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2023 AMO Conference

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Opportunities for Energy Innovation

Presented by Neetika Sathe, Vice President, Alectra GRE&T Centre

Alectra: Overview

Alectra distributes electricity and provides innovative energy solutions to customers in Ontario, Canada. It is the second largest municipally-owned integrated energy solutions company in North America with over C$4.8 billion in assets, over 1,500 employees, and serving over 1 million customers in 17 communities.

Two subsidiaries:

Alectra Utilities: responsible for distributing electricity to residents and businesses
Alectra Energy Solutions and Services: provides innovative energy solutions, such as microgrids, energy storage, solar PV, metering, and streetlighting

Innovation at Alectra

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Where great minds collaborate to power a better tomorrow

The Alectra GRE&T Centre makes energy innovations come to life by identifying, evaluating, developing and accelerating emerging, clean, and customer-friendly energy solutions.

Strategic Areas of Focus

Smart Cities

Powering homes, buildings and transportation with smart, clean technologies.

Focus on electrification of Transportation.

Grid Innovation

Leveraging grid modernization technologies to enable a more sustainable grid.

Focus on Distributed Energy Resource (DER) integration, and a Distribution System Operator (DSO) model

Advanced Planning

Harnessing emerging technologies and cross-industry solutions to enable a digitalized utility of the future.

Focus on market intelligence, Artificial intelligence and integrated end-to-end solution design and deployment.

Data & Enterprise Architecture

Establishing sustainable and secure data solutions that enable data-driven insights and align business strategies with technology capabilities for optimized resources and improved operational efficiency.

Focus on data management, analytics, and governance.

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Utilities can Support DecarbonizationTargets

Municipality
City of Toronto
City of Ottawa
City of Mississauga
City of Brampton
City of Hamilton
City of London
City of Markham
City of Vaughan
City of Kitchener
Town of Oakville
City of Windsor
City of Richmond Hill
City of Burlington
City of Oshawa
City of Barrie
City of Guelph
City of Cambridge
Town of Milton
Town of Whitby
City of St. Catharines
Town of Ajax
City of Waterloo
City of Kingston
City of Brantford
Clarington
City of Pickering
City of Niagara Falls
Town of Newmarket
Town of Caledon
Totals

In fall 2022, Ontario pledged to build 1.5M new homes by 2031.

One third of the proposed new homes fall in the Alectra Service territory

As cities move to net zero, LDCs like Alectra, have the best opportunity to contribute to provinces' net-zero goal by providing their communities with decarbonized energy solutions

Source: Environmental Registry of Ontario, https://ero.ontario.ca/notice/019-6171 :

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Smart Transportation : AlectraDrive

The AlectraDrive @Home pilot program aims to better understand EV charging behavior ‘at home’ and the impact of incentives on influencing customers’ charging patterns.

Participants from:
City of Mississauga, Markham, Barrie and other communities served by Alectra

AlectraDrive @ Work is a smart solution that enables workplaces to offer EV charging to their employees while managing the workplace’s energy costs.

Partners:
City of Mississauga
City of Markham

Project Funders

Natural Resources Canada | Ressources naturelles Canada
Canada

ieso
Independent Electricity System Operator

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Smart Transportation: Public EV Chargers

- Alectra has worked with municipalities to identify locations for public charging infrastructure.
- Alectra has installed and continues to manage public charging stations in key locations in 3 municipalities.

Partners:
City of St Catharines
City of Markham
City of Barrie

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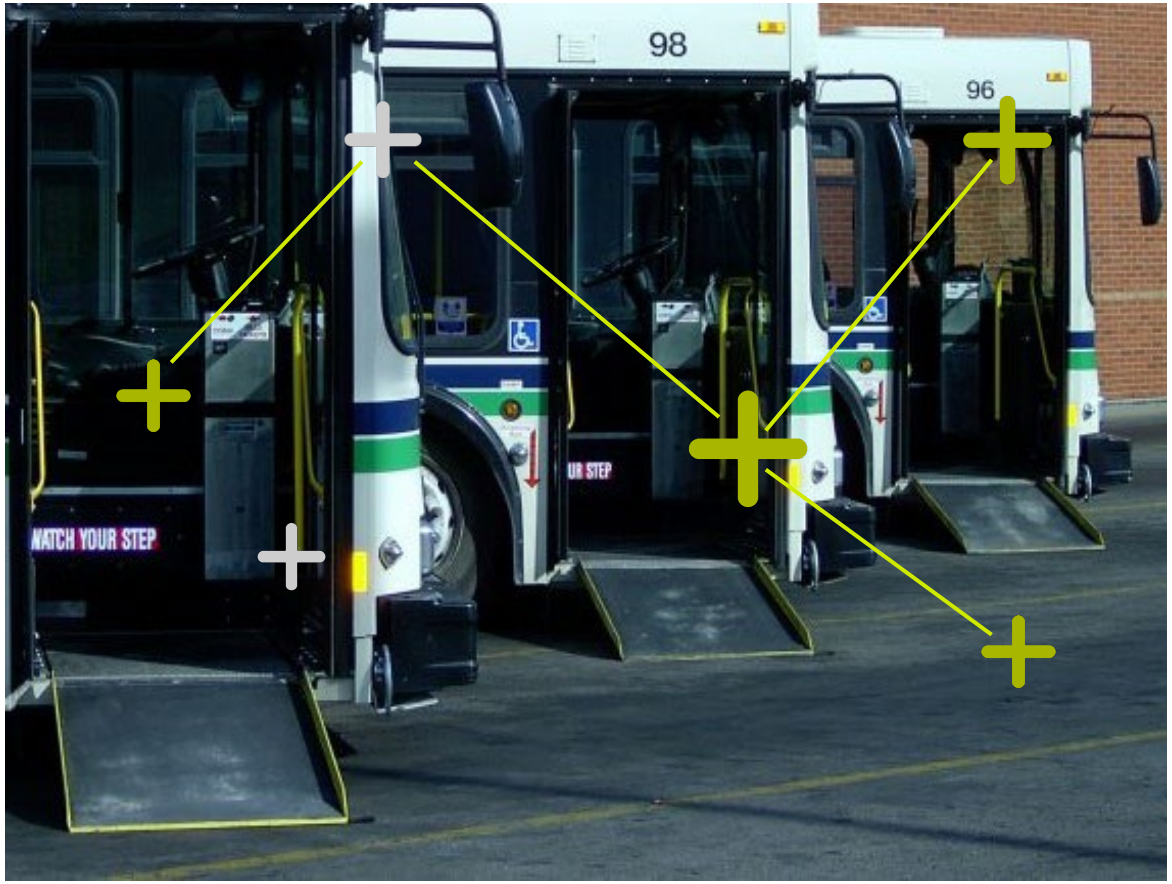
Smart Transportation: Enabling Transit Electrification



- Canada has a target of having **5,000** battery electric buses by **2025.**
- Alectra has supported several transit fleets as they plan to electrify.
- Alectra has conducted infrastructure upgrades for pilots and participated in electrification studies and feasibility assessments.
- A recent study performed for a transit agency (supported by Alectra) demonstrated that **98%** of their transit routes could be electrified.

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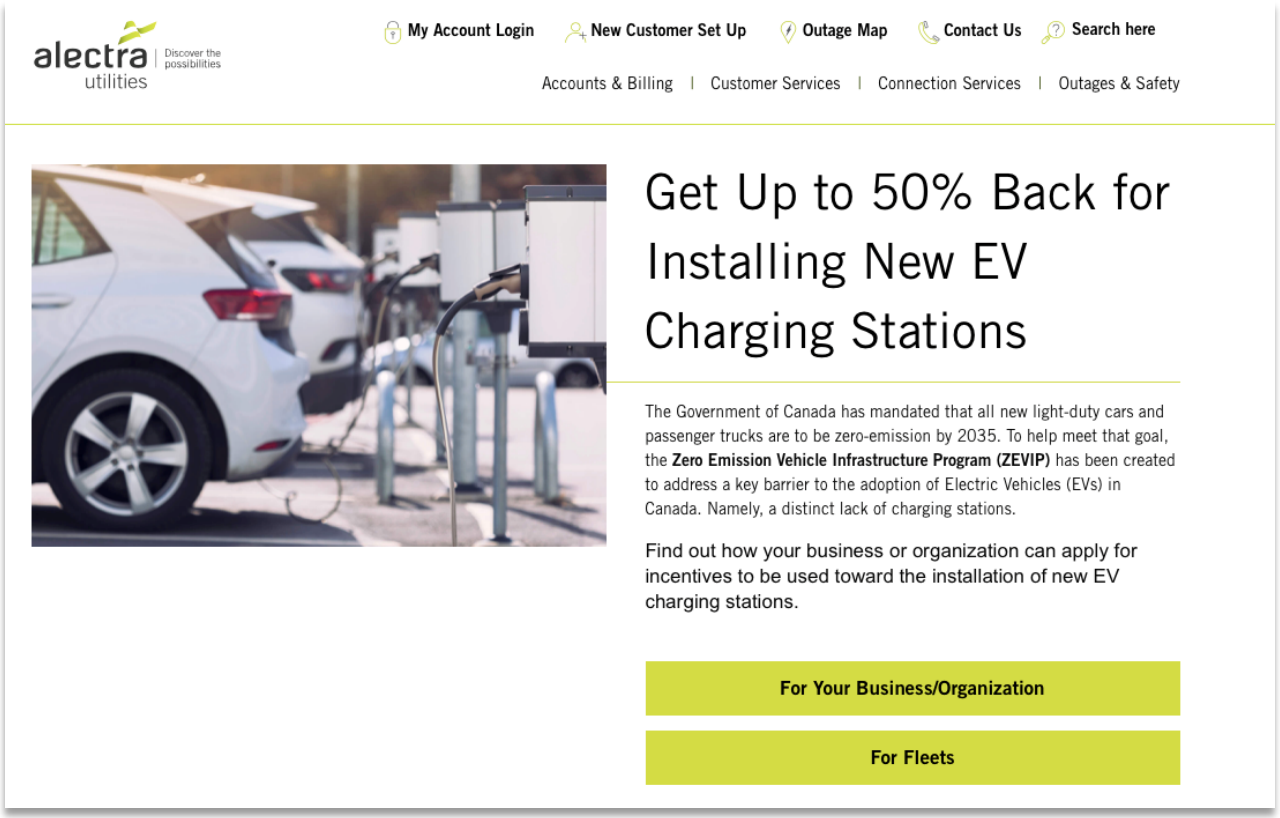
Smart Transportation: Enabling EVSE Incentives



- Alectra is administering over **$6 million** in federal incentives to enable customer EV charging infrastructure.
- Eligible projects support access to charging infrastructure for either public charging or fleets.

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Sustainable Homes: Power.House Hybrid

- Alectra-led Power.House Hybrid enables the move towards Net-Zero Energy Emission homes by integrating a hybrid set of electrical and thermal equipment into a Virtual Power Plant (VPP) platform.
- This novel solution adjusts heat and electricity consumption within a home to minimize its carbon footprint and uses Smart EV Chargers to move EV charging load to off-peak times.

Project Partners

Natural Resources Canada | Ressources naturelles Canada | ENBRIDGE Life Takes Energy | MARKHAM | Toronto Metropolitan University – Centre for Urban Energy, Faculty of Engineering & Architectural Science | alectra GRE&T Centre

Enabling Green Choices: Influencing Policy

Advantage Power Pricing, a pilot project undertaken by the Alectra GRE&T Centre provided the impetus that helped create the Ultra-Low Overnight (ULO) electricity price plan option for Ontarians.

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Enabling Green Choices: IESO York Region NWA Demonstration

Canada's first local electricity market in southern York Region, Ontario.

Demonstrates potential for non-wires alternatives to meet local, regional, and province-wide electricity needs.

Participating businesses, institutions, and homes can use distributed energy resources (DERs) as cost-effective, reliable, and environmentally sustainable energy

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Neetika Sathe, Vice President, GRE&T Centre, Alectra Inc.

Neetika is an established thought leader in areas of clean technology, sustainability, and energy transition.

Under her leadership, the Alectra GRE&T Centre has launched many innovative initiatives, such as a cloud-based transactive energy platform, North America's first distribution-level local electricity market, and a successful electricity pricing pilot that laid the foundation for Ontario's recently-announced ultra-low (ULO) electricity rate.

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Thank you!

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