

PLUG 'N DRIVE

Workplace Charging
For
Municipalities

April 2020





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Greenhouse Gas Emissions – The Big Three

A photograph of a busy city street with a traffic jam. A white bus is in the foreground on the left, followed by a yellow taxi, a blue car, a red SUV, and a white SUV. A sign on the right says "RED LIGHT CAMERA".

TRANSPORTATION

34%

A photograph of an industrial facility, likely a refinery or chemical plant, featuring a complex network of pipes, scaffolding, and large cylindrical storage tanks under a clear blue sky.

INDUSTRY

30%

A photograph of a dense city skyline with numerous skyscrapers and buildings, viewed from an elevated perspective during the day.

BUILDINGS

17%



NUCLEAR = 58%



HYDRO = 23%



RENEWABLES = 9%



NATURAL GAS = 10%



Electric Vehicle Discovery Centre Features

Electric Vehicle Test Drives

Home Charging Station Gallery

Electrifying History Wall

Public Charging Powered by Toronto Hydro

OPG PowerPlace Conference Centre (Brought to you by Ontario Power Generation)

Interactive Touchscreen Displays (Brought to you by the Power Workers' Union)

TD Insurance Zone

Bruce Power Coffee Bar

Plug'n Drive Head Office



PLUG 'N DRIVE

OPG PowerPlace

Sponsored by Ontario Power Generation

Premium event venue that can accommodate workshops, seminars, presentations, etc.

Seating for upwards of 150 guests

Equipped with high-definition video display, podium and webinar/conferencing tools



POWERPLACE
ONTARIO **POWER**
GENERATION 

EVs SAVE MONEY



\$2000 (approx)

ANNUAL SAVINGS ON
FUEL AND MAINTENANCE

EVs REDUCE GREENHOUSE GAS EMISSIONS



UP
TO **90%**

FEWER GREENHOUSE GAS EMISSIONS
THAN AN EQUIVALENT GAS CAR

EVs GO THE DISTANCE



1 CHARGE
PER WEEK

200+ KM OF RANGE ON A FULL CHARGE

EVs ARE FOR EVERYONE



40+

MODELS STARTING AT \$20,000
(AFTER INCENTIVES)



Sponsors

Discovery Sponsors



Electrifying Sponsors



Accelerator Sponsors



Electron Sponsors



Partners



The M.H. Brigham Foundation

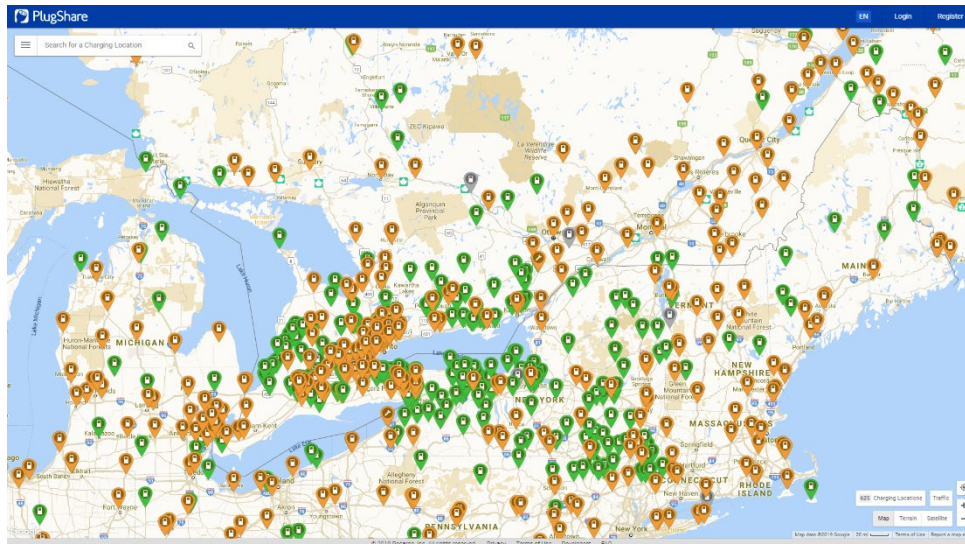
Why is Workplace Charging so Important?

- **2nd most important charging location (after home)**
- **Employees are 6x more likely to adopt EV if chargers at work (Calif. Study)**
- **Makes EV possible for garage orphans**
- **Employee engagement/attract and retain talent**
- **Help your organization achieve its climate change resiliency preparedness goals**
- **Not just an environmental issue, but also a health issue!**



Assessing Demand – for employees

- Existing and potential drivers
- To charge or not to charge (\$\$)
- Commuting distances
- Are vehicles moved? Carpooled?
- Consider future demand
- Are there other stations nearby?
- What will the rules be?



Employers:

- Fleet considerations
- What will the rules be
- Do you intend to charge \$? CRA
- Owner or Tenant?
- How hard will this be? How costly?
- Parking availability/capacity
- Power considerations
- Regulatory/Policy considerations

Consider stakeholder mapping!

Case Study 1: Cascades

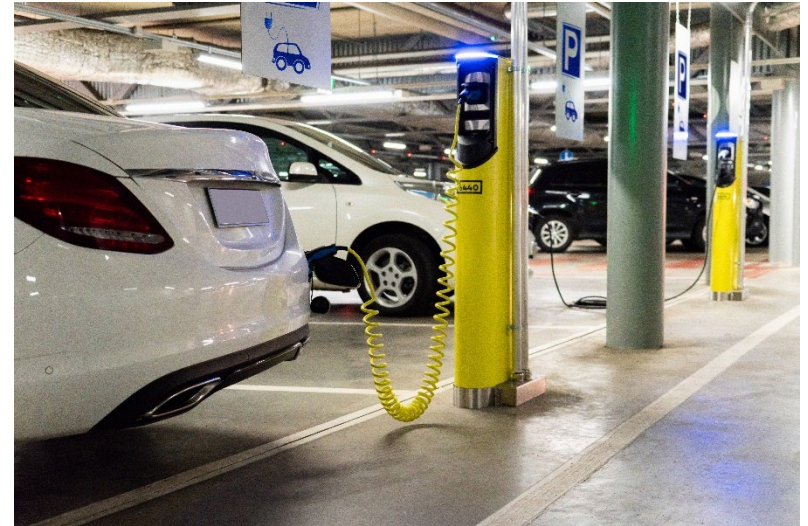
- Employee incentive of \$2000 toward the purchase of an EV
- Installation of chargers at workplaces in Quebec and Ontario



- Began as a pilot in Quebec and was expanded to Ontario locations
- Encouraged more than **160** employees to switch to Evs and installed over **100** level 2 stations at its sites

Selection and installation:

- Networked or not
- Pay system or not
- Lots of feature considerations!
- Access to Station
- Operating and Maintenance
- Ownership model
- permitting



-chargepoint+



SPARK 
EV CHARGING SOLUTIONS



SIEMENS
SIEMENS



flo



- Free
- Variable Pricing
- Fees to a third party
- Method of payment
- Will you own and operate?
- Rules of Etiquette
- Signage



Alectra Drive for the Workplace

- Partnership between the City of Markham and Alectra
- 2 year pilot – assessing the impact of daytime EV charging on the grid



PHASE I (2017–2018)

Alectra launched its first workplace site at the Markham Civic Centre in Markham, Ontario. The pilot includes 17 EV charging stations, battery storage and integration to the building's automation system.

PHASE II (2018–2019)

Alectra launched its second workplace site at Alectra's corporate office in Mississauga, Ontario. The pilot includes 7 charging stations, battery storage, solar carport and integration to the building's automation system.

PHASE III (2019–2020)

Alectra will introduce “smart charging” at both pilot sites to balance the real-time energy needs of buildings, EV drivers, and the grid.



Comprehensive Guide to Help Businesses Prepare for and Install Workplace Charging

Includes:

- Reasons to invest
- How to assess your workplace's demand for EV charging
- Policy considerations
- How to select the right charging equipment
- Installation considerations
- Cost considerations and pay-per-use payment models
- Operation and maintenance considerations



Lead the Charge
2020 Guide to Workplace Charging

Interested?

E-mail info@plugndrive.ca



Lead the Charge
2020 Guide to Workplace Charging

Other opportunities:

- custom webinar for your organization?
- not sure which supplier to choose and you want to learn more about their products and services?
- considering applying for ZEVIP?

WE CAN HELP!

E-mail info@plugndrive.ca

- NRCan funding for EV infrastructure
- Workplace, multi-res, light duty fleets
- Applications due June 11 (this is the extended time)
- Up to 50% of total project costs, to a maximum of \$5,000 per connector; 20 charger minimum



<https://www.nrcan.gc.ca/energy-efficiency/energy-efficiency-transportation/zero-emission-vehicle-infrastructure-program/21876>

EVS – NOT 'IF', BUT 'WHEN'

Canada launches the country's first national EV incentive

EV sales projected to account for 57% of all passenger vehicle sales by 2040

Petro-Canada to build a coast-to-coast fast charging network

Electric vehicle sales reach 5.1 million worldwide

Global automakers to invest \$300 billion in EV development over the next 5-10 years

EV prices to match internal combustion engines by mid-2020



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Thank you!



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