Motor Guidance

Electric Vehicles – Charging Ahead

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Electric Vehicles

The development of electric vehicle options within the fleet market continues to grow.

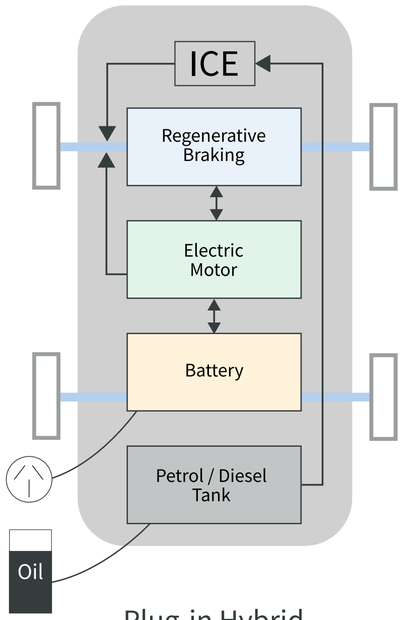
This guide is for fleet managers who are managing electric vehicles (EVs) in their fleet, and offers areas for consideration when bringing these vehicles onto fleet.

In 2024 19% of all new car registrations in the UK were Zero Emission – a total of 382,000 – an increase of 22% on the 2023 figure and a 132% increase on the 2020 figure. When adding in Plug in hybird vehicles to these figures then the 2024 figure is 550,000 - 28% of all new vehicle registrations.

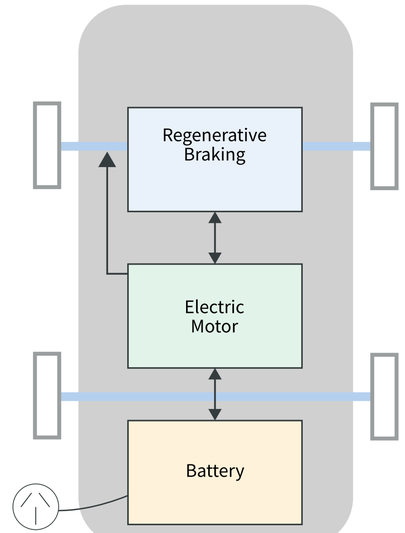
Demand for electric vans is also increasing, in 2024 over 22,000 zero-emission light goods vehicles (LGVs) were newly registered, a 3% increase from the previous year, making up 6% of all new LGV registrations.

With demand increasing and new manufacturers entering the market, EV's are becoming an increasingly viable option for fleet markets in the passenger car space, and even more so with vans, our quick reference guide gives you useful information if you're thinking about adding electric vehicles to your fleet.

Types



Plug-in Hybrid



Battery Electric

Choice

The UK government offers several grants and schemes to encourage the adoption of electric vehicles (EVs) and support the development of EV charging infrastructure.

These include grants for purchasing EVs, installing home and workplace charging points, and funding for local authorities to expand charging infrastructure.

For EVs there are two main considerations we'd recommend prioritising:

Charging EVs:

- A garage or driveway will provide the best chance for electric vehicles to be safely charged overnight
- Where available, off-street parking charging stations can be used
- Charging vehicles on location or at service stations is also a viable option

EVs charging range:

- The range of each full charge of an electric vehicle is quite broad, ranging from around 80 miles to over 350 miles
- The same battery, typically 60-80kWh, may offer different ranges based on the vehicle type
- The range is impacted by driving style and weather conditions, with range typically dropping during cold weather months

Range

An electric vehicle's range is how far it can travel before recharging.

For a plug-in hybrid, the range is how far it can travel on battery power, before switching to the petrol engine, or very rarely the diesel engine. Battery technology is developing quickly and the driving range on new ultra-low emission vehicle models is increasing rapidly.

Typical ranges for the different vehicle types are:

- Battery or pure electric vehicle: 100 to 370 miles, depending on the model
- Plug-in hybrid: an electric-only range of 20-50 miles is typical, with some models achieving 70+ and a total range of over 500 miles using the petrol or diesel engine
- Range extended: around 150 miles on electric-only power, and a further 80 to 90 miles powered by electricity generated by the petrol or diesel engine

Ranges vary depending on:

- How efficiently you drive – anticipating the road ahead and making full use of regenerative braking increases range
- How you heat or cool the car (preconditioning) – heating or cooling the car while plugged-in and using heated seats, rather than heating the cabin, increases range
- How fast you drive – driving at high speeds reduces range
- The vehicle's payload – heavily loaded electric vehicles will have a shorter range

We have partners that can help drivers develop a driving style to maximise vehicle range.

Charging

There are three main types of EV charging – rapid, fast, and slow. These represent the power outputs and therefore, charging speeds available to charge an electric vehicle. Power is measured in kilowatts (kW).

Each charger type has an associated set of connectors which are designed for low or high-power use, and for either AC or DC charging.

Rapid chargers are the fastest way to charge an electric vehicle. They're often found at motorway services or locations close to main routes. Rapid devices supply high power current to recharge a car as fast as possible.

The average charging capacity of a 50kw station would take around an hour for a vehicle to achieve the 20 - 80% battery recharge figure. Power from a unit represents the maximum charging speed available, though the car will reduce charging speed as the battery gets closer to full charge. As such, times are quoted for a charge to 80%, after which the charging speed tails off significantly. This maximises charging efficiency and helps protect the battery.

Regenerative braking: what is it and how does it work?

Regenerative braking turns your car's kinetic energy into electricity, charging its battery and boosting efficiency.

When you step on your petrol or diesel car's brake pedal, hydraulic fluid pushes brake pads against brake discs or drums on each wheel. The resulting friction works to slow the car down, generating heat and wearing away at the material on the pads and discs in the process.

Regenerative braking is a way of taking the wasted energy from the process of slowing down a car and using it to recharge the car's batteries. On a nonelectric car, braking simply wastes energy but with regenerative braking, some of the energy can be reused. In hybrid and pure electric cars regenerative braking takes a more active and obvious role. In these models, brake regeneration can help charge the larger batteries that directly drive the car.

When this process kicks in, you can feel the car start to slow down. It's a different sensation in each car that has this function, because manufacturers can program-in how much regenerative braking occurs when you lift off the pedal. All cars still have normal brakes, so if you push the pedal hard enough then the hydraulic system will kick in to get you stopped quickly, depending on your speed. Again, different cars will have different amounts of force on the pedal needed to get the brakes to kick in.

What does regenerative braking feel like?

There are many cars with regenerative braking, and they all feel a little bit different to use.

In fact, in most EVs you can even tailor the way it feels to your own preference. It's important to note that the settings and effectiveness of this system is different with the various models of vehicle available.

If you want to harvest as much lost energy as possible you can set it to the maximum setting, or if you hate the sensation of the car braking itself, you can turn it off. In most cases the car's brake lights will come on if the car is slowing quickly, even if you're not even touching the brake pedal. Again, this will change with the speed at which you are slowing down, so don't think the brake lights are on every time you use regenerative braking.

The main point is that when used correctly, this can extend the range of the vehicle, by how much will be dependent on the settings you choose. If you accelerate and brake in your normal driving, this might not be for you, but with some slight changes to driving styles, range anxiety could be a thing of the past.

If you're driving a vehicle with this feature on, you should ensure you are familiar with how this works, any variations in settings that may exist and that you are comfortable with the sensation prior to any long journeys.

Journey planning

There are several options for journey planning, including some very intuitive apps, that include appropriate chargers for EVs.

Most EVs will have a on-board navigation service with most looking at your current range. If the predicted journey is above the mileage remaining in the vehicle battery, it should offer an alternative with charging options to ensure you get to your destination. The time for a full charge will vary but a full charge isn't always necessary, ensure there is 20% more charge than the journey requires.

Get in touch

If you need further guidance on managing EV on your fleet, please get in touch with us.

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