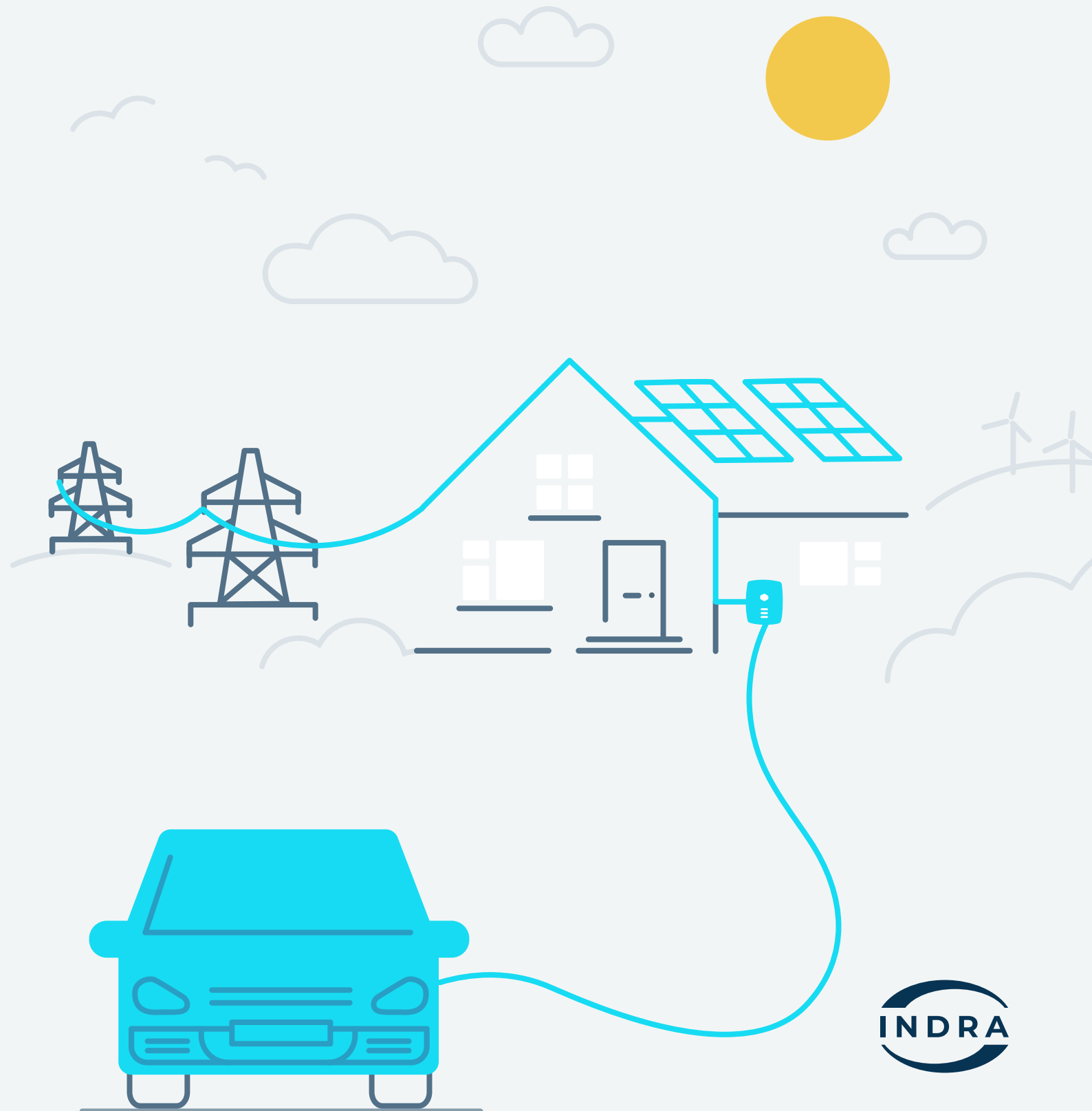


Indra-dex Report

UK driver attitudes towards energy costs and electric vehicle ownership



Introduction

“Welcome to our inaugural Indra-dex report, where we share insights from UK drivers on topics such as the environment, attitudes to driving petrol and diesel vehicles, the barriers to EV ownership and what would make drivers buy one.

With the Government committed to a ban on the sale of all new pure ICE (Internal Combustion Engine) vehicles by 2030 and EV sales on the rise, the move to a cleaner and more sustainable future is well underway.

Yet while the switch to EVs is clearly gathering pace, there is still a long way to go until EVs outnumber their petrol and diesel counterparts on our roads. The shift away from ICE is massive and will have far-reaching consequences, and it’s a shift in behaviour that’s almost as seismic as the move away from horses to the very first cars over a century ago.

This report is based on feedback from 2,000 people who were surveyed in February 2023. It reveals data and opinions on subjects as far ranging as the environment, the cost of running an EV and the potential future use of technology currently in development.

“Interestingly, there seems to be a lot of misunderstanding when it comes to costs associated with EV ownership. For example, over half (59%) of surveyed drivers over-estimated the cost of charging an EV, which some thought could be as high as £100-£150, when the reality is that a family-sized car (with a 64kW battery) costs around £21 on a standard rate domestic tariff of 33 p/kWh and can cost as little as £7 for a full charge on a specialist EV tariff. This compares to an average cost of £74 to fill a petrol 1.5 litre petrol vehicle, based on a cost of £1.47 p/l.

“As pioneers of bidirectional charging, we were encouraged to see that almost 50% of drivers said they would switch to an EV if they could use it to power their home.”

Mike Schooling, Indra Founder and Chief Product Officer



Energy Bills

Just over 60% of drivers currently feel they have no control over the rising cost of their energy bills. And while a massive 76% want to find ways of more effectively managing costs over the coming year, nearly 58% are resigned to the fact that there's nothing within their power to keep a cap on spiralling energy prices.



61%

said they **feel powerless** over their home energy bills



66%

said they felt that **turning off appliances** was the only way to reduce their energy bills



77%

said they wanted **more control** over their home energy bills



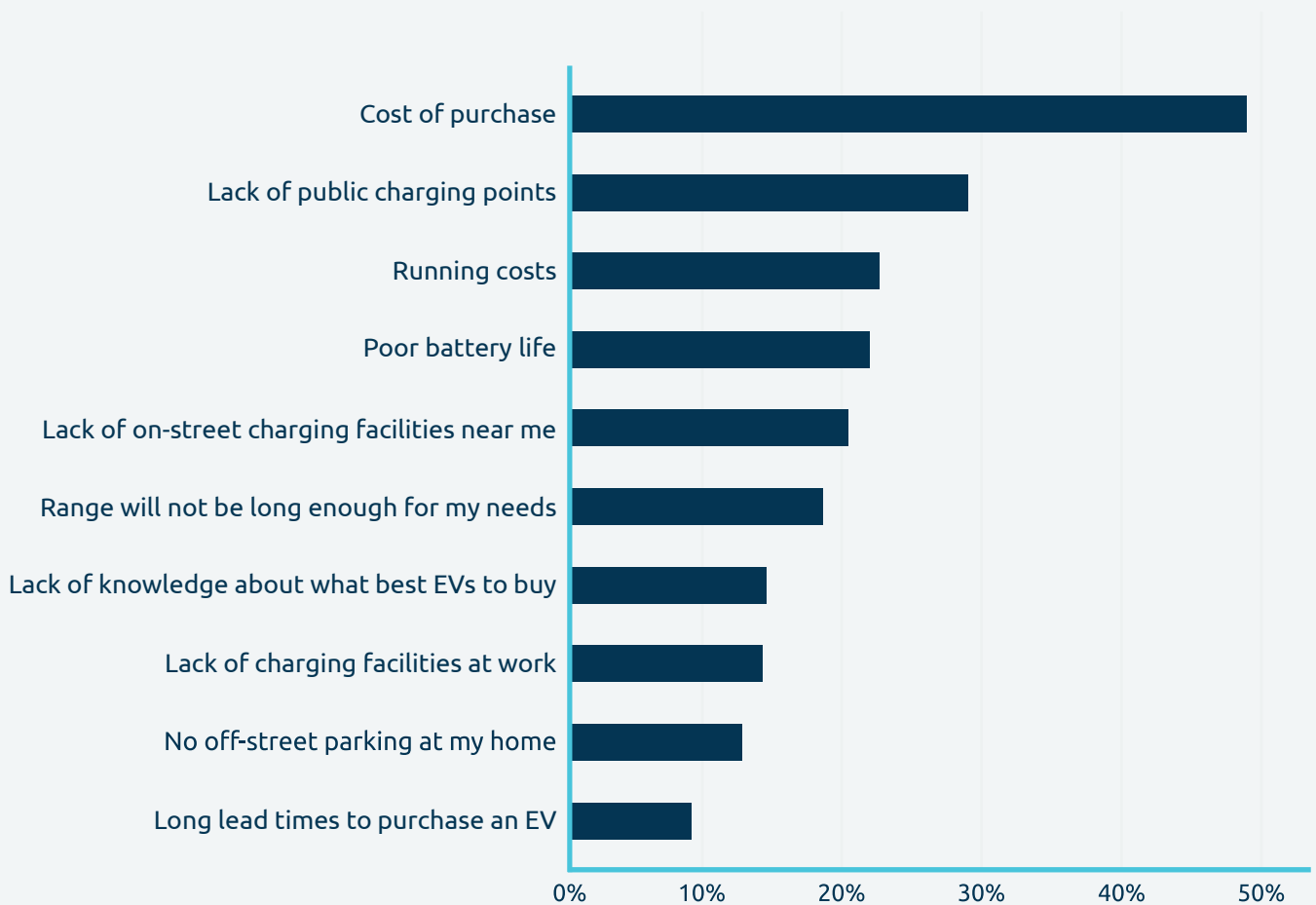
58%

of drivers said they thought they **would not have any power** over their home energy bills in the next 12 months

EV Ownership

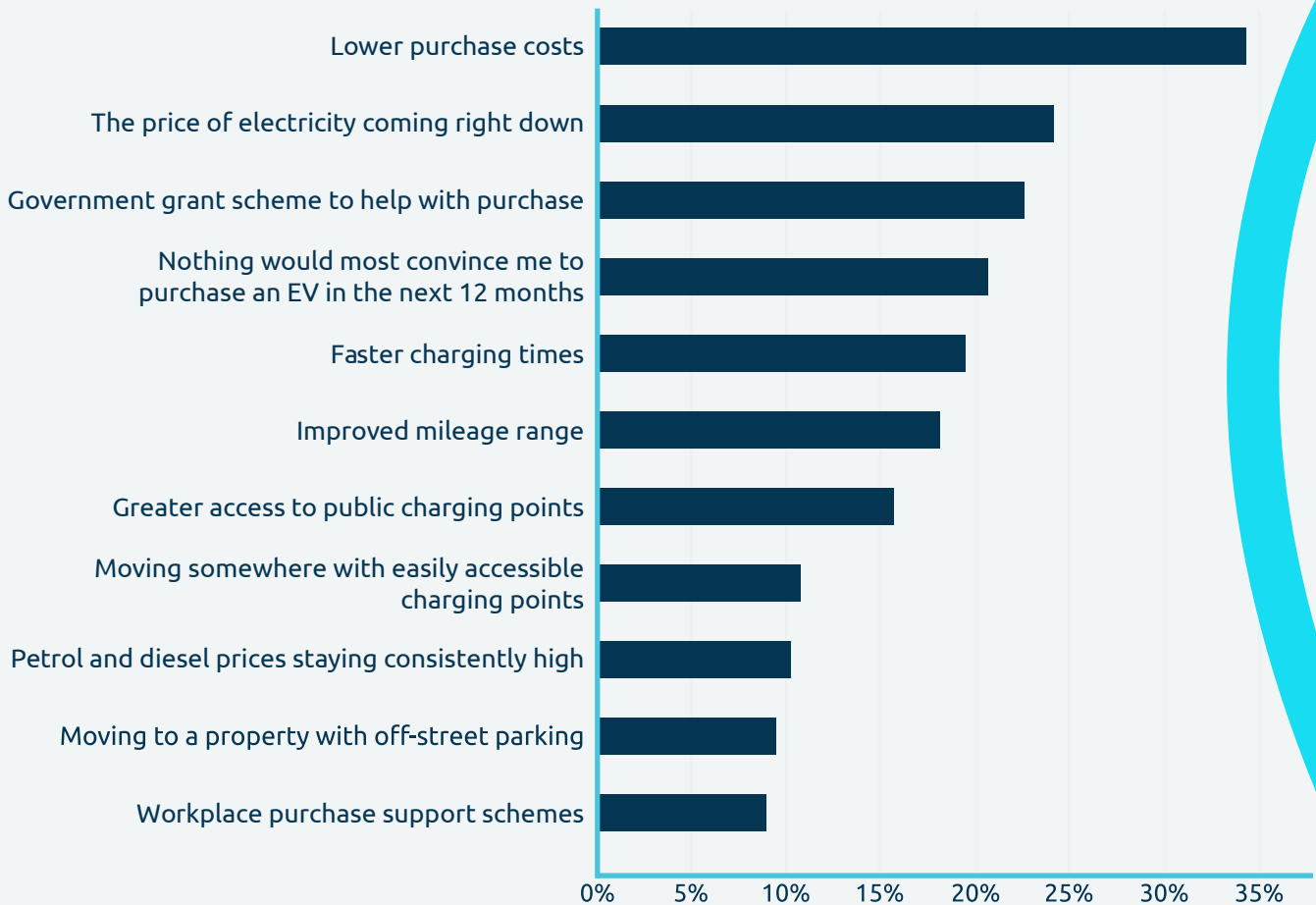
One in two drivers cited purchase price as the biggest barrier to switching to an EV with less than a third (30%) saying they were concerned with the lack of public charging points.

What, if anything, would be the biggest barrier(s) to you buying an EV?

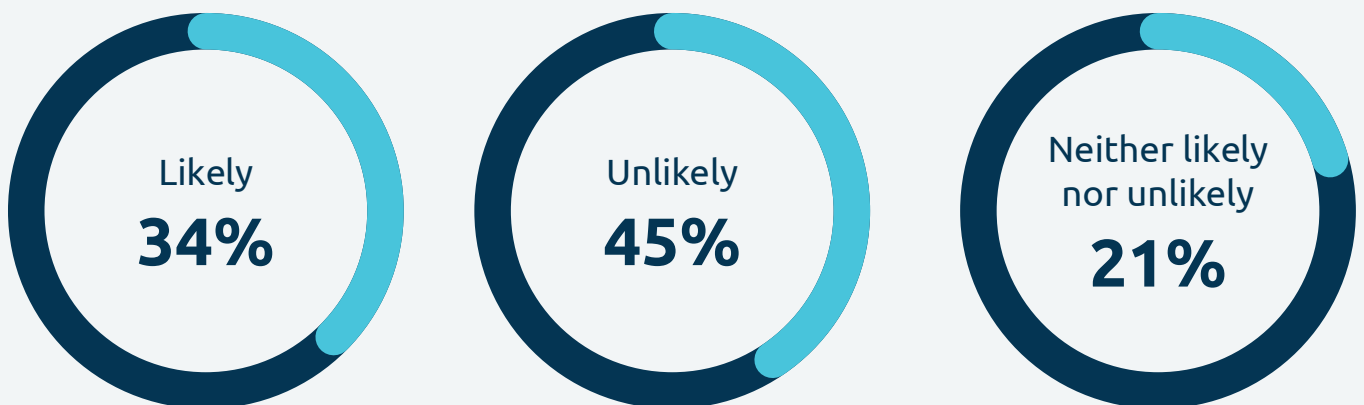


Only a third of respondents said they are likely to buy an electric car in the next 12 months. While 35% would be tempted by a lower purchase price, 21% claim that nothing would convince them to make the switch to electric in the next 12 months.

What, if anything, would most convince you to buy an EV within the next 12 months?



Around a third of drivers said they were likely to purchase an EV in the next 12 months



EV Charging Costs

Over 59% of those surveyed over-estimated the cost for charging an EV, with some incorrectly believing it could amount to £150-£200 for a single charge. These perceptions are contrary to real-world findings, where EV running costs are generally much lower than those of petrol and diesel cars, especially when charged at home. Based on the average cost for electricity of 32p per kWh, charging a family-sized EV with a 64kWh battery costs around £21**. Indra home chargers also enable EV drivers to access specialist Type-of-Use tariffs, such as OVO's Charge Anytime tariff, which offers a rate of 10p per kWh for EV charging, bringing the cost down to less than £7 for a full charge.

Roughly, how much do you believe it would cost to fully charge a typical 100% battery EV (not a hybrid) using an EV home charger?

Up to £10, please specify in £	2%
£11-20	14%
£21-30	15%
£31-40	17%
£41-50	13%
£51-100	9%
£101-150	2%
£151-200	2%
Don't know	25%

* Calculations based on a Seat Ateca 1.5 TSI petrol car with a 50-litre tank, filled up at a cost of £1.47 per litre as per [RAC Fuel Watch data](#) on 22nd March 2023.

** Based on calculations for charging an EV Powertrain Kia Niro with a 64.8 kWh battery on an [E.ON Net Flex rate](#) of 32.81p/kWh on 22 March 2023.

Transport Costs

Many drivers believe petrol cars are the most cost-effective mode of transport over the next 6-12 months (37%), followed by public transport (18%) and diesel engine vehicles (18%). EVs came fourth place, with only 16% of those polled believing them to be the cheapest way to travel.

Again, these opinions differ to real world data.



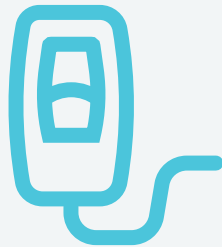
37%
Petrol engine
vehicle



18%
Diesel engine
vehicle



18%
Public
transport



16%
EV



10%
None of these

Upcoming Legislation

Nearly half of respondents did not know the correct date for the UK governments plan to end the sale of ICE cars in 2030, while nearly 10% believe that there is no future ban in place.

When, if at all, will a ban on buying new petrol and diesel engine vehicles come into force in the UK?

2024	4%
2025	7%
2028	6%
2030	43%
2032	6%
2034	4%
2035	9%
2038	1%
2040	3%
2050	4%
Other, please specify	0.5%
There is no ban on buying new petrol and diesel engine vehicles scheduled to come into force in the UK	9%



“Bidirectional charging is such an exciting technology. The idea that an electric vehicle could not only be a car but also a portable battery – providing a sustainable source of power to people’s homes – could transform not just the EV market, but also how we think about electricity. At a time of rising energy costs, increasing global demand on energy resources and climate change, this could be a very clever solution, potentially saving consumers money and allowing us to harness far more green energy than we currently do.” **Harry Wallop, consumer journalist**

Environment



47%

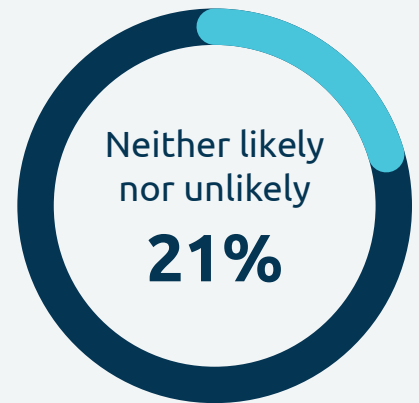
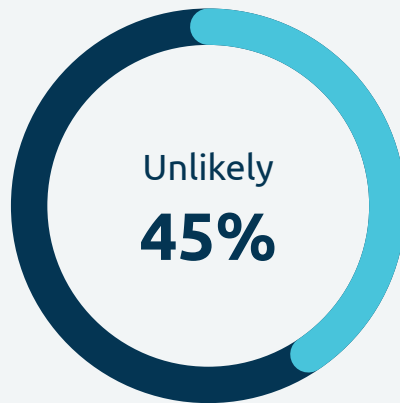
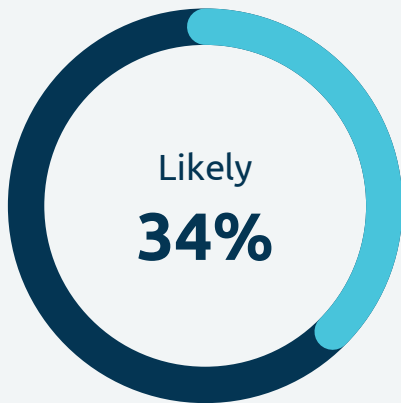
worry about the environmental impact of petrol and diesel vehicles



31%

feel guilty they are still driving a petrol or diesel vehicle

How likely or unlikely are you to purchase either a new or second-hand EV in the next 12 months?



A large number of drivers were completely unaware of bidirectional charging technology. Bidirectional (V2X) charging technology enables you to discharge energy back from your EV to either sell it back to the grid or use it to power your house or building



EV Charging Schedules

Nearly 35% of UK drivers are entirely unaware of the time of day when the grid is using the most renewable energy to generate the 'greenest' electricity. Furthermore, of those surveyed, over a quarter have no idea when the cheapest energy tariffs are available, while around 45% were only 'slightly aware' of when to plug in and save money.

Less than a third of drivers were confident they knew the greenest time of day to use electricity at home (which is normally between midnight and 4am).



Grid Energy

Over 70% of respondents underestimated the amount of cheaper and cleaner renewable energy generated by the grid that could be used for more cost-effective and sustainable EV charging. And nearly 6% claimed **all** energy production came from fossil fuels. However, according to the most recent Government figures, a record-breaking 40% of the UK's energy demands were met by renewables in 2022.

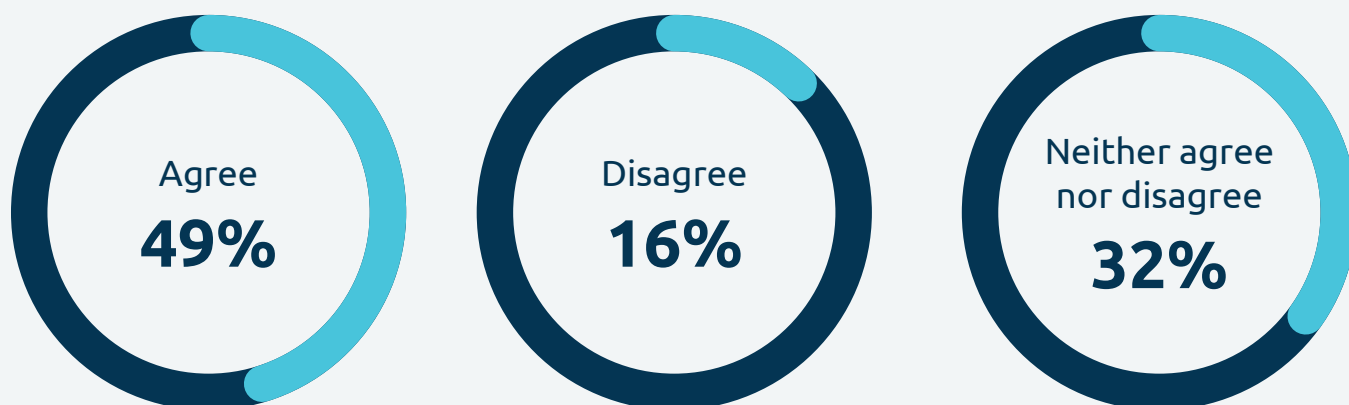
How much of the UK's energy, if any, do you believe came from renewable sources (such as wind and solar) in 2022?

Less than 5%, please specify how much	0%
5-10%	14%
11-20%	20%
21-30%	23%
31-40%	16%
41-50%	9%
51-60%	6%
61-70%	3%
71-80%	1%
81-90%	0.5%
91-100%	0.5%
None of the UK's power was generated from renewable energy sources in 2022	6%

Bidirectional Charging Technology

Almost half of the drivers surveyed said they would be more likely to buy an EV if they could use the battery to power their home. Indra's bidirectional charging technology allows you to access the energy stored in your EV's battery and use it to power your home or sell it back to the grid.

Percentage of drivers more likely to buy an EV if they had bidirectional charging



Over three quarters of respondents liked the idea of bidirectional charging technology and the potential in the future to use and trade energy with the home, the grid or with other destinations such as shopping centres, workplaces, hospitals and airports.

If bidirectional technology were available to you and you owned an EV, which if any, of the following would most appeal to you?

Ability to import electricity from the grid when it's greenest (from only renewable sources), store in the EV's battery and then use to power your home	16%
Ability to import electricity from the grid when it's cheapest, and store in the EV's battery for use to power your home	22%
Ability to earn money by importing electricity from the grid when it's cheapest, store it in the EV's battery and then discharge it back from your EV to sell back to your home energy provider	26%
Ability to earn rewards such as free parking or cash alternatives by trading your EV's power with a business such as a shopping centre or airport	12%
None of the above	24%

Half of respondents claimed their vehicle was parked for at least 50% of the week. This highlights the potential that bidirectional charging technology could unlock for the UK energy ecosystem by using EV batteries while the vehicles are not in use.

Roughly, what percentage of the time does your vehicle spend parked on average week? i.e. not being driven

Less than 5%, please specify how much	0%
5-10%	3%
11-20%	7%
21-30%	12%
31-40%	12%
41-50%	11%
51-60%	10%
61-70%	10%
71-80%	12%
81-90%	9%
91-100%	3%
Don't know	9%

“It is already significantly cheaper to run an EV compared to a petrol or diesel vehicle, particularly when it is charged at home. This will only improve as we move towards widespread adoption of bidirectional or V2X charging,

Bidirectional charging will fundamentally change the way we view and interact with energy and our cars and vans. EVs will effectively become mobile batteries on wheels for harnessing, storing and then using greener, cheaper energy to power our homes or sell back to the grid.

“In the future, we will no longer be tied to a traditional energy infrastructure, but will be able to access, trade and share energy. This means that EVs and bidirectional charging could play a hugely significant role in creating a flexible, sustainable energy eco-system and enabling the government to achieve its net zero ambitions.”

Mike Schooling, Indra Founder and Chief Product Officer



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Contact us

If you have any questions on Indra's product and services, please contact info@indra.co.uk



Email us
info@indra.co.uk



Call us
(+44) 01684 770 631



Online
www.indra.co.uk