Office of Energy and
Climate Change

How to understand the electrical and EV charging needs at your site

Drive electric NSW
EV destination charging grants

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NSW GOVERNMENT

How to understand the electrical and EV charging needs at your site

The visitation patterns at your destination, as well as the layout and capacity of your current electrical infrastructure, will help you select the right EV charger and the best place to locate it at your site.

How will drivers use your EV charger?

There are a number of factors that will determine the suitability of your site for installing an EV charger. This includes:

- how much time drivers will spend at your destination?
- how many kilometres of range (EV battery charge) drivers will need to recharge to get to their next destination?

You should also plan for future EV charging needs as well as expected current usage.

How much power is available in your car park?

One of the biggest challenges to installing an EV charger is getting sufficient power supply to the carpark charging location.

You may need to consult your local licensed electrician to assist in answering the following questions:

1. Is there an existing electrical distribution board located near the carpark? If the answer is 'no', then can a new electrical distribution board be installed. This includes by running a new supply to the car park from the main switchboard.
2. Are there any spare circuit breaker spaces on the switchboard?
3. What is the capacity rating of the available circuit breakers?
4. Is the electrical supply to your site single-phase or 3-phase?
5. What is the total power available for EV charging at your site?

Tips:

- Destination charging for EV drivers is a bonus not an expectation.
- Most charging sessions provide a 'top up', i.e., visitors won't need to charge their whole EV battery unless charging overnight.
- A convenient and pleasant experience is almost as important as the charge provided.
- Charging vehicles with renewable energy from on-site solar panels or accredited GreenPower can result in no emissions and lower charging costs.

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How many EV chargers should your site install?

NSW Government grant funding is available for up to 4 EV chargers per site. However it only takes one EV charger to put your site on the map!

Depending on your site and visitor needs, it could make more sense to install one charger now and future-proof the electrical infrastructure for additional chargers later. By considering your future needs, it could save you thousands of dollars by completing all electrical upgrades during the installation process.

What EV charger size does your site need?

EV chargers available under the grant funding come in the following 2 sizes:

- 7 kW (single phase)
- 22 kW (can be modified for single phase or three phase).

These charger sizes can be similar in price (depending on capabilities). However, you must ensure that your site's existing electrical infrastructure can support a 3-phase charger.

Apart from charger size, vehicle technology itself also determines how fast an EV can charge which varies across models.

Example destination	Coffee	Winery	Museum	Restaurant dinner	Trip to the zoo	Overnight accommodation
Example dwell time	10 min	1 hr	1.5 hr	2 hr	5 hr	12 hr
Average driving range added from a 7 kW charger	7 km	40 km	60 kms	80 km	200 km	Full charge
Average driving range added from a 22 kW charger* *Range added is dependant on the individual car's charging capability. Not all EVs can charge at 22 kW AC.	6 km – 22 km	40 km – 130 km	60 km – 198 km	80 km – 260 km	200 km – full charge	Full charge

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Funding your EV charger

1. Read the **EV destination charging grants guidelines** to check your eligibility for a co-funded EV charger(s) at your destination.
2. Refer to the **list of EV chargers** available for purchase under the EV destination charging grants to understand what a charger suited to your needs will typically cost.
3. Find out more about purchasing, installing and operating an EV charger in our series of how-to-guides and application checklist.
4. We recommend you consult an electrician to understand your electrical requirements and limitations.

Tips:

If your carpark has a 32A 3-phase electrical supply available, you could choose one of the following:

Install one 3-phase 22 kW charger to charge a single vehicle more quickly. This is suited to short visits, e.g., lunch stop or museum visit.

Install 3 x single phase 7 kW chargers to charge 3 vehicles simultaneously at a slower rate. This is suited to longer visits, e.g., an overnight stay at a hotel.

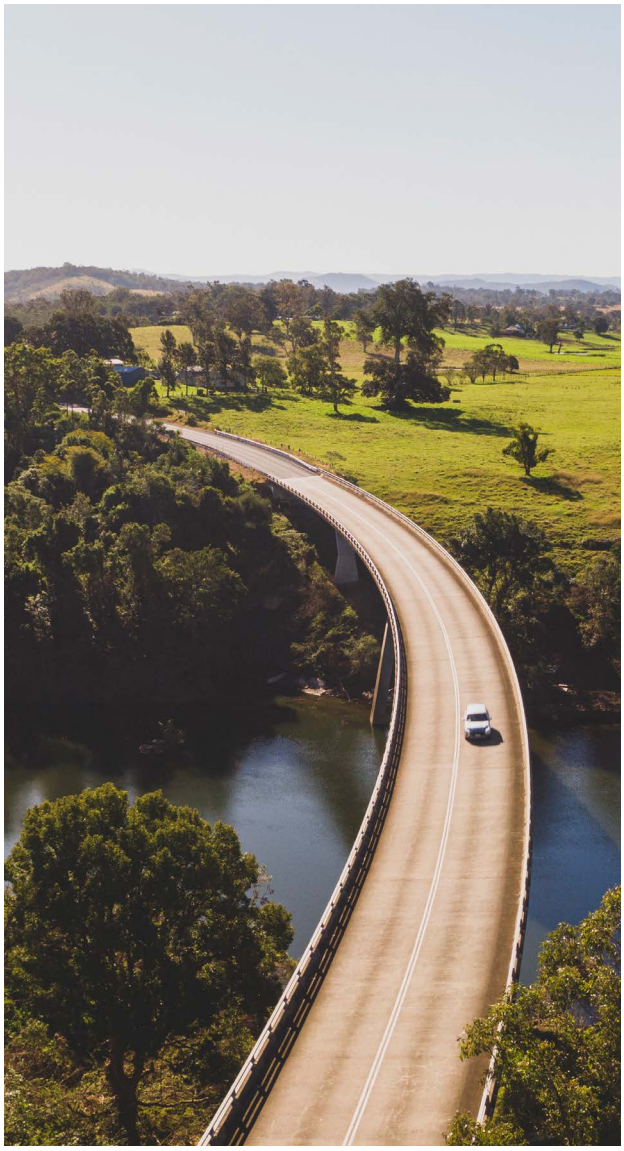

Image courtesy of Destination NSW.

For more information

This guide is one of a suite of supporting documents. Visit **energysaver.nsw.gov.au/EVdestinationgrants** to find other support material and download the guidelines.

Take a look at the list of eligible EV chargers and software at **electricvehiclecouncil.com.au/programs/nsw-destination-charging**.