

## Getting ready for **electric mobility**



**A**lectraDrive @Work is a multi-year pilot to demonstrate the value of a smart electric vehicle (EV) charging system that balances the electricity needed to serve workplace buildings and on-site EV charging stations, while mitigating increases to the electricity bill. The project provides businesses and their employees with a turnkey smart charging solutions that integrates the workplace building and EV load management system with solar generation and/or battery storage technology. The goal of the pilot is to identify how smart charging can serve workplaces, EV drivers, and the electricity system to support the shift to a smarter, cleaner, and more affordable energy system.

### **Innovating & collaborating together to:**

- ✓ Demonstrate how EV smart charging can help manage peak demand while meeting the needs of EV drivers
- ✓ Make it easy for workplaces to offer EV charging, managing the needs of both the building & EV drivers
- ✓ Support EV adoption and the evolving grid

## The Challenge

Workplaces are the second most common charging location for EVs, after homes. By 2030, the number of EVs on the road is expected to grow to 125 million worldwide. Because workplace charging typically takes place during peak hours for the electricity grid, it is critical to understand the impact of EV charging at workplaces, to investigate opportunities for managing peak demand on the grid, and to apply key learnings to future electricity infrastructure investment decisions.

## The Solution

The AlectraDrive @Work solution will strategically charge EVs to balance the energy needs of the facility and the drivers, scheduling EV charging for times when electricity costs are lower. An EV vehicle data logging device tracks the vehicle's charge to ensure optimal charge by the time the driver leaves the office. The solution is supported by virtual power plant technology that takes into account the driver's planned departure time, the state of the EV battery charge, the facility's electricity demand, provincial electricity prices, and electricity market signals (i.e., demand response) provided to the system in near real-time.



### PHASE I (2017–2018)

Launch first workplace site, the Markham Civic Centre in Markham, Ontario. Site includes 17 EV charging stations, battery storage and integration into the building's automation system.

### PHASE II (2018–2019)

Launch second workplace site, at Alectra's corporate office in Mississauga, Ontario. Site includes 7 charging stations, battery storage, solar carport and integration into the building's automation system.

### PHASE III (2019–2020)

Introduce smart charging at sites, to balance the real-time energy needs of building, EV drivers, and the grid.

## The Benefits



Reduced EV charging costs



Better management of a building's overall energy use and costs



Enhanced employee and customer satisfaction



Low cost EV load management system



Promote EV adoption, significantly reducing GHG emissions & air pollution

### In collaboration with



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