

Consumer survey 2021 - Electric vehicles

Introduction

This document presents a summary of findings from the 2021 Ofgem Consumer Survey relating to electric vehicles (EVs).

The survey interviewed 4,037 energy consumers in Great Britain who were solely or jointly responsible for their household's energy bills.¹ Within this we interviewed 202 consumers who have a plug-in electric vehicle (fully electric or plug-in hybrid). Fieldwork was conducted from 19th August to 17th September 2021. Comparisons are made to the 2020 survey.²

The rapid uptake of EVs will be the most significant change in our energy sector over the next 10 years, we may well see 14 million EVs on UK roads by 2030³. Ofgem has an important role to play in enabling the widespread adoption of EVs and their lower-cost integration into the electricity system, which will be instrumental in meeting 2050 climate change targets. If EVs smart charge and provide flexibility to the grid, they will be a huge asset to the energy system. To unlock that flexibility, and maximise the benefits of EVs, we may need greater consumer participation.

We need to understand the rate of adoption of EVs, the adoption of smart charging, and how EV owners use and charge their vehicles to help us to prepare the electricity system so that all consumers benefit from the transition.

Key findings

Uptake of electric vehicles is expected to increase but is currently low because of barriers such as costs, concerns about lack of charging infrastructure and battery life

¹ The survey was conducted online by Ipsos MORI, with the sample drawn from online access panels, and quotas were used to deliver a broadly representative sample of energy consumers in Britain. Minor weighting was applied to bring profiles in line with national estimates, and only weighted data is shown.

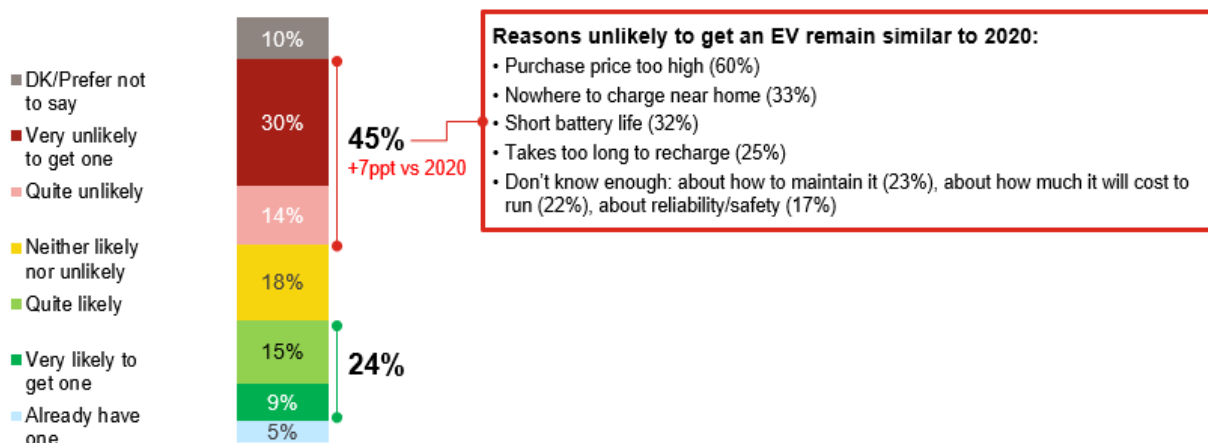
² The 2020 survey used comparable methods and delivered a sample of 4,608 British energy consumers. Findings available [here](#)

³ [Enabling the transition to electric vehicles - the regulators priorities for a green fair future.pdf](#)

In our 2021 survey, 5% of all energy consumers said their household had a plug-in electric vehicle, and within this 2% had fully electric vehicles and 3% had plug-in hybrid vehicles. Despite increasing sales of plug-in vehicles over the past 12 months, these figures remain unchanged since our 2020 survey.⁴

Currently a quarter (24%) of all energy consumers said that their household is likely to buy a plug-in vehicle in the next 5 years (unchanged since 2020 survey). The proportion saying they are unlikely to buy one has grown since last year, from 38% in 2020 to 45% in 2021. The main barriers to adoption, unchanged since 2020 were cost, perceived lack of charging infrastructure⁵ and concerns about battery life.⁶

Figure 1: Intentions to take up electric vehicles and barriers to uptake



QEV2. How likely would you be to change your household's car or van to an electric or plug-in hybrid one in the next five years? Base: Total 2021 (4037)
 QEV3 Why do you say your household is unlikely to change to an electric or plug-in hybrid car or van in the next five years? Base: 2021 All unlikely to get an EV in the next 5 years (1730)

Plug-in electric vehicle users tend to be more engaged than average and more likely to have other low carbon technologies

The survey interviewed 202 energy consumers who had an electric vehicle in their household.

⁴ <https://www.gov.uk/government/statistics/vehicle-licensing-statistics-april-to-june-2021>

⁵ Ofgem has announced investment of £300 million, which will include funding for cabling for rapid chargepoints on motorways and chargepoints in towns and cities <https://www.ofgem.gov.uk/publications/ofgem-delivers-ps300-million-down-payment-rewire-britain>

⁶ Note fieldwork ended before the shortage of petrol period began which may have changed the balance of attitudes

Consumers with a plug-in vehicle are a key group who could be encouraged to use energy more flexibly, and to take up other low carbon products and services. While causality can't be assumed, there are links between plug-in EV use and engagement with environmental issues and energy generally. Plug-in EV users are more likely to be engaged with energy and the environment (88% of EV owners are concerned about climate change, compared with 80% of GB energy consumers on average). And they are more likely to have other low carbon technologies such as solar panels, smart appliances/smart heating controls or heat pumps.

Most plug-in electric vehicle users will have to change their behaviour to take advantage of smart charging and the majority are open to doing so

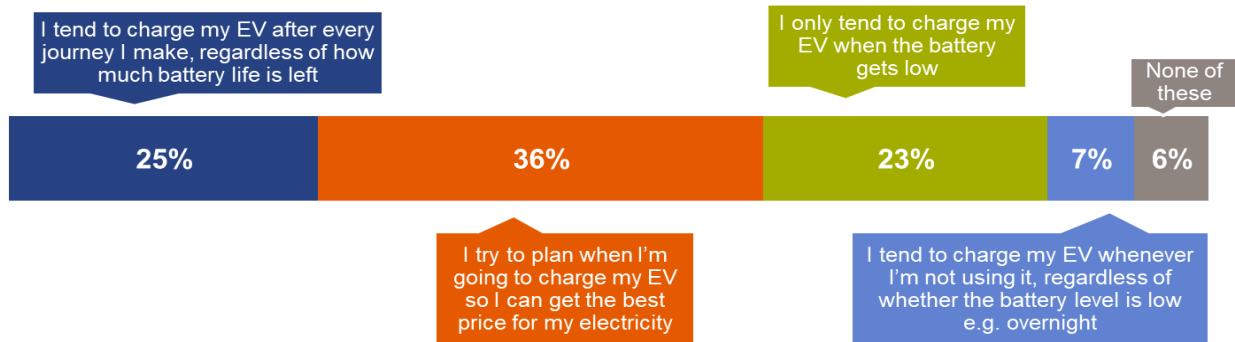
Most EV users (83%) use their EV for local trips, with just under half (44%) using them for longer-distance trips. Only a fifth (19%) use their EVs for long distance trips on unfamiliar routes.

When it comes to charging behaviours most (59%) plug-in EV users said they usually charged their vehicle at home. However, not all consumers are charging their vehicles in a way that is conducive to flexibility. 1 in 4 (25%) tend to charge after every journey they make and a further 23% only charge their EV when the battery gets low. In total around a quarter (25%) of plug-in vehicle users say they usually charge their vehicle at peak times.⁷

Of the 120 EV users who say they usually charge at home, 59% use conventional chargers, with 22% reporting they have a smart charger and 26% have a charger with programmed apps or timers. While plug-in vehicle users are more likely than average to say they are on a time of use tariff which would enable them to access lower prices for off-peak energy, only 13% are at the moment.

⁷ Defined as 4-8pm on weekdays

Figure 2: Charging preferences among plug-in electric vehicle users



HABITEV: Which of the statements below, if any, best describe how you prefer to charge your main electric vehicle? Base: 2021 All who have plug in electric vehicles (203)
 TIMEEV: What time of day do you usually charge your electric vehicle(s)? Base: 2021 All who have plug in electric vehicles (203)

Encouragingly, we do see that some plug-in EV users intend to charge their vehicle in a flexible manner. For example, 36% try and plan when they are going to charge their EV to get the best price. However, not all these consumers are currently benefitting from the smart products and services designed to enable flexibility, as a minority of this group⁸ currently report being on a time of use tariff or having a smart charger. The use of conventional chargers over smart or programmable chargers is driven by lack of availability and awareness of the availability of smart chargers, as well as their perceived cost. Further promotion and encouragement of smart charging would have benefits of enabling flexible energy use while also providing bill savings for EV owners.

Looking at potential future uptake of smart charging and flexible energy use, 67% of plug-in EV users said they would be likely to use smart charging systems in the future to reduce the cost of their household's energy bills.⁹ 58% of plug-in EV users said they would feel comfortable having an external company controlling smart charging, smart appliances or heating. Here, EV plug-in EV users were at the forefront, as they were significantly more likely than average (20%) to feel comfortable having an external company controlling aspects of their electricity use (e.g. smart heating, appliances or EV charging).

⁸ Caution, low base n=37

⁹ Note: UK Government has laid legislation which will mandate that all privately owned slow chargepoints in future will need to be smart <https://www.legislation.gov.uk/ukdsi/2021/9780348228434/contents>