Hyper Integrated Electric Vehicles (HIEV) Platform for LDC visibility and control of EV charging

Grid Innovation Fund Project Details

Lead Proponent: Elocity Technologies Inc.

Partners: Toronto Hydro, Waterloo North Hydro, Centennial College, Optym, The Centre for Urban Energy at Ryerson University, Energy Web Foundation, Celestica

Strategic Area(s):	Enhancing Forecasting and Planning, Enabling Non-Wires Alternatives
Project Total Cost:	$ 1,005,275
Year Contracted:	2020
Location:	Toronto, Waterloo
Economic Development:	8 Jobs

Project Objectives

The objective of this project is to test and prove the capabilities of Elocity's Hyper Integrated Electric Vehicle (HIEV) technology in supporting a reliable grid under the strain of increased EV adoption.

The HIEV is an end-to-end AI-powered solution that provides both the data and the control needed to manage demand by EVs. It connects consumers directly to grid management systems, is EVSE agnostic and provides LDCs with a communications and data collection framework. LDCs gather usage and data, anticipate and plan for grid infrastructure and incent consumer behaviour change.

The project will demonstrate the value of the interoperable and secure digital platform coupled with a hardware solution with Toronto Hydro and Waterloo North Hydro to monitor, manage and control residential electric vehicle charging load within the distribution network.

Expected Outcomes

This pilot would enable LDCs to understand, visualize and predict EV power demand. The pilot is expected to engage 80- 150 EV participants in Toronto Hydro and Waterloo North Hydro service territories.

The outcomes include demonstrating and measuring peak load reduction and peak load shifting and the resulting bill savings for participants. The pilot would also provide insights on the impact of EV charging on reducing the frequency and duration of distribution system interruptions.

Elocity's Hyper Integrated Electric Vehicle demonstration unit.