

ELECTRIC VEHICLES; ETHICS, ENVIRONMENT AND EXPENSE

**EXECUTIVE
NETWORK
GROUP**

Electric vehicles were first introduced in the 1800s and soared in popularity, by 1900, 28% of the cars on the road in the US were electric. However due to running costs and mileage capability, gasoline-powered cars took over as the vehicle of choice and electric cars were often seen as a status symbol that many could not afford.

As awareness of our environmental impact on the planet increases in the 21st century, many consumers have made considerable changes to their habits and behaviours, opting for more environmentally friendly alternatives, for example, recycling, reducing single-use plastics, and now, switching to hybrid or electric vehicles as a means of reducing their carbon footprint.

Electric cars are now much more affordable for road users and with the UK government placing a ban on the sale of new diesel and petrol cars and vans by the end of 2030, many drivers are making the switch to electric vehicles.

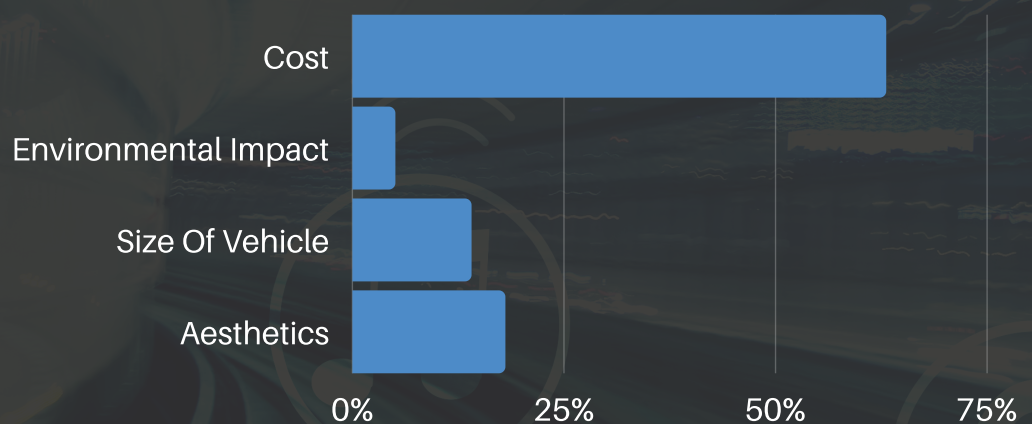
With the significant increase of electric vehicles, electric charging points are also in higher demand and electric charging points are expected to increase ten-fold and reach 300,000 by 2030.

The increase of electric vehicles seems like a no-brainer, but everything comes with its own downsides and the environmental impact EVs has on our planet is still detrimental, but with an increasing awareness of sustainability and carbon footprints, deciding between the traditional route of gasoline powered vehicles and electric is an easy decision to make.

As of the end of March 2022, there were more than 838,000 plug-in cars with approximately 460,000 Battery-Electric Vehicles (BEVs) and 380,000 Plug-In Hybrid Electric Vehicles (PHEVs) registered in the UK.

Zap Map, 2022

What's most important for you when purchasing a new vehicle?



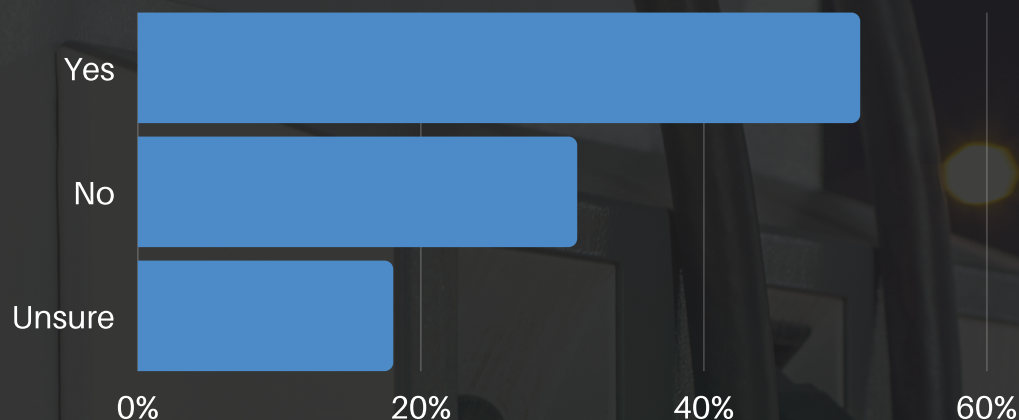
Our poll results indicate that the environmental impact of a vehicle is the least important factor when making a decision when making a new purchase, and further studies have corroborated this and evidenced that it is seldom a highly-influential factor in the decision making process.

- 65% of current car shoppers believe vehicle emissions and fuel economy have an impact on global warming. 18% of respondents said they didn't believe there was a correlation; 17% were unsure.

- Yet just 35% of buyers said the issue of global warming had had an impact on the type, size or powertrain of the vehicle they bought. 54% said it had never impacted their decision, 12% were unsure.

- Half of consumers believe stricter fuel economy standards will save them money over time.

If you don't already drive an electric vehicle, do you plan on switching within the next 5 years?



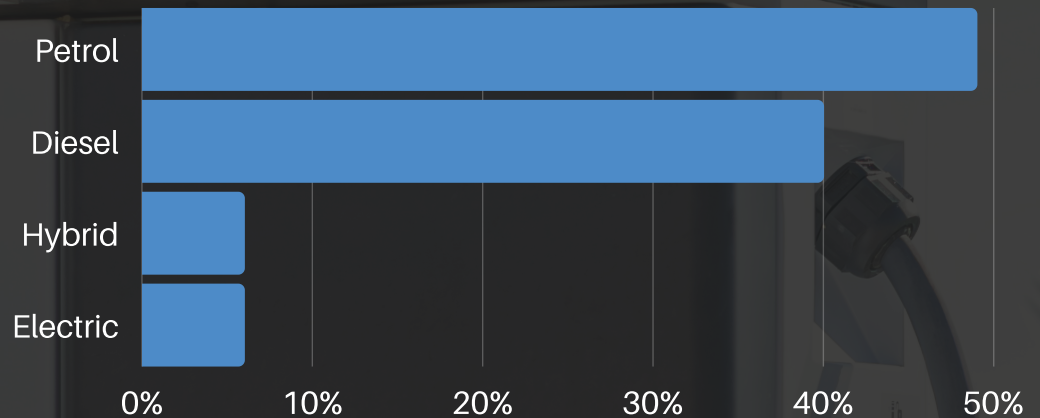
Considering the research suggesting that the majority of individuals purchasing a new vehicle do not consider sustainability as a key factor when making the decision, the fact that just over 50% of our poll respondents stated they plan on switching to an electric vehicle in the next 5 years is somewhat surprising.

However, with the impending ban on sales of new petrol and diesel cars and vans, and the ever-rising financial costs of running a car, the fact that 31% of respondents stated that they are not planning on changing is considerably more surprising; whether those particular respondents have recently purchased a new car and thus have no plan on changing so soon, or perhaps even with the rising costs of running a car, the equally-rising cost of living makes it more difficult for many drivers to purchase a new car when other costs are rising exponentially.

The answer to those that may not want to purchase a new car due to the financial burden is potentially a 'car subscription service', according to Vauxhall's Managing Director, Paul Wilcox, stating "seismic changes are coming". He expects to see "a huge rise in things like subscription models", where customers pay monthly to use a car with other costs like insurance and maintenance included.

Another area expected to grow is what's known as 'fractional ownership', or car sharing clubs.

Which type of vehicle do you currently drive?



With 40 million vehicles being driven in the UK currently, switching to a more environmentally friendly alternative is no easy feat.

From our poll, just under half of respondents stated that they drive a petrol vehicle and a combined 12% drive either a hybrid or electric vehicle.

As it was in the late 1800s and early 1900s, electric vehicles have long been seen as a status symbol and only those that earned enough money were able to drive them. However, almost a quarter of the way through the 21st century, electric vehicles are becoming more affordable and the options are more accessible, i.e. a hybrid model.

The average cost of a petrol or diesel engine car is between 15-25 pence per mile, compared to EVs significantly lower price of 5 pence per mile (if charged at home), along with the lower, or lack of, road tax, and lower maintenance costs as a result of a reduction in moving parts, EVs are, in the long-run, a more financially sensible option.

When it comes to charging, there are currently 30,000 public charging points, with two-thirds of those being 'rapid' chargers. Just over 800 are Tesla Superchargers, which can only be used by Tesla vehicles.

The environmental Impact of Electric Vehicles

All great things come with their downfalls, and electric vehicles are not exempt. For battery-powered EVs, lithium-ion battery packs are required to allow the vehicle to run, but the materials required to create a lithium-ion battery have a somewhat detrimental impact on particular parts of the world and the people that live there.

One lithium-ion battery pack can contain 8kg lithium, 25kg nickel, 20kg manganese, and the most valuable component, 14kg cobalt.

More than 70% of the global supply of cobalt is mined in the Democratic Republic of Congo (DRC), where there are issues surrounding worker's health as a result of the material being toxic if not handled properly, as well as child labour and ethical considerations to not only the workers but also the people of DRC. The mining of cobalt can be a lifeline for those in poverty in the country, but the country has been weakened by violent ethnic conflict, medical disasters, corruption, child labour, fatal accidents, and violent clashes between artisanal miners and government-approved miners.

Many vehicle manufacturers are taking steps to combat this issue, by ensuring there is a clear record of where the cobalt is being mined from to ensure their supply chain is not corrupt, as well as the government creating safety measures for artisanal miners to ensure they are able to work both legally and safely.

"This poses a significant issue for the electric vehicle (EV) market as emotionally, an EV is supposed to be a good deed. The last thing you want to hear is that the car is not clean. EV suppliers have attempted to combat this by launching pilot schemes to ensure that the cobalt is mined ethically."

Mining Technology

In conclusion, electric vehicles are undoubtedly the future for drivers worldwide, but for manufacturers, important considerations to take into account are the ethical and environmental implications of material sourcing.

For consumers, whilst ethical and environmental considerations aren't at the top of their priorities, cost generally is, and the long-term costs of running an EV are significantly lower than driving a petrol or diesel car or van.

Further Reading

- <https://blog.executivenetworkgroup.com/media-hub/electric-vehicles-are-they-the-best-option>
- <https://www.bbc.co.uk/news/business-60838192>
- <https://www.themanufacturer.com/articles/a-new-perspective-on-the-mining-industry/>
- <https://www.nextgreencar.com/electric-cars/statistics/>
- <https://www.cfr.org/blog/why-cobalt-mining-drc-needs-urgent-attention>
- <https://heycar.co.uk/blog/electric-cars-statistics-and-projections>
- <https://biofriendlyplanet.com/environment-issues/pollution/electric-vehicles-and-their-importance-in-the-21st-century/>
- <https://cleantechnica.com/2018/09/10/autolist-study-shows-environmental-concerns-have-little-impact-on-car-buying-decisions/>
- <https://www.osv.ltd.uk/deciding-factors-buying-new-car/#:~:text=Other%20factors%20that%20were%20taken,and%20customer%20service%20and%20design.>
- <https://www.mining-technology.com/analysis/artisanal-mining-drc/#:~:text=There%20are%20about%20150%2C000%2D200%2C000,from%20governmental%20or%20mining%20officials.>

