

The NFDA Electric Vehicles team are helping Franchised Dealers to change the narrative...

Range anxiety is dead.

Long Live:



With OEMs bringing new EV product to the market at a staggering rate; government policies and roadmaps supporting zero emission vehicles on the road to net carbon zero; and the increasing shift in consumer attitudes towards sustainability; your dealership staff are encountering a whole new type of customer.

This guide aims to tackle some of the questions that dealers are now having to answer. It is by no means exhaustive; it will be continuously changing and many of the answers may also depend on your current and future EV product. However, this guide will help you ensure that you have well informed staff, happy customers and potentially your own roadmap for future partnerships.

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Why is there all this fuss about EVs?

In mid-2021, the government announced their Decarbonisation Strategy and plans. The papers presented industry and the public with a roadmap for the future of transport which supports their wider goals toward being Carbon Net Zero in 2050. As part of this plan, government have set the goal that by 2035, all new vehicles registered in the UK will be zero emission vehicles.



I like my petrol/diesel, why should I change to EV?

Quite simply put, there are financial and environmental benefits to owning an electric vehicle. Current government incentives make moving to an EV attractive. The vehicles themselves are often high performing, with new technology being added at a staggering rate. Servicing costs for EVs are dramatically lower than conventional petrol and diesel equivalents. Don't forget, it's also a fait accompli.... By 2035 there will be no *new* petrol or diesel cars sold in the UK.



What is an EV?

Electric Vehicles, or EVs, essentially replace (or work in addition to) the engine in a vehicle to drive the wheels. Internal Combustion Engines (ICE) use traditional fossil fuels (petrol and diesel), fuelled at a pump, stored on board the vehicle but they create damaging emissions at the tailpipe. EVs use batteries to store energy rather than a fuel tank and in most instances can be plugged in and charged.

There are a number of different types of EV currently on the market, some of which still use traditional ICE engines in various ways.



I don't understand all the acronyms!?

Manufacturers continue to get to grips with the varying regulations in different countries. As they begin the transition from ICE to zero emission vehicles, a number of different technologies have emerged with various “hybrid” styles of EV drive-train.

The three main drive types have been summarised and simplified by the Energy Saving Trust¹, as below

Battery-electric vehicle (BEV)

A vehicle powered only by electricity, also known as a ‘pure’ or 100% electric car.

The vehicle is charged by an external power source, such as a charge point. These vehicles do not produce any tailpipe emissions. Most battery-electric cars have a real-world range of 100-300+ miles on a single charge.

Plug-in hybrid electric vehicle (PHEV)

This is a vehicle that has a battery, electric drive motor and an internal combustion engine (ICE). It can be driven using the ICE, the electric drive motor, or both, and can be recharged from an external power source.

Typical PHEVs will have a pure-electric range of up to 50 miles. Once the electric battery is depleted, journeys can continue in hybrid mode, meaning that there is no range limitation.

PHEVs are only efficient if they are charged regularly, otherwise they can be more expensive to run than a conventional petrol or diesel vehicle.

Extended range electric vehicle (E-REV)

These are a version of plug-in hybrids. An E-REV combines a battery, an electric drive motor and a small petrol or diesel generator. The electric motor always drives the wheels, with the ICE acting as a generator when the battery is depleted.

The range of these vehicles can be between 150-300+ miles.



Some manufacturers also offer a few more types of drive-train that incorporate EV technology:

Hybrid Electric Vehicles (HEVs)

These are capable of zero emission driving, but typically over less range than a PHEV. They use electric power generated during braking to improve fuel economy and run on petrol or diesel for longer trips. They have a lower road tax (VED).

Mild Hybrid Electric Vehicles (MHEVs)

These are sometimes known as hybrid assist vehicles, have a petrol or diesel internal combustion engine equipped with an electric motor that can allow the engine to be turned off as the car is coasting or braking. The motor can also be used to provide assistance to the engine, reducing fuel consumption and CO2 emissions. MHEVs cannot be driven on electricity alone.



¹ [All you need to know about electric vehicles - Energy Saving Trust](#)

How quickly can I charge?

Plug-in vehicle charging times are dependent on:

- The vehicle technology
- The charging infrastructure

When the charging capability of the vehicle is less than that of the charger, the vehicle will charge only at the maximum speed allowed by the vehicle. When the charging capability of the vehicle is greater than that of the charger, then the vehicle will charge at the maximum rate allowed by the charger.

Below are the current classifications of the different charging types and the times for a 100% charge of a typical EV. Please note, that as said, the vehicle itself must be capable of accepting the *delivery rate*:

- **Slow:** 3kW 6-8 hours
- **Fast:** 7-22 kW 4-6 hours
- **Rapid:** 43kW-50kW 30 mins to 80%
- **Ultra-Rapid-Charging:** 150+kW <20 mins

CHARGE CONFIDENCE

I still don't understand all the numbers and figures!?

Chargepoints are primarily defined by the power they can provide. Think of this as how fast the tap in your kitchen can fill a glass up with water. This is measured in kilowatts or KW and is sometimes referred to as the *delivery rate*.

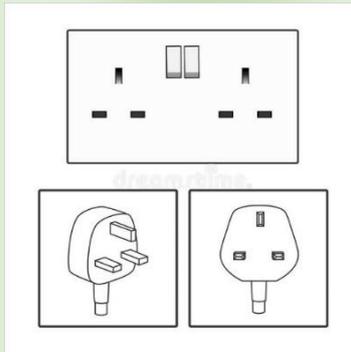
How quickly you can then drink this water can then be related to the use of the EV itself. This is measured by Kilowatt Hours or kWh. The measure of kWh **also** relates to the size of the glass, or the size of the battery. For example, a 30 kWh battery will hold a shot glass and a 200kWh battery will hold a pint. Simple!

CHARGE CONFIDENCE

I don't understand the charge cables and all the different types!?

The range of connectors and devices can make charging seem overwhelming but in reality, it is quite simple. To charge an electric car, you need to connect your vehicle to the chargepoint (also known as a socket) with a suitable cable.

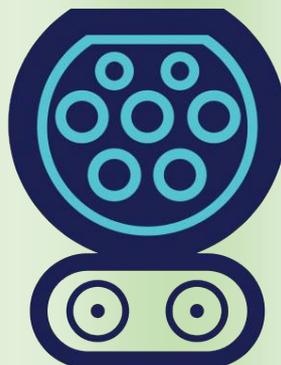
Vehicle manufacturers use a number of different cable connectors but most will also issue you with a traditional, **3-Pin** plug that you can put in any normal home plug socket. This will likely deliver the slowest method of charging an EV but is accessible to most of us. [INSERT IMAGE]



The **Type 2** plug is the European standard for chargepoints. This cable will have the appropriate connector for your vehicle at the other end. A Type 2 chargepoint enables faster charging than a 3 pin socket. Most EVs will accept a **Type 2** charge cable and most home chargepoints will have this connection fitted to the box outside your house.



CCS plugs are built on the Type 2 chargers but the extra pins at the bottom, essentially make rapid charging possible. They are mostly fitted to European models. Remember though, rapid charging can only be used on vehicles with rapid-charging capability.



CHAdeMO plugs are also suited to rapid charging and are most commonly found on Asian manufactured EVs.



How do I charge an EV at home?

Home charging is the most common method of charging electric vehicles. While charging can be carried out via a three-pin socket, it is recommended that those charging regularly at home or the workplace get a dedicated chargepoint installed as it is faster and more convenient. This can cost from around £500 depending on the work required at your property and what chargepoint you decide on.

Home chargepoints of up to 7kw can easily be supported in most domestic properties. Certified installers will install a separate fused supply so should there be any issues with the car, this would not impact the rest of the house. As a comparison, electric showers are generally in the range of 7kW to 10.5kW.

IMPORTANT NOTES ON HOMECHARGING:

- Ensure that your new charger is a SMART charger, this will save you more money!
- Government subsidies may be available to help with installation costs

CHARGE CONFIDENCE

How do I get a home charger installed?

The Electric Vehicle Consumer Code (EVCC) gives you **charge confidence** by ensuring their approved installers follow a rigorous code of practice.

www.electric-vehicle.org.uk

CHARGE CONFIDENCEEVCC
CONSUMER CODE FOR HOME CHARGEPOINTS

What home charger is right for me?

There are many companies out there with different products available for home chargers and their installation. To help choose what is right for you, you need to consider the features, the aesthetics, the cost, the durability and many other aspects. The rightcharge website can help make sure you choose a charger that is right for you, your vehicle and ensure that it is a SMART charger to benefit from current home charge grants available and also that it matches your energy requirements and home energy tariff.

www.rightcharge.co.uk

CHARGE CONFIDENCE

rightcharge 

What is a SMART charger?

Energy requirements from the UK infrastructure vary dramatically depending on the time of day. For instance, in the evenings when people are home, enjoying TV, boiling the kettle, having a bath and keeping toasty with their central heating on, the demand on the National Grid is high. At these peak times, your home energy provider often charges peak rates that are higher than other times. SMART chargers (and sometimes the inbuilt capabilities of EVs) schedule charge times towards off-peak.

CHARGE CONFIDENCE

How much will home charging cost me?

This is an open-ended question as there are so many different energy providers and tariffs on the market. But you can keep these costs low by thinking about switching!

Some energy providers now offer preferential EV home tariffs that help you benefit more from overnight or off-peak charging. Right Charge are the industry leading price comparison site, ensuring that your home tariff matches your new form of EV mobility and saves you money!

CHARGE CONFIDENCE

What if home charging doesn't quite work for me?

If you don't have a home charger or have one which sits empty for most of the time, Co Charger is a platform that lets people share with members of their local community while making an income. Co Charger creates charge confidence in line with their vision to create greener, calmer, more connected places where people thrive.

www.co-charger.com



Are there enough public charging points?

The amount of charge points available across the UK continues to grow. In some rural areas work still needs to be done to ensure a fair charging network. Zap-Map is the leading provider of real-time information on charge points across the UK. The excellent Zap-Map app will help you locate available chargers, plan for longer trips, support with payment and share updates with other EV drivers.

www.zap-map.com



What are the financial benefits of having an electric vehicle?

There are loads of money saving aspects to EV ownership!

- ⚡ Electricity is cheaper than petrol/diesel
- ⚡ EVs have fewer moving parts than ICE equivalents, for example: brake wear is minimal (due to regenerative braking) and EVs also require less consumables such as engine oil replacement
- ⚡ Using a smart charger will reduce your home charge costs
- ⚡ Company car tax or "Benefit In Kind" (BIK) is less for EVs
- ⚡ Currently zero Road fund License cost (Road tax)

Grants are available to reduce the initial purchase cost of eligible plug-in vehicles and the cost and installation of charging points. The plug-in vehicle grant is automatically deducted from the retail price and currently provides up to:

- A maximum of £2,500 provided the car has CO2 emissions of less than 50g/km and can travel at least 112km (70 miles) without any emissions at all.
- 20% of the cost of a van, up to a maximum of £8,000.
- 20% of the cost of a motorcycle, up to a maximum of £1,500.

If you live in Scotland, an interest-free electric vehicle loan and used electric vehicle loan are available.

Can I save money by switching to an EV?

For the majority of people, especially those looking to buy a new vehicle, the simple answer to this question is: YES!! OF COURSE!!

Firstly, if you are a company car user, you will enjoy Benefit In Kind (BIK) costs that are heavily subsidised by government in their Green agenda. But don't wait too long, favourable BIK rates are part a government incentive to transition to EVs, these are likely to be increased in 2024, if not before.

New Automotive have created a total lifecycle comparison tool for switching from ICE to EV. You simply put in your current/old registration and it will project savings based on data held through previous MOTs regarding mileage usage.

www.electriccar.guide/ev-comparison

 CHARGE CONFIDENCE

ZapMap has a Journey Cost Calculator to discover the savings you could enjoy by switching from a petrol or diesel car to an electric vehicle. EVs offer a number of benefits over conventional petrol or diesel models. Lower fuel costs, reduced maintenance bills, and zero or discounted car tax are just some of them.

<https://www.zap-map.com/tools/journey-cost-calculator/>

 CHARGE CONFIDENCE

Useful contacts for dealers

EVCC: Lorraine Haskell lorraine@realschemes.org.uk

ZapMap: Melanie Shufflebotham melanieshufflebotham@zap-map.com

RightCharge: Colin Hennessy colin.hennessy@rightcharge.co.uk

Co-charger: Alan Winslade alan.winslade@co-charger.com

Energy Saving Trust for Training: Ian Featherstone ian.featherstone@est.org.uk