

# EV charging explained

Novuna<sup>®</sup>  
Vehicle Solutions

Tomorrow. Together



## If you've decided to make the switch to a plug-in hybrid (PHEV) or a full electric (EV) vehicle, you probably have some questions about charging.

In general, charging an EV is simple; it's just like a phone, plug it in and wait for it to power up. That said, there are a few things you will need to consider such as: How long will it take to recharge? Will I do it at home or on the road? And, do I have the right adapters and apps?

To make things a little easier for you, we've put together some of the most common questions we get asked by drivers who are getting ready for their first EV.





# Slow, fast, rapid or supercharged?

There are lots of different speeds of charger and how fast your car charges is dependent on a few factors:

How much electricity can be taken from the source — from home charging on a three-pin plug right through to a Tesla supercharger at 120kW, delivering 200 miles of charge in just half an hour.

The size of the battery — just like the fuel tank on a traditional car, the batteries of EVs come in different sizes. The bigger the battery, the longer to charge.



## Slow: 3-5kW

---

Fully charging on a three-pin plug can take 13 hours or more and should be reserved for occasional and emergency use only. You should always check the manufacturers guidance for further details before charging.

## Rapid: 25-99kW

---

When you're out on the road and need a top-up, a rapid charge is a great option. These charging points can top you up from empty to 80% full in around 30 minutes.

## Fast: 7-22kW

---

This category covers charging from 7kw through to around 22kw and tends to cover both home charging units and away from home charging points. Installing a 7kw home charger could cut your charge time by half.

## Ultra rapid and supercharger: 100kW+

---

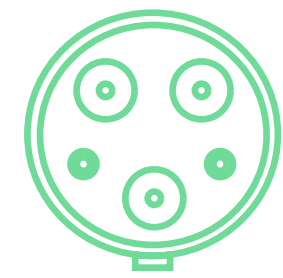
Ultra Rapid is the next-generation of rapid chargers and Supercharger is the name Tesla has given to its charging network. Only available to Tesla drivers, these chargers can deliver a 200-mile range in just half an hour.

# What connector do I need?

In addition to different speeds of charger, there are different types of connector. These fall into two groups: AC for slow and fast charging up to 43kW and DC for rapid and supercharging. Some cars come with two or more cables to allow the use of chargers with different connector outlets.

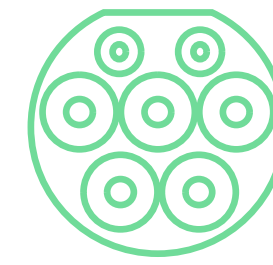
Type 2 is the Europe-wide standard for all new electric cars and is compatible with both single and three phase electricity supply.

## Slow and fast charging



### Type 1:

Mainly found in the US, and on some older European models. This is still the connector used by the Mitsubishi Outlander PHEV.



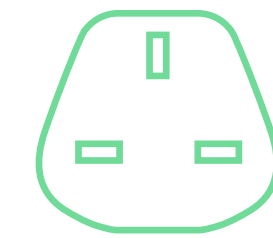
### Type 2:

This is the standard for European and Asian vehicles (Nissan Leaf for example) from 2018 onwards. It's by far the most common and can charge at a level of up to 43 kW.



### Commando:

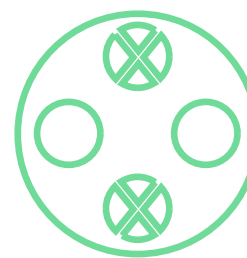
These are often used on commercial or industrial sites where more power is required than a normal UK 3-pin plug.



### 3 pin:

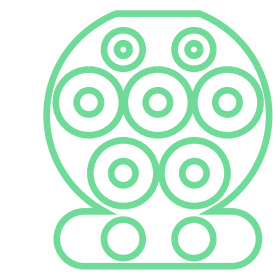
Although not recommended for regular use, a 3 pin plug is capable of charging an EV when there is no dedicated charging point available.

## Rapid and supercharging



### CHAdeMO:

Mainly used in older vehicles and the Nissan Leaf (100% electric BEV) and the Mitsubishi Outlander (partially electric PHEV).



### CCS (Combo 2):

A very fast version of a Type 2 connector with two additional power contacts. It is always combined with either a Type 1 or Type 2 socket.

# Should I get a home charger?

Charging at home is the most convenient option for most people. Just plug it in when you get home or charge it overnight and, when want to go out again, your EV is powered up and ready to go.

It is possible to charge your EV using your existing electricity supply and three pin-plug. However, this does take a lot of time and lots of EV drivers choose to get a home charger fitted.

The Electric Vehicle Home Charge Scheme (EVHS), provides funding of up to £350 towards the cost of installing a home charging station. However, from April 2022, the scheme will only apply to homeowners who live in flats or people in rental accommodation. To find out more visit: [www.gov.uk](http://www.gov.uk) and search for EVHS.

---

It's worth noting that government grants have a range of eligibility criteria and these can change with very little notice, so it's a good idea to check the latest terms before making a final decision:

- Smart chargers rely on WiFi for software updates, so you'll need home internet connectivity.
- Think about the location of the router — will the signal reach the charger or do you need a booster?
- The charger will work remotely via an app so you'll need a smartphone.

---

When it comes to choosing your charge point, there are lots of different options and price ranges. It's possible to pay anywhere from around £500 up to £1500 or more (minus any available grant).

To make it easier for you, we've partnered with British Gas to offer you a home charging solution which includes your grant applications, standard installation and a charge point.

Our team will be able to talk you through all the relevant options, such as:

- The type of connector you need.
- The speed at which you want to charge.
- How much charge your car and local supply can manage.
- Choosing between a tethered charger that comes with the cable as part of the unit (so you can't change it), or an untethered charger that has a removable cable, which adds flexibility, but could be a security risk as the cables can be detached and stolen.
- Selecting a style that's right for you. Admittedly, this probably isn't the most important point but, if it's on the side of your house, you'll still want to be happy with how it looks.
- Will you be using standard home electricity or solar energy (either now or in the future)?

---

If you're charging at home, you could also consider switching to an EV friendly electricity tariff. These tariffs offer cheaper, off peak, overnight electricity



# Charging on the move

These days, charging on the road isn't a problem. There are nearly 50,000 charging points at well over 18,000 locations up and down the country. In fact, charging locations now far outnumber petrol stations.

That said, there are some things you will need to consider if you're planning to charge when out and about. For example, there are lots of different charging networks and they all have slightly different requirements. Many of them require you to use a mobile app, so it's worth planning ahead and downloading the required apps and registering in advance. Here are just three of the most common charging brands:

1\_

**Polar** is the UK's largest public charging network offering a pay-as-you-go or subscription service.

2\_

**Pod Point** is often found in supermarket car parks. Accessed via an app, charging is often free.

3\_

**Charge your car (CYC)** has over 2,000 devices nationwide. Access is via an RFID card or app.

There are lots of websites and apps showing UK charging points and access requirements. One of the most well known is Zap Map ([www.zap-map.com](http://www.zap-map.com)).





# Any questions?

To talk to one of our EV experts, just call give us a call on  
**0344 375 5501** or visit **NovunaVehicleSolutions.co.uk**

**Novuna**<sup>®</sup>  
Vehicle Solutions

Novuna is a trading style of **Mitsubishi HC Capital UK PLC** Authorised and regulated by the Financial Conduct Authority. Financial Services Register no. 704348.

Registered Office: Novuna House, Thorpe Road, Staines-upon-Thames, Surrey, TW18 3HP. Registered in Cardiff under company no. 1630491.

**Tomorrow. Together**