Welcome
Bienvenue

CONDO DIRECTORS GROUP

Leveraging collective knowledge and experience to help directors manage their condominium operations more effectively and efficiently.

Website: www.condodirectorsgroup.com
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Next Meetings:

Thursday Nov. 18, 2021

AGENDA

Topics:

- **COVID Update**
  - Stage 3
  - Proof of vaccination requirements
- **EV Charging stations**
  - **The Roadmap to installing EV at your condo** (Envari)
- **Condo experience**
  - The Merit
  - CCC 621
  - CCC 72
  - Cathedral Hill's

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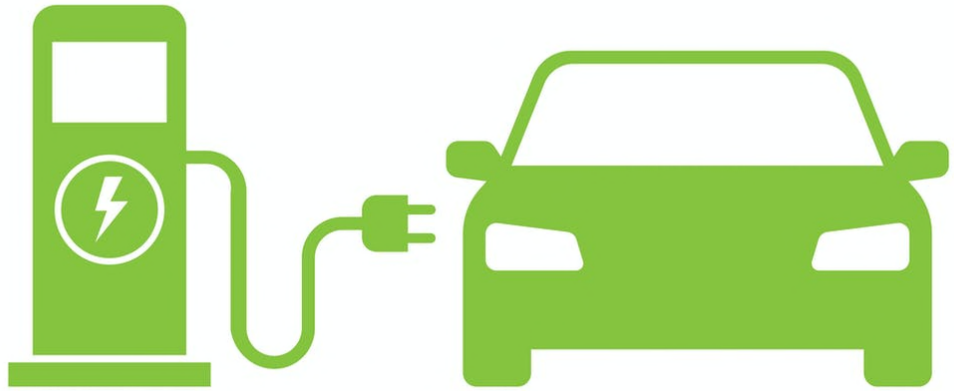
EV Charging Stations



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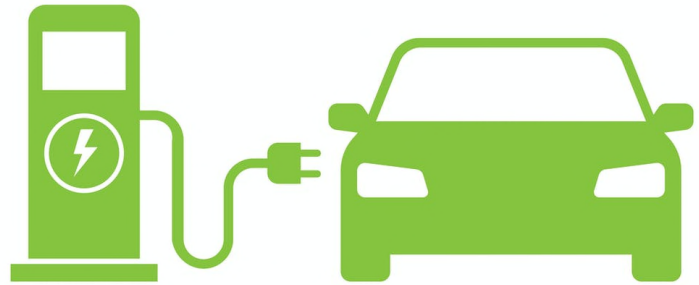
Two Avenues

1. **Installation by the Corporation** (covered tonight)
2. **Installation by an Owner**
   - The owner must apply in writing
     - Owner must include drawings, specs and info about the proposed installation
     - Corporation must cooperate and provide access/info required
   - 60 days to respond to request (limited reasons to reject it)
   - 90 days to enter into a Charging System Agreement
   - 6 months to go to Arbitration/mediation or deemed abandonned



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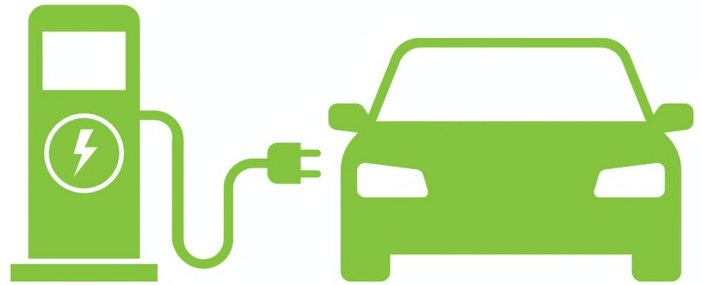
Two Avenues

1. Installation by the Corporation

- Corporation can proceed **unilaterally**:
  - 60-day notice
  - If installation cost no more than 10 % of the annual budgeted common expenses
  - In opinion of the board, owners would not regard the installation of the charging station as causing a material reduction of the use or enjoyment of units or common elements.
- Otherwise, corporation can proceed **on notice**
  - Owners given 60 days to requisition meeting
  - Requisition must be supported by 15% of the units
  - Proceed if no requisition; no quorum or not voted down



Charging System Agreement

- Must be **in writing**
- Must be **reaonable and necessary** to facilitate the installation, use and operation of the EV charging Stations
- Allocate the **cost of the installation** between owner/corp.
- **Ownership** of instalation
- Set out **duties and responsibilities** of the owner/corp.
  - Cost of use
  - Operation
  - Repair after damage
  - Maintenance / insurance of the system

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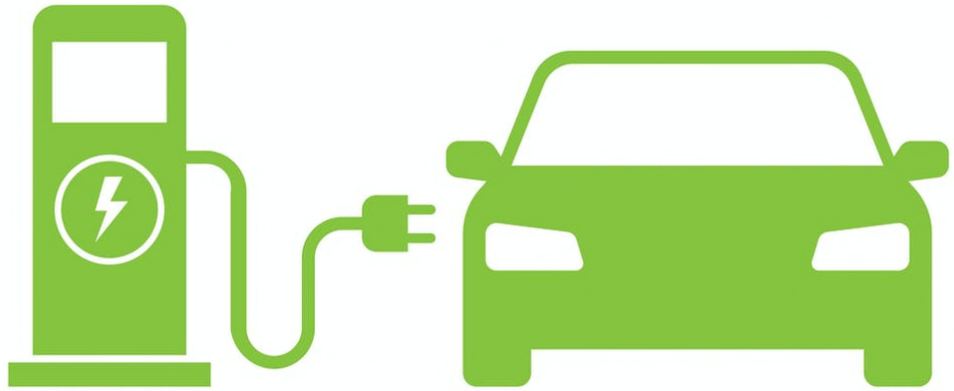
Envari presentation



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envari
energy solutions



Charging into the Future

Presentation for Condo Directors Group

September 22, 2021

Today’s discussion

- **ENVARI – Who we are & what we do**
- **Different types of EV chargers – Level 1, 2 & 3**
- **Smart charger, Smart panels & Power sharing**
- **How to make your building EV ready?**
- **Maintenance & operations**
- **Financial incentives**
- **Q & A**

Envari – Who We Are

Hydro Ottawa Limited is the third largest local distribution company in the province, **delivering electricity to 335,000 homes and businesses** in Ottawa and the village of Casselman.

Portage Power is Ontario's **largest municipally-owned producer of green power**, with hydroelectric. Solar and landfill gas-to-energy generation facilities.

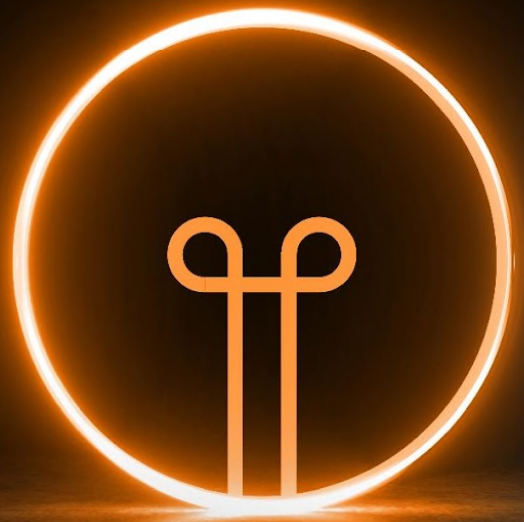
Envari offers a wide range of energy solutions to governments, utility companies and businesses which are designed to **improve financial performance and reduce environmental impacts.**

Envari – What We Do

We design and implement custom energy solutions.

We are a team of specialized designers, engineers and project managers that help governments and businesses find innovative ways to save energy, improve financial performance and reduce environmental impacts.

Our solutions



lighting

- Street Light Conversion
- Street Light Maintenance
- Interior & Exterior Lighting
  - Lighting Audits
  - Design & Engineering
  - Installation
  - Project Management

building

- Mechanical Design & Engineering
- Energy Audits & Assessments
- Feasibility & Lifecycle Studies
- Boma Best & LEED
- Energy Data Services
- Building Automation Systems
- Green Building Initiatives

electrical

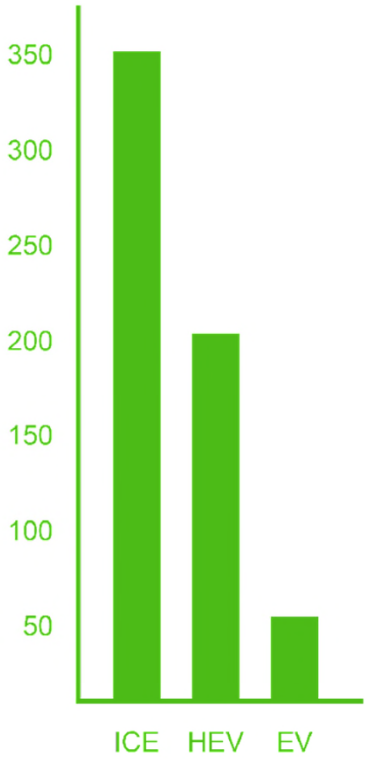
- Electrical Design & Engineering
- Electric Vehicle Readiness
- Electric Chargers
- Energy Storage
- Suite Metering
- Electric Vault Services
  - Condition Assessments
  - Maintenance
  - Upgrades & Replacements
- Cable Q –Underground Cable Testing

Electric Vehicles

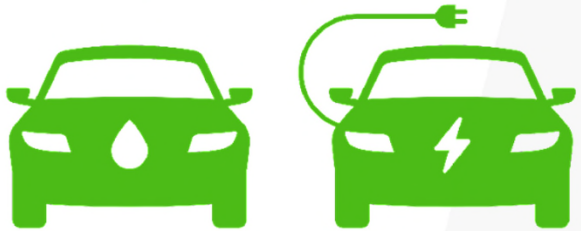
Why EVs?

EVs are clean, efficient and cost effective.

Lower emissions



5x more efficient



Traditional Engine
17%-21%
efficient

Electric Motor
90%-95%
efficient

Lower fuel costs

20,000 km/yr for 5 years

Gasoline
$9,600 CAD
7,900 litres

Electricity
$2,600 CAD
19,400 kWh

Decreasing battery costs

70%

Decrease in EV battery prices over past 7 years

Less maintenance

Traditional Vehicle
2000+
moving parts

Electric Vehicle
18 to 20
moving parts

What are the benefits for multi-unit residential buildings?

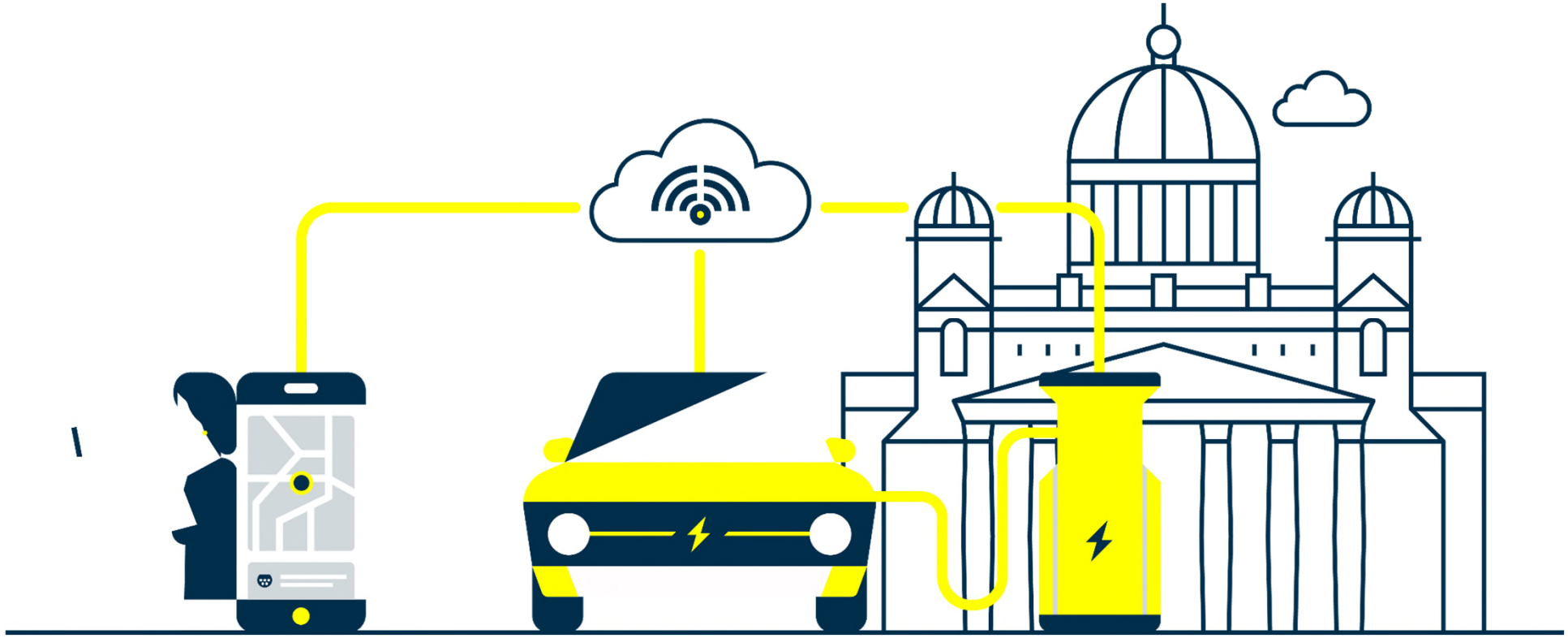
- Customer Retention
- Customer Convenience
- New Revenue Stream
- Energy Management
- Improve Brand Image

Comparing Levels 1, 2 and 3

TYPE	POWER	CHARGER TIME
Level 1	**1.3 kW to 2.4 kW** 120 V	**12+ hours** **6 km** of range per hour
Level 2 Standard	**7.2kW** @ 208 VAC or 240 V	**4 to 8 hours** **30 km** of range per hour
Level 3 DC Fast Charger	**50 kW** @ 200-450 V	**15 to 20 minutes** **250 km** of range per hour

Smart Chargers

Smart charging allows the charger to communicate in order to optimize charging efficiencies.



Power Sharing

Power sharing allows properties to maximize charging points without increasing electrical capacity.

- Typically electric vehicles only need to charge for a few hours, but may be parked for much longer, such as overnight at a condominium.

- Power sharing intelligently manages the electrical capacity of a site by managing the available power. Various approaches to power sharing include:
  - Circuit sharing
  - Panel sharing
  - Site sharing

How to make your building EV ready.

DISCOVERY

Involve key stakeholders:

- **Gauge** stakeholder interest
- **Survey** residents to determine the need of EV chargers
- I**nvolve** property owners/managers in infrastructure discussions

Gather information:

- **Research** the types of EV chargers available and where to install them
- **Gather information** and building specific details (electrical and architectural plans)
- **Approach** EV charging solution providers

How to make your building EV ready.

COLLABORATION

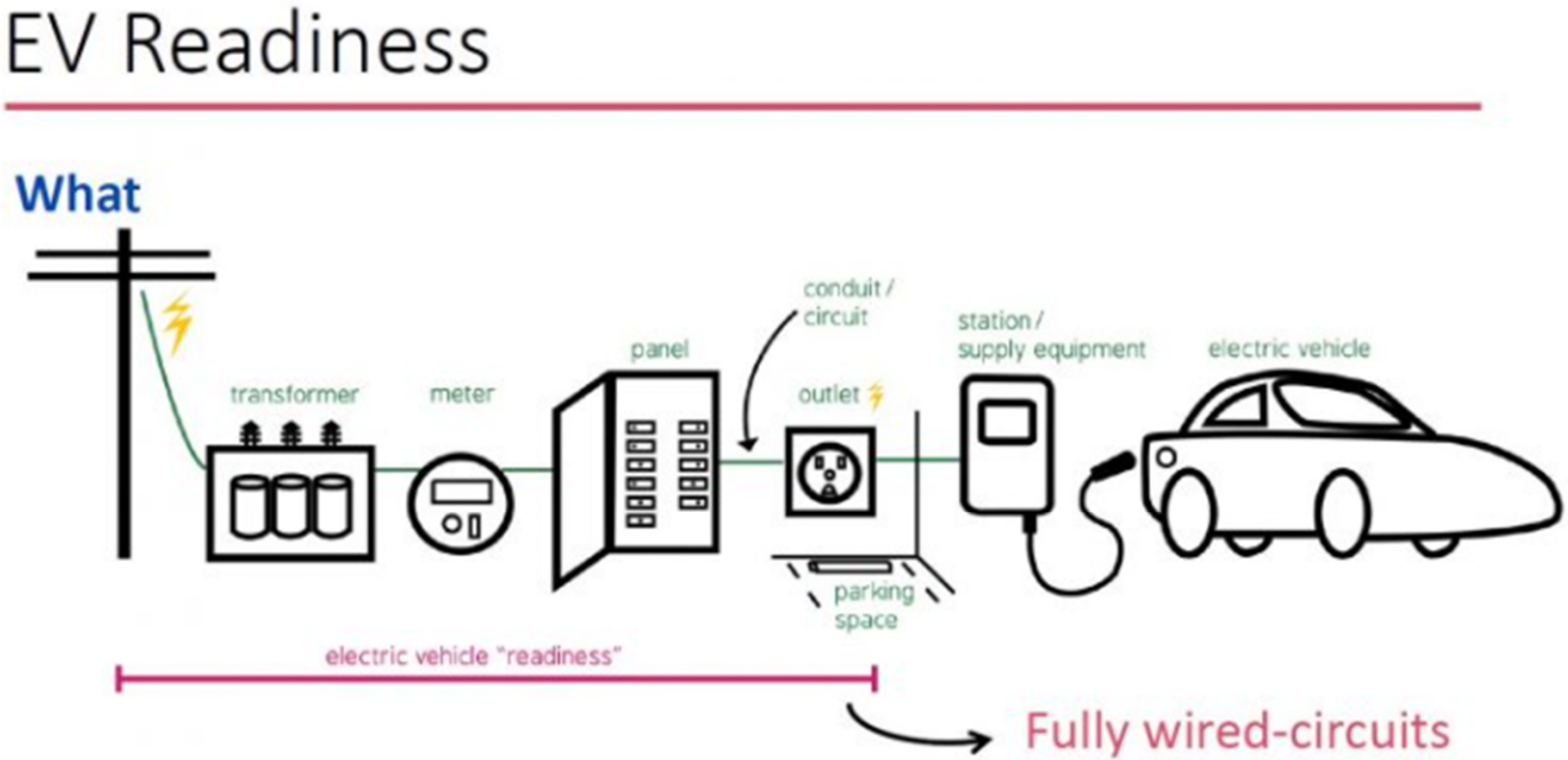
Consult with industry experts (Electrical Engineers):

- **Review** the building's electrical capacity and energy load profile
- **Analyze** the building's load to determine options e.g. networked, power sharing, etc.
- **Involve** the local utility company in the design and obtain necessary permits

Discuss metering and other details, which may include (but not limited to):

- Number of chargers to be installed and the locations
- Dedicated or shared stations
- Metering configurations - $ per session or monthly bill

Typical EV Installation



How to make your building EV ready.

DESIGN & INSTALL

Design

- Based on your needs, the design would be developed to install the chargers at the building (Remember that there is *no one size fits all* as each building is unique and warrants its own design).
- Design would be dependent on the available capacity, number of chargers, building plans etc.

Installation

- Electrical contractor would secure necessary permits
- Electrical contractor would install your charging infrastructure e.g. conduits run, pulling wires and installing the chargers
- Complete final inspection with local authorities (ESA)

What do I need to know about ongoing maintenance and operations?

- Smart chargers typically have annual fees for operation
- Preventive maintenance plans are important
    - EV manufacturers and solutions providers offer maintenance plans
    - Consider extended warranties and support services

Are there any financial incentives that we can take advantage of?

Government of Canada

Zero Emission Vehicle Infrastructure Program

Type of Infrastructure	Output	Up to 50% of total project costs, to a maximum of:
Level 2 (208 / 240 V) connector	3.3 kW to 19.2 kW	$5,000 per connector
Fast charger	20 kW to 49 kW	$15,000 per charger
Fast charger	50 kW to 99 kW	$50,000 per charger
Fast charger	100 kW and above	$75,000 per charger

What Envari Offers

- **EV READINESS ASSESSMENT**
- **INSTALLATION**
- **MAINTENANCE**
- **USAGE MONITORING**
- **FINANCING**
- **FUNDING OPPORTUNITIES**

QUESTIONS?

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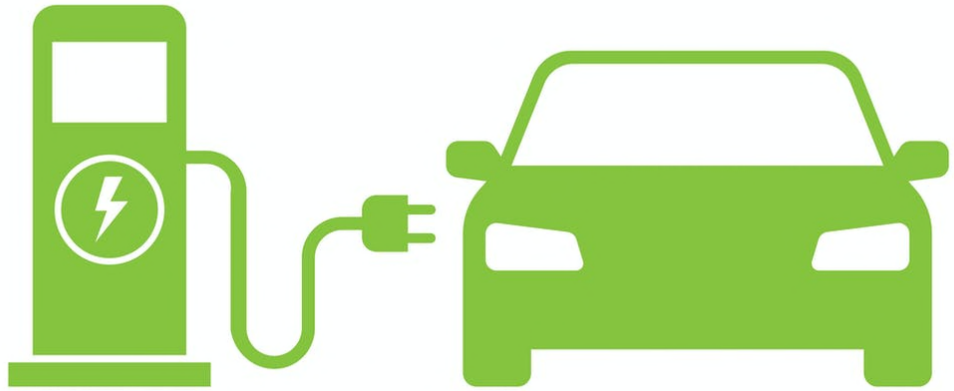
Experience at The Merit



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EV Charging Committee process for the Merit

George Parry

Original presentation: May 5,2021

Outline

1. Objectives at Beginning of Investigation
2. Federal Gov’t Funding Program
3. Industry Solutions
4. Selection Criteria
5. Selection of the Merit EV Committee
6. Our results so far…

Objectives at Beginning of Investigation

- Understand the state of the technology
- Determine the interest level at the Merit: initial survey showed ~80% interest amongst those who responded, before costs were known.
- Minimize cost by taking advantage of gov’t funding programs
- Structure a design that puts in place the basic infrastructure and allows for easy owner growth, potentially from as few as less than 5 initial stations

Federal Gov’t Funding Program

- ZEVIP (Zero-Emission Vehicle Infrastructure Program)
- Administered by Natural Resources Canada
- Delayed in deployment and in definition
- When finally announced in March and examined in detail, reveals key aspects:

  a) covers cost of charging station as well as infrastructure

  b) must have a minimum of 20 charging stations

  c) must have firm commitments for 50% of the cost, individuals required to sign “proof of funding”

  d)higher commitment above 50% would earn merit points for our application

  e) Demand for federal funds will likely outstrip available funds

Experience at The Merit

Industry Solutions

- Basic wiring / equipment to provide an infrastructure to the 4 garage levels is common and relatively straight forward
- Industry divides between methods to implement the usage monitoring and payment portion of the system:

  a) electronics in the charger (“smart charger”) plus a management company for billing. (MetroEV provides this type of solution)

  b) basic power charger with monitoring electronics associated with the distribution panels plus a management company. (EVDirect provides this type of solution)

Experience at The Merit

Selection Criteria

- Overall cost
- Ease of expansion of chargers
- Minimization of fixed monthly fees
- Efficient use of Merit Electrical resources
- “Future Proofing”
- Experience

Experience at The Merit

Selection of the Merit EV Committee

MetroEV - Prime Contractor ; uses the “Smart Charger” approach

a) Charger supplier - Lite-on
b) Consumption monitoring and payment supplier - Chargelab
c) Wiring / distribution equipment / installation - MetroEV

Cost Information

a) Common Element Infrastructure : $90,000 *
b) Owner portion (wiring / charger) : $3400 per charger *
c) Fee is 24% of consumption cost with no minimum monthly fee
d) Load sharing implementation

* If the Merit is selected for the ZEVIP fund, these numbers are reduced by 50%

Our results so far…

- Owners deposited $1,700 commitments and signed “proof of funding” by May 24
- Proposal could not be submitted with less than 20 Chargers: final number of EVCS ordered = 63
- Finalization of all aspects and writing of Proposal: Richard Hill
- Proposal submission to NRCAN on June 20
- Notification of selection for ZEVIP funding by October 2021 and initiation of implementation phase.

If NRCAN does not select the Merit for ZEVIP

a) Owners’ deposits will be returned
b) The project will have to be re-evaluated

Experience at The Merit

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