

Benefit Stacking Transmission and Distribution System Non-Wires Alternatives Pilot Project

Grid Innovation Fund Project Details

Lead Proponent: Toronto Hydro

Partners: Power Advisory LLC, Ryerson CUE

Strategic Area(s):	Enabling Non-Wires Alternatives, Wholesale Market Integration, Transmission-Distribution Coordination
Project Total Cost:	\$3,960,000
Year Contracted:	2021
Location:	Greater Toronto Area
Economic Development:	3 jobs

Project Objectives

Toronto Hydro is demonstrating how a distribution utility can coordinate with the IESO to dispatch Local Demand Response resources to meet targeted distribution system needs and simulated bulk-system needs, with the goal of driving down ratepayer costs and total system costs.

Under the Benefit Stacking T&D NWAs Pilot Project, participants in Toronto Hydro's Local Demand Response (LDR) program will have the option of allowing Toronto Hydro to offer their capacity in IESO's capacity auction, and manage the obligation of this capacity in the IESO real-time markets. Through this project, Toronto Hydro will explore how to coordinate with the IESO to dispatch LDR resources to meet both distribution and bulk system needs, and will explore opportunities to maximize value of NWAs and the impacts on cost of capacity auction.

Part of this will be developing and testing a transmission-distribution coordination protocol that adheres to the existing IESO market rules, frameworks and tools. The protocol will define how

Toronto Hydro, aggregators and the IESO would communicate to indicate when resources are available to meet a local need, a wholesale need, an overlapping need, or an undeliverable need (e.g. due to a distribution-level outage).

The pilot will run for a 3-year term, including running discrete LDR Auctions in 2023, 2024 and 2025.

Expected Outcomes

This project will create a process for better coordination between Toronto Hydro and the IESO for the deployment of LDR capacity to address target constraints at both the distribution system and bulk-system levels of the electricity grid.

The success of this project will lower capacity and Capacity Auction clearing prices, increase DER proliferation and will allow for improved IESO planning and distribution system planning. Additionally, this project will permit and encourage other Local Distribution Companies to pursue activities to encourage DERs and benefit ratepayers without undue administrative burden.