

Are EVs the way forward?

Up to now I've always driven vehicles powered by diesel, apart from my very first car, a Vauxhall Nova 1.2. Since then I've had a Peugeot 306HDI, Peugeot 405TD (which the then girlfriend rolled into a ditch, RIP the old workhorse) and then 3 Skoda Octavias - 1.9TDI, 1.6TDI and my current vrs 2.0TDI. For the last 15 years I've had a large commute on my hands, but now that times have changed; I find myself using my car much less than before.

All my Skoda diesels have always been serviced under the "variable service" schedule which means you use a more expensive grade/quality of oil, but depending on driving style (long commutes rather than short town trips), you can travel up to 30,000 miles between services.

I had always considered an EV to be pretty useless; it might struggle to get to work and back again and recharge in time for the commute the following day. This would potentially be more of an issue in the winter when the commute would be in dark and cold - so more battery powered would be diverted to headlights, and heating. However rather than focusing on my specific usecase, here are the major points to consider, if you are contemplating a change

The Driving Experience

For anyone who already drives an automatic, then the change to an EV is going to be less noticeable. There are no longer any gears, so you don't need to worry about a clutch or gear changes. However, unlike an automatic there aren't any steps or shifts in gear, it is a case of one gear does it all - from 1mph up to the vehicles top speed. The issue here, is the you can very quickly accelerate, so you need to be careful, as there is no engine noise or gear changes to help you judge your speed.

Braking is also slightly different, some cars will start to slow when you lift your foot off the accelerator,

and most will switch into a re-generative mode for the first part of the brake pedal travel - thus recharging the battery slightly.

Will an EV suit you?

If you are able to charge your EV at home, or work (or both) and the majority of journeys are within approximately 80% of the cars stated range when you could be a suitable candidate. However, if you are someone who travels lot of miles, say on the motorway in a single day then at that this point in time an EV isn't really suitable. Whilst there are motorway service changing points, you may find them in use, and have to wait, which might adversely affect your journey (if you have to wait numerous times in a day). An EVs range drops to about 2/3rd of the quote range at 70mph, and the range drops the faster you go (I believe there are plans to considering speeds on motorways, but I can't remember if the shift was up or down).



Home Charging

This is where you can suffer an additional outlay, but obviously not as much as the EV purchase! A home fast-charging point installed at home (garage or driveway) is likely to cost in the region of about £800, but you can claim a Government grant of £350. Currently you can't charge an EV parked on the side of

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the road as that would mean having a trip hazard of a charge cable.

However, not having a driveway or a garage doesn't rule an EV out – if you travelled say 10,000 miles a year that could be covered in approximately 50 charges. In essence one charge per week in a car with a range of ~200 miles. More and more car parks are now offering charging points. It is, however, more expensive to charge somewhere other than home, and public charging points might be occupied when you want to use one.

You might be lucky and find your employer offers free charging points, but again you may well find those to be in high demand – no one wants to get stuck at work!

Rapid Charging while on the Road

This can be a handy feature, although when you think about it, for the average journey which we might make, the majority of these probably aren't over 200 miles, so the need to rapid charge isn't as great as you might think. However, that said if you do have a long trip planned then a rapid charge coupled with a cup of coffee at a service station can be handy.

The technology behind rapid charging is different to normal charging. Normal charging points are AC based, generally supplying with 7kW, 22kW or 43kW. Unfortunately, there are several 'standards' for DC charging plugs – CCS which is used by most European EVs, however Japanese vehicles use CHAdeMO. This is why you will often see Rapid charging points with 2 cables so that they can support both plug types.

Most of these rapid charge systems are operated by one of several different companies so you will need to register with the appropriate operator and have payment details stored with them. Finally, you have to be able to find the right Rapid Charging point for your vehicle. This is where more standard technology

comes to the rescue – an app for your phone will map out charger locations, and even tell you if they are currently in use.

Range and Charge time

Charge time will primarily be based on how much charge is left in the battery. A flat 50kWh battery on a home 7kW charge will take around 7 hours. If the car had $\frac{3}{4}$ of a charge, it would take $1\frac{1}{4}$ hours to restore the battery back to full. The rules for AC charging are quite simple.

Life isn't quite so simple for DC charging as the delivery currents are significantly higher which can cause additional heat in the battery, so you often can't complete the charge at the rating of the Rapid Charging point. The example 50kWh battery, again totally flat at a 100kW DC Rapid Charge point won't charge in a mere 30 minutes. Current delivery might peak at 100kW, but will drop off otherwise the aforementioned battery charge heat becomes an issue.



Can you tow?

Many EV don't allow it, but some do – so make sure that you do your research first. Towing weights may also vary as per with a more traditional vehicle. Why you might ask is there a restriction when towing. One of the reasons is that the regeneration system used for the braking might be overwhelmed when safely stopping both your EV and (carefully) loaded caravan to a stop. It is also worth remembering that towing will

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reduce your range. A trip to the local tip might not be an issue, but if you were towing a caravan then you might need to plan out your charge stops much more carefully rather than just winging it.

Cost and Tax

Cost per mile – this should be easier to calculate. For most, electricity is normally charged around 15p/kWh (excluding those with PV systems or economy7). Most current EVs will cover about 3 miles per kWh of battery power, so that equates to something like 5p/mile. This assumes you are charging at home, as public charge points will charge significantly more per unit – easily double. In addition, public charge points may well charge a ‘connection’ fee, so just “topping up” has an additional cost which can damage the cost per mile.

There are other bonuses, as many UK city centers strive to tackle pollution, EVs are allowed to travel for free in such areas. Obviously if you don’t travel to such locations frequently this may not really be much of a selling point, but is certainly worth considering. General maintenance is reduced somewhat too – no complicated combustion engines to service and maintain, and no manual or automatic gearboxes to worry about. My DSG box requires a service every 40k. However, there are probably some more fancy computer systems to go wrong!

EVs are also VED free, as this is based on their emissions (at operation). You can argue all you like about this, but that is how they are currently treated!

The prospects

The number of EVs is ever increasing, so there is probably a vehicle out there ready and waiting to replace your current vehicle. Technology is ever improving so we are likely to see ranges increase, although there is always going to be a cost-effective point after which you start to hit diminishing returns for your cash.

Have you made the change?

If you’ve bought an EV, let us know why you changed. Are you a two-car family – one EV, and one not? How are your experiences – the good and bad. It would be great to get some feedback from real owners.

Back to a bit of normality - it would be remiss of me not to give a breakdown of my recent cycling activities. So far the weather hasn’t put me off, but it is certainly getting a bit chillier on the fingers for the last couple of weeks. Two weeks ago, I did my first (unplanned) century ride, out to Shillingstone and up Bulbarrow Hill twice (just for good measure), and this weekend just gone was a pleasant ride of 71 miles taking in Whiteways hill. The hills and miles all help to justify the consumption of pasties, cakes and coffee!

Stay Alert, Control The Virus, Save Lives

Matt Ames
Newsletter Editor

Membership records and the AGM

Many thanks to all those of who have replied to my emails about renewing your membership. I have been hanging fire this newsletter (having written the editorial a couple of weeks ago!), on the hope that I could announce the date of the Group’s AGM.

However, sadly, that information hasn’t yet landed on my desk. What I do know is that when the time comes we will be carrying out the AGM online, most likely using WebEx. I am sure that many of you will have been regular users of various video conferencing applications since the start of year, so attending the AGM shouldn’t prove to be too much of a daunting task!

Matt Ames
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