



## **Experiences with EV development in multi-unit residential buildings in Ontario & deployment suggestions**

**DEVELOPED BY CLIMATE ACTION FOR LIFELONG LEARNERS (CALL)**

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### **INTRODUCTION**

CALL supporters have shared stories on how they developed EV Charging in their buildings. While our collective experience is in condos, the lessons learned would be applicable to co-ops and rental buildings with a strong base of tenant engagement.

### **BACKGROUND & EXPERIENCES**

Usually the EV charger issue arises when someone expresses interest in purchasing an EV or move into a building and already owns an EV. They approach management or board members asking for the installation of a charger. The response varies from outright refusal to even consider the idea to a willingness to explore how chargers might be made available to residents.

For the outright denial a resident needs to know the current law in Ontario. While there is no provincial requirement to provide EV charging in existing or new buildings various municipalities have by-laws in place to support the development of EV charging infrastructure. Also the Condo Act requires the Condo Corporation to provide EV charging when requested by an owner, unless it is proven impossible or dangerous to do so - exemptions from the rule.

In Toronto the following by-law is in place: According to the Zoning Bylaw 569-2013, which was amended on Dec. 2021 and the Toronto Green Standard version 4 performance standards for EV Infrastructure, which came into effect in May 2022, all residential parking spaces provided for dwelling units located in an apartment building, mixed-use building, and multiple dwelling unit building, but excluding visitor parking, must include an energized outlet capable of providing Level 2 charging or higher to the parking space. If you are in Toronto your management or board cannot deny you the right to install, at your cost, an EV charger at Level 2 or higher. There are exemptions, the most important being that the building does not have sufficient power capacity to support a Level 2 or above charger. This does not apply to a lawfully existing building that was not required to provide an energized outlet when built.

Other cities with by-laws in place include:

- Cambridge
- Hamilton
- Kitchener

- Mississauga
- Waterloo
- Ajax
- Whitby

## CONDOMINIUM CORPORATIONS

1. Background Information for Condos
  1. A condo corporation could install chargers in the building at its own expense and without a vote of members if the cost of installation is less than 10% of the annual budgeted common expenses. The board has to believe the installation of EV charging stations will not negatively impact the use and enjoyment of units, common elements or the assets of the corporation.
  2. If the costs are more than 10% a vote of owners is required to approve the installation and include the costs in common element fees.
  3. Installation by a condo owner can be done by application with various rules in place the condo has to follow in the approval or rejection of the request. However this is a seriously flawed approach — approving requests and installing chargers one by one. It will be more costly for the owner and the corporation. What could happen is the first few people secure electrical power from the condos shared services electrical panel and suddenly by the 5th or 6th request the panel is full and no further requests can be considered. This will create significant conflicts between owners and management so it is not recommended.
  4. The condo can also facilitate a group purchase of chargers by those owners who are interested. This will lower the cost and manage the electrical capacity and assets of the corporation. This is the favoured scenario and the one used in this guide as a preferred way forward. Usually the costs in this scenario are borne by the condo owner as a shared project for all those signing up to purchase a charger. The costs of doing it in a group are significantly lower than trying to do it individually. Group purchasing may also allow the group to receive incentive grants.

If we assume there is willingness to explore the installation of chargers, these are the usual steps that occur:

1. Determine if there is interest beyond one or two people
  1. First try to schedule a meeting of owners or a town hall to explore the idea and gauge interest. Bring in someone from your municipality, Plug'nDrive or an EV Installer or a combination of the above. Have them do a presentation with lots of time for a Q&A. If you do the meeting on ZOOM record it and make it available for those not in attendance.
    1. Consider having an owner, management and board committee established to guide the research and investigation process and if going ahead with installation a group to monitor the installation. A group of around 10 would be good. There are a lot of questions to asked and answers to be secured during this process and a group of people can be an efficient way to move forward. If the town hall shows interest in going ahead recruit the members at that meeting and in subsequent communications with those not able to attend. Create some enthusiasm for the project.
    2. Remember there are two issues with regard to chargers. The first is the desire to eventually own an EV and the need to be able to charge it at home. The second is making sure your unit is competitive on the real estate market. New condo developments are charging \$10-25,000 extra for a charger in your parking spot. It will likely cost an existing condo owner \$3-5,000 to install a charger in a group

- buying situation. A condo with a charger in place is a more attractive sell than one without.
2. After an owner's meeting follow up with a communication for those not able to attend and give them a summary of what happened at the meeting plus a link to the recording if available.
  3. Then prepare a survey to the owners. The objective is to gauge interest in going forward to the next steps. No commitment required yet.
2. If there is apparent interest, a minimum of 20 is best as that is the size of one electrical panel, then a parking assessment needs to be made:
1. A study of the buildings electrical supply capacity needs to be done to ensure the current electrical infrastructure can support the installation of chargers.  
(NOTE: This sometimes is done as step 1. If the infrastructure is not in place and the costs to increase electrical capacity are prohibitive there may not be a need for a survey).
    1. A local EV Charging provider can be called in to determine electrical capacity
    2. An electrical engineer can also be contracted to determine if there is sufficient power.
    3. There are grants and loans available to assist buildings in developing the required infrastructure. Your hydro provider can assist with this.

Assuming there is interest and that there is sufficient electrical capacity you can move to the next step

3. Procuring Cost Estimates: You need a minimum of three quotes from various installation vendors. Toronto it is a very competitive market, lots of vendors to choose from. In other jurisdictions there may be less choice.
  1. The vendors chosen must have:
    1. Valid electrical licensing certification
    2. They should be local. You have to remember post installation repairs and service.
    3. The recommended system should be OPCC - open source. Do not go with a vendor that has a proprietary software and hardware. If they are removed from the market you will be stuck with hardware and/or software that cannot be upgraded. Open source is the way to go. This also applies to the billing software and other aspects of administration of the system. You need to be able to move from one vendor to another without additional future costs.
    4. Chargers must be level 2 or 3 - Overnight charging or fast charging. Level 3 are significantly more expensive to install and not normally required in a multi-residential building unless you have a parking garage for the general public. There might be a business case for a fast charger in that case (Fast chargers also require significantly upgraded electrical systems so may not be an option from that perspective).
  2. In the end you, will expect to pay for the upfront costs of installation then some sort of ongoing costs for software subscription for managing the billing to the owner. A pay as you go model is better than a simple monthly charge split amongst all owners that covers the costs of usage. A person with a plug in hybrid will hardly use any electricity and a EV Hummer will use a lot more. Owners would recognize the unfairness built into the system so go with a pay-as-you-go or pay-per-use model.
    1. The software that manages the billing can most often also manage distributing the power loads when there are a number of users requiring power at the same time so everyone gets the charge they need when they need it. It can also handle visitor chargers if you decide to install them.
      1. It is recommended that the condo board share the cost of installation between those interested in EV charging or absorb the cost upfront as a part of shared amenities. Whichever way is chosen it is important for the condo corporation to oversee the installation, choosing a vendor, managing the entire process to make sure the installation is a success for everyone.

3. Some of the common issues/questions are:
  1. Do you need visitor parking that should have a charger(s)
  2. Should the parking space be future proofed by ensuring all spaces can be electrified as time progresses. What happens if the first 100 get a charge and the 70 who waited and in 5 years when they want a charger cannot get one?
  3. Determine that a committed group with a substantial deposit in place (say \$1,000 to \$1,500) is ready to proceed. When the group numbers are finalized then final estimates can be developed for the cost to be shared amongst the participating owners.
  4. Chargers would be allocated on a first come first served basis.
  5. Location of Hydro panels and proximity to the parking spots, making sure the electrical cable runs are efficient and no loss of power occurs for runs that are too long.
  6. Location of wall space or columns adjacent to parking spots and ability to place electrical panels and chargers close to the parking spots.
  7. Complexity of the wiring plan and possible barriers to installation (existing pipes in the way, difficulty core drilling cement from one floor to another, etc.)
  8. Inability to install wifi in the parking garage. Wifi is usually required to activate a charger using a phone app or a tap card. There are different types of chargers and charger infrastructure, some require wifi, some do not. If “smart chargers” are installed it usually means the bill comes to you and not through the condo corporation. Non wifi installations may require the condo corporation to be involved in administration of the billing system, which is not ideal. If wifi is impossible there are other solutions for installing chargers that do not require wifi access, all is not lost. This issue applies for all installation situations not just condos.
  9. Determining the load-sharing technology that works best for your building - smart charger, versus smart panel, versus dynamic systems. This is all related to how many charging stations your electrical load can handle and how charging will be managed when all parking spaces are electrified and using power.
4. Assuming the building has capacity a list of requirements needs to be developed before contracting with an EV installation provider
5. The provider will work with the board and owners to explain the various options and issues your installation may pose for the building.
6. Assuming you now have a final vendor you are happy with it is time to have another town hall. You will explain how it will work, the costs, time frame and other details that are important. It is often at this stage when you will find more people signing up.
7. Assuming you are going ahead it will be good to have a short EV Progress Newsletter sent out to those who have signed up, owners and residents.

**Some of the lessons learned for Condos are this:**

- Create curiosity and enthusiasm for the project.
- Keep people informed through town halls, ZOOM style meetings, flyers, newsletters, whatever way works best for your community
- Emphasize both the environmental benefits - no more pollution in the garage, the quiet hum of vehicles as they enter and leave the building, the increase in the competitive value of your real estate, and the thrill of moving your building into a new fossil free fuel era.
- The development of a committee to shepherd the process builds community.

## **CO-OPS OR RENTAL BUILDINGS**

The Condo development steps are similar for a Co-op or rental building. However getting your Co-op Board or the building owner to make the right decisions may be more difficult. For rental situations, you may not want to stress that increasing desirability of having an EV charger would likely equal higher rent. It is possible to design a system where some parking spots with EV charging could be rented at a premium to those without to avoid a building wide increase.

Just like in a Condo the EV charger issue arises when someone expresses interest in purchasing an EV or move into a building and already owns an EV. They approach management or board members asking for the installation of a charger. The response varies from outright refusal to even consider the idea to a willingness to explore how chargers might be made available to residents.

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## **DEVELOPMENT PROCESS FOR CO-OPS AND RENTALS**

In co-ops or rental buildings a similar process for development should occur as in the condo example:

1. Start with trying to organize a resident meeting with the topic being EV charging. The best place to start is to meet with management or the board and lay out your interest in having a resident meeting to discuss EV charging and see what ideas there are for accomplishing this in the building.
  1. Should there be opposition to this a co-op usually has rules in place for resident led meetings. Check those out and try to secure the requisite number of residents required to call a meeting. For co-ops the social aspects should be paramount but costs are always an issue as well. Your co-op housing federation may have strategies to help the co-op through the decision making process.
  2. In a rental building this will be more complex. Talking to your neighbours and gauging their interest might give you a sufficient mass of people to demand a meeting with management/owners if your first request is met with opposition. With a sufficient number of residents demanding a meeting you may have some progress.
    1. If your building is owned by a REIT or managed by a larger corporation you may have more luck by-passing on site management and going to the corporate headquarters, explaining your interest and asking to meet with them about the possibility of developing EV charging in your building.

2. Should this fail you can go to your local councillor and the mayors office, explain what you are trying to accomplish and get their by-in to put pressure on the owners to meet with you.
3. Rental building's interest should be similar to condo corporations. There is the environmental concern but also making their rental units more competitive could factor into the decision to explore EV charging.
4. It may be that the ultimate solution is pay-as-you-go shared chargers that people use when they are free. Very much like public chargers but in your building. This may be the best place to start. As time goes on and EVs become ubiquitous they will be forced to deal with that fact.

The real issue for co-ops and rental buildings relates to getting past any gatekeepers who are there to ensure that costs are as low as possible. Other concerns are secondary or are not even on the table.

The strategy should be to convince decision makers it is in both their economic interests - competitive advantage - to install chargers in some form, as well as the right thing to do.

Another argument is the fact that currently there are lot's of government incentives - from grants to no and low interest loans to help encourage EV adoption.

Of course, once a decision to proceed is taken the management will likely control the process, but a resident committee could act as advisors and assist in the implementation.

Please feel free to distribute this widely. If you find any errors please let us know and we will revise the document. Email [contact.us@climatelearners.ca](mailto:contact.us@climatelearners.ca). Here is a link to the document in .pdf format: [CLICK HERE](#)

## Appendix - Resources to help you

### Condo Resources:

Condominium Authority of Ontario, rules and regulations according to the Condo Act: <https://www.condoauthorityontario.ca/resource/electric-vehicle-charging-systems/>

Condo Charging guide from Plug'nDrive: <https://www.plugndrive.ca/condo-charging/>

Make your Condo EV ready guide from Plug'nDrive: <https://www.plugndrive.ca/wp-content/uploads/2018/08/Make-Your-Condo-EV-Ready-Guide.pdf>

A guide to EV charging in Condos from the Association of Condominium Managers of Ontario: <https://acmo.org/publications/cm-magazine/article/375>

Make sure you pick the right contractor: <https://esasafe.com/newsroom-2023/esa-ramps-up-electric-vehicle-charging-safety-in-ontario/>

### Co-op Resources:

Canadian Housing Federation Support: [https://www.chf.bc.ca/scoop\\_stories/greening-your-co-op-getting-ev-ready/](https://www.chf.bc.ca/scoop_stories/greening-your-co-op-getting-ev-ready/)

Challenges and barriers for EV Charging in Social Housing: <https://pluginbc.ca/electrification-in-community-and-indigenous-housing/>

### Funding for all types of buildings:

EV Charging Station Fund from The Atmospheric Fund: <https://ev.taf.ca/>

Federal Government's EV Infrastructure Program: <https://natural-resources.canada.ca/energy-efficiency/transportation-alternative-fuels/zero-emission-vehicle-infrastructure-program/zero-emission-vehicle-infrastructure-program/25027>

City of Toronto loans to improve electrical infrastructure to accommodate EVs: <https://www.toronto.ca/wp-content/uploads/2022/05/9769-Energy-Retrofit-Loan.pdf>

Energy Retrofit Loans - Toronto: <https://www.toronto.ca/wp-content/uploads/2022/05/9769-Energy-Retrofit-Loan.pdf>

More on Energy Retrofit Loans: <https://www.toronto.ca/services-payments/water-environment/environmental-grants-incentives/energy-retrofit-loans/>

Ontario Making it easier to install EV charging infrastructure: <https://news.ontario.ca/en/release/1004197/ontario-making-it-easier-to-build-electric-vehicle-charging-stations>

**Some Installation Vendors (some are province wide):**

<https://www.metroev.ca/>

<https://evdirect.ca/>

<https://electricchargeontario.com/>

<https://www.nextgenelectric.ca/>