



Status: Final

Electric Vehicle Charging Station Policy

Approved By: Chief Administrative Officer

Approved On: March 5, 2019

Last Reviewed: N/A

Policy Statement

The Regional Municipality of York is committed to supporting the increased use of electric vehicles by the Region and its staff, and will make reasonable efforts to provide access to charging infrastructure that supports the viability of electric vehicles.

Application

This policy applies to all existing and planned electric vehicle charging infrastructure, including its associated management and use, at all York Region-owned buildings.

Purpose

This policy governs how York Region establishes and manages the electric vehicle charging infrastructure using a demand-based, revenue-neutral growth model that allows for consistent deployment of infrastructure to support the viability of electric vehicles.

Definitions

Charging Station

Charging stations in this document are inclusive of the electric vehicle charging station pillar, electronic/physical parts, head, and the parking space designated for use when charging an electric or plug-in hybrid vehicle.

Charging station data

Charging station data must include time and usage data for chargers, at a minimum. However, identifying information will not be collected.

EV Charger Service Provider

EV Charger Service Provider is the third-party organization that supplies and/or operates the electric vehicle charging station

Fleet

Fleet vehicles (for the purposes of this policy) are electric or plug-in hybrid vehicles owned by York Region and shared by staff for the purposes of carrying out Region business.

Level 2 charging station

Level 2 charging stations provide the current industry standard for average duration EV charging at 240 volt AC.

Level 3 charging station

Level 3 charging stations provide up to 500 volt DC capacity, providing the highest speed alternative for EV charging.

Operator

Entity in charge of the electric vehicle charging station will be the Regional Department or Branch responsible for maintaining the corresponding building.

Payment Card Industry (PCI) Standards

[PCI standards](#) were created to increase controls around cardholder data to reduce credit card fraud. Validation of compliance is performed annually.

Process

Process refers to [Electric Vehicle Charging Station Process](#), which is enabled by this policy and governs the operation and usage of the charging infrastructure, including specific rules related to use of the charging station and its management.

Public

Public includes members of the general public and Regional staff using charging stations for personal vehicles. This includes personal vehicles being used for Regional business.

Third party ownership

Third party ownership refers to an ownership model where York Region provides parking spaces and electrical connection for a third party service provider to install, maintain, and operate an EV Charging Stations with no ownership rights for the Region. All costs, revenues, and risk are borne solely by the third party service provider and York Region receives a portion of the revenue to cover costs.

Description

Charging station type

Charging stations installed shall be a minimum of level 2 that is in compliance with Payment Card Industry (PCI) standards. Installation of charging stations higher than level 2 shall be based on the needs and speed required for EV charging.

Since level 3 charging stations can lead to spikes in electricity demand, concerns associated with higher electricity demand should be considered by the Operator and discussed with the Manager of Climate Change and Energy Conservation before moving forward with any level 3 charger installation.

York Region electric vehicle charging stations shall be open by default for use by anyone, including Regional staff personal vehicles and the general public for a fee as outlined under the Process. Exceptions can be provided for dedicated charging stations installed in locations with York Region employee-only access dedicated to support York Region-owned fleet vehicles.

Usage requirements

Electric vehicle charging stations shall be for charging purposes only. Any vehicle parked in an electric vehicle charging station space that is not actively charging as defined under the Process shall be subject to increased fees or measures including those outlined in the [Parking at the Regional Administrative Centre Policy](#).

Electric vehicle charging stations are available on a first-come first-served basis. This includes dedicated fleet spaces, which are open to all fleet vehicles.

Users of charging stations are required to be registered and active members of the EV Charger Service Provider's network to use the service.

Appropriate signage shall be erected to provide information for users, with content identified under the Process. Signage shall include a reference to this Policy and the associated Process.

Data requirements

Usage data must be accessible to the Region in perpetuity, regardless of contract status and/or available in a form that can be stored in a central repository to be analyzed by Regional staff to facilitate evidence-based/data-driven decision making for future stations.

Revenue and rates

In cases where the Region owns or leases the chargers, rates are to be set based on a revenue-neutral business model (no net monetary loss). Rates for charging stations shall be based on the time a vehicle is connected to a charging station as outlined in the Process.

Regardless of the ownership model, revenues generated by electric vehicle charging stations shall be kept by the Operator in a dedicated revenue account (separate from general revenues). Depending on the specific ownership model, the funds can only be drawn down for asset management, infrastructure operating costs, and to add additional charging stations (as described in the Process) related to electric vehicle charging stations.

Demand-based implementation and expansion

All expansions to the public electric vehicle charging station infrastructure shall be based on data-demonstrated demand, as outlined in the Process.

Decisions related to purchase, lease, or contract from providers shall be based on the lowest life-cycle cost, as outlined in the Process.

Supporting infrastructure in new buildings

New buildings shall install infrastructure to support future electric vehicle charging stations that meet requirements under Section 3.1.21 and Section 9.34.4 of the [O. Reg. 332/12 Ontario Building Code](#).

Electric capacity

Plans for expansion of electric vehicle charging stations should consider potential impacts that charging stations may have on the electric capacity of a building. If there are significant impacts, mitigation should be addressed under the implementation / capital plan for the charging station project, with timing tied to planned replacement of capital, when feasible.

Transition of existing stations

Charging station infrastructure installed prior to establishment of this policy shall be upgraded to meet the requirements of this policy. The upgrade will be subject to capital plan and budget cycle, within 36 months from approval of the policy. This will help ensure consistency across all charging facilities and avoid complications (i.e. deemed taxable benefit) associated with free, unmetered and standalone charging facilities.

Leased Buildings

For leased buildings, proposed installations of EV charging stations will be considered on a case by case basis, only to be installed where an agreement has been negotiated between the Region and the building Operator.

Term

Electric vehicles and their associated charging station technology have been evolving rapidly and it is anticipated that this trend will continue in the future. As a result, this policy will be reviewed every two years following initial approval to ensure the policy remains up to date with the state of electric vehicles and associated charging technology.

Responsibilities

Responsibility of Regional Staff

Regional staff are responsible to become familiar with this policy and the associated Process. Staff are to required to follow requirements outlined in these documents when using charging stations.

Charging station asset management

Charging station asset management is the responsibility of the building Operator where the infrastructure is installed.

Data management, operations and expansion

The Operator of the charging stations is responsible for data acquisition, operations and decisions regarding expansion of services. The Climate Change & Energy Conservation unit will support corresponding teams with associated analysis and decision-making tasks where required.

Reference

[Electric Vehicle Charging Station Process \(#8754608\)](#)

Contact

Manager of Climate Change and Energy Conservation, Environmental Services

Approval

CAO Signature: ORIGINAL SIGNED BY BRUCE MACGREGOR

Date Approved: MARCH 5, 2019

Accessible formats or communication supports are available upon request.

#8594739



The Regional Municipality of York

Electric Vehicle Charging Station – Process

Document	Electric Vehicle Charging Station Process
Applicability	Region wide
Supporting Policy	YORK-#8594739-Electric Vehicle Charging Station Policy

Purpose:

This document provides additional guidance to York Region staff when planning or implementing the installation of electric vehicle (EV) Charging Station(s) or associated infrastructure for staff, the public or dedicated York Region fleet use.

Scope:

This process is applicable to York Region owned and operated EV Charging Stations and corresponding users including Regional staff, fleet, and the general public as defined in the EV Charging Station Policy [YORK-#8594739-Electric Vehicle Charging Station Policy](#)

Responsibility:

Document Author	Brandon Foster, Climate Change and Energy Conservation
Document Owner	Ershad Kazemi, Climate Change and Energy Conservation
Document Approver	David Szeptycki, Director, Strategy and Innovation

Definitions:

Alternative payment options

Alternate payment options include methods such as RFID cards to authenticate and authorize charging of an EV (e.g. for fleet vehicles).

Charging Station

Charging Stations in this document are inclusive of the electric vehicle Charging Station pillar, electronic/physical parts, head, and the parking space designated for use when charging an electric or plug-in hybrid vehicle.

Charging Station data

Charging Station data must include time and usage data for chargers, at a minimum. However, identifying information will not be collected.

EV Charger Service Provider

EV Charger Service Provider is the third-party organization that supplies and/or operates the electric vehicle Charging Station.

Fleet

Fleet vehicles are electric or plug-in hybrid vehicles owned by York Region and shared by staff for the purposes of carrying out Regional business.

Gateway

Gateway refers to the communication gateway that relays electric vehicle Charging Station information to the EV Charger Service Provider's server through a wireless communication.

Level 2 (SAE) J1772 electric vehicle plug

Refers to SAE standard "Surface Vehicle Recommended Practice J1772, SAE Electric Vehicle Conductive Charge Coupler", which provides a standard of how a Charging Station connects, communicates with, and charges the vehicle. This standard has been adopted by all major manufacturers of passenger vehicles worldwide.

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Level 2 charging station

Level 2 charging stations provide the current industry standard for average duration EV charging at 240 volt AC.

Level 3 charging station

Level 3 charging stations provide up to 500 volt DC capacity, providing the highest speed alternative for EV charging.

NEMA

NEMA (National Electrical Manufacturer Association) provides standards for the types of environments where an electrical enclosure can be used. NEMA Type 3 enclosures are constructed for either indoor or outdoor use certifying a degree of protection from harmful effects on equipment due to the elements.

Open Application Program Interface (API)

Open Application Program Interface (API) is a set of clearly defined methods of communication, which allows access to Charging Station information from an EV Charger Service Provider's database, supporting the use of apps, dashboards and fleet management systems.

Open Charge Point Protocol (OCPP)

Open Charge Point Protocol (OCPP) is an application protocol for communication between EV Charging Stations and a charging station network. This allows EV Charger Service Provider to connect their system with any EV Charging Station, regardless of the initial vendor.

Operator

Entity in charge of the electric vehicle charging station will be the Regional Department or Branch responsible for maintaining the corresponding building.

Power sharing

Power sharing is a function of the Charging Station that intelligently manages the available power to the Charging Station enabling an owner operator to maximize the number of Charging Stations they can install at a particular location.

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Power limiting

Power limiting is a function of the Charging Station that minimizes and even totally offsets the effect of electricity demand charges by limiting power transfer to EVs during the building's peak power demand.

Public

Public includes members of the general public and Regional staff using chargers for personal vehicles. This includes personal vehicles being used for Regional business.

Service capacity

Service capacity refers to the ability to power electric vehicles compared to the amount of power available by the building or facility.

Third party ownership

Third party ownership refers to an ownership model where York Region provides parking spaces and electrical connection for a third party service provider to install, maintain, and operate an EV Charging Stations with no ownership rights for the Region. All costs, revenues, and risk are borne solely by the third party service provider and York Region receives a portion of the revenue to cover costs.

Users

A person who uses an EV Charging Station.

Utilization rate

Utilization rate, in this document, is measured as a percentage value referring to the connection time of the EV charger relative to the EV charger's charging capacity from 8:30 am to 4:30 pm Monday to Friday.

Administration

1. Installation requirements

- A. The building operator shall ensure sufficient space and capacity within the building electrical system/room and in the parking area(s) are available to house EV charging infrastructure.
- B. The electrical tie serving the Charging Station shall have a minimum 208/240 volt electrical service on a 40 ampere breaker.

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- C. Charging Stations shall be equipped with “power sharing” and “power limiting” technologies.
- D. Charging Stations shall be commissioned as per EV Charger Service Provider recommendations and is operational and functioning within the recommended specifications.
- E. EV Charger Service Provider shall provide the Region with a completed and signed off Site Commissioning form confirming proper installation and function.
- F. The ownership model for Charging Stations shall be one of the following:
 - I. The outright purchase of EV Charging Stations by the Region; or
 - II. Lease program
 - III. Third party ownership
- G. Third party advertising shall not be permitted without approval by York Region Corporate Communications.

2. Maintenance Requirements

A comprehensive preventative maintenance program for Charging Stations shall be implemented as part of the agreement with the EV Charger Service Provider, to include but not limited to:

- A. Regular hardware inspections and maintenance activities.
 - I. Inspect the condition of the charger to include but not limited to:
 - i. Charging Station Display
 - ii. Door mechanism
 - iii. Cable retraction system (cable management):
 - 1. Regular inspection and proper storage of cables
 - 2. Periodic cleaning of surfaces; especially for units close to roads or high traffic areas
- B. One (1) business day response time, by the EV Charger Service Provider, on all service issues related to charger malfunction.
- C. Regular software updates as appropriate.
 - I. The EV Charger Service Provider shall be responsible for remote monitoring and management of software.

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3. Revenue collection and pricing

A. The Operator shall ensure the EV Charger Service Provider manages all revenue collection on behalf of the Region.

- I. The EV Charger Service Provider shall be responsible for handling the entire billing process, including payment processing, fund transfers, tax collections and remittance.
- II. All billing shall be in Canadian funds and be tax compliant in the Province of Ontario.
- III. Ensure availability of alternative payment options for different user types (i.e. public versus fleet).

B. Pricing

- I. Users will be charged based on the time a vehicle is connected to a charger.
- II. Time-based rates charged to users shall be based on the following formula:
 - I. $\text{Charger rate} = \text{Electricity consumption costs} + \text{EV Charger Service Provider fees} + \text{Maintenance costs} + \text{Hardware installation costs amortized over 10 years}$
 - II. In the event that York Region enters into a third party ownership agreement, York Region shall require the hourly rate not to exceed the maximum average rates in Ontario, to be approved by Climate Change and Energy Conservation unit.
- III. Once the user is notified that vehicle charging is complete, following a 30 minute grace period, the rate per hour will be increased by two (2) times the normal rate until the vehicle is moved. This is to encourage users to move their vehicles when charging is complete.
 - I. Under the third party ownership model, the third party agrees to charge a rate less than or equal to the maximum rate outlined above and reimburse York Region based on the agreed upon rate outlined in the corresponding contract.
- IV. Climate Change and Energy Conservation staff shall review the rates for EV charging on an annual basis to confirm compliance with revenue neutral operating objective, except in the case of a third party ownership agreement where a maximum allowable charge rate has been agreed to.

4. Requirements for expansion of the Charging Station network

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Expansions to the Region's public EV Charging Station network shall be demand-based using the following criteria:

- A. At facilities without EV Charging Stations installed, demand will be assessed based on a survey of EV usage.
- B. At facilities with EV Charging Stations installed, additional EV Charging Stations will only be considered when utilization rates during normal business hours (8:30am – 4:30pm) exceed 80%.

Fleet electric vehicle charging infrastructure expansion shall be based on planned purchases of electric vehicles/plug-in hybrids and ensuring charging infrastructure provides sufficient flexibility to meet Fleet needs.

The Operator shall ensure there is sufficient service capacity for the installation of EV chargers, including but not limited to:

- C. Appropriately sized electrical panels and transformers with adequate access to electrical infrastructure.
- D. Appropriate planning for future parking spaces equipped with Charging Stations.

5. Required features of EV chargers to include but not limited to:

- A. Open Charge Point Protocol (OCPP) compliant systems
- B. Network capability to a private and secured connection using a cellular data network
- C. Gateway enabling sufficient communication capabilities to multiple Charging Stations.
- D. Mobile app enabling real time communication for with the Charging Station(s).
- E. The connector shall be Level 2 (SAE) J1772 EV plug.
- F. Capable of effective operation in outdoor temperatures and conditions experienced in York Region during all four seasons.
- G. Charge head to meet a minimum NEMA 3 standard.
- H. Charging station components are corrosion resistant.
- I. EV Charger Service Provider's customer service hotline, posted in plain sight, for real-time assistance.

6. Registration Requirements

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All EV charging customers/users shall register for membership directly with the corresponding charger network EV Charger Service Provider through smartphone applications or dedicated radio-frequency identification (RFID) cards.

7. Public vs Fleet Use of Charging Stations

- A. Public Charging Stations shall be installed in easy to identify locations and appear on the EV Charger Service Provider's public map.
- B. Fleet Charging Stations shall only be available for fleet vehicles either through physical controlled access or controlled access via software.
- C. EV Charging Station shall have both public (staff) and fleet charger option(s), enabling notices to be set as "Private" and "not available" to the public on the web app where necessary.

8. Data Administration

- A. The Region shall have full control of its Charging Stations and access to the charger utilization data.

The EV Charger Service Provider shall make available to the Operator a complete history of EV charging session data for all the Charging Stations associated with the Region. This data will be accessible electronically with the ability to generate reports for specific dates, sites and/or EV Charging Stations, including but not limited to:

- I. Energy transferred (kW)

- II. Connection time (hours: mins)

- III. Time connected not charging (hours: mins)

- B. The Operator shall obtain from the EV Charger Service Provider non user specific EV charging session data no less than every three months to assess utilization and plan for future expansion needs. The data shall be made easily available, stored in a central repository enabling the Operator to analyze the data as required to facilitate evidence (data driven) based decision making activities.
- C. The Region shall have access to real-time Charging Station status, including but not limited to:

- I. Charging Station availability

- II. Charging Station in use

- III. Charging Stations currently inoperable

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IV. Electricity use rate

V. The ability to produce detailed transaction reports for a given period

9. Considerations for Level 3 Charging Stations

The Operator has the right to assess the need for and install level 3 Charging Stations at their corresponding facilities based on:

- A. A needs assessment
- B. An assessment of the building's electricity infrastructure and electrical capacity

10. Complaint management protocols

All complaints shall be managed by the EV Charger Service Provider that are accessible and follow processes that are transparent to the Region.

11. Training for EV charging

The EV Charger Service Provider shall be responsible for all EV Charging Station training and instructions for their use.

References:

- [YORK-#8594739-Electric Vehicle Charging Station Policy](#)
- [O. Reg. 332/12: Ontario Building Code](#) (See sections 3.1.21 and 9.34.4)

Last Revision Summary:

Date	Item	Description of Change