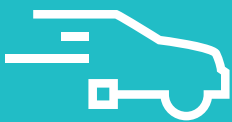




Make Your Condo EV Ready

2018 Guide for Condo Owners,
Boards and Managers



PLUG 'N DRIVE

WITH SUPPORT FROM:





Make Your Condo EV Ready

2018 Guide for Condo Owners, Boards and Managers

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Plug'n Drive's staff, Board of Directors and Sponsors at the May 2017 official ribbon cutting ceremony for the Electric Vehicle Discovery Centre.

WHEN IT COMES TO EVS, WE'RE HERE TO HELP.

ABOUT PLUG'N DRIVE

Plug'n Drive is a non-profit organization committed to accelerating the adoption of electric vehicles in order to maximize their environmental and economic benefits. Since 2011, Plug'n Drive has established itself as a leader in the electric vehicle industry, a trusted and unbiased source of information on electric cars, charging stations and the electricity sector.

ELECTRIC VEHICLE DISCOVERY CENTRE

The Electric Vehicle Discovery Centre is the first facility of its kind in the world dedicated to providing an experiential learning environment for electric vehicles. At the EV Discovery Centre, visitors can discover the environmental and economic benefits of electric transportation, learn about charging and take test drives in the latest EV makes and models from leading manufacturers in a sales-free no-pressure environment. Visit the EV Discovery Centre or plugndrive.ca for more information.

AT THE WORLD'S FIRST Electric Vehicle Discovery Centre™ we frequently get condominium-related calls about electric vehicles (EVs). Condo owners, managers and boards have plenty of questions and want to make sure they do the right thing when it comes to EVs. That's why, with the help of the Province of Ontario and our sponsors, we decided to update our much-used EV charging in condominiums guide.

It turns out that our timing couldn't have been better. Ontario recently made regulatory changes that make it easier for condominium owners and boards to install EV charging equipment. In this updated guide, we provide background, tips and answers to some of the most common questions we receive, all updated to take Ontario's new regulatory changes into account.

We'd like to thank the Province of Ontario, Ontario Power Generation, the Power Workers' Union and TD for their invaluable financial contributions and all the consultation participants who shared their stories and ideas to support the development of this guide (*see page 20*). Plug'n Drive takes sole responsibility for the content of this report and the content in no way reflects the positions or views of our sponsors or consultation participants. We'd also like to thank Travis Allan and DeMarco Allan LLP for their valuable contributions to this guide.

As always, we hope you'll come visit us at the EV Discovery Centre, located at 1126 Finch Avenue West, North York. When it comes to EVs, our friendly staff is here to help answer your questions and provide test drives in a wide range of EVs. We know that after a visit with us, you'll be ready to make the switch.

Cara Clairman, President and CEO of Plug'n Drive

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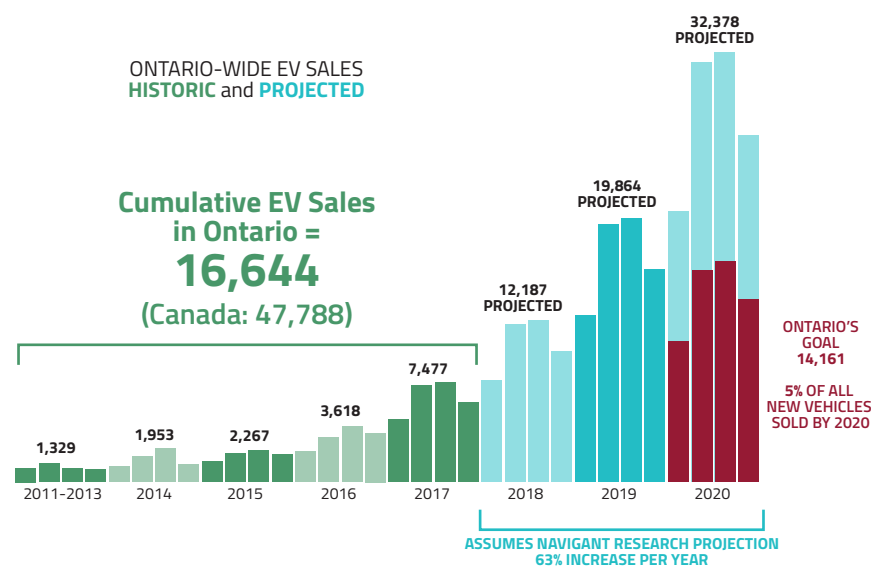
ELECTRIC VEHICLES



EV sales in Ontario are growing at an astounding rate as consumers discover the convenience and cost benefits of charging their EVs at home.

BY PLUGGING INTO LOW COST ELECTRICITY at night, owners avoid having to wait at gas stations for unpredictable fuel prices. Recent data collected by FleetCarma, an Ontario leader in EV technology, show sales in Ontario have risen dramatically over the past five years (Figure 1). These sales suggest that Ontario is well on the way to achieving its target of 5% of new passenger car sales being EVs by 2020, as set out in Ontario's Climate Change Action Plan.

FIGURE 1: Plug'n Drive – Ontario's 2017 EV Sales



Note that these figures represent all fully electric and plug-in hybrid electric sales. All historic EV sales data represented in this chart was compiled by FleetCarma.

TYPES OF ELECTRIC VEHICLES

Fully Electric Vehicles, also called Battery Electric Vehicles or BEVs, are powered 100% by electricity and have zero tailpipe emissions.

Plug-in Hybrid Electric Vehicles, also called PHEVs, have smaller battery packs for driving shorter distances (20-80 km) before a gasoline engine or generator turns on for longer trips. Plug-in hybrids differ from gasoline and diesel hybrids because they provide dedicated all-electric (and low-emission) driving.

If this is your first time taking a look at EVs, or if you haven't checked out available models in a couple of years, we suggest you take a look at Plug'n Drive's updated list of **EV models available in Canada** and the Ministry of Transportation's (MTO) list of **eligible electric and hydrogen vehicles**. You can find a make and model that fits almost any budget, and our hardworking staff keeps our site updated so you can shop informed. If you see one you'd like to try, give us a call—we have a wide range of vehicles in our test drive zone at the **EV Discovery Centre**.

INCENTIVES

The Province of Ontario currently provides a number of incentives that might be of interest to condo residents and boards. You can find up-to-date information about Ontario's EV incentives on **Plug'n Drive's website**, but always make sure to check the **Ministry of Transportation's website** to confirm your eligibility for a particular incentive before purchasing an EV.

Electric and Hydrogen Vehicle Incentive Program

Ontario's Electric Vehicle Incentive Program offers up to \$14,000 off the purchase of a fully electric or plug-in hybrid EV. The amount of eligible incentive changes by model and is based on the vehicle's electric range, the number of passengers, the manufacturer's suggested retail price and, if applicable, the duration of the lease agreement. For more information and to apply, see the Ministry of Transportation's **Electric and Hydrogen Vehicle Incentive Program**.

Electric Vehicle Charging Incentive Program

The Province of Ontario offers 50% of the purchase of a home charging station (up to a maximum of \$500) and 50% of the installation (up to a maximum of \$500). In order to qualify for the incentive, your station must be inspected by the Electrical Safety Authority (ESA). For more information and to apply, see the Ministry of Transportation's **Electric Vehicle Charging Incentive Program**.

Green License Plate Program

In addition to financial incentives, electric vehicle drivers in Ontario receive a green license plate that allows them to use High Occupancy Vehicle (HOV) lanes along major highways even when driving alone. For more information about the green license plate program, visit the Ministry of Transportation's **Green License Plate page**.



ONLINE RESOURCES

Climate Change Action Plan

<https://www.ontario.ca/page/climate-change-action-plan>

EV Models Available in Canada

<https://www.plugndrive.ca/electric-cars-available-in-canada/>

MTO Eligible Electric and Hydrogen Vehicles

<http://www.mto.gov.on.ca/english/vehicles/electric/electric-vehicle-rebate.shtml>

EV Discovery Centre

<https://www.plugndrive.ca/electric-vehicle-discovery-centre/>

Plug'n Drive Incentives

<https://www.plugndrive.ca/electric-vehicle-incentives/>

MTO Home Page

<http://www.mto.gov.on.ca/english/>

Electric and Hydrogen Vehicle Incentive Program

<http://www.mto.gov.on.ca/english/vehicles/electric/electric-vehicle-incentive-program.shtml>

MTO Electric Vehicle Charging Incentive Program

<http://www.mto.gov.on.ca/english/vehicles/electric/charging-incentive-program.shtml>

MTO Green License Plate Program

<http://www.mto.gov.on.ca/english/vehicles/electric/green-licence-plate.shtml>

2 EV CHARGING



Electric cars have battery packs that recharge by plugging into the electricity grid. Charging is simple, convenient and affordable.

You can recharge using a simple wall socket or by using a charging station, also known as Electric Vehicle Supply Equipment (EVSE). The time it takes to fully charge is based on the level, or speed, of charging and how full the battery is.

LEVEL 1: ONE HOUR OF CHARGE GIVES ~8 KM OF RANGE

All electric vehicles come standard with a cord-set that plugs into a regular wall socket. This is the slowest speed of charging, but ensures that no matter where you are, you can always recharge. Be careful though, not all wall sockets are designed for long-term EV charging—make sure to consult an electrical contractor if you are hoping to use an outlet for regular charging.

LEVEL 2: ONE HOUR OF CHARGE GIVES ~30 KM OF RANGE

The most common level of charging. Level 2 stations have similar electrical requirements to a stove or clothes dryer. Most EV drivers install a Level 2 station at home and many businesses install them for employees and/or customers. A Level 2 station will fully charge your EV overnight. All EVs sold in North America, (with the exception of Tesla), use the same charging standard (called J1772). That means that any car can use most stations across Canada and the United States. Tesla has a unique Level 2 standard that only Tesla cars can use. However, Tesla products come with a J1772 adapter.

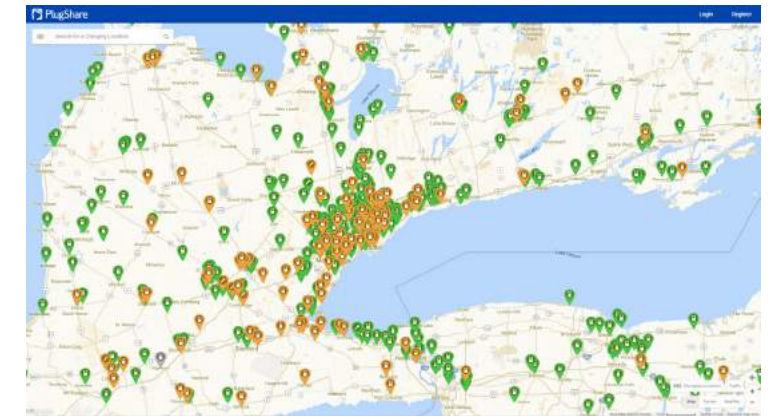
LEVEL 3 DC FAST CHARGING: ONE HOUR OF CHARGE GIVES ~250 KM OF RANGE

Direct Current Fast or “Quick” Charging (shortened to DCFC) will recharge your battery from empty to 80% in 30-45 minutes. DCFC stations can be found along many major highways in Canada. There are three standards of Level 3 charging: (i) CHAdeMO which is used by the Asian auto manufacturers; (ii) CCS which is used by the North American and European auto manufacturers, and (iii) Supercharger, which is used by Tesla. Most Level 3 stations in North America (with the exception of Tesla Superchargers) have both CHAdeMO and CCS infrastructure. Simply pull up to the station and pick the standard that your car needs. Please note that Level 3 is designed for situations when you need to

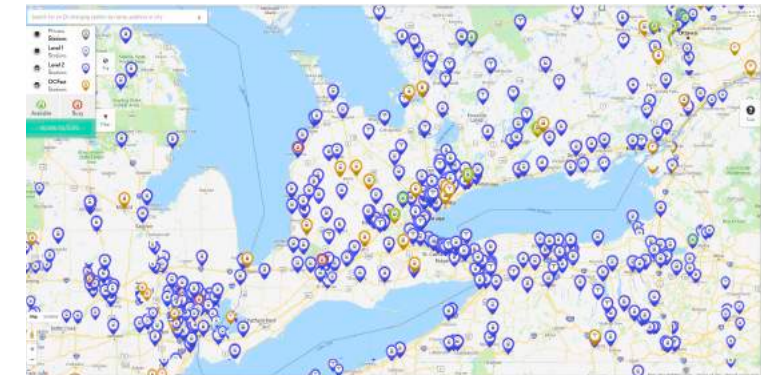
charge quickly, like during long trips and busy driving days. The majority of your charging will be Level 1 or Level 2.

PUBLIC CHARGING

There are over 4,500 public charging stations in Canada and counting. They can be found in a variety of places, such as malls, restaurants, office towers, and other buildings. Public charging stations are either free to use or pay per use. Free-to-use stations do not require payment. However, some are only available to customers, can only be used for a set amount of time and/or are located in parkades and parking lots with associated parking fees. Pay-per-use stations vary in cost from location to location and although there is no industry standard fee, Level 2 stations typically charge a \$2.50 flat rate or \$1.00/hour, while Level 3 stations charge \$15.00/hour. Please note that you will likely only be plugged into Level 3 for 20-30 minutes. It is billed by the minute and you pay for what you use. To find a public charging station along your route, please visit **PlugShare** or **ChargeHub**.



PlugShare: <https://www.plugshare.com/>



ChargeHub: <https://chargehub.com/en/>

CASE STUDY: PETER AND SUSANNE

“We were the first EV owners to request charging installation in our building. Our board was excellent! We provided a letter and some background reading on EVs and EV charging. We entered into an agreement with our condo corporation governing the payment of installation costs and electricity. We pay \$35 to charge our LEAF each month, based on 20,000 km of driving per year. The best part has been answering questions from other owners—they all want to know more when they see our parking space! We know our building has limited electrical capacity, so we think our condo board is likely going to have to adopt an energy management system soon to deal with future installation requests.”



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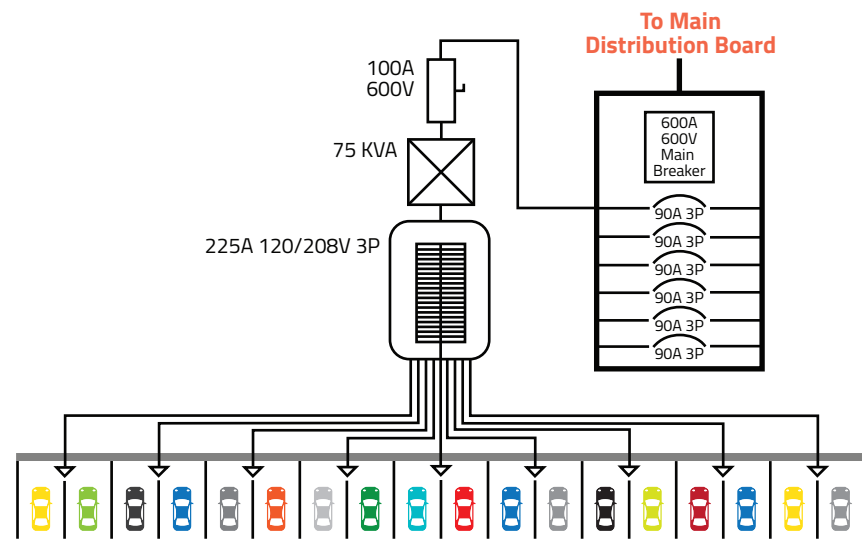
TYPICAL EV CHARGING INSTALLATION IN A CONDOMINIUM



While every condominium is different, experts say that most installations in existing condominiums tend to involve a similar procedure.

THE MAIN ISSUE is getting electricity from either the electrical room or an electrical sub-panel to the parking space where a person wants to (and is allowed to) install charging equipment. We asked our colleagues at Signature Electric to provide a sample diagram showing some of the typical elements of a condo parking space with a Level 2 charging station. Of course, every building is different.

FIGURE 2: Typical Condominium Installation Diagram



Signature Electric – EV Power Distribution

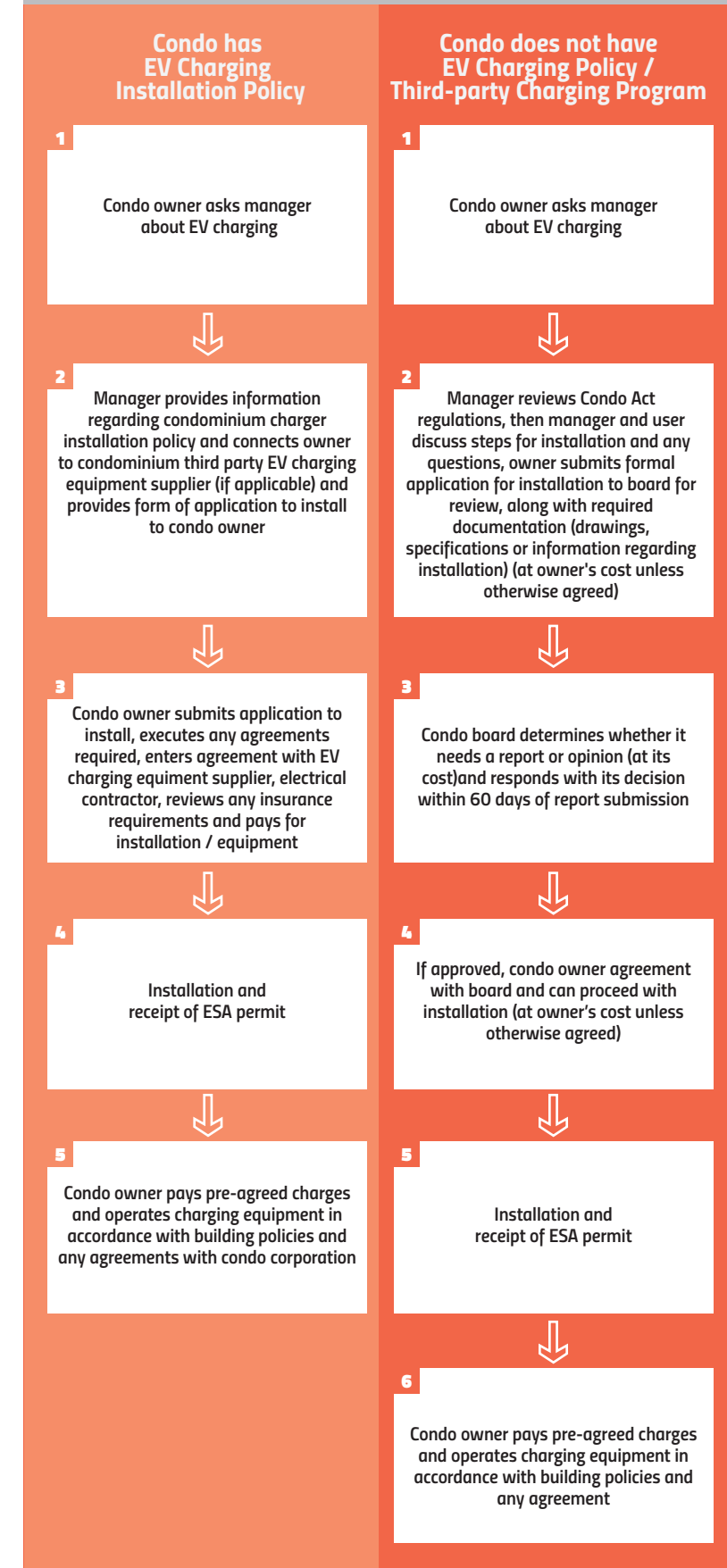
Some of the steps normally involved in installing a Level 2 charging station in a condominium setting include:

- 1) Obtaining any information regarding your condominium’s policies on EV charging. Some buildings have an EV charging policy or relationships with third parties who provide EV charging installation and maintenance services.
- 2) Checking the building’s electrical capacity. This is the responsibility of the building, not the resident.
- 3) Obtaining permission from the condo board to install charging equipment.
- 4) Installing wiring to the parking space (if you are running wiring through common elements, you may need to run the wire inside a “conduit”, which could be some kind of pipe to protect the wires).
- 5) Installing a Level 2 charger (Electric Vehicle Supply Equipment), in accordance with any policies or charging programs your condominium corporation may have in place.
- 6) Obtaining a permit from the **Electrical Safety Authority (ESA)** (your licensed electrical contractor will handle this).
- 7) Energizing the charger (you can use the charging station in advance of receiving the certificate of inspection, but you will ultimately need the certificate).
- 8) Reporting. In some cases, condo boards and owners agree to obtain reporting about electricity use from smart chargers. Be aware, though, that Measurement Canada (a federal regulatory body) currently does not permit the sale of electricity on the basis of energy (kWh) or time-related demand (kW) unless meters approved by Measurement Canada are used—and we aren’t aware of any commercially available EV charging equipment with such meters built in.¹

We’ve also provided an overview of the process for asking for and receiving permission to install EVSE. Figure 3 shows the typical process when the condominium corporation has a policy around EV charging and an external EV charging equipment supplier who supplies charging equipment and helps the condominium corporation manage billing, repairs and maintenance. Figure 3 also shows the process in situations where the condominium corporation doesn’t yet have a policy or energy management system in place. In both cases, if a modification to a common element is required, the owner and corporation are likely to have to enter into an agreement to allow for installation (a Section 98 Agreement). This means a condo corporation should contact its condominium lawyer early on in the process.

¹ Measurement Canada, “Electric vehicle charging stations” (Ottawa: Measurement Canada, 2017). Available online: <https://www.ic.gc.ca/eic/site/mc-mc.nsf/eng/lm04839.html>.

FIGURE 3: Permission to install EVSE



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ENERGY EFFICIENCY AND LOAD MANAGEMENT



Not all condo buildings have enough electrical capacity to install large numbers of EV charging stations.

IF YOUR BUILDING IS CONSTRAINED, it might be a good idea to hire an energy management expert to perform a Level 2 Energy Audit in accordance with the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE). A Level 2 Energy Audit helps clarify how much capacity the building has, outlines potential energy saving actions that are possible and provides a financial analysis. Local utilities may even have programs to help save on electricity.

Energy management at the building or charger level is another tool a building can use to expand the number of EVs that can charge in a building and to limit the total amount of electricity used for EV charging. Energy management can be very important for controlling building electrical costs. An engineer can use the hydro bills from the previous year and compare that to the building's service size for an accurate assessment of the building's typical electricity use. An ideal assessment will also include a recommendation as to the number of EVSE that could be installed with load sharing in place.

There are many emerging systems, including some available as part of EVSE specially designed for multi-unit residential buildings, which can help control cost and maximize available electrical capacity. Systems that allow EVSE to share power can allocate limited electrical capacity between several stations, making sure everyone gets an opportunity to charge before they need their car in the morning.

When signing an EV charging agreement (also called an **EVSE Agreement**), we recommend that condo corporations require an EV user to participate in any energy management system implemented by the condominium in the future. Otherwise, you could lose the right to fairly share your building's electrical capacity when more people want to charge in the future.

A Level 2 Energy Audit helps clarify how much capacity the building has, outlines potential energy saving actions that are possible and provides a financial analysis. Local utilities may even have programs to help save on electricity.



ELECTRIC VEHICLE CHARGING EFFICIENCY

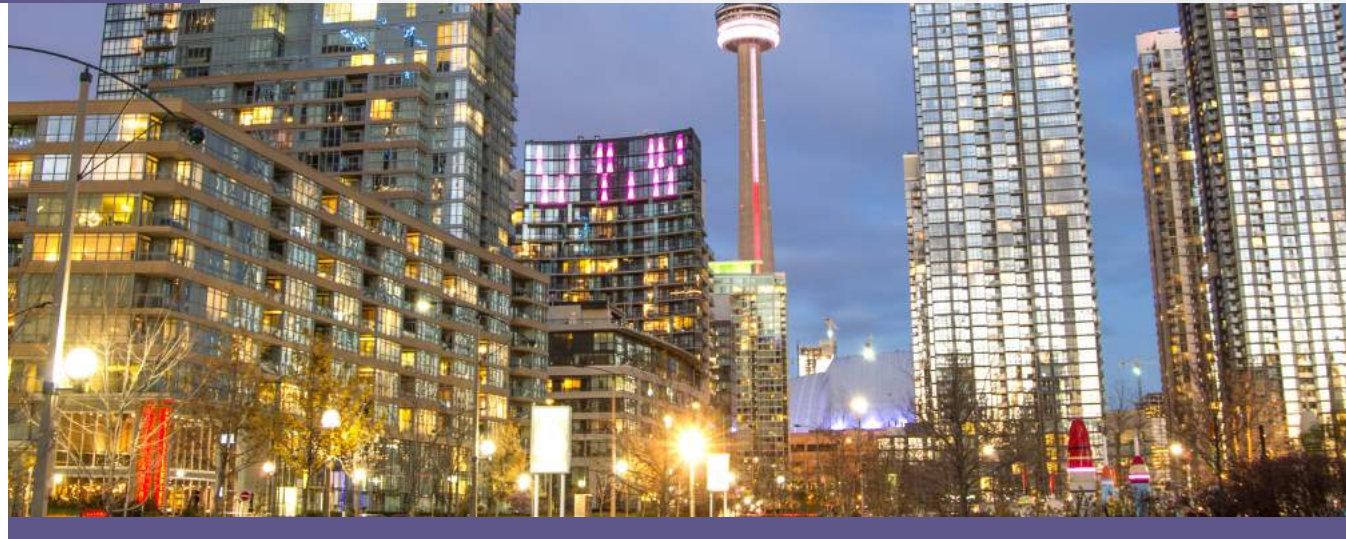
Below is a list of all fully electric vehicles available for sale in Canada as of May 31, 2018, and their charging times. For information on the plug-in hybrid electric vehicles available for sale in Canada, visit plugndrive.ca/electric-cars-available-in-canada.

EV Specifications

	Battery Size	Max Continuous Electrical Draw from Vehicle	Estimated Time to Charge (0-100% battery)	
			LEVEL 1 (120V, 15A)	LEVEL 2 (240V, 30A)
BMW i3	33 kWh	6.6 kW	23 hrs	5 hrs
Chevrolet BOLT	60 kWh	6.5 kW	42 hrs	9 hrs
Ford Focus Electric	33.5 kWh	6.6 kW	23 hrs	5.5 hrs
Hyundai IONIQ Electric	28 kWh	7.0 kW	19.5 hrs	4 hrs
Kia Soul Electric	30 kWh	6.0 kW	21 hrs	5 hrs
Nissan LEAF	40 kWh	6.7 kW	28 hrs	6 hrs
smart fortwo Electric	17.6 kWh	5.9 kW	12 hrs	3 hrs
Tesla Model S	100 kWh	11.5 kW	52 hrs	12 hrs
Tesla Model X	100 kWh	11.5 kW	52 hrs	12 hrs
Volkswagen e-Golf	35.8 kWh	6.8 kW	25 hrs	5.5 hrs

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CONDO BOARD AND MANAGER FAQs



DISCLAIMER: 1) Please keep in mind that neither Plug'n Drive nor the authors of this EV condo guide are providing legal advice. You should consult a qualified lawyer for any legal questions, and a qualified and licensed electrical contractor for any electrical questions. 2) In these FAQs, we refer to O. Reg. 48/01 to the Ontario Condominium Act, 1998 (O. Reg. 48/01)—the provisions we refer to came into effect on May 1, 2018.

QUESTION 1: **Do we have to allow EV charging in our building?**

Condo boards in Ontario are required to approve an application to install an EV Supply Equipment (EVSE) unless certain exemptions exist. If you are receiving an application to install for the first time, we suggest you consult your condominium lawyer promptly to review your obligations. Ontario requires that condominium boards respond to a complete application to install within 60 days. You also have to respond as soon as reasonably possible if you think the application is incomplete (*see O. Reg. 48/01, ss. 24.5(5) and 24.5(6)*).²

QUESTION 2: **Under what circumstances can a condo board deny a complete application to install EVSE?**

Condominium boards should do what they can to accommodate condo owners who want to drive electric, particularly as EV uptake increases and more potential condo buyers

won't buy in buildings without the possibility of charging.

If you are considering rejecting an application to install, please make sure you consult your condo lawyer first. Ontario's condo regulations allow condo boards to reject an application for installation *only if* a report or opinion of a person whose profession lends credibility to the report or opinion clearly states that the installation meets certain criteria, including, but not limited to: being contrary to the Electrical Safety Code (or another other act or regulation); adversely affecting the structural integrity of the condominium corporation's property or assets; or posing a serious risk (i) to the health and safety of an individual or (ii) of damage to the condo corporation's property or assets (*see O. Reg. 48/01, s. 24.5(8)*).³ The report or opinion also has to give the reasons for this determination.

² See O. Reg. 48/01, ss. 24.5(5) and 24.5(6).

³ See O. Reg. 48/01, s. 24.5(8).

Keep in mind that if a proposed installation won't work, you can provide alternative solutions to condo owners (*see Question 4, below*).

QUESTION 3: **What if the Application to Install is incomplete?**

Ontario's condo regulations require that if a condo board determines an application to install doesn't meet regulatory requirements (e.g., because it is incomplete), the board must, as soon as reasonably possible (or as otherwise agreed in writing) respond to the owner in writing stating why, according to the board, the application wasn't compliant (*see O. Reg. 48/01, s. 24.5(6)*).⁴

QUESTION 4: **Can we propose an alternate way to install?**

Ontario's condo regulations allow condo boards to require that a proposed installation be carried out in an alternative manner or location if the alternative manner or location would not cause the owner to incur unreasonable additional costs and if the alternative manner or location is necessary to avoid certain things, one of which is avoiding causing a material reduction or elimination of the use or enjoyment of another owner's unit, the common elements or the condo corporation's assets (*see O. Reg. 48/01, s. 24.5(12)*).⁵ This is something that you should consult your condominium lawyer about.

QUESTION 5: **Can we require the use of our own electrical contractors?**

Condominium boards in Ontario can make reasonable bylaws to govern the maintenance of common elements and the management of the condominium property (*see Condominium Act, 1998, S.O. 1998, c. 19, subsections 56(1)(j), 56(1)(l) and 56(6)*). Many condominium boards find it reasonable and in the best interests of their condominium corporation to create a list of

approved contractors. We suggest ensuring that you have more than one contractor on your list with experience installing EVSE and who understands any energy management system you have in place so your residents are able to get multiple quotes.

QUESTION 6: **Does the condo corporation have to pay for the electricity used to charge EVs in our building?**

Ontario does not require condo corporations to pay for the electricity used to charge EVs without any compensation from condo owners who install EVSE, unless the corporation agrees to do so. When an Ontario condo board approves an application to install, the corporation and the applicant owner are required to take all reasonable steps to enter into an EVSE installation, use and operation agreement (an **EVSE Agreement**) within 90 days (*see O. Reg. 48/01, s. 24.6*).⁶

The EVSE Agreement is required to set out responsibility for the cost of the use of the EVSE, which likely includes the cost of electricity (*see O. Reg. 48/01 s.24.6(3)(c)*). Keep in mind, though, that Measurement Canada takes the position that the sale of electricity on the basis of energy (kWh) or time-related demand (kW) is not permitted unless meters approved by Measurement Canada are used—and we aren't aware of any commercially available EVSE with such meters built in.⁷ Some condo corporations have interpreted this as preventing them from charging for electricity directly. One option is to charge a flat fee based on estimates of how much electricity an EV might use every day based on normal operating conditions. Another option is to charge on a per-use basis. This can be done several ways, including smart meters, sign-out systems or networked charging stations. Many EVSE manufacturers and network operators will manage the payment on behalf of the building. Other condo corporations use approaches that may not be approved by

Measurement Canada. Whatever you decide, your approach should be set out in your EV charging by-law and reflected in your EVSE Agreement.

QUESTION 7: **Do we have to pay for the installation costs for a condo owner to install charging equipment?**

Unless the owner and the condo corporation agree otherwise, Ontario law states that if the owner or a person retained by the owner carries out the installation, the owner is responsible for all costs to carry out an EVSE installation. If the corporation or a person retained by the corporation carries out the installation, the owner is still responsible for the costs, but they must be reasonable and necessary to carry out the installation (*see O. Reg. 48/01, s. 24.6(4)*).⁸

QUESTION 8: **Our building doesn't have enough electrical capacity to allow for the installation of a charging station—can we refuse a request to install?**

Keep in mind that, as EVs increase in popularity, buildings that don't have EVSE may be less attractive to potential buyers who want to charge their EVs at home. We suggest you consider hiring a qualified energy management expert to conduct an ASHRAE Level 2 Energy Audit. A Level 2 Energy Audit helps you understand how much electrical capacity your building has, potential energy saving actions you could take, and provides a financial analysis. Your local utility may also have programs to help you save on electricity. You may also want to look into energy management systems, which can help make best use of your available capacity between EV charging and other uses.

⁴ See O. Reg. 48/01, s. 24.5(6).

⁵ See O. Reg. 48/01, s. 24.5(12).

⁶ See O. Reg. 48/01, s. 24.6.

⁷ Measurement Canada, "Electric vehicle charging stations" (Ottawa: Measurement Canada, 2017). Available online: <https://www.ic.gc.ca/eic/site/mc-mc.nsf/eng/1m04839.html>.

⁸ See O. Reg. 48/01, s. 24.6(4).

If a building truly does not have sufficient capacity to charge an EV, Ontario's condo regulations may allow condo boards to reject an application based on legitimate reasons (see *Question 2 on the previous page*).

If a proposed installation won't work, you can provide alternative solutions to condo owners, such as community shared EV charging spots (see *Question 4 above*).

QUESTION 9:
Our building has limited electrical capacity. What can we do to ensure that other residents will be allowed to install later?

We think it is a very good idea to keep future EV users in mind (as adoption is growing rapidly). We recommend including a requirement in any EV charging bylaw and EVSE Agreement with a condo owner that the condo owner will participate in any future energy management program entered into by the condominium. Many condo boards are now working with EV charging providers to create and install systems that allow for multiple condo owners to charge their EVs at once using energy management and power sharing systems.

To put a requirement like this in place, you should consult with a condo lawyer to make sure it conforms either with the provisions of O. Reg. 48/01, for example around alternative manner or location of installation (see *Question 4 above*) or the condo corporation's right to set out the respective duties and responsibilities of the corporation and the owner with respect to the EVSE in an EVSE Agreement (see O. Reg. 48/01, s. 24.6(3)(c)).⁹ Any policy related to power sharing should ideally be in place before moving ahead with the first installation.

QUESTION 10:
We want to make our building EV ready. What should we do?

As EVs increase in popularity, buildings that don't have chargers may be less attractive to potential buyers who want to be able to drive and charge their EVs. We know multiple developers are starting to plan for high levels of EV adoption, so it makes sense to consider keeping your building competitive with newer buildings. One option is to conduct a study to look at your building's current capacity for EV charging. If there are limitations, you could consider hiring a qualified energy management expert to conduct an ASHRAE Level 2 Energy Audit. A Level 2 Energy Audit helps you understand how much electrical capacity your building has, potential energy saving actions you could take, and provides a financial analysis to help you understand potential payback periods. Your local utility can help facilitate the process by providing operation and guidance surrounding the EV charging requirements in the building. If you need additional upgrades to your building's electrical capacity to support EVSE installation, we recommend that you consult your condominium lawyer. Ontario's new condo regulations provide important new rights for condo boards to install EVSE in common areas upon 60 days' notice if: (a) the assessed cost being lower than 10 per cent of the annual budgeted common expenses for the current fiscal year and (b) in the reasonable opinion of the board, the owners would not regard the installation as causing a material reduction or elimination of their use or enjoyment of the units that they own or the common elements or assets of the corporation (see O. Reg. 48/01, s. 24.3(4)).¹⁰

QUESTION 11:
Will having EV chargers impact our insurance?

We are not aware of any reported impacts of EV chargers on a condominium corporation's insurance policy. Check with your condo lawyer if you want to be sure.

QUESTION 12:
What can we require a user to do as part of an application to install EVSE?

When an Ontario condo board approves an application to install, the corporation and the applicant owner are required to take all reasonable steps to enter into an EVSE Agreement within 90 days (see O. Reg. 48/01, s. 24.6(1)).¹¹ The terms and conditions of the EVSE Agreement are required to be reasonable and necessary to facilitate the installation, use and operation of the EVSE and shall include terms and conditions that:

- (a) relate to the manner of the installation;
- (b) allocate the cost of the installation of the system between the corporation and the owner (see Question 7, above, regarding the condo owner's default obligation to pay for this);
- (c) set out the respective duties and responsibilities of the corporation and the owner with respect to the system, including responsibility for the cost of use, operation, repair after damage, maintenance and insurance of the system and the cost of preparing the EVSE Agreement and registering it;
- (d) specify who will have the ownership of the system or any part of it; and
- (e) relate to the cessation of the use and operation of the system or the termination of the EVSE Agreement (see O. Reg. 48/01, s. 24.6(3)).¹²

⁹ See O. Reg. 48/01, s. 24.5(8)).
¹⁰ See O. Reg. 48/01, s. 24.6(3)(c).
¹¹ See O. Reg. 48/01, s. 24.6(3)(c).
¹² See O. Reg. 48/01, s. 24.6(1).
¹³ See O. Reg. 48/01, s. 24.6(3).

QUESTION 13:
A condo owner who had charging equipment at her space is moving out—what should we do?

Before making any final decisions, we suggest that you first check with the new owner—she or he might want the option to charge an EV in the future. If the new owner doesn't want the EVSE, or it needs to be removed for some other purpose, we recommend that you review your condo EV charging policy and any EVSE Agreement with the owner to see if you have a right to require that the condo owner remove the EVSE. If you have an external EV charging provider, make sure to check your agreement—this may be covered for a fee.

Going forward under Ontario's condo regulations, any EVSE Agreement should have terms and conditions related to the cessation of the use and operation of the system or the termination of the agreement (see O. Reg. 48/01, s. 24.6(3)(e)).¹⁴

QUESTION 14:
We are planning to repave our parking area in the future, what should we do if someone wants to install EV charging equipment in an area that will need to be repaved?

We suggest including a right to require the temporary removal and cessation of use of an EVSE under certain reasonable circumstances, including re-paving and parking area repairs, in your EV policy and EVSE Agreement. You should have your condominium lawyer look at these provisions. The terms and conditions of an EVSE Agreement are required to be reasonable and necessary to facilitate the installation, use and operation of the EVSE and should set out the respective duties and responsibilities of the corporation and the owner with respect to the system and the cessation of the use and operation of the system (see O. Reg. 48/01, ss. 24.6(3)(c) and (e)).¹⁵

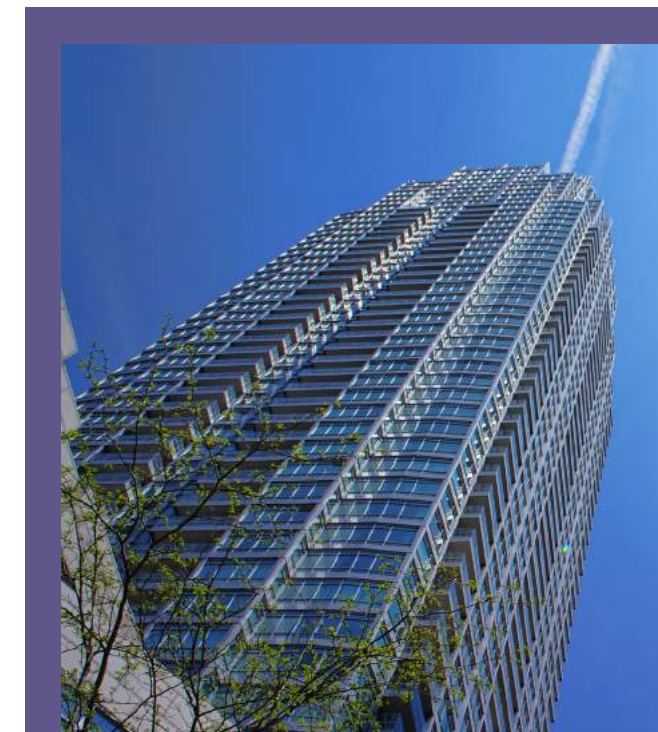
QUESTION 15:
Are EV charging stations safe?

EV stations that have been certified by a third party such as the Canadian Standards Agency (CSA), properly installed by a licensed electrical contractor, inspected by the Electrical Safety Authority and kept in proper repair are safe to use under normal operating conditions. If you ever have concerns about a station, we suggest consulting a licensed electrical contractor.

QUESTION 16:
Where can we read more about EVs and EV charging?

We invite you to check out [Plug'n Drive's website](#) and the [Ministry of Transportation's webpages on electric vehicles](#). If this is your first request for charging installation, you may also find it helpful to discuss with other building managers or boards who have installed EV charging equipment in their buildings.

¹⁴ See O. Reg. 48/01, s. 24.6(3)(e).
¹⁵ See O. Reg. 48/01, ss. 24.6(3)(c) and (e).



CASE STUDY:
CONDO BOARD MEMBER

A condo owner approached our board requesting to install a Level 2 charger. I was interested in EVs, so offered to do some research for the board. Together with our condo manager, I spoke to other condominium boards who had permitted EV charging installation. I advised my board that we should look into options to support the owner, because we don't want to be left behind other buildings that allow for charging installation. I found an electrical contractor who was able to confirm that we had enough electrical capacity and we had our lawyer draft up a Section 98 Agreement because some modifications to the common elements were required to bring wiring to the parking space. The Agreement pre-dated Ontario's new condominium regulations allowing EV charging, but we considered most of the aspects in the new regulations. Now, we're working on an EV charging policy and looking at energy management systems to allow for wider uptake because other owners saw her charging and have asked how they can start charging too.

QUESTION 17:

Can we install one EV charger for all users?

It may make sense in some cases to install a shared charging station as a temporary measure. A number of smart charging systems even provide options that allow you to bill multiple residents using tap cards. However, one of the major advantages to an EV is the ability to charge overnight at home, so you have a full battery for your use the next morning. That's why most users want dedicated charging spaces over the long term. You will also need to consult your condominium lawyer to determine the process for, and any restrictions on, installing EV charging in any common elements (see Question 10, above).

QUESTION 18:

What should we include in an EV charging policy?

We suggest including the following in your EV charging policy:

- Treatment of installation costs.
- Reasonable insurance requirements (make sure to consult with an insurance provider so you correctly describe the applicable policy).
- Rules related to participation in any energy management system or use of any third party EVSE providers.
- Ability of condo corporation to change/enter into an energy management system.
- Obligations regarding repair and removal of EV charging equipment (including in situations of repair or replacement of parking area).
- Reporting obligations regarding energy consumed.
- Payment deadlines and process.

QUESTION 19:

Can we charge a condo owner a fee to evaluate her application to install?

Each of the condo corporation and the owner are responsible for their own costs related to the application to install unless they agree otherwise in the EVSE Agreement (see O. Reg. 48/01, s. 24.5(17)).¹⁶

¹⁶ See O. Reg. 48/01, s. 24.5(17).

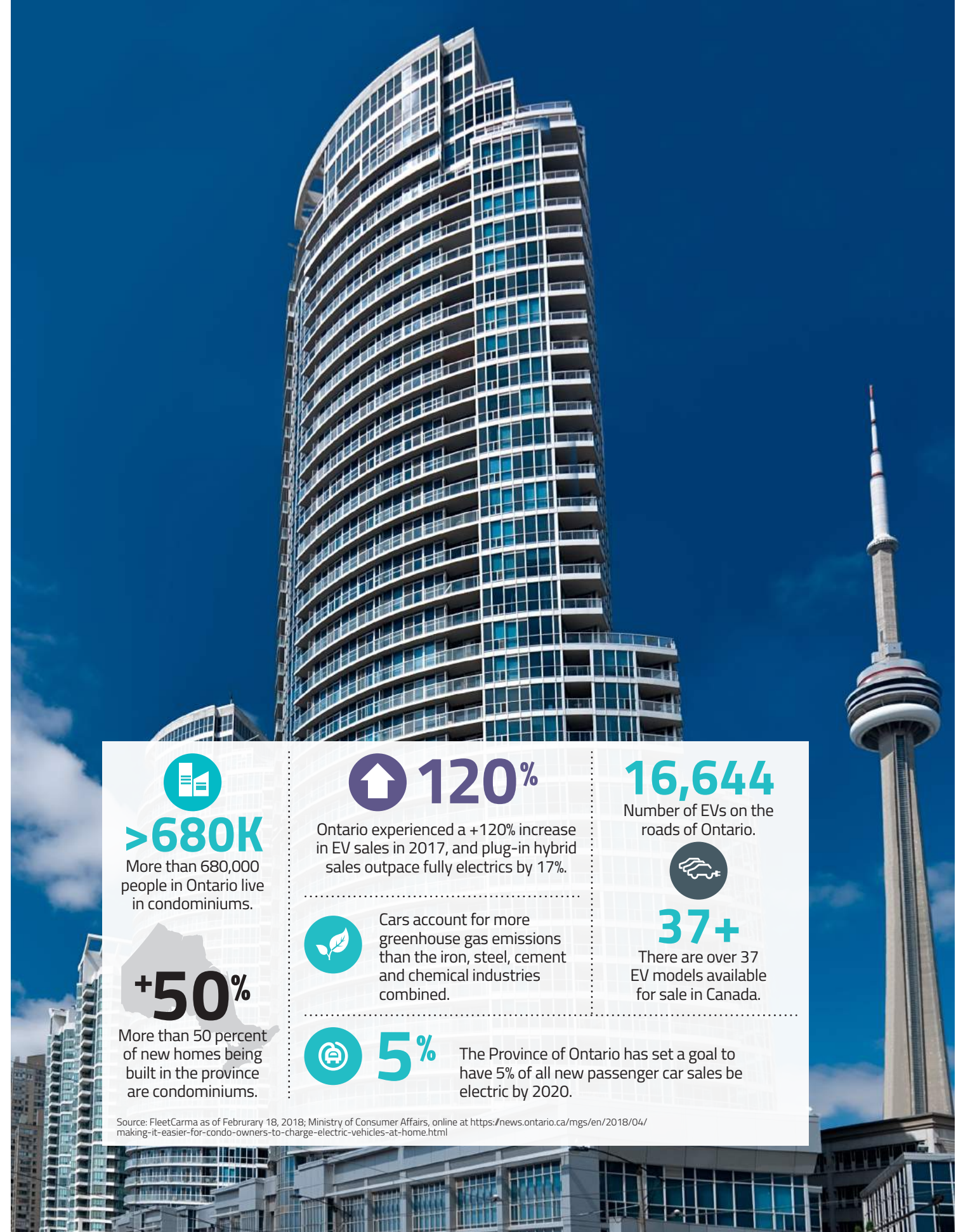


CHOOSING YOUR CHARGING SOLUTION

The majority of condominium buildings install Level 2 charging stations for their residents. (For more information about the different charging levels, please see page 6). All Level 2 stations on the market operate at the same voltage and amperage (240V/30A), meaning any station will charge any EV at the exact same speed. Furthermore, all Level 2 stations and EV models sold in North America use the same plug standard, meaning every Level 2 station is compatible with every EV model across Canada and the United States.

However, different charging stations offer unique features and there are a number of companies that manufacture and sell them. Before choosing your charging solution, it is important to undergo a procurement process by sending out requests for proposal and obtaining quotes. Different suppliers can offer you different features at different price points and will customize their quote to suit your unique needs.

Plug'n Drive is here to help. We work with a number of trusted suppliers and can help point you in the right direction. Contact us at info@plugndrive.ca.



>680K
More than 680,000 people in Ontario live in condominiums.

+50%
More than 50 percent of new homes being built in the province are condominiums.

120%
Ontario experienced a +120% increase in EV sales in 2017, and plug-in hybrid sales outpace fully electrics by 17%.

16,644
Number of EVs on the roads of Ontario.

37+
There are over 37 EV models available for sale in Canada.

5%
The Province of Ontario has set a goal to have 5% of all new passenger car sales be electric by 2020.

Source: FleetCarma as of February 18, 2018; Ministry of Consumer Affairs, online at <https://news.ontario.ca/mgs/en/2018/04/making-it-easier-for-condo-owners-to-charge-electric-vehicles-at-home.html>

6

CONDO OWNER AND RESIDENT FAQs



DISCLAIMER: 1) Please keep in mind that neither Plug'n Drive nor the authors of this EV condo guide are providing legal advice. You should consult a qualified lawyer for any legal questions, and a qualified and licensed electrical contractor for any electrical questions. (2) In these FAQs, we refer to O. Reg. 48/01 to the Ontario Condominium Act, 1998 (O. Reg. 48/01)—the provisions we refer to took effect on May 1, 2018.

QUESTION 1: Are there any resources to help me inform my condo board about EV charging?

We suggest referring them to this guide and our condo board and manager FAQs. You can also refer them to Plug'n Drive's website and the Ministry of Transportation's webpages on electric vehicles. If you are the first person to request charging installation, you may also find it helpful to suggest that the building manager reach out to other building managers who have installed EV charging equipment in their buildings.

QUESTION 2: The quote to install a Level 2 charging station at my parking space is expensive. Are there more affordable options?

Make sure you have factored in any available incentives. You can check the Plug'n Drive website for an overview of current incentives. You can also ask for a second quote to make sure you have been offered a market price for installation. Keep in mind that your condominium corporation may have a list of approved electrical contractors who you might need to use. If the price is still too high, there may be other solutions. For example, if the excess costs result from building electrical capacity limitations or the need to bring electrical cabling through walls or floors, you may be able to work with a group of condominium owners to install at multiple spaces at the same time, which could save on costs. It may also be possible for your condominium to free up some electrical capacity through energy

efficiency measures and the use of an energy management system. Alternatively, you could look into:

- installing Level 1 charging infrastructure at your parking space, which has a lower electrical load (sometimes helpful if the cost is because of limited building electrical capacity)— be careful though, some standard wall sockets are not designed for long-term EV charging and may pose a safety risk;
- approaching another parking space owner about a swap, if their space would be significantly cheaper to install charging equipment in;
- asking for the installation of charging equipment in a visitor space or other common area that could be accessed by any resident who uses an EV.

Keep in mind that each of these options may have other challenges and procedures and could require legal agreements that may add to their cost and practicality.

QUESTION 3: My condo board/manager wants me to pay for an expensive electrical submeter and fees to read the meter. What can I do instead?

There are a number of ways to make sure that you compensate the condominium corporation for the cost of electricity used in EV charging. Some condominiums charge a user fee based on a reasonable estimate of the cost of electricity you are expected to use, which can be significantly cheaper than paying for a submeter and meter-reading. Other condominium corporations use a report from "smart" EV charging equipment that is capable of reporting how much electricity was used for charging and when, which helps figure out the cost accurately. You can find more information about Canadian and internationally built charging equipment at plugndrive.ca/charging-station-store. This type of setup may not comply with Measurement Canada's metering rules, however (see *Condo Board and Manager Question 6*).

QUESTION 4: I've provided all of the information required under Ontario's condominium regulation for an installation application and offered to pay, but my condo manager or board is still refusing to let me install. What can I do?

We are sorry to hear that! Most condo managers and condo boards are great, but sometimes, condominium residents encounter problems. Ontario now has a regulatory requirement to approve requests to install Electric Vehicle Supply Equipment (EVSE) in condominiums if certain requirements are met. We suggest you make sure that your installation application is complete by consulting a condominium lawyer. If your application is complete and conforms with the condominium regulation, you have a right to hear back within 60 days.

Ontario's condo regulations limit condo boards' rights to reject an application for installation unless a report or opinion of a person whose profession lends credibility to the report or opinion clearly states that the installation meets certain criteria, including, but not limited to: (a) being contrary to the Electrical Safety Code (or other act or regulation); (b) adversely affecting the structural integrity of the condominium corporation's property or assets; or (c) posing a serious risk (i) to the health and safety of an individual or (ii) of damage to the condo corporation's property or the assets (see *O. Reg. 48/01, s. 24.5(8)*).¹⁷ The report or opinion also has to give the reasons for this determination.

The new regulation also has dispute resolution provisions that can help you resolve issues with your condo board. Keep in mind that if a proposed installation won't work, your condo board is allowed to provide alternative requirements for the manner and location of installation, subject to certain conditions (see *Condo Board and Manager Question 4*).

¹⁷ See *O. Reg. 48/01, s. 24.5(8)*.



CASE STUDY: CONDO OWNER

I tried to install EV charging in my parking space for over 3 years. I offered to pay all the costs, sent information to my condo board and kept receiving the same response, "no." The process has been very frustrating.

Now that Ontario has passed a new EV charging regulation that gives me a right to install subject to reasonable restrictions, I'm excited to finally get some progress on this point.

QUESTION 5:

I'm moving! What do I do with my EV charging equipment?

Condominium residents should have agreements with their condominium corporations regarding their EVSE (an EVSE Agreement), and some condominium corporations have a by-law setting out EV charging policies. You should make sure to comply with both of these if they exist unless your condominium manager grants you an exemption. If they are silent on what to do when you sell, you can discuss it with your real estate agent and lawyer and the condominium manager/board. The purchaser may want to buy the EVSE or may want it removed. If it is a plug-in device, removal is easy. If it is wired-in, you will need to hire a licensed electrician to remove it and make any remaining electrical infrastructure safe in accordance with Ontario's Electrical Safety Code. Your condominium corporation may have a list of approved electricians, or you can check the Electrical Safety Authority's [Contractor Location site](#).

QUESTION 6:

Is it safe to install EV charging equipment outside?

There is EV charging equipment designed and tested for outside use in Ontario. We recommend taking a look through [Charge My Car - Plug'n Drive's Online Charging Station Store](#). Not all of the chargers available through Plug'n Drive's online store may be practical for your situation. You should consult with your condo board before making your charger purchase in order to ensure that the unit you want to buy satisfies any product requirements or specifications that may be set out in the building's EVSE Agreement. Make sure that any EVSE you select is "wired" meaning it can't be easily unplugged. You may also want to look for Canadian-made options that are tested for Canada's winters. Finally, you'll want to look for options that are physically or electronically secured, meaning they can't just be used by anyone who plugs in.

EVs SAVE MONEY



\$2,000 (approx)

ANNUAL SAVINGS ON FUEL AND MAINTENANCE

EVs REDUCE GREENHOUSE GAS EMISSIONS



UP TO 90%

FEWER GHG 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



37+

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



THINGS TO CONSIDER

BENEFITS OF CHARGING STATIONS

- Tenant Retention/Attraction
- Value-Added Amenity
- LEED Accreditation
- Marketing/Branding

CHOOSING A CHARGING STATION

Wall-Mounted or Pedestal-Mounted

- Wall-mounted stations tend to be more affordable to install while pedestal-mounted stations are more durable

Hard-Wired or Plug-in

- Hard-wired stations are more secure because they are wired directly into the building's electrical supply. Plug-in stations tend to be more expensive but can more easily be transported or moved.

Single or Dual Wand

- Single wand stations are less expensive to purchase while dual-wand stations can service multiple parking spots and cars at the same time

Publicly Accessible or Private Use Only

- You may want to make your charging stations available to visitors or restrict their use to residents only



GLOSSARY OF EV TERMS

EV - Electric Vehicle

BEV - Battery Electric Vehicle. Also known as a fully electric car

PHEV - Plug-in Hybrid Electric Vehicle

EVSE - Electric Vehicle Supply Equipment. Commonly known as a charging station.

J1772 - The North American EV industry standard for Level 2 charging. All EV models and Level 2 charging stations (with the exception of Tesla) use this standard in Canada and the United States

DCFC - Direct Current Fast Charging. Also referred to as Level 3 or DC-Quick charging

CHAdeMO - CHAdeMOve. This is the DCFC charging standard used by the Asian auto manufacturers

CCS - Combined Charging System. This is the DCFC charging standard used by the European and North American auto manufacturers



ONLINE RESOURCES

Plug'n Drive's website
<https://www.plugndrive.ca>

Charge My Car - Plug'n Drive's Online Charging Station Store
<https://www.plugndrive.ca/charging-station-store/>

MTO Electric Vehicle Charging Incentive Program
<http://www.mto.gov.on.ca/english/vehicles/electric/charging-incentive-program.shtml>



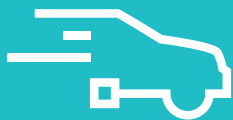
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