, will take place in the fall of 2021 for delivery in the summer of 2022.

Learnings from the project are expected to inform a broad range of policy and regulatory initiatives currently underway in Ontario.

Project Partners

Project Sponsor: The Independent Electricity System Operator (IESO) operates Ontario's power grid 24 hours a day, 365 days a year, ensuring Ontarians receive a reliable and cost-effective source of power when and where they need it. It works with sector partners and engages with communities across Ontario to plan and prepare for the province's electricity needs now and into the future. Visit www.ieso.ca for more information.

Delivery Partner: Serving more than one million homes and businesses in Ontario's Greater Golden Horseshoe area, Alectra Utilities is now the largest municipally owned electric utility in Canada, based on the total number of customers served. The Alectra family of companies contribute to the economic growth and vibrancy of the 17 communities it serves by investing in essential energy infrastructure, delivering a safe and reliable supply of electricity, and providing innovative energy solutions.

Funding Partner: Natural Resources Canada (NRCan) develops policies and programs that enhance the contribution of the natural resources sector to the economy, improve the quality of life for all Canadians and conduct innovative science in facilities across Canada to generate ideas and transfer technologies.

Key Dates

Summer Commitment Period	May 1 – October 31, 2021
Mid-point review	Q3 – Q4 2021
Local Capacity Auction	Q4 2021
Summer Commitment Period	May 1 – October 31, 2022
Final Review and Lessons Learned	Q4 2022