What is the recommended charger for most EV drivers?

Energised Electrical believe the charger suited to most EV owners is a 7Kw single phase charger. These chargers will sufficiently charge a wide range of vehicles and can easily be installed without upgrading the existing electrical supply to the property.
Most EV drivers drive between 30 and 50km per day and therefore we only need to "top up" the battery when we return home at night, and realistically this may only take 1-2hours of charging time. A smart charger will allow you to schedule your EV to charge at night during periods where power is cheaper to purchase from the grid.

"Cam installed our Evnex wall charger, really prompt and friendly service, talked us through any issues and did a great job. Thanks so much."
- Colleen

"Cam installed an Evnex EV charger for us. He arrived on time, was friendly, and did a nice quick job with the installation. Definitely Reccomend."
- Darin

Why work with us?

- EV charger installation is what we do!
- We are fast, friendly and reliable
- We don't just install an EV charger and leave; we provide detailed test results on completion of the job as well as a handover service and ongoing support should you require it.
- We are both registered Master Electricians as well as registered Electrical Inspectors. This means we are qualified to inspect "High Risk" work and carry out periodic inspections on commercial and public charging stations.
- We look for what we can GIVE to our clients rather than what we can GET from them and we aim to make every customer a repeat, referring client!

If you would like to discuss your Electric Vehicle needs further, please feel free to contact us for a no-obligation chat.

021 441 415
info@energisedltd.co.nz
www.energisedltd.co.nz

evnex CERTIFIED INSTALLER

evnex TRUSTED PARTNER

energised ELECTRICAL LTD

Electric Vehicle Charging Guide

Electric Vehicle Owners Charging Guide

Purchasing an Electric Vehicle and then figuring out how to best charge it can be overwhelming. To assist in the transition, Energised Electrical have put together this brochure to help answer some common questions.

What methods are available for EV charging?

- Level 1 chargers are the slowest, most common type. They can be connected to a wall socket at home and deliver up to 2.3 kWh, or around 10 km of range per hour.

- Level 2 chargers provide higher charging speeds but require installation by an electrician. They are the most common charger found in residential, commercial and public settings. Most level 2 chargers can deliver at least 7.4 kWh or 11 kWh, with some capable of up to 22 kWh. Charging on those power outputs adds approximately 40 km, 60 km, and 120 km per hour of charge respectively.

- Level 3 chargers, also called DC or fast/rapid chargers, can deliver the most power and highest charging speeds. They require large transformers and are not cost-effective for residential and most public uses. The highest-rated level 3 chargers can deliver between 50 to 350 kWh. At these rates, most EVs can charge up to 80% in less than an hour and some in as little as a few minutes.

What is AC vs DC electricity?

All batteries, including those in EVs, store Direct Current (DC) power, so the Alternating Current (AC) current coming from the grid must be converted. It is not a question of if, but rather where this conversion happens that highlights the key difference between AC and DC charging.

AC chargers are the most common (and generally slower) type. Without getting too technical, this is because the conversion from AC to DC happens inside your vehicle and is limited by the power that the vehicles onboard converter can process. In most cases, AC charging can reach up to 22 kWh.
Example; In order to fully charge a Tesla Model S (that has a 100 kWh battery) with a 22 kW Level 2 charging station, it would take about 7 hours, while it would take an 11 kW charging station approximately 10 hours to do the same.
With DC charging, the electricity is converted from AC to DC via the charging station before it reaches your car. This allows it to bypass the car's slower onboard converter and achieve much higher power outputs, up to 350 kWh as it feeds power 'directly' to the battery. As a result, charging an EV with a DC charger takes only minutes rather than hours.

For context, what would this mean when fast charging a Tesla Model S? This would only take around 30 minutes.
However, as mentioned – DC charging infrastructure requires a lot of power and is therefore unsuitable for most residential, commercial, and public environments.

How long does it take to charge a car battery?

One of the main factors affecting charging time is the car's battery size. Just as a large fuel tank takes more time to fill up, generally speaking, the larger the battery, the longer it takes to charge. Other than size, the car, chargers' charging capacity and even the weather can impact charging times.
Another factor that will impact an EV's charging time is the battery's state of charge. Because of their chemistry, batteries can accept more power at lower charge levels: as they get closer to 100%, the charging power slows down considerably.

So, while charging a car from 20% to 70% might only take a few minutes, charging it from 70% to full will take substantially longer.

Beyond battery capacity and state of charge, another element influencing charging time is the car's charging capacity. Not all EVs are rated to accept the same charging power.

While some may be able to take up to 350 kWh fast charging, many are limited to much lower power inputs, often between 100 kWh and 150 kWh. The same applies to slower AC charging: while the theoretical maximum charging power is 22 kWh, many cars can only use 7.4 kWh or 11 kWh.