

Strata strategies

How do you charge an electric vehicle if you live in an apartment or unit?

Bryce Gatton considers the options.

Charging an electric vehicle (EV) when you live in an apartment presents some interesting challenges compared to charging in a single home.

The first and most obvious issue is where to install the charging unit (also known as electric vehicle supply equipment, or EVSE): in your own parking spot or in a shared charging spot.

Own parking spot

While this might sound like a great option, it's not always possible to wire a strata's car park spot to your own electricity meter. This is unlikely to be a problem in a unit development, but in a multi-level apartment block it could be impossible or expensive; a

cost of \$5000 to \$10,000 wouldn't be out of the question. And your apartment's electricity supply might not be up to more than a 16 A (3.6 kW maximum) charging unit, if that. You might also need to negotiate moving your parking spot so that it's accessible to the supply cable. Depending on the property title arrangements, that could entail a title change, which could be very expensive. You will need owner corporation approval as well.

Shared EV charging

Shared EV charging spots is the more likely scenario for a multi-level apartment block. Obviously this requires owner corporation involvement and sufficient space in the carpark.

An ideal situation would be two or more dedicated EV parking spots per charging unit so that cars can be parked nearby while waiting to charge, and the lead simply swapped between them.

Once again, you can run into electricity supply constraints. Many apartment developments don't have much spare capacity, though they do generally have three-phase available. For a reasonable speed of charging, you would want to aim for a 32 A, three-phase (22 kW maximum) charging unit.

Cost recovery is an issue too, as those without EVs may not like being charged for the electricity used to charge EVs (though maybe that will change down the track when EV ownership becomes more common!) An RFID-capable charging system could be used to implement timed charging blocks and billing back to the individual owners. [<add more on this and examples>](#)

Car stackers

Things get really tricky for car stackers, sometimes used in apartment carparks, as cars may not necessarily go back into the same spot each time. In this case, either stacker positions dedicated to EVs need to be provided, or separate, non-stacker positions need to be created that have access to the required electrical supply. Either way, some serious negotiations with the owners corporation will be required.

Assessing the electricity supply

Generally, apartments are built with very little spare capacity in the electricity supply cables from the street, or in individual unit switchboards. A further issue is that where high-rise apartments are built in inner city



If your apartment block uses car stackers, you may not always get the same parking bay, making EV charging more complex. Image: KLAUS Multiparking ANZ



Newer apartment blocks are more likely to have EV charging bays, but older buildings may need electrical upgrades for this to be feasible.

areas with older supply networks, there can be long timelines for increasing the street capacity, even if there is agreement from the body corporate to increase supply cable sizes to the apartment block or individual units.

You'll need to consider spare capacity in the main switchboard and in either the individual's own section or the publicly metered section—including physical room for the additional circuit breakers.

Introducing EV charging into an apartment block or multi-unit site is also going to impact on the future available power supply to other apartments or units, so any new EV charging unit (including a 15A power point in the owner's parking spot) will need to be negotiated with the owners corporation.

If your strata's electrical supply limits charging to a 10A socket and you need to travel longer distances than limited overnight

charging could offer, it may be that a plug-in hybrid EV (or even a hybrid EV) rather than a battery-only EV would be a better choice. See p. xx this issue for more on these EV options.

EV-ready developments

Some apartment developments are now being advertised as 'EV-ready'. Here at least the electricity supply will have been sized to allow for a certain percentage of EV owners charging their vehicles. However, make sure you find out what that percentage will be and what charging rate will be allowed for each EV. Tread warily if buying into an 'EV-ready' development—and ask some serious questions about what EV-ready means.

Other considerations

For vandal-resistance and to prevent unauthorised use, the most appropriate charging unit is likely one with a 'BYO' lead and a lockable socket. Also consider the position of the unit to avoid introducing a tripping hazard when the lead is plugged in to a vehicle; for example, don't position the unit next to a walkway. As most apartment blocks have undercover parking, a weather-resistant charging unit may not be needed.

Summing up

If you live in a strata situation and you're planning to buy an EV, it's a must to seek expert advice from an electrician, charging unit supplier or consultant experienced in multi-unit and apartment installations. They can help you work out your electricity supply constraints and the best EV charging options for your situation. And, of course, make sure

you talk to the owners corporation!

More info:

- 'Installation of Electric Vehicle Charging Stations on Strata Properties in British Columbia', 2014, www.bit.ly/2MrkmU2
- 'Electric Vehicle Recharging in Residential Strata Buildings', Wattblock report to City of Sydney, 2017, www.bit.ly/2ME2kgw
- Wattblock is calling for further participants in their national resident survey in order to understand intentions and attitudes toward electric vehicles. The broader results will be used to assist local councils in planning for electric vehicle charging. Strata managers can contact Wattblock to register and set up the survey for their strata schemes. Phone: 02 9977 1801 or email support@wattblock.com.au



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