

Electric Vehicles

Barriers to Take Up (Myths & Misinformation)

Early Adopters

- In 2012 my son Giles & I founded EV Motion Limited, we were the first installers of EV charging infrastructure in the southwest, we considered somewhat hypocritical for us to “rock “ in petrol/diesel vehicles whilst trying to persuade others to migrate to electric, to this end we leased a Citroen C zero.
- At this time there was limited charging infrastructure especially locally and range anxiety was prominent in the press, however Giles drove the C zero to London for a meeting.

Barriers to EV Take up

- Acquisition Costs
- Range Restriction
- Battery Fires
- EVs aren't Green
- Batteries aren't Recyclable
- The Grid Can't Cope

Acquisition Costs

- Total Cost of Ownership
 - Acquisition costs were offset by reduced maintenance and fuel costs
 - Charging at home unless via renewable energy technologies is now more expensive.
 - High energy costs have resulted in some charge point operators charging (£0.6/kWh, as a consequence the price per mile for EVs exceeds that for ICE vehicles.
 - Not all energy supply companies are the same with some charging more on their EV tariffs more than their night rates.

Range Restriction

- . Battery range has increased significantly 200 miles plus for many vehicles.
- There are now 59,590 publicly accessible charge points in the UK
- The government's target is 300,000 by 2030
- Emerging battery technologies such as Sodium Ion take a deeper charge increasing range still further

Battery Fires

- An EV fire is spectacular and hard to put out, however, in terms of risk, a study by the Australian Fire Department calculates the risk for an ICE catching fire as 0.1% and an EV catching fire as 0.0012%.
- However this perception is a potential barrier to EV take up, insurance companies base their premiums on a perception of risk, if this perception is flawed insurance premiums will be disproportionately high.
- The Faraday Institute has been working on emerging battery technologies and has promoted Sodium Ion, these batteries take a deeper charge, have an improved charge/discharge life and are inherently safer.
- Some Chinese EV manufacturers are already employing Sodium Ion batteries in their vehicles

EVs Aren't Really Green

- EVs are reported to have a higher carbon footprint than an equivalent ICE (Volvo Report)
- This report has been debunked by a number of Universities as it does not take into consideration “well to wheel” emissions, when the carbon footprint of extraction & refinement are included EVs have a lower carbon footprint.
- Modern low energy manufacturing plants & composite materials lower the carbon footprint further.
- Reducing the cobalt content in EV batteries further reduces the carbon footprint.
- Moving to Sodium Ion should reduce the carbon footprint still further.

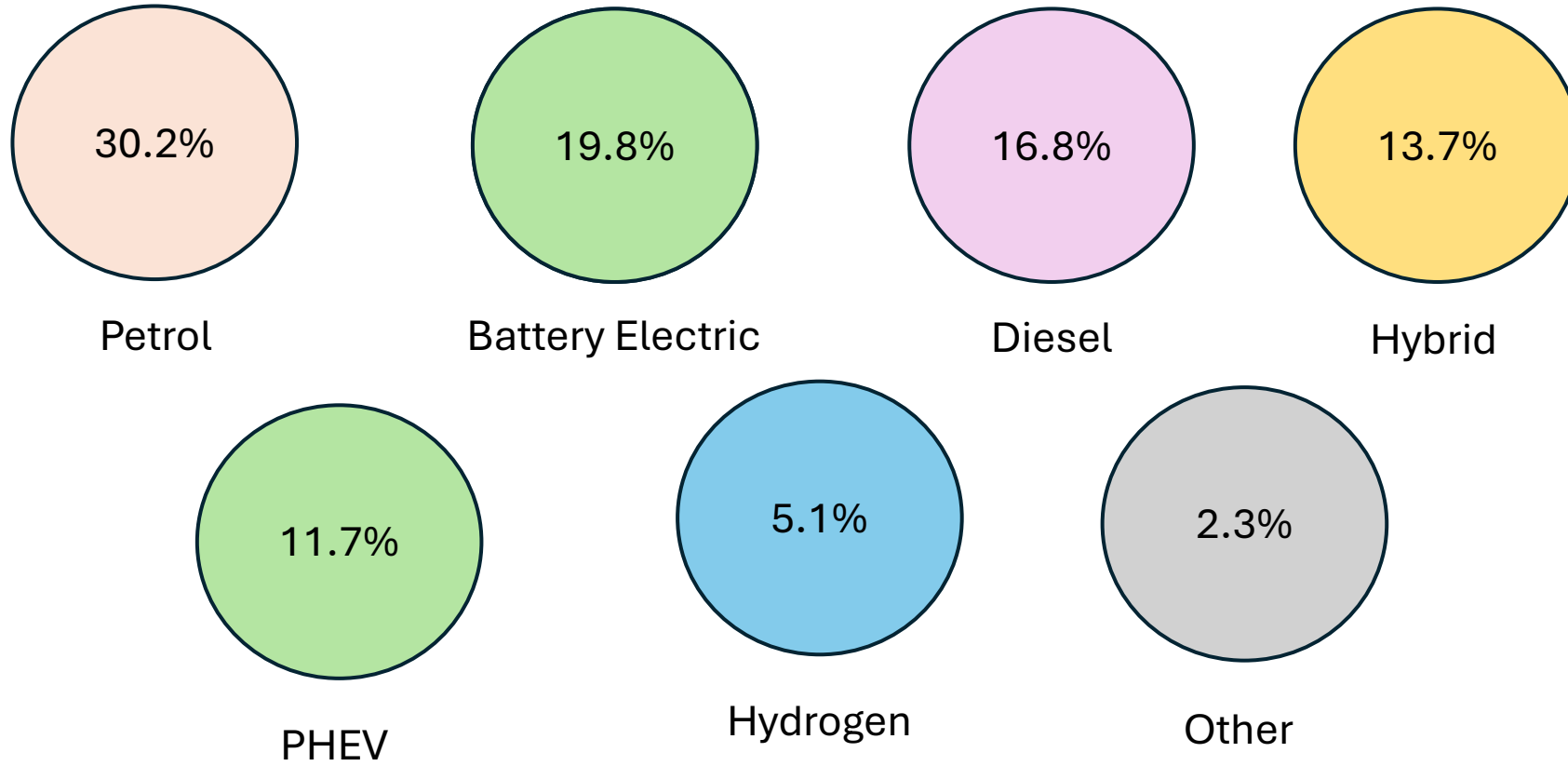
Batteries Aren't Recyclable

- EV batteries are often repurposed and used for battery storage.
- Cellular manufacturing now enables only defective cells to be replaced
- Many EV manufacturers now have dedicated recycling plants
- 90% can be recycled

The Grid Can't Cope

- Currently there may be some justification behind this claim
- Improvements to the grid are already underway with significant increases in wind & solar planned
- A more holistic approach is required, reducing our energy demand in our homes, commercial and community buildings will offset the increased demand
- Some EVs have V2G capability and will help with “grid smoothing” and “valley filling”
- Just replacing every vehicle on our roads with Ultra Emission Vehicles is not not the answer, we need an integrated transport system, reduction in our travel needs and encourage active travel

2030 Car Park Projection



Commercial

The UK and electric cars market is experiencing a notable trend marked by a significant surge in adoption and sales. As of the end of February 2024, there were more than 57,000 electric vans in the UK, signifying a substantial increase in the number of electric vehicles on UK roads.

Infrastructure

By 2030, the UK and electric cars are projected to have approximately 300,000 public electric vehicle (EV) charge points, representing a tenfold expansion from the current number. This ambitious target, supported by a £1.6 billion investment under the Electric Vehicle Infrastructure Strategy, aims to make charging easier and more affordable than refuelling a petrol or diesel car.

The CHAdeMO standard is being phased out and is being replaced by CCS, however the existing CHAdeMO Charge points will remain. There are now CHAdeMO to CCS adapters available.

Q&A