

Electrification Session

Hosted by: EFC & Alectra GRE&T Centre

October 23, 2019, 12 pm – 3 pm

161 Cityview Blvd., Vaughan, ON

Meeting Rooms 101, 102 and the Microgrid Room

GRE&T Centre Presentation

Alectra is a family of energy companies that distributes electricity to more than one million homes and businesses in Ontario, with a goal to transform into an integrated, innovative, energy solutions provider that plans, designs and implements on and off-grid services with a focus on green energy.

The Green Energy and Technology (GRE&T) Centre is Alectra's latest step to be at the forefront of exciting industry changes. The Alectra GRE&T Centre makes energy innovations come to life by identifying, evaluating, developing and accelerating emerging, green, and customer-friendly energy solutions across Alectra's service territory. As a hub for green technology solutions, the Alectra GRE&T Centre acts as a platform for GRE&T minds to come together to create the smart and green community of tomorrow. The Centre conducts pilot projects with a focus on smart cities, grid innovation, and advanced planning.

Among many of its exciting projects, the GRE&T center is currently underway in launching the **GridExchange** project. This project will create the ability to buy and sell clean energy between utilities and consumers. Using blockchain and other technologies, 20 homeowners will be empowered to buy and sell clean renewable energy into the local electrical grid, all in real-time, with instant financial exchange opportunities. Another recent pilot includes **Power.House™ Hybrid**. This project will see 10 homes retrofitted with solar panels, electric vehicle charging stations, hybrid heating systems (natural gas and electricity), and advanced integrated controls to significantly reduce greenhouse gas emissions, for both the homeowner and our electrical grid.

Smart grid projects like these help reduce greenhouse gas emissions, increase grid resiliency, and improve power quality, while providing financial benefits for the home owner.

Microgrid Tour

In 2014, Alectra Utilities was one of the first utilities in North America to build a proof-of-concept microgrid pilot, at its office in Vaughan, Ontario. This innovative pilot is evaluating the microgrid's performance in three modes of operation: grid-connected, islanded, and transitional. Alectra's Microgrid Demonstration project supplies electricity for lighting, air conditioning and refrigeration loads at its corporate office in Vaughan, Ontario. The goal of this project is to understand how to achieve safe, stable and reliable operation of microgrid. From this we can learn how flexible loads and DERs can provide new types of grid services. In this tour, you will get a chance to see the microgrid's operation when disconnected from the electricity distribution grid, to operate independently from the grid and then reconnected back to the grid. The microgrid has the underlying assets of: a solar array, a wind turbine, a natural-gas generator, a lead acid storage battery and a lithium-Ion battery, and connected controllable and uncontrollable loads, such as the electric vehicle charging stations.

Alectra GRE&T Centre

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EVSE Tour

Alectra has several electric vehicle (EV) charging stations in the exterior parking lot at its Cityview office. This includes several Level-2 (240 VAC) chargers for employee/guest use, a Level 3 (480VDC) charging station for public use, and a V2G charging station that is connected to the building's microgrid.

Control Room Tour (TBC)