

Electric Vehicle FAQs

EVs are becoming increasingly common on our roads and have a vital role in tackling climate change and air pollution.

In this guide, we answer some common questions.



Purchasing or leasing an EV

Electric Vehicles (EVs) are too expensive

According to [Transport & Environment](#), EVs will have price parity with petrol and diesel vehicles by 2027 at the latest.

There are significant savings to be made on fuel costs. If you can charge at home, despite the continued increases in energy prices we are currently seeing, an EV can cost as little as 6p per mile to charge (based on an [average price](#) of 18.9p/kWh for home electricity) – meaning 100 miles can be covered for as little as £6. A standard petrol car, based on an average fuel cost of around £1.45 per litre in December 2021, could cost up to 18p per mile to run according to [Nimblefins](#).

It isn't just about purchase or monthly payment costs though, servicing and maintenance is on average [23% lower](#) for EVs over 60,000 miles. This is because there are far fewer items requiring regular servicing and replacement; EVs don't have fuel, oil or air filters for example and there are no large items such as cam belts, water pumps or clutches to replace or repair. In fact, other than a diagnostic check on the electric motor and battery packs, the only items needing regular replacement are brake discs, pads and tyres.

I've never driven an EV before

EVs are a very different experience for many but are easy and fun to drive due to their smooth acceleration. [EV Approved](#) dealers have achieved a set of standards designed to recognise excellence in the EV sector, including the sales and aftersales process. Opportunities for an extended test drive are a great way to experience driving an EV.

Take a look at our [videos introducing drivers to EV](#).

Can I tow with an EV? Are there 7 seater EVs?

Many EVs are capable of towing, often the towing capacity will be lower than for a petrol or diesel equivalent but this is starting to change. There are a number of 7 seater EVs now on the market and different manufacturers are producing EVs in a wider variety of body styles. [Love my EV](#) is a useful resource for identifying the correct vehicle for your needs.

Purchasing a second hand electric vehicle

There are lots of models out there with different battery sizes, specifications and, increasingly, body styles so ensure the vehicle is right for your needs. Some older models have leased batteries, particularly Renault models, so it is important to check this too. There are an increasing number of independent dealers specialising in used EVs but you can also look out for garages that are [EV approved](#) or part of the [Hybrid and Electric Vehicle Repair Alliance](#).

What grants are available?

The [plug-in car grant scheme](#) is available for new cars, motorbikes/mopeds, taxis, vans and lorries, purchased outright or leased. All the paperwork is dealt with by the dealership/leasing company and will be incorporated into the advertised purchase price.

Charging

What are the different types of chargepoint?

Chargepoints are categorised by their maximum charging speed. Slow chargepoints are generally 3 kilowatts (kW) or less, fast chargepoints are between 7 and 22 kW, rapid chargepoints are 50kW, and ultra-rapid units are 150kW+.

How do I charge an EV?

The [EST guide to charging EVs](#) should answer most questions. EVs can be charged via a standard domestic 3 pin plug socket, however best practice where possible is to install a 7kW home charge unit which will fully charge most vehicles in 6-8 hours and has added safety functions over a standard domestic socket. Your new EV will be supplied with a charging cable to charge on a standard domestic socket and another to connect to home and public charge points (7kW-22kW). Any car can charge at home and public chargepoints as the charging socket is standardised.

Higher powered DC charging units have tethered cables and look not dissimilar to petrol or diesel pumps. You will just need to choose the socket to connect to your model of EV.

How long will it take to fully charge?

This very much depends on the type of chargepoint being used, the size of the battery and how fast the car will charge. Generally, a 7kW unit will charge an EV with a 40 kWh battery in 4-6 hours, a 50kW DC rapid charger will add an 80% charge in around 1 hour.

What is smart charging?

Smart charging is a convenient way of charging your EV at times when demand for electricity is lower, for example at night, or when there is lots of renewable energy available on the grid. This helps to reduce peak demand on the grid and can also lead to carbon and cost savings, depending on your electricity tariff.

Read our [guide on smart charging](#).

What grants are available to help install EV chargepoints?

The [UK Government's homecharge grant scheme](#) is intended to support homeowners to install chargepoints, the focus for the future of this grant is on supporting residents of flats and apartment buildings with off street parking to install chargepoints.

The [workplace charging scheme](#) enables employers to install chargepoints for employee and fleet vehicle use, it covers up to £350 (or 75% of the cost) per socket (up to a max of 40 sockets per organisations).

How much can I expect to spend and who can install a home chargepoint?

According to [Rightcharge](#), depending on the model, the chargepoint unit will cost from around £400-£500 fully installed. The homecharge grant scheme has a list of approved installers that must be used to be able to take advantage of the grant scheme.

Ensure your installer has signed up to the [Electric Vehicle Consumer Code for Home Chargepoints \(EVCC\)](#). The EVCC is a code of practice which aims to ensure that consumers receive fair treatment from domestic chargepoint installers, and will identify the company as a reputable installer.

Where can I install my chargepoint?

Chargepoints should be installed within 5 metres of the main electrical consumer unit in a property. However, any qualified electrician will be able to install more bespoke or complex arrangements. You will need to consider whether you want your cable supplying the chargepoint buried as there are specific regulations regarding this. Some older properties may require an upgrade to the main fusebox, your installer will be able to advise on this.

What are my options if I don't have a driveway or cannot install a home chargepoint?

The public chargepoint network is expanding quickly, resources such as [Zap-Map](#) are an excellent way of identifying chargepoints locally. Many Local Authorities are installing chargepoints in local car parks and on residential streets, check your local council website for information on their network and plans for expansion.

There is a growing network of rapid chargepoints at UK motorway service areas; National Highways have plans to ensure that 95% of the motorway and main A-road network in England is within 20 miles of a chargepoint.

Are public chargepoints easy to use?

Fast (7-22kW) chargepoints are generally accessed via a smartphone app or RFID card. At present, you will usually need an app or RFID card for each network but there are moves to ensure wider interoperability. Rapid (50 kW+ DC) increasingly offer contactless payment. Some public chargepoints, for example those at supermarket chains, are available free of charge but will still require an app to activate them.

Is it safe to use a rapid charger?

Yes! The onboard technology on EVs will manage the rate of charge to protect the battery and will significantly reduce charging rates once the battery reaches 80%.

Should I let my EV battery drain to empty and then fully charge it each time?

Operating a battery regularly at nearly full or nearly empty can affect battery health, therefore to limit this, manufacturers use software to 'buffer' the maximum and minimum charge level. Lithium-ion batteries perform best at between 20% and 80% charge. The [Geotab report](#) on EV battery health is a useful source of information.

I need to travel longer distances quite regularly

Modern EVs generally have a range of 200 or more miles, some are even capable of over 300 miles. Longer journeys are therefore practical and the motorway network is well served by rapid chargers, with growing numbers of dedicated rapid charging hubs available beyond the motorway network too.

How does weather impact on EV range and battery health?

Extremes of weather can impact battery range, particularly very cold weather. Heating and air conditioning does have an effect on the range, however all EVs can be pre-cooled and pre-heated whilst the car is plugged in to help maximise range and provide a warm car to step into in the winter and a cool one in the summer.

How long does a battery last?

Most manufacturers offer at least an 8 year or 100,000 mile battery warranty. The [RAC highlights](#) that some EV drivers have easily driven 200,000 miles on their original battery – a lifespan not dissimilar to a petrol or diesel engine.

Will I need to replace the battery?

EV batteries have proven to last well and replacements are rare and generally covered by battery warranties. The batteries themselves are made up of a number of individual cells which can often be replaced if any issues occur.

Do EVs produce more CO₂ during their lifetime than petrol or diesel vehicles due to battery manufacturing?

[Carbon Brief](#) has considered this statement at length. Essentially, EVs are responsible for considerably lower emissions over their lifetime than an equivalent internal combustion engine vehicle. In the UK in 2019, lifetime emissions per km from driving a Nissan Leaf EV were approximately 3 times lower than an average conventional car. It is also important to note that EVs have zero tailpipe emissions so there is an immediate air quality benefit compared to a petrol or diesel vehicle.

What is the impact of the extraction of rare metals for battery production?

There are concerns around the demand for water from lithium mining in some countries and the ethics of mining for cobalt in others, such as the DRC. Manufacturers are working to ensure their supply chains are ethical and minimise the environmental impact. New battery technologies are also being developed which will reduce the demand for these resources. New sources of these rare metals are being investigated closer to home, for example there is potential to mine lithium in Cornwall and some EV batteries are cobalt free.

Can you recycle EV batteries?

At the end of their useful life powering an EV, batteries have further applications for energy storage which will be increasingly useful to support the power network. There is also scope to extract the minerals and metals in the batteries and a growing recycling industry as volumes of used batteries increase.

What about hydrogen?

EVs are considered more suitable to replace most petrol or diesel cars and vans as there are challenges with the amount of energy required to produce hydrogen. While electricity generated from renewable sources can be used to produce 'green' hydrogen, it is an inefficient process. Hydrogen may be a better solution for some vehicles, such as long range trucks, as well as for aviation and shipping.

Are there any suitable alternative battery technologies?

There are new battery technologies that are at early stages of development. Solid state battery technology is safer and can store significantly more energy than an equivalent size and weight lithium-ion battery which will mean significant improvements in manufacturing and vehicle efficiency.

energy saving trust

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We empower householders to make better choices, deliver transformative programmes for governments and support businesses with strategy, research and assurance – enabling everyone to play their part in building a sustainable future.

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