



# The Complete Guide to **Electric Vehicles**

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**Helping all prospective EV  
owners and drivers make  
the leap to an electric future**

  
**allstar**



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# Introduction

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It's highly likely that one day you'll be driving an electric vehicle (EV).

The UK Government has set a cut-off date for the sale of new petrol and diesel cars and vans of 2030. It won't mean internal combustion engine (ICE) vehicles disappear completely from our roads at a stroke, but it is going to lead to change. Even now, drivers are making the switch to electric, and this change will fundamentally change the way we fuel and run vehicles, and have an impact on our environment, globally, and locally.

That's why we've put together this guide. Switching to EVs should be positive - a way to save money, make our communities healthier and avoid contributing to climate change.

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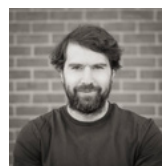
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In these pages you'll find why EVs are a great investment and how they are different from ICE vehicles in some fundamental ways. We'll also be taking a detailed look at how charging works - it can be as simple as fuelling up at a petrol station, but to get to this point requires some pretty big changes in behaviours and infrastructure.

We'll also spend some time looking at the costs, addressing the claims that EVs are too expensive. Speaking of myths, we'll end by looking at some of the half-truths, misinterpretations and outright fabrications that are still going around when it comes to EVs.

The one thing that we most want you to take away from this publication is that driving and running an EV can be a really enjoyable experience, that increasingly is within the reach of all drivers.

So, let's get on the road.



**Tom Rowlands**, Managing Director of Global EV Solutions, FLEETCOR



# 1. Why own an EV?

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There are plenty of reasons why you'll want to make the change to an EV.

## 1. ICE vehicles are being phased out

The date for the end of new ICE car and van sales in the UK used to be 2040. Then it was 2035, and now it's 2030. Given how the uptake of EVs is increasing, and in 2022 took up more than 16% of all cars sold, which in itself was an increase of nearly 80,000 sales on the year before and that's with manufacturers struggling to supply enough cars. Things are going in the right direction.

<https://media.smmf.co.uk/december-2022-new-car-registrations/>

Over time, all these EVs will reach the second-hand market, giving buyers far more choice, and while surviving ICE vehicles will still be on our roads for some time to come, a used electric car will become a far more cost-effective option. While batteries are lasting far longer than critics predicted, the cost of replacing them will reduce too, keeping older EVs on the road for years to come.

<https://www.forbes.com/sites/carltonreid/2022/08/01/electric-car-batteries-lasting-longer-than-predicted-delays-recycling-programs/?sh=17cc362a5332>

## 2. The cost of 'fuel' can be lower

Even with lower petrol and diesel prices, ICE vehicles are often more expensive than those using electricity if an EV is charged at home, even after the massive spike in energy prices in 2022.

If the price per kilowatt hour (kWh) of domestic electricity is at 34p, completely recharging the 89kWh battery in a Mercedes-Benz EQE at home would still only cost £30, and give you around 300 miles of range. That means the cost is 10p per mile.

To compare, a car doing 300 miles at 45mpg, when it was filled up with petrol costing 150p a litre, would cost 15p per mile.

Of course, recharging at public charging points as opposed to at home is more expensive, but it's unlikely that you'll charge your entire battery from one unless you're on a road trip or don't have access to home charging.

## 3. They're quieter

Unless you're the antisocial sort who likes to rattle your neighbours' windows, quieter is better when it comes to vehicles. Vehicular noise pollution has been linked to health effects like high blood pressure, sleeplessness, nausea, depression, dizziness, headaches and even heart attacks. One study estimated that noise pollution costs one million healthy life-years from Western Europe alone, and 113 million Europeans are routinely exposed to traffic noises above the healthy threshold of fifty decibels.

Traffic noise can not only disrupt our sleep, but it also ruins our rest while we're sleeping, preventing our brains from optimally healing and destroying our ability to learn, remember and regulate our moods. The World Health Organisation (WHO) recommends that sounds outside of our bedrooms shouldn't exceed 40 decibels, the ambient sound level of a library or a forest.

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*"While an outright ban on ICE vehicles is probably never going to happen, it will become increasingly difficult to buy and run them."*

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#### 4. They don't cause direct air pollution

Their non-existent CO2 emissions on the road (not counting their manufacture or the generation of electricity to run them of course) may be the main reason that the UK, and the world, is transitioning to EVs but the lack of traffic-related air pollution comes a close second. Many studies have shown that traffic pollution causes asthma attacks in children, impairs lung function, and causes premature death from heart problems. Anywhere up to 500 meters from a major road will be particularly badly affected by traffic pollution, and children will be hurt most of all. Adults are also at a higher risk of dementia and overall poor cognition.

#### 5. They drive better - and easier

EVs are wonderfully simple to drive. Many don't even have a key or start button. You just get in, select drive or reverse, press the accelerator, and go. With only one gear and a near silent motor, there's less going on than in an ICE with multiple gears, revs rising and falling, noise and vibration. Even the most luxurious petrol car would struggle to match the refinement of any EV.

One of the main advantages that EVs have is that their motors produce high levels of torque (the shove that gets a car going) almost instantly. Quite often, new EV drivers are shocked by how quickly their electric car leaps off the line.

It means that EVs are often faster accelerating than equivalently priced petrol or diesel models, but you don't usually buy an EV to get into drag races. What makes them so good is how nippy they are to drive, especially in towns and cities.

There's also one other crucial difference, and that's when EVs are slowing down. Most use a system called regenerative braking. When you lift off the accelerator, the motor reverses in order to feed energy back into the batteries and top them up, while also slowing the EV down. You can still also use the conventional brakes, and the level of 'regen' can often be adjusted to slow the car or van down by varying amounts (or even be switched off entirely) when you're driving or before you start off. It can seem odd at first, leaving an EV to do most of its own braking, but most drivers soon get used to it.

#### 6. They don't need as much maintenance

Petrol and diesel engines are generally more complicated than electric motors. Think about all the moving parts, coolants and lubricants in even the simplest ICE engine and how much maintenance it takes to maintain them all, while an EV drivetrain is significantly less complicated.

While you will still need a regular MOT, EV drivers often find that they have much less need for regular maintenance.

It's still undecided whether they go through tyres more quickly though. On the one hand, EVs drivers are usually more careful, driving slower and more carefully to save energy, which is good for tyre life.

But because of their batteries, EVs are much heavier than equivalent ICE vehicles, and that torque puts a lot of stress through the rubber if you're heavy on the accelerator. Those factors can wear tyres very quickly if you're not careful.

1. <https://www.intechopen.com/chapters/71662>

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*“EV drivers find that they have much less need for regular maintenance.”*

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## 2. How an EV works

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Don't worry, we won't be doing a deep dive on lithium mining or 'well-to-wheel' emissions comparisons here. Rather, we're going to talk about the day-to-day reality of an EV.

### The three (or more) types of EV...

We're mostly going to be discussing plug-in electric, or fully electric vehicles in this piece since it looks like they are most likely to make up the majority of vehicles on the road in a few decades, but there are other types of EV too:

**Plug-in Hybrid:** Vehicles like Mercedes' C 300e and BMW's 330e are plug-in EVs, as they have an ICE engine that kicks in if the battery ever runs too low, or can be used if you want to save your electric power for later. They are a good stopgap between ICE and full EV vehicles, especially if you do very high mileages, but with EV range and charging technology becoming much better it may be worth simply getting a plug-in EV at this point.

**Electric Hybrid:** The famous and widely sold Toyota Prius is the best-known example of a hybrid vehicle. It primarily has an ICE engine, but it has a battery that is charged as the vehicle drives that can take some of the strain of driving.

Drivers can switch between the battery and regular motor at the touch of a button, or it can switch automatically when one engine is running low on fuel. However, they can't be plugged in, and their batteries are usually much smaller than those that can, meaning their electric-only range is much lower. Sales are also being phased out by 2035 in the UK.

<https://www.gov.uk/government/news/government-takes-historic-step-towards-net-zero-with-end-of-sale-of-new-petrol-and-diesel-cars-by-2030>

There are also three more types of hybrid and zero-emissions vehicles that could be put into the broader EV category:

**Mild Hybrid Electric Vehicles:** These are mostly ICE vehicles, but with a small battery and integrated starter-generator that gives a small boost to fuel economy.

**Range-Extender Electric Vehicles (RE-EVs):** Similar to hybrids, RE-EVs have a petrol or diesel engine alongside a battery, but the big difference is that the engine is used as a generator to charge the battery when needed, increasing its range. There aren't many of these type of vehicles on the road as hybrids or full battery powered EVs, so you'll likely only see them second hand.

**Hydrogen Fuel Cell Vehicles:** Hydrogen fuel cell vehicles are powered by an electric motor, and some claim they might be the future of driving if battery and charging technology plateaus. They combine hydrogen and oxygen to make electricity, producing only water vapor as emissions. The range is often equivalent to an ICE vehicle too: the Toyota Mirai can drive 400 miles on a single tank, and refuelling only takes minutes.

A major drawback is the price, which is currently very high, and while they have been in development for decades and the available models are great, the future for hydrogen looks rosier in lorries and other very large vehicles than in cars and vans. In addition, there is an extremely underdeveloped infrastructure for hydrogen in the UK, with only 11 refuelling points currently available.

<https://www.ukh2mobility.co.uk/stations/>

## Driving an EV

We're at a point now where EVs have an almost similar range to ICE vehicles, so when you are on the road you don't need to be any more concerned about running out of charge than you would in a conventional petrol or diesel vehicle. Chargepoints are becoming extremely common, from the La Clos Paumelle station at St. Helens on Jersey to the Baltasound chargepoints on Shetland Islands.

Based on Zap-Map's map of charging points, there shouldn't be anywhere in the UK where you are more than ten miles from a chargepoint, and because of the on-board navigation in most EVs and apps like our partner Zap-Map's, there shouldn't be a point at which you are worried about running out of charge (and if you do, the RAC and AA both offer mobile charging to get you going again).

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## Battery efficiency

There's no standard EV battery size and given how factors like weight and temperature affect an EV's range the quoted official mileage may be more than you get in real life.

EV mileage is measured in miles per kilowatt hour, and the average mileage is easy to work out: take your battery size and multiply it by the stated number of miles per kilowatt hour your vehicle is reporting on the trip computer. So, if your vehicle has a 50 kWh battery and you are managing to travel three miles per kilowatt hour then you have a range of 150 miles. Easy.

## What's a good mileage for an EV?

Mileage or efficiency, (effectively an EV's 'MPG') can vary a lot depending on how you drive, how much weight you are carrying, or how cold it is (EV batteries operate less efficiently as the temperature drops).

Generally speaking, 4 miles per kWh and up is considered to be at the upper end of efficiency, but three is about average.

Just to confuse things, some EVs will show their efficiency as kWh per 100 miles. So while by the previous metric, the higher number, the better, in this version it's the opposite. The equivalent this way round of 4 miles per kWh is 25 kWh per 100 miles, and three is about 33 kWh per 100 miles. So make sure you check how your mileage is calculated.







## 3. What kind of EV is right for you?

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There are a lot of EVs out there, and more every day, so it won't be possible to give a total rundown of the best EV for everyone here. What we can do is talk about the broad categories of EVs and who they might be right for.



### Small hatchbacks

Small EVs are perfect as city cars or for short trips because of how easy they are to drive, the lack of pollution and noise, and the amount of braking involved means they can recharge their batteries using regen a lot.

Models like the Fiat 500 and Nissan LEAF have excellent efficiency, although they might not have the range of larger cars which have much larger battery packs.

The Fiat 500, for example, has a standard battery that can travel for 112 miles between charges, although a larger battery is available that can travel as far as 199 miles. These should be more than enough to drive to and from work for the week and to the shops, even if you don't recharge.

Who they're for: singles, couples and small families who live and work fairly close to the places they need to go but who might also take the occasional longer trip – you could easily get from Birmingham to London in one of the more efficient small EVs.

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“If 99% of your driving is short trips to and from work but you occasionally go away on longer trips, why not buy a small hatchback and rent a larger vehicle when you're away? The chances are it'll work out cheaper.”

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## Family cars

Vehicles like Tesla's Model 3 and S, Polestar 2 and the Mercedes EQE and EQS are larger, generally more expensive and because they have greater space for batteries, they have much longer ranges – the EQS can travel more than 400 miles on a full charge, meaning range anxiety isn't really an issue. But you'll pay for the privilege.

[https://www.mercedes-benz.co.uk/passengercars/mercedes-benz-cars/car-configurator.html/motorization/CCci/GB/en/EQS-KLASSE/LIMOUSINE\\_LANG](https://www.mercedes-benz.co.uk/passengercars/mercedes-benz-cars/car-configurator.html/motorization/CCci/GB/en/EQS-KLASSE/LIMOUSINE_LANG)

You will find that these higher-end vehicles are luxurious, high-tech and expensive (a Polestar starts at more than £40,000 and an EQS at nearer £100,000), but there are cheaper four-door electric family cars like the MG 5 EV estate.

Who they are for: families, executives who travel long distances frequently.



## SUVs

As technology advances, electric SUVs are becoming more common. The Volvo XC40 Recharge and BMW iX are both SUVs of varying size and range (257 and 380 miles respectively) with the additional practicality of a higher seating position and a big boot. Like many new models, the iX is also capable of using ultra-fast charging, so it can potentially charge its entire battery in only half an hour on the right charger – ideal if you're on a long trip and the family and dogs are in tow... Who they are for: Large families or drivers needing more practicality and carrying capacity.



## Sports cars

The Porsche Taycan and other electric sports cars use a huge amount of near-instant torque available from the electric motors, coupled to high end power. The result is that they are among the fastest accelerating cars on the planet. A Taycan Turbo S has a 0-62mph figure of 2.8 seconds, and Tesla claims its Roadster, should it eventually be launched, will manage it in 1.9 seconds and do 250 mph.

[https://www.tesla.com/en\\_gb/roadster/reserve#payment](https://www.tesla.com/en_gb/roadster/reserve#payment)

Great fun, of course, but they are expensive (a Taycan Turbo S starts at £142,000) and enjoying the performance a lot will find you sitting at chargers a lot, too. There are more sensible alternatives available though, like the BMW i4 M50 and Audi RS E-tron GT.

Who they are for: Those with deep pockets who can also afford a more practical vehicle for everyday use.





## 4. Charging explained

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Driving an EV won't feel much different from driving an ICE vehicle after a while, but charging is going to be a major change.

Right now, if you need to refuel your ICE vehicle it's a pretty easy process: go to a garage, fuel up, pay and drive away. The whole process takes a few minutes at most. For all the advances in battery technology, recharging an EV takes much longer. Fortunately, there are plenty of ways to not just get around this, but make it work for you. While it initially sounds like having to spend time recharging your vehicle is a major inconvenience, you'll find out that it can actually work out cheaper and easier if you do it right.

### **There are two (or more) types of EV charger:**

If you are buying a new EV, almost everyone will now have a Type 2 charging connector. It's the EU standard and increasingly all vehicles come with them because it can lock in place once plugged in, and can carry high power levels, including a standard 7kW wallbox, and public charging up to around 22kW.

There is a development of the Type 2 connector for rapid and ultra-rapid charging of speed up to 350kW called CCS. What this looks like is a Type 2 plug on the top with a further row of connectors underneath. So if you have a CCS enabled car, you can plug in with a Type 2 at home on a wallbox, and then use the CCS plug that will be attached to an ultra-rapid chargepoint at public locations.

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*“Charging infrastructure is growing rapidly. It isn't just service stations and city-based petrol stations that have charging points anymore, they're really everywhere.”*

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Increasingly, public chargers have their plugs attached (called 'tethered'), but it's still worth taking your own cable with you as sometimes you may need it at certain chargepoints.

There is another option for when you're not near a wallbox or charger. A 'granny' cable has a standard plug at one end, and a Type 2 connector at the other, so you can plug into a household socket. But be prepared for a long wait, as it will only supply 3kW power. A 60 kWh battery would take over 20 hours to charge at that rate, but sometimes it can be useful.

Some older EVs (and some US models) use the Type 1 connector, which can't carry as much power or lock, and some Japanese vehicles use a CHAdeMO connector, which you can usually find on the other side of tethered ultra-rapid chargers from the CCS connector. It allows very fast charging, and the name comes from the Japanese phrase for 'would you like a cup of tea', implying that you can charge your vehicle in the same time it would take to make a cup of tea. The upshot is, if you're buying a used EV, make sure it has one of the two main types of EV charger to make things easier on yourself.

### **Charging on the road**

As mentioned above, charging infrastructure is growing rapidly. It isn't just service stations and city-based petrol stations that have charging points anymore, they're really everywhere.

Charging is very easy and fully automated, so you'll still be able to charge after hours. Using most should be simple too: there are several apps that let you pay for charging remotely and you can tap or swipe payment cards.



The thing to remember when charging on the road is that public charging points are more expensive than doing it at home, so that's something to bear in mind if you can't fit a wallbox. Plenty of people do only charge on public connectors, but generally if you are looking to run your EV as cheaply as possible, public charging is best used for topping up and when it's really necessary.

Some drivers new to EVs worry they will spend lots of time sitting in car parks waiting for their vehicle to charge. But the average length of a car journey in the UK is only 8.4 miles, and even if you do 15,000 miles a year that's still only an average of 41 miles a day. Ask yourself: how often do you leave the house and drive 200-plus miles daily, a distance which is within the range of most EVs? You might be surprised how much you only charge at home as a result.

## How long does charging take?

There are charging points across the UK with power types from 3kW to 350kW, and the latter is going to charge vehicles a lot faster than the former.

Chargers with lower power tend to be small, privately owned and often free to use. Cafes may have one of these available to customers to charge up a little while they have their meal, for example. Those rated at 50kW and above tend to be found at motorway service stations, car parks and petrol stations, and these are usually on major motorways or in large towns and cities.

So how long will charging take with different types of public charger?

Charger	Estimated time to charge 24kWh battery on a Fiat 500	Estimated time to charge 75kWh Tesla Model 3
3kW	9hr 15 mins	27hr 46 mins
7kW	3hr 48 mins	11hr 54 mins
11kW	2hr 25 mins	7hr 34 mins
22kW	1h 12 mins	3hr 47 mins
50kW	32 mins	1hr 40 mins
100kW	16 mins	50 mins
350kW	N/A	14 mins

Based on estimated charging from 0% to 100% for 24kWh battery on a Fiat 500 and 75kWh Tesla Model 3

You can see that even a vehicle with a large battery can charge during a lunchbreak with some of the more powerful chargers. Smaller city cars can easily charge overnight even on the lowest power chargers, though this is unlikely to be something that drivers will do in public except perhaps if they are staying at a hotel.

It is important to note that only a few years ago there wasn't a single 350kW charger in the UK, but now there are dozens. This means that the time spent charging vehicles is going to come down dramatically over the next decade, so that by 2030 when ICE vehicles are being phased out the idea that you'd have to spend over a day charging your vehicle should be a distant memory.

## Charging at Home

You might not be able to get 350kW chargers at home, but you can install home chargers up to 7kW which should be more than enough for overnight charging of most EVs. They are typically not cheap, but they are necessary if you are an EV owner.

Depending on energy prices, there is a fine balance to which might be cheaper if you charge solely from public chargers compared to running an ICE vehicle, but it becomes almost absurdly cheap when you charge from home providing electricity prices are low or you can access EV-specific or off-peak tariffs. These usually kick in at night, so you can schedule your EV to charge only during these low cost periods.

Home chargers connect directly to your home's electrics and this solution is perfect for people with garages or driveways, but they can be a little more difficult to use if you park on the street. You may have to contact your council to ensure that you're legally allowed to run a cable across a pavement from your house.

Obviously, there is also more difficulty if you live in a flat or apartment. Either your apartment building will install them in parking areas for you or you may be able to access the increasing number of lamp post charge points that are being installed by local councils.

<https://www.fleetnews.co.uk/news/latest-fleet-news/electric-fleet-news/2022/10/24/councils-to-install-more-than-16-500-ev-charge-points-in-the-next-year>

“ Depending on energy prices, there is a fine balance to which might be cheaper if you charge solely from public chargers compared to running an ICE vehicle, but it becomes almost absurdly cheap when you charge from home, especially at off-peak times.”

A further problem is how chargers work with rental accommodation. If you rent then you will definitely need your landlord's permission to install a charger, and you will need to agree on what happens when you leave the property – will you have the charger removed or will it be left with your landlord and if so, what will they pay you for it? If you rent an apartment in a larger building, you and other residents might need to establish how chargers are going to be installed – will it be at the expense of residents or the building's owners, and if the former then again, what happens when you move out?

Hopefully in time every house and flat will have charging as a matter of course, but until that time you will have to do your research and figure out the home charging solution that works for you.

## Home charging and your electricity bill

You might have noticed that your electricity company now has a sideline in selling and installing home EV chargers. Although they're far from the only places that you can get home EV charging solutions, your electricity supplier has an important part to play in home charging.

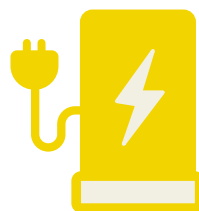
Many electricity suppliers are beginning to offer special tariffs with provisions for home EV charging. They will incorporate features such as cheap overnight charging for when your vehicle is most likely to be on charge and the ability to see your EV charging and other electricity use separated on your bill.

## Charging at work

Many offices are using the government's grants for installing EV infrastructure in order to give their employees a way to charge their vehicles while at work or to charge the vehicles that the company uses.

In the case of the former, employees have a great way to keep topped up and save money: they can charge their vehicles during their workday and will rarely need to top them up unless they are travelling a lot on weekends. For the latter, if you are given a company car or are allowed to use a company vehicle outside of work then it is increasingly likely that you will be given an EV. If so, then you will need to work out the logistics of charging with your company – who will pay for charging, who will pay for the installation of a charging point at your home if required, how will you show your company how much you have spent on vehicle charging, and so on. The solutions for these problems will change from company to company, but they are going to need to be worked out in the coming years.

While it's not illegal, installing a charger is highly specialised work and if done incorrectly could be dangerous or you could end up with wiring that is illegal. You'll also be ineligible for the grants discussed below. Therefore, installation from a professional is strongly advised.







## 5. What you'll save

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Once you've worked out what kind of EV is right for you and how you're going to go about charging, the next step (which is a fun one) is to see how much you stand to save.

The following are a few of the places in which you'll be able to save money by switching to an EV. These are all subject to change and more may arrive, so keep your eyes on the press to see if there are any other savings you could make.

### Grants for EV chargers

There is a grant for installing home chargepoints for flat owner-occupiers, people living in rented properties, landlords and even the owners of residential car parks. These can reduce the cost of installing a charger by as much as 75%, so they are definitely worth looking at. You should also ask any company that is installing a charger in your home if they are aware of any grants that might be available for your specific circumstances and make sure that they are on the government's list of approved providers.

### Lower VAT on fuel

Electricity isn't just cheaper than fossil fuels at the point of purchase, it's also taxed differently: you'll pay 5% VAT on electricity at home versus 20% on fuel, although electricity from public chargers is taxed at 20% too. Depending on your situation, you might even be able to claim the tax on electricity back as an expense, if for example you travel for business.

### Low Emission Zones / Clean Air Zones

There are Clean Air Zones in six UK cities currently, with more planned this year, as well as the Ultra Low Emission Zone in London. The rules on what vehicles can and can't be driven in these zones free of charge is complex and varies for each one.

But one rule applies across all of them: electric cars can drive into them free of charge. You may not even need a pure battery EV to take advantage of these areas – many hybrid vehicles can use Low Emissions Zones, so if you have one, check the website for the scheme to see if your vehicle qualifies.

### Reduced (or no) parking charges

Many places, particularly in London, offer EV drivers free parking, sometimes combined with charging (though don't expect full 350kW ultra-fast charging).

### They can use (some) bus lanes

Cambridgeshire was the first county to change traffic laws so that EV drivers can use bus lanes. Nottinghamshire and Milton Keynes followed soon after and we may see similar schemes roll out across the UK.



## 6. Myths about EVs debunked

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From the humble milk float to the little G-Wiz quadricycle there was a time when they were seen as nothing more than a novelty. But over the past decade or so EVs refinement, usefulness and technology have resulted in them becoming ever more mainstream. But, like anything new, there has been pushback and criticism.

Yes, they're not perfect, but by now you've seen that EVs have ranges in the hundreds of miles, can potentially charge in minutes and for many drivers are genuinely the best option.

However, plenty of myths, misconceptions and downright untruths still abound about EVs, so let's take a moment to take a look at some of the most common:

### **They're too expensive**

There was a time when this was true, and it's definitely the case that you can buy very expensive EVs if you want to. And even small electric cars like the smart EQ fortwo, Renault ZOE and MINI Electric are likely to be more expensive than ICE equivalents. It's all about being smart, though. An EV will have a higher price, but many electric cars and vans are leased, or bought through finance, so you don't pay the full amount up front. Then, after a few years, you either simply hand the car back, or pay off the remaining balance. With speed of technological development, three or four years is a long time in EVs, so you'll want to upgrade by then anyway, just like with your mobile phone.

<https://www.fleetnews.co.uk/news/leasing-news/2022/07/21/fully-electric-vehicles-most-popular-fuel-type-on-bvrla-leased-fleet>

### **There aren't enough chargepoints**

According to our partner, Zap-Map, there are 36,752 devices at 21,906 locations across the UK, with 1,507 added in the month of December 2022. In 2016, there was a little over 5,000, and only 150 ultra-rapid chargers compared to over 2,000 today, with 839 added in January 2023 alone. Even if you think that this isn't enough, you have to admit that pretty soon it will be.

Even areas such as the Scottish Highlands, North Wales and the Lake District have plenty of places to plug in. Looking at Zap-Map's map of the UK's charging points, one of the longest journeys you can take without passing a charging point is Lochcarron to Strathpeffer in Scotland, and this beautiful 46-mile drive through the scenic Highlands only takes one hour. Not enough time to build any range anxiety!



## What if I run out of batteries?

Both EVs and charging apps are built to prevent you from running out of batteries, giving you plenty of warning that you are running low and finding nearby charging points. Although it is hard to run out of charge in an EV, it is equally hard to do in an ICE vehicle, and yet it still happens.

If you do run out of charge in an EV, then your vehicle will put itself into 'limp home' mode for few miles, giving you enough time to pull over. It always saves some for emergencies. As you can't walk to a nearby petrol station to fill up a jerrycan with electricity you'll need to call roadside assistance (AA, RAC etc.), who will be able to send a vehicle out to recharge your car enough to get to a nearby charge point, or give it a lift on a flat bed lorry.

## I'll never be able to find a mechanic

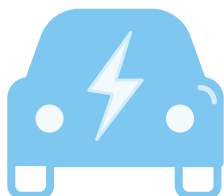
As we pointed out earlier, EV powertrains have fewer moving parts and often need to be serviced less than petrol and diesel vehicles. That's not to say they don't break down or suffer from wear and tear, so when they do require expert attention, you'll need a mechanic. Many current garages work solely on ICE vehicles, but they are adapting and as EVs become a larger percentage of the vehicles on the road, they will increasingly reskill to work on them.

All EV manufacturers have their own service centres, while for businesses with fleets, solutions such as ServicePoint are available. This means that even if you can't use your traditional mechanic to work on your EV, there are options available to get you back out on the road.

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"EVs also tend to come as standard with a host of connected features that monitor the motor and battery to make sure that it can catch problems before they develop."

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## The battery will wear out

If you've ever used a laptop or a smartphone, then you will know that lithium-ion batteries have a limited lifespan. While they sound like the same thing, EV batteries are actually built differently and while they are subject to some degradation too, it's not in the same way, or anywhere near to the same extent. It's also because the electronic systems for managing battery life and charging are far more advanced, protecting their condition for far longer.

Quite simply, when EVs first came out nobody really knew how long they would last until they had been tested on the roads, but now it looks like 15-20 years is a reasonable expectation.

<https://www.nationalgrid.com/stories/Journey-to-net-zero-stories/what-happens-old-electric-car-batteries>

In fact, manufacturers are so confident that battery warranties of eight to 10 years are not uncommon.

## You can't charge EVs in the rain

Some of you might find this question to be idiotic, to others it's obvious that having hundreds of kilowatts of direct current flowing through a tube could be prone to failures.

The short answer is yes, all EV charging points are built to be able to be used in heavy rain and have failsafes in place to prevent electrocution. Of course, nothing is 100% safe, but there have been very few cases of harm caused by EV charging in any situation, and no known cases of harm caused by charging an EV in the rain.

## You can't tow with an EV

Yes, you can. But it requires a bit of research first. Not all EVs have been approved for towing, but there are plenty that have. In fact, because of the huge amount of torque electric motors have they'll get your caravan off the line no trouble.

But you need to be aware of their maximum towing weight, because it can vary a lot, and also the weight of the EV and what it's pulling. Driving licences changed in 1997 and after that not everyone is allowed to tow anything over 3500kg combined. With EVs much heavier than ICE vehicles it can be easier to bust this limit, and so you'll need to take a further test to be able to do it.

<https://www.gov.uk/towing-with-car>



# Making the leap to an EV future

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Like we said at the start, you're very likely to own, or drive, an EV one day. Hopefully by this time you've seen that this is going to be a good thing: lower prices, more convenient 'refuelling', long ranges, a fun driving experience, greater versatility, and an end to environmental impacts such as air and noise pollution.

While ICE vehicles are going to be around for some time yet, particularly when we're talking about large and heavy vehicles like lorries or HGVs, and there will be collectors hanging on to older vehicles out of a sense of nostalgia, it may not be many years before the majority of new vehicles on the road are electric.

As we've shown, there are going to be ways in which everybody who drives will have to make changes to their lives and the way they get around. After an initial investment this change should be mostly positive, and you won't be the only person going through it - there's a lot of information out there about how to make things cheaper and easier.

Technology changes, but not usually overnight. You've got almost a decade before ICE vehicles go the way of Betamax, VHS, tapes, Minidiscs and CDs, so that's plenty of time to save and get yourself into a position where the transition is easy - if your home has no off-street parking, for example, you might want to hold off until your situation changes and you can charge in the street.

Start planning now and the switch to an electric vehicle will be as smooth and exciting as driving your EV for the first time.



## About Allstar

Allstar is one of the UK's market leading business fuel, EV and expense card providers for businesses, with over 40 years expertise.

Accepted at over 90% of fuel sites across the UK, it has over 1.2 million cards in circulation across 50,000 businesses, giving drivers' access to fuel spend across supermarkets, major oil companies and motorway fuel sites. The network encompasses around 7,700 sites nationwide, alongside more than 3,400 charging locations and over 10,200 charge points across its electric vehicle charging network.

For more information, please visit: [www.allstarcard.co.uk](http://www.allstarcard.co.uk)

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## About FLEETCOR Technologies, Inc.

FLEETCOR Technologies, Inc. is a leading global provider of commercial payment solutions. The company helps businesses of all sizes better control, simplify and secure payment of their fuel, toll, lodging and general payables. With its proprietary payment networks, FLEETCOR Technologies, Inc. provides affiliated merchants with incremental sales and loyalty. FLEETCOR Technologies, Inc. serves businesses, partners and merchants in North America, Latin America, Europe and Australasia.

For more information, visit [fleetcor.com](http://fleetcor.com).



[www.allstarcard.co.uk](http://www.allstarcard.co.uk)

## References

1. <https://www.intechopen.com/chapters/71662>
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