

# EV-ready buildings for owners corporations

Guide for owners corporations to enable the installation of electric vehicle (EV) chargers in multi-unit residential buildings



## Guidance for owners corporations to make their buildings EV-ready

With electric vehicle (EVs) sales increasing every year, Victorians want access to affordable and convenient home charging. Approximately 1 in 4 Victorians live in strata-managed residential buildings that are not yet setup for EV charging, leaving many Victorians without a home charging solution. This is leading to increasing demand from residents to owners corporations to install EV charging infrastructure.

Retrofitting existing residential buildings can be challenging due to the potential lack of electrical infrastructure and the complex nature of navigating strata rules. This can be especially difficult if EV uptake among residents and committee members is low. This can cause frustration for EV owners and in some cases, lead some to find alternative buildings that do offer these services.

The purpose of this document is to provide a high-level and simplified guide to help step owners corporations through the process of installing EV chargers in multi-unit residential buildings.

There are several reasons why you should consider installing EV charging.

- **Increased property value** – the EV market is growing and experts predict there could be almost one million EVs in Victoria by 2030. Since most EV owners prefer to charge at home, a growing EV market will increase demand for EV chargers in residential buildings. Getting your building EV ready will make your building more desirable for EV owners.
- **Reduced costs for residents** – charging at home is often cheaper than public charging. Getting your building EV ready will save money for your residents, making your building even more desirable for EV owners.
- **A healthier environment for residents** – more EVs means cleaner air for residents, while also contributing to less demand on building ventilation systems.

## Sounds great – but where do I start?

Here are nine key steps for installing EV chargers in a multi-unit residential building:

1. Determine building suitability for EV charging
2. Assess the level of interest from residents
3. Determine the building's level of EV-readiness and how to reduce your energy consumption
4. Determine your preferred approach
5. Discuss the type of EV chargers and charging preferences
6. Consider how to manage safety for your residents
7. Determine your budget, including who pays and how costs are recovered
8. Develop user agreements with residents to formalise charging arrangements
9. Approvals and installation process

### 1. Determine building suitability for EV charging

First, you should determine whether there are suitable carparks on the premises that can allow EVs to charge when parked. In most cases, if you have a carpark then your building is suitable, noting EV charging may be more challenging in the context of stacked parking. If you are unsure, you can speak to a registered electrical contractor (electrician) or an EV charging company.

#### Building not suitable for EV charging?

We have invested over \$22 million to accelerate the roll-out of EV charging infrastructure across the state, making it easier for Victorians to access public chargers. We are also working to make charging easier at workplaces and public spaces in the future.

## 2. Assess the level of interest from residents

So, your building is suitable – your next step is to undertake a survey of your residents.

### Survey residents to gauge interest

Some questions you could ask residents include:

Do you own an EV?

- If yes, plug-in hybrid or fully electric?
- If not, are you considering buying an EV? If so, when?

If you own an EV, how do you charge today?

- Public chargers.
- Common area power socket at home.
- Private electric vehicle charger at home.
- At work.

If you own an EV, where would you prefer to charge?

- In this building.
- At work.
- Public chargers.

How far do you drive your vehicle per day and per week on average?

Are you interested in having an EV charger in the building?

- Yes, no, not sure.

Indicate any preferences:

- Free service (paid for by owners corporation).
- User pays service.
- Shared charging facility on visitor car spaces.
- Private chargers for individual car spaces.
- Accessible to public.

Which best describes your residence?

- Owner occupier.
- Owner investor.
- Tenants.

These surveys can be done regularly (e.g. every 6 or 12 months) to account for changing interest, EV uptake and new residents.

Surveys of residents are also a good opportunity to outline the buildings' 'model rules' and EV charging permissions – as residents who already own an EV could be using common power outlets leading to unfair usage costs shared by all residents. These rules should also be communicated at the start of any tenancy.

### 3. Determine the building's level of EV readiness and how to reduce your energy consumption

Now that you have interest from residents to install EV charging, the next step is for you to assess the state of the existing electrical infrastructure. This could be undertaken by an EV charging operator, which will have the electrical expertise in-house and can help with the end-to-end process. Alternatively, you may wish to engage an electrician or an electrical engineer (for a larger more complex building) to do this assessment before you engage an EV charging operator.

There are several parts of the electrical infrastructure that need to be assessed, including:

#### The building's existing grid supply (external)

- Peak electrical demand – this will help inform when and how users can charge their vehicles, in a sustainable and fair way.
- Transformer size – this will determine how much power can be supplied to the EV charger(s).
- Maximum electrical capacity – this will help inform how much spare capacity is available and the potential number and size of EV chargers without capacity upgrades.

#### The building's existing electrical infrastructure for the carparks (internal)

- The number of electrical distribution boards and their availability in parking spaces – this will affect the size and number of EV chargers and help determine whether additional space for electrical infrastructure in the building is required.

Understanding the building's existing grid supply capacity and electrical infrastructure in the car parks will help inform the type and the amount of EV chargers that can be installed. You may also need authorisation from the building manager to ensure the electrician has sufficient access to all areas, including the electrical room. Providing electrical and architectural drawings of parking spaces to the contractor can also help inform the best options.

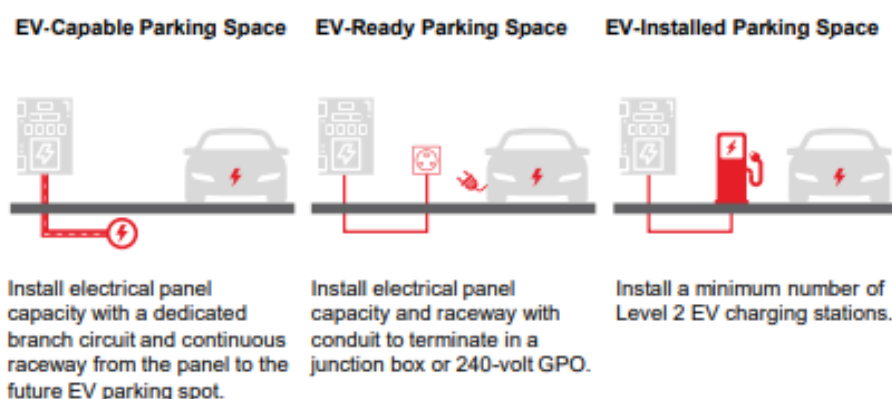
The electrical assessment will determine the level of EV-readiness of the building. This matters as it will impact the amount of work and costs associated with installing EV charging infrastructure. Following the assessment, your building will likely fall into one of the following three scenarios:

- **EV ready** – there is enough electrical capacity with wiring and a power outlet to support future EV chargers at parking spaces. In this case, you are almost there, with much of the upfront installation costs already covered.
- **EV capable** – the building has enough electrical capacity and appropriate wiring to support future EV chargers at parking spaces. In this case, you are well on your way to getting the building EV ready and will likely save substantial retrofitting costs.
- **Insufficient existing electrical infrastructure** to support EV charging to parking spaces. Older buildings likely fall in this scenario as building developers never planned for EV charging. If this is the case, you may have to undertake significant internal electrical work to enable EV charging. Depending on the scope and complexity of the upgrades, this may also require a building permit.

If the grid supply to your building needs to be upgraded to accommodate EV charging, the contractor used to assess the electrical infrastructure will need to coordinate any upgrades with your distribution network service provider on your behalf. To find your local provider, see [www.energy.vic.gov.au/for-households/find-your-energy-distributor](http://www.energy.vic.gov.au/for-households/find-your-energy-distributor).

#### Consider how you can better manage or reduce your building's energy consumption

Managing your energy use more efficiently across the building could help you avoid major upgrades to the building's electrical infrastructure and/or help you reduce your energy bills.



You could consider a range of options, including:

- Installing load management systems to enable the charge rates across EV chargers be adjusted automatically to suit the available power supply.
- Timers to only allow EV charging during off-peak periods. Restricting the time residents can charge shouldn't be an issue for most residents as studies show that most people charge their EVs during periods of low energy demand, which is during the middle of the day or overnight.
- Demand management systems that can prioritise building air-conditioning (heating and cooling) and cooking over EV charging, ensuring occupants are comfortable while maximising opportunities to charge EVs when there is spare capacity.
- Installing smart EV chargers to allow the charging operator to monitor, manage the use of the devices remotely to optimise energy consumption.
- Reducing the building's overall energy demand. You could consider undertaking energy efficiency projects, such as switching to LED lighting (with occupancy sensors) throughout the building common areas, installing solar photovoltaic (PV) panels or an on-site battery.

Owners corporations should talk with the contractor used to assess the electrical infrastructure to determine the best options for your building.

#### 4. Determine your preferred approach

Now is the time to start considering the type of charging solution for your building. The survey results and the state of your electrical infrastructure should be useful guides to determine which option is best for your building and the circumstances of the residents.

There are several options you could consider:

##### Individual approach

The owners corporation manages the installation on a case-by case basis for EV owners, with individual lot owners responsible for installation and maintenance costs within private parking spaces. This approach may be most appropriate for smaller buildings (10 apartments or fewer), and apartments with integrated metering and individual distribution boards.

##### Shared charging solution

The owners corporation nominates one or several shared car spaces for EV charging and establishes the infrastructure, reservation process and charge back processes. As charging is shared, this approach may also require a level 2 or 3 charger to maximise efficiency between residents. As the number of residents driving EVs increases over time, you can also install additional shared chargers (including potential additional upgrades) to reflect the increased demand. This option

may be more suitable for medium buildings (11 to 100 apartments) and large apartment buildings (over 100 apartments), as well as buildings with enough common property spaces or limited car spaces.

##### Phased/modular charging solution

The owners corporation adopts a progressive approach to upgrading electrical infrastructure to enable a percentage of private car spaces to be EV ready (in line with expected demand), rather than undertaking a whole of building upgrade to allow for 100 per cent EV readiness. Initially, this could be 10-20 per cent of car spaces. As EV demand increases, the owners corporation could undertake further upgrades to allow for additional charging. This option may be more suited for medium buildings (11 to 100 apartments), with currently low demand for EV charging and a limited budget.

##### Whole of building charging solution

The owners corporation undertakes a whole of building electrical infrastructure upgrade to allow for all car spaces to be EV ready. This option will effectively future proof the building and allow for all residents with car spaces to install EV charging in the future. This option may be more suited to larger buildings (over 100 apartments), with high demand for EV charging and/or a large budget.

Approach	Benefits	Drawbacks
Case by case basis	Simple Least cost in short term	Less appropriate for medium to larger buildings Can lead to duplication and inefficiencies in long-term Could lead to inequities if not managed properly
Shared charging solution	Equitable Can better align with EV uptake over time	As EV uptake increases, shared charging solutions may become more challenging to manage
Phased/modular charging solution	Can better align with EV uptake over time	Can lead to duplication and inefficiencies Could lead to inequities if not managed properly
Whole of building charging solution	Future proof Equitable Increases most value to property Potentially lease cost in long term	Potentially more expensive and time consuming in short-term Owners corporation approvals may be more challenging



As the table indicates, each of the approaches have different benefits and drawbacks. The most appropriate option for your building will depend on the amount of interest from residents, the state of your existing infrastructure, the size of the building and the available budget.

When considering the best option, you should consider any upgrades in the context of future demand. While there may be low EV ownership now, this will change significantly over the next 5-10 years. As a result, any upgrade that is focussed on current demand, will likely lead to inefficiencies, duplication and inequities.

For instance, you may be able to allow a few EV chargers now at a small cost, but additional chargers in the future may not be possible and require costly upgrades to electrical infrastructure. This could mean some residents miss out or alternatively the first EV owners avoid these costs, pushing these costs among a smaller group of residents. In this situation, it could also lead to duplication of electrical work, which ends up being more costly.

On the other hand, any charging solution that is future focussed, and more costly, may struggle to gain support from the owners corporation. These considerations need to be carefully balanced and we recommend talking through the options with the residents and an EV charging operator to determine the best option for your building.

### Consider appointing an EV representative to navigate this process

To support the best option for your building and your residents, consider nominating an EV representative on the strata council or steering committee to represent EV users. This will allow for a dedicated and consistent voice to share the benefits, aspirations and technologies of EVs and help determine the best option for residents.

## 5. Determine the type of EV chargers and charging preferences with residents

Once you know the amount of work needed to get your building EV ready and your preferred charging solution, the next step is to determine what type of EV chargers will work best and how charging will take place (private versus shared).

### Understand the available charging options and costs

There are three types of charging options to consider (see following table).

The speed of the charger must be weighed up against the energy demand of the vehicles, the upfront costs, and the ongoing electrical connection costs. In most cases, level 1 and/or level 2 chargers are sufficient for residential buildings for overnight charging and are suitable for most commuters – Victorians drive on

average 37 kilometres per day. A mixture of chargers might be the best solution, depending on your resident's needs and preferences.

A level 3 charger on the other hand may not be suitable for most residential applications given the higher costs and the significant electricity demand these chargers place on the electrical system. This type of charger may however be suitable for a shared car space.

Charger type	Distance/charge time	Building suitability	Costs
Level 1 charger (2.4 – 3.6 kW - typically using a standard household plug)	12-18km per hour	Yes	Starting from \$500 per car space
Level 2 charger (7.4-22 kW - more powerful and faster than level 1)	35-110km per hour	Yes	Starting from \$2,000 per car space
Level 3 charger (25-50 kW – faster chargers)	30-60km per 15 minutes	Maybe	Starting from \$10,000 per car space (shared)

### Understand where charging will take place

The location of EV chargers will determine how energy consumption and billing will be managed. Based on your preferred charging solution, you should now have a good idea of whether you are implementing a shared charging solution, or enabling charging for private use.

If a charger is located within a shared parking arrangement (e.g. visitor parking or a shared charging area within the building), typically the owners corporation is responsible for installation and maintenance, with energy expenses charged either to the user or on a shared fixed user-fee basis.

If the EV chargers are for private use, typically the user is responsible for installation and maintenance costs, with energy expenses charged through an incorporated smart charging system, utility-based EV charging account or sub-metered directly to the user's apartment.

Alternatively, an EV charging operator could implement a one-stop-shop solution, with the charging operator responsible for the installation and maintenance costs (regardless of whether shared or private), and costs are recovered by the operator via utilisation of the EV chargers and/or through a subscription.

See 'A fair system for all – managing EV charging costs' below for further information.

## 6. Consider how to manage safety for your residents

The Australian Building Codes Board has published guidance on how you can make EV charging in buildings safe. See the guidance here:

<https://www.abcb.gov.au/news/2023/ev-charging-making-it-easy-making-it-safe>.

Strata managers and building managers should familiarise themselves with this guidance and consider adopting these recommendations into your building to support safe EV charging.

## 7. Determine your budget, including who pays and how costs are recovered

Once you know your preferred approach and have an approximate understanding of costs, the next step is to determine your available budget, including who is responsible for these costs and how these costs are paid or recovered.

While there is no-one size fits approach for determining who pays, the owners corporation can apply the following general principles to ensure the most equitable solution for all residents:

- Costs for electrical upgrades to increase the building's electrical supply (external) – costs are shared among all residents or come out of the owners corporation's existing budget. Increasing the building's total electrical supply benefits everyone, including those that do not have a car space or have plans to own an EV. However, increasing the electrical supply to the building is not always necessary and will depend on the type of charging solution you go for, the existing capacity of the building and options to manage and reduce building load.
- Costs for electrical infrastructure upgrades for the supported carparks (internal) – costs are shared among all residents that will benefit from the upgrade, even if those owners do not currently own an EV or have plans to. This would not apply to owners that do not have a car space or have access to common car spaces (in the case of shared charging).
- Costs for EV chargers in private car spaces – owner of the private car space is responsible for costs and electricity usage.
- Costs for shared EV chargers – owners corporation is responsible for costs, while electricity costs are paid by users.

Depending on your preferred approach and available budget, you may be able to recover any costs by levying fees to some or all lot owners through a special resolution. You could also implement a cost recovery model, where the owners corporation pays for the costs

and the respective user(s) make a contribution to pay back these costs via their levies over a few years.

## 8. Develop user agreements to manage EV charging with residents

Before you move to the approvals and installation process, you should develop and formalise user agreements to establish who is responsible for the ownership, installation, energy usage and maintenance of the EV charger. This will ensure equity, protecting residents and minimising risks for the owners corporation.

Ownership of an EV charger is particularly important if the user of a charger sells their property, or if the charger is located within common property – such as a shared parking bay. In most cases, whoever owns and pays for the installation of the charger will be responsible for the management of energy use, billing and maintenance. This could be the resident in the case of a private EV charger or the owners corporation in the case of a shared EV charger.



## **A fair system for all – managing EV charging costs**

There are several ways to ensure EV charging costs are managed fairly, including:

### **Installing a smart charger**

This solution, paired with a centralised energy management system, involves metering energy use by vehicle and either billing lot owners at the time of recharge or billing straight to the lot owner's energy bill.

### **Establishing a fixed fee for electricity**

Many strata organisations use this model, charging users as little as \$30-\$50 a month for unmetered use and maintenance. This is useful where the administration costs of individual cost recovery outweigh the benefits.

### **Installing a utility-based EV charging account (one-stop-shop solution)**

A one-stop shop charging solutions offered by some charger operators, minimising risks, leveraging the required expertise and potentially reducing upfront costs.

### **Installing a sub-meter to track individual energy use**

This solution involves installing a charger that is directly linked to the occupier's individual electrical account.

In addition, depending on the scope and complexity of the electrical work and upgrades you need to get the building EV ready, you may need a building permit. If you are unsure, you could seek advice from your local council or consult a building surveyor. For further information, visit

<https://www.vba.vic.gov.au/consumers/home-renovation-essentials/permits>

### **Engage professionals and gather cost estimates**

Most electricians will be able to fit-out the parking facility to support the installation of EV chargers. However, you may wish to use an EV charging operator with experience and qualifications in designing systems for residential buildings. If you engaged an EV charging operator to undertake the electrical assessment, you may wish to use them to tailor an EV charging solution that works for your specific building and the preferences of your residents. They can also develop a plan that allows for the future installation of additional EV chargers if needed.

To ensure you get the right option and get the best value for money, you should also seek out multiple quotes. When reviewing quotes, keep in mind long term cost implications. A less expensive design now may be more expensive over the long term.

### **Seek final approval and install**

Once you have your preferred quote, the owners corporation will need to agree to the installation and sign the agreement with the preferred contractor. As most installation of EV chargers will require alterations to common property, the owners corporation will need to pass a special resolution to proceed. A special resolution requires 75 per cent of the owners corporation to agree to the proposal.

Once approved, the contractor can begin undertaking the electrical work and installation of EV chargers based on the agreed approach. Any electrical work will need to be completed by a qualified electrician(s), who must provide a certificate of electrical safety at the end of the process.

### **Install appropriate signage and provide information about the EV charging to all residents**

Ensure you have appropriate signage installed to make EV chargers clearly visible to all residents and visitors. You could also consider providing readily available information about the EV charging to all residents and offer residents the opportunity to sit down with the EV representative (if one has been nominated) to discuss EV charging in the building. This could be used to inform residents who is responsible for the costs associated with EV chargers to minimise any uncertainty or risks of perceived unfairness, while also informing residents about charging options should they be interested in buying an EV in the future.

## **9. Approvals and installation process**

### **Set out the scope of work**

Before you move to the installation phase, it is important to have a clear plan. This plan should be based on the information gathered to date, including:

- The survey results
- The electrical capacity assessment
- Your preferred charging solution
- The type of EV chargers to be installed and charging preferences of residents
- Approach to manage safety
- Your budget, including who pays and how costs are recovered
- The user agreements between the owners corporation and residents





We acknowledge Victorian Traditional Owners and their Elders past and present as the original custodians of Victoria's land and waters and commit to genuinely partnering with them and Victoria's Aboriginal community to progress their aspirations.



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To access the most up to date version of this fact sheet please visit <https://www.energy.vic.gov.au/renewable-energy/zero-emission-vehicles/ev-ready-buildings>.

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