

# ELECTRIC VEHICLE CHARGING IN STRATA

## 1 Why prepare your strata scheme now?

A Wattblock survey of 700 strata residents in Sydney showed that 78% were in favour of installing EV charging.

There are currently 31 different EV models available in Australia and this will increase to 58 by the end of 2022.

NSW government has removed stamp duty and is providing a \$3,000 subsidy on electric vehicles under \$68,750.

Jaguar Land Rover, Volvo, Mazda, Nissan, GM, Daimler and Honda have committed to becoming 100% electric. By 2025, Audi will have 30 EV's, Hyundai will have 23 EV's and Renault will have 24 EV's available. VW will have 70 EV models by 2028.

## 2 Visitor carspace or individual carspace

61% of strata residents would prefer to charge their electric vehicle in their own parking spot. However, an EV charging strategy may start with some EV charging in visitors carparking spaces and then invest more in providing EV charging in individual carspaces over time. Eventually, all car parking spaces will be equipped with EV charging so that visitors to your building are able to charge while visiting residents.

## 3 Billing and cost recovery

Nobody is going to get **FREE** EV charging in a strata scheme. Modern EV chargers either use data cables or Wi-Fi to create charging reports, which can then be used for cost recovery.

Once setup, there is no impact on strata managers or facilities managers to recover the costs of individual EV charging sessions. Local software companies such as Exploren and Chargefox and International companies such as Tesla provide third party billing services. In buildings with embedded networks, the embedded network provider can offer billing and cost recovery for EV charging.

## 4 Motions, by-laws, end-use and policy docs

Any motion taken to an EGM or AGM in NSW can be brought as a Sustainability Infrastructure motion, as per a NSW government amendment to the Strata Schemes Management Act passed in February 2021. This lowers the threshold for proceeding with any EV charging installation from 75% to 50% of those present and entitled to vote, based upon unit entitlements.

Best practice is to pass two different by-laws, one which governs charging in visitor carparking spaces and one which governs parking in individual lot carspaces. These can range from one page to 9 pages long.

An end-use agreement is signed by the EV owning resident and the strata scheme and is a contract with the EV owner to govern their use of the charging infrastructure and cost recovery.

Furthermore, a policy document can be developed to govern the electrical works where a resident engages a qualified electrician at their own expense to install an EV chargepoint.

## 5 Capacity and electricity monitoring

If you have already done energy efficiency works (e.g. LED lighting) in the common areas of your strata building, then you will not immediately have a capacity constraint for charging electric vehicles. Before approaching your local electrician and get 24 hours of data logging on your main switchboard, investigate getting a permanent electricity monitoring device from a company such as Wattwatchers. An EV charging feasibility study based upon 2 years of historical metering data capacity report.

## 6 Hardware or software load balancing

The first apartment EV charging systems used data cables to each EV charger, as well as electrical cables to each EV charger to network the chargers together. This required installing data network boxes on each floor of the carpark as well as a hardware load balancing box in the main switchroom, which became expensive. New EV chargers such as Tesla Gen 3 and EVBox have Wi-Fi connection capability, allowing software load balancing without additional hardware. This approach requires installation of house Wi-Fi repeaters through each level of carpark.

## 7 Booking systems and bollards

EV chargepoints can be installed in visitor carspaces and regulated using online booking systems and bollards. This means the carspace operates as a regular visitor carspace for ICE vehicles, when an EV is not present and being charged. There is even a bollard system available now which uses a remote (similar to the garage remote) for an EV owner to lower the bollard from their vehicle, before driving in and charging.

## 8 Open architecture

Open Charge Point Protocol (OCPP) is an industry standard for interoperability of different chargepoints from different manufacturers in the same charging network.

The current version of the protocol is 1.6j and version 2.0 is coming soon.

Tesla will be able to provide OCPP support into their Generation 3 charger over Wi-Fi as a future update, as well as allowing other electric vehicles from other manufacturers to charge at the Tesla Gen 3 chargepoint.

Take care of EV chargepoint installer sales pitches that they are OCPP compliant. They may still be locking you in with hardware load balancing or billing systems which are proprietary.



## 9 Examples of strata buildings in Sydney which have started preparing for EV charging



## 10 Cable tray vs flat cable

If your carpark does not currently have cable trays passing every vehicle carparking space, then at some point your strata scheme will need to consider how to run electricity cables to each carspace without creating “spaghetti”. The early attempts to do this used a cable tray project to install new cable trays past each vehicle but this proved to be very expensive. There is now a product called ‘flat cable’, developed in Norway, which is a single cable which can have multiple EV chargers attached to it and run the perimeter of the carpark wall or ceiling.

## 11 Common area power or individual meters

It is highly recommended that all electric vehicle charging is in the first instance connected to common area power, rather than individual lot electricity meters.

Where individual lot electricity meters are in metering panels on different floors of the building, running a cable down to the carparking area will involve the need for fire sealing and re-certification on every level which the cable passes through which should be avoided.

Where individual lot meters are in the basement level, connecting EV charging to these individual lot meters still has a number of drawbacks. These include the Owners Corporation not being able to effectively control EV charging at a building-wide level. This will lead to more costs further down the road.

By-laws can be passed which ensure that all the chargepoints which are installed into the building connect to the common area or houselights meter, with cost recovery mechanisms in place. This allows the Owners Corporation to manage a single software or hardware load balancing system, rather than having to install load balancing into every meterboard which has individual lot electricity meters in it.

Charging off common power gives the potential to have faster charging for the electric vehicles at times when few vehicles are charging than can be achieved off single phase individual lot apartment meters. Charging off common power also allows cheaper EV charging through bulk buying and solar power.

## 12 Improving property valuations

In Pyrmont, a potential tenant who owned a Tesla Model X declined to rent in the building when they found out that it was not possible to charge their electric vehicle.

The apartment buildings which offer EV charging will become more attractive over time, as more of the new cars being bought become electric vehicles.

Infinity Cove building in Lane Cove already has 40 EV chargepoints in the basement carpark and many other buildings are following suite.

An owner investor in Redfern wanted to reserve a spot on the buildings ageing electrical infrastructure through installing an EV chargepoint early, even though their tenant didn’t have an electric vehicle.

As the most desired vehicles become electric, properties which don’t support EV charging will be left behind.

## 13 Further online videos

Wattblock has prepared a number of online videos on EV charging in strata which are available on our youtube channel. Click on the hyperlinks below:

- ➔ [The Case for EV Charging in Strata](#)
- ➔ [Key Findings from EV Charging Survey of 700 residents](#)
- ➔ [10 Models for EV Charging in Strata Apartment Blocks](#)
- ➔ [EV Charging Capacity Explained for Strata Apartment Buildings](#)
- ➔ [EV Carshare for Strata Apartment Buildings](#)
- ➔ [Flat Cable Innovation for EV Charging in Strata Apartment Blocks](#)