

# EV charging at home

This guidance is intended for people living in standalone homes, with access to off-street parking, working out how to charge their car at home.

If you live in an apartment complex and want to understand your options, talk to your owners corporation, or send us a note at [office@evc.org.au](mailto:office@evc.org.au)



# CHOOSING WHEN TO CHARGE YOUR CAR

## Dollars and cents benefits:

Electricity prices vary around the country, but solar feed-in tariffs are falling, and off-peak rates are available to most Australians. Most consumers will be able to save up to 20c/kWh (around \$500/year for average drivers) by avoiding charging their car at peak times and by shopping around for a retailer.

Using your preferred web browser, search EV tariff to see what's available in your area that will best suit your circumstances.



## Environmental benefits:

Driving a petrol car 100km burns about 7L of petrol, creating around 17kg of CO<sub>2</sub>.

Driving an EV 100km will use about 17kWh of electricity. Based on the average carbon intensity in the Australian electricity grid today, this produces about 11kg of CO<sub>2</sub>.

As we clean up the grid by deploying more solar and wind and closing down coal fired power stations, this will continue to fall.

Charging an EV from solar or other renewably sourced electricity creates no direct CO<sub>2</sub> emissions.



## Energy system benefits:

Over the next thirty years we're shifting transport and heating from petrol and gas to renewable electricity. Building the infrastructure that'll support the transition is a huge job. This will be easier, faster, and cheaper if we charge our cars with excess solar when we can, and charge in the middle of the night when doing so in the daytime doesn't work for us. We all depend on a reliable energy system – each of us can do a little, and it'll add up to a lot!



## Your choice of charging time can:

Reduce your cost for electricity - which saves you money right now!

Reduce the environmental impact of electricity generation.

Reduce the burden on the energy networks, saving everyone money in the long run.



Using solar to charge your car – from your own panels, or just by drawing from the grid when lots of solar panels are turning sunshine into electricity – is the best option.

If you're not at home during the day, the best time to charge your car is at night, typically after 11pm. The times to avoid, where possible, are 3pm to 9pm.



You can achieve this by: setting the preferred charging time via your car, or installing a smart charger that manages this for you, or simply plugging in or switching on at the right times of day.

This doesn't mean you can't begin charging when you get home from work – just that it's better for everyone if you set your EV to start charging later, rather than at 5pm or 6pm.

# CHOOSING HOW TO CHARGE YOUR CAR

## Standard power point:

Electric vehicles can be charged with a 'mode 2' or 'level 1' charger. This is a cable that plugs into the standard power outlet at one end, and the car at the other end, and which has a box in the middle featuring indication lights. Some car makers supply one with the car.

Charging this way typically delivers between 10 and 15km of range per hour from a standard 10 Amp power point. Using one of these with your car set to charge daily from 11pm to 7am means about a 100km daily range top-up. Higher power mode 2 / level 1 chargers are also available, for use with standard 15A and 32A outlets.



If you're planning to use this method regularly, the EVC recommends the use of a dedicated circuit for EV charging to enhance reliability and reduce the chance of tripping circuit breakers. Any electrician can quote this for you, which will typically cost a couple of hundred dollars.

## A home EV charger:



The technical term for one of these is a 'mode 3' / 'level 2' EVSE (Electric Vehicle Supply Equipment). The most common sizes for domestic installations are 7.4kW single phase or 11kW three phase.

These options can enable full EV recharging overnight and allow consumers to maximise the use of solar for EV charging during the day. Some EV chargers have smart features to tie in with apps to help plan your charging times, making use of excess solar or give you the option of connecting to external systems for additional monitoring and control.

The EVC recommends that consumers installing mode 3 EV chargers in their homes consider choosing a product with OCPP 1.6J (or higher) communications capability.

The car maker you're talking to may have a preferred supplier for EV charging installations that they work with, or a preferred EV charger that they offer. You can also contact a specialist independent EV charging installation company, or your local electrician. If you're renting, you'll need to discuss this with your landlord.



Queensland, South Australia, ACT, and the NT have a variety of restrictions on the installation of 7.4kW EV chargers. Your electrician can help you understand what you're allowed to install.

# CONSIDERING UPGRADING TO THREE PHASE?

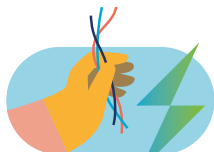


About 90% of homes in Australia are wired single phase. Upgrading to three phase allows more powerful equipment to be installed in the home and for more appliances to run at the same time. It'll also typically cost a few thousand dollars. Your electrician can provide you a quote if you want an accurate price for this.

It's not necessary to upgrade to three phase to install a 7.4kW EV charger. Refer to the guidelines linked below if you want the details on why! You will need three phase if you want an 11kW or higher EV charger.



Would you like to sign up to the EVC mailing list for news about EVs?



Are you an electrician interested in additional guidance around EV charging equipment installations?



**INTERESTED IN VEHICLE-TO-GRID OR VEHICLE-TO-HOME?  
WATCH THIS SPACE, MORE BROCHURES COMING SOON!**



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Prepared by Ross De Rango

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If you would like to get in touch with us, please drop us an email at [office@evc.org.au](mailto:office@evc.org.au)