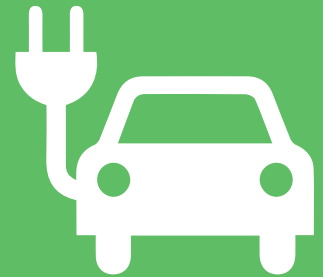




*Everyday*  
**climate  
choices**



# Using a public electric vehicle (EV) charger

Using a public EV charger is often as easy as 'plug and play' but there are a few things to be aware of before you hit the road.

## Public EV charger checklist

**Before you use a public charger, we recommend you check the following things:**

- > **Speed** is it a slow or fast charger? How long will it take to charge to 100%? Can your EV accept the amount of power the charger is delivering?

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- > **Cables** are cables attached to the charger, or will you need to bring your own?

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- > **Plugs** what plugs are on the charger, and are they compatible with your EV and/or cable?

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- > **Provider** do you know who operates the chargers? If so, do you have the relevant app to make payment easier when you arrive?

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- > **Access** do you need to be a customer of a certain business to access the chargers? Are the chargers Tesla only?

When in doubt, [www.plugshare.com](http://www.plugshare.com) is a great place to check information about public EV chargers. It is a free, community driven website that shows public EV charger locations right across Australia. However, a charge providers website or app will always be the best source of truth to check if chargers are operational and available.



# Charger speeds

The speed of an EV charger will vary depending on the power output in kilowatts (kW) and the type of electrical current (AC or DC). It will also depend on the maximum amount of power that your EV can safely receive via AC or DC.

DC chargers typically have a higher power output than AC chargers. This means they are often much faster, but also more expensive to install and use. DC chargers are more expensive to use because they require more electrical infrastructure to be installed to deliver higher power output.

The power output of public chargers in the ACT typically ranges from 7kW up to 50kW, but some DC chargers can reach over 300kW. The speed of charging will vary depending on the make and model of your EV, but typical charge speeds for the most common types of chargers are:

Level 1	Level 2	Level 3
Uses a regular wall outlet (no install required), common for home charging	Uses a physical charger that can be installed at home or in public	Uses a very high voltage fast charger, common on long distance travel routes
<b>AC slow/trickle (2.3kW)</b> up to 15km of range per hour	<b>AC fast (7kW)</b> up to 40km of range per hour	<b>DC fast (50kW+)</b> up to 420km of range per hour
	<b>AC fast (22kW)</b> up to 130km of range per hour	

➔ **Charging speeds for EVs vary depending on the power of the charger and the maximum charging rate a vehicle can accept. When planning a trip, remember to consider the maximum AC and DC charging speeds of your vehicle.**

## Tips to estimate charging speed

### > AC slow/trickle charging

- To estimate the time to charge from 0 to 100% battery capacity, divide your EV battery capacity by 2.3. For example, an 80kW battery EV would take approximately 35 hours to charge from 0 to 100%.

### > DC fast charging

- The power of the charger (in kW) will be delivered to the battery (in km of range) every 10 minutes. For example, a 50kW DC fast charger should deliver approximately 50km of range every 10 minutes. Charging speed may slow once charge is above 80%.

➔ **Plug in hybrid electric vehicles (PHEVs) often have limited capacity to use level 2 or 3 chargers.**



## Charging at home

Charging at home is the cheapest and most convenient way to charge your EV. Charging overnight by plugging into a regular wall socket in your garage/carport (AC slow/trickle charging) should add approximately 150km of range. The average Canberran drives approximately 40km a day, so you should only need to charge overnight once every three days to keep your battery topped up.

If charging at home is not an option, public chargers offer great convenience for when you are at work, on a road trip, or at the shops on the weekend.

## Cost of public EV charging

Charging providers (such as Evie, Engie, Tesla and more) set the price for electricity typically in dollars per kilowatt hours (\$/kWh).

Prices vary depending on the provider and location but are often in the range of \$0.30 to \$0.70 per kWh\*. In general, faster charging costs more per kWh. For an average EV in the ACT, this means charging from 0 to 100% can cost anywhere between \$15 to \$35 at a public charger\*.

In comparison, charging at home between 8pm and 7am (during the off-peak electricity rate) can cost as little as \$10 for a full 0 to 100% charge\*. If you are only 'topping up' your EV each night after your daily commute, this can cost as little as \$2 a day. If you have solar panels and a home battery, charging at home can even be free!

\* Price range as of September 2023

**Only park in an EV charging bay if you are charging your EV. Fines apply in the ACT for parking any vehicle (EV, petrol, or other) in a charging bay if it is not charging. And remember, you still need to pay for parking!**



## Cables

EV chargers will often have cables that look similar to an old-school petrol pump. However, some AC chargers do not provide cables to connect the charger to your car. In this situation, EV owners will need to bring their own cable.

Charging cables are typically provided when you purchase an EV, but they are also sold separately. Most hardware and auto stores sell charging cables and a range of other dedicated EV products.









It may seem like a nuisance having to own your own cable, but this actually allows more EVs to be compatible with more public chargers. The 'bring your own cable' approach also means EV owners can be confident that the cable they own has the correct plug for their EV.

DC chargers will always have attached cables for safety reasons. When using a DC charger, be sure to check that the attached cables have the correct plug for your vehicle.

# Plugs

Before using a public charger, you should check that the plug on your vehicle is compatible with the plug on the charger. The type of plug will vary depending on the type of charger (AC vs DC). Adapters can be purchased for AC charging cables that allow you to charge at almost any public AC charger.

For DC chargers, CCS is the most popular plug type and is common on new EV models. CHAdeMO is typically found on Japanese manufactured EVs but is much less common than CCS.

Plug				
Socket				
	Type 1 (AC)	Type 2 (AC)	CCS (DC)	CHAdeMO (DC)

## Charging tips for good battery health

In general, each EV model has a charging ‘sweet spot’ where the battery will stay healthy for longer. But every EV is different, so consult your manufacturers recommendations to see what type of charging is best for your model. Some general tips and tricks are listed below.

- > Keep the battery charge between 20% and 80%
- > Only use DC fast chargers when you really need to – like on a road trip
- > Avoid full cycle charging and discharging (i.e., 0% - 100% or 100% - 0%)
- > Don't charge every day unless recommended by the manufacturer
- > Store your EV somewhere it can be protected from extreme temperature

 For tips about EV charging etiquette, visit [www.aeva.asn.au/electric-vehicle-charging-etiquette/](http://www.aeva.asn.au/electric-vehicle-charging-etiquette/)

### Need some free advice?

Contact the Sustainable Home Advice Program team on 1300 141 777  
or email [SustainableHomeAdviceProgram@act.gov.au](mailto:SustainableHomeAdviceProgram@act.gov.au)