# Moving the EV transition from early adopters to "early majority"

March 2024

## Executive summary


The UK's battery electric vehicle (BEV) transition is approaching its next phase. With a million BEVs on UK roads and BEVs due to make up over a fifth of new car sales this year, the UK is moving from an early adopters market for BEVs to the "early majority" - the beginnings of the mass market.

This transition from early adopters to early majority means factors such as cost, convenience and confidence are going to become increasingly important. The UK's Zero Emission Vehicle (ZEV) Mandate will bring an increasing amount of new BEVs to the market, with manufacturers under pressure to provide the cars consumers want and need at a reasonable price to ensure they fulfil the targets.

While the ZEV mandate will do a lot of heavy lifting, wider concerns around the charging network and general confidence in operating BEVs on a day-to-day basis may be causing hesitation among private buyers to make the switch. Against a backdrop of intense media misinformation, Government and industry need to be working closely to ensure that not only are policies being implemented to address practical barriers, but that also consumers are able to access clear and reliable information on the realities of owning a BEV and the benefits it can bring.

In this research, we worked with SKIM, to identify where policy and public information is not addressing new car buyer needs or concerns.

**T&E recommendations:**

1. **Confidence:** The Government invests in improving public communications with industry and consumer groups and implements measures that will help boost consumer confidence.
2. **Charging:** The Government takes action to "level-up" the UK's public charging network, with better regional rollout of chargers, removing barriers to scaling up rapid charger installations and implements measures to guarantee even higher standards for consumer experience of public chargers.
3. **Costs:** Government and the car industry should take action to bring more affordable BEV models to the market, while Government should reform taxation to better incentivise BEVs for new private car buyers. The Government should also monitor other potential cost issues with public charging and insurance premiums, as well widening access to BEV salary sacrifice schemes.

# 1. Introduction

The BEV transition is well underway in the UK. While the share of registrations BEVs had in 2023 (16%) didn't increase upon the previous year, total sales volumes did with over 309,000 BEVs sold[1] - a 17% increase from 2022. This has resulted in 1 million BEVs on UK roads so far.

With the ZEV mandate now in force, manufacturers will be required to increase the share of zero emission car sales every year from 22% in 2024 to 100% in 2035. While this regulation will help to strengthen the supply of BEVs coming into the UK, it is crucial that demand also continues to strengthen. The regulation will encourage further competition which should help bring prices down and a wider variety of models to market but questions remain over how the UK can give car buyers confidence in making the switch to BEVs, particularly against the headwinds of relentless media misinformation and policy uncertainty.

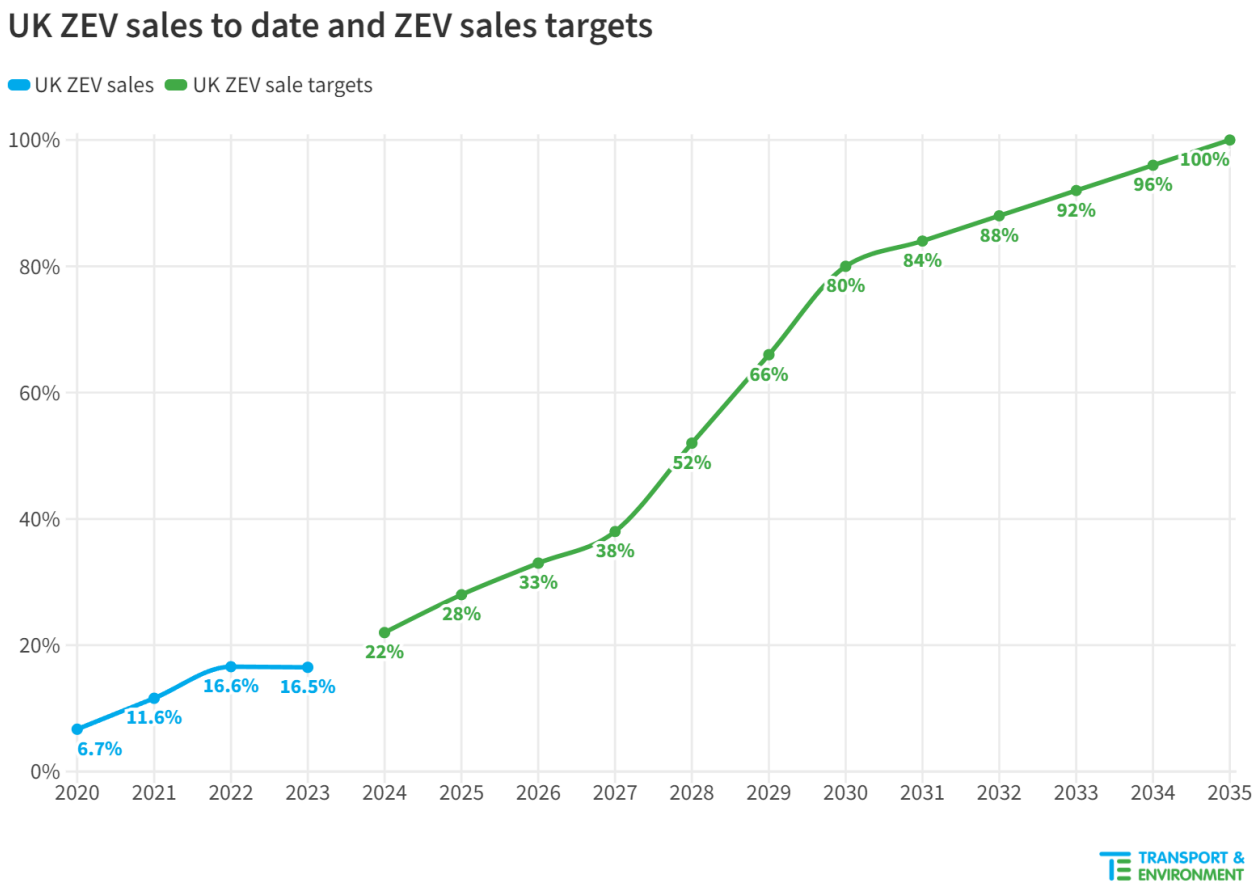


**Figure 1 - BEV share of new car sales 2020-2023 and ZEV mandate targets 2024-2035**

Transport & Environment commissioned SKIM to run focus groups in London and Yorkshire and a national survey, focusing on those who buy their cars in the new private car market, to understand what their barriers and perceptions of BEVs are and identify potential measures that can best support people to be a

[1] Dataforce 2023

part of the “early majority”. This briefing analyses some of those results and identifies potential measures needed from the Government and other stakeholders.

## 2. The current situation

To date, the BEV transition has been largely made up of “early adopters”; a case of picking the low hanging fruit. The low hanging fruits in the UK’s case have been made up of two main groups: 1) company car drivers due to tax advantages and 2) typically wealthier car buyers with technological or environmental motivations.

There’s a good reason for company cars having moved early on BEV adoption in the UK. In 2020, the Government introduced new benefit-in-kind (BiK) taxation rates that greatly favour BEVs over other fuel types. The result of this has led to a huge acceleration of BEV uptake in the corporate market with BEVs making up 22.3% of new corporate registrations in 2023, the seventh highest out of the EU27 and UK. Significantly, BEVs make up a massive 40.9% of registrations in the leasing channel, a subsection of corporate registrations[2].

Moving the corporate market faster makes sense - half of new cars are sold into the corporate market, with these cars tending to spend 3-5 years in a corporate fleet before feeding into the second hand market. The faster the corporate market moves on electrification, the faster the UK will have a thriving and well supplied used car market for BEVs. Additionally, fleets are far better placed to absorb risks associated with upfront costs and residual values than a private buyer would be.

However, it’s crucial that the private market doesn’t fall too far behind. With the ZEV mandate targets sharply increasing from 2027 (38% up to 52% in 2028), as well as flexibilities for manufacturers being removed, the private market in particular must be ready to scale up significantly from this date.

So far, there have been the typical “early adopters” that you see with any new technology. These people tend to be those with better financial capacity to justify the higher upfront costs and the ability to overcome the “uncertainty” many feel from switching to a BEV. These people are also more likely to have been motivated by environmental concerns or interest in the technology. Finally, these people are also more likely to have driveways or a garage to more easily access charging infrastructure at home.

[2] Dataforce 2023

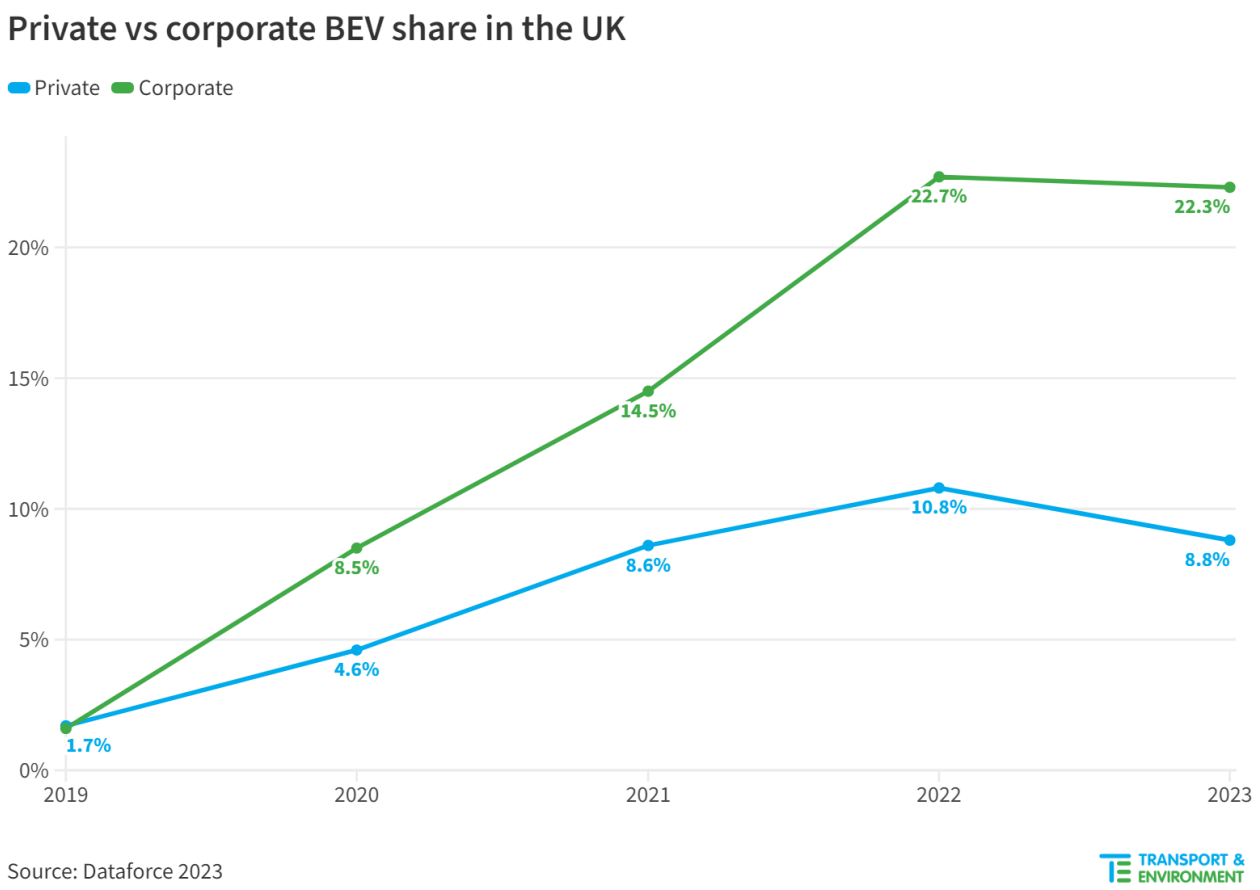


**Figure 2 - BEV share of new registrations in the corporate and private channels**

While there are incentives in place for company car drivers to select a BEV, no such incentives exist in the private market. The Government previously had a plug-in car grant that was offered to support BEV buyers with the higher upfront costs, but this grant was removed in 2022. Meanwhile, the UK's car tax system ranks poorly compared to other European countries in providing a clear differential between petrol and BEV cars according to T&E analysis.

## 2.1. Entering the early majority phase

We are now entering the next phase of the transition. Low hanging fruits are still to be picked off, but the next big group to tackle is the "early majority" further up the tree. While many will care about their carbon footprint, have driveways to access home charging and be theoretically happy to make the switch, their choices will be more influenced by factors such as cost and convenience than early adopters, as well as being more reliant on information presented in the mainstream media than specialist media or sources. Ultimately, they want a car that suits their needs and are unlikely to take what they perceive to be major risks.

This step between early adopters and early majority is often a critical stage in technological adoption and where, arguably, technologies face the greatest difficulties to properly establish. This is where more Government and industry intervention will be needed to enable this next group to feel confident to be the

next wave of BEV drivers. This is why, in this research, we have focused on new car buyers in the private channel - it is the new market that is crucial for making the ZEV mandate a success.

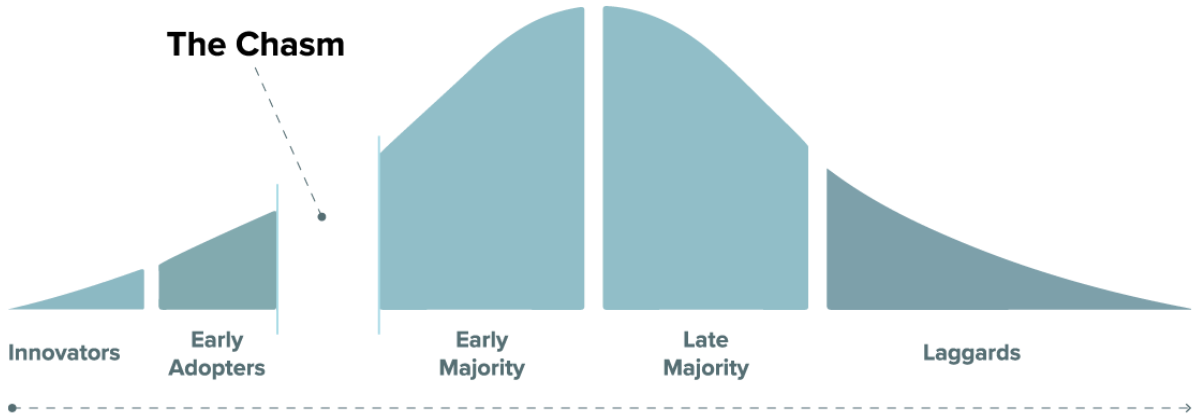


**Figure 3 - Technology adoption curve, SKIM**

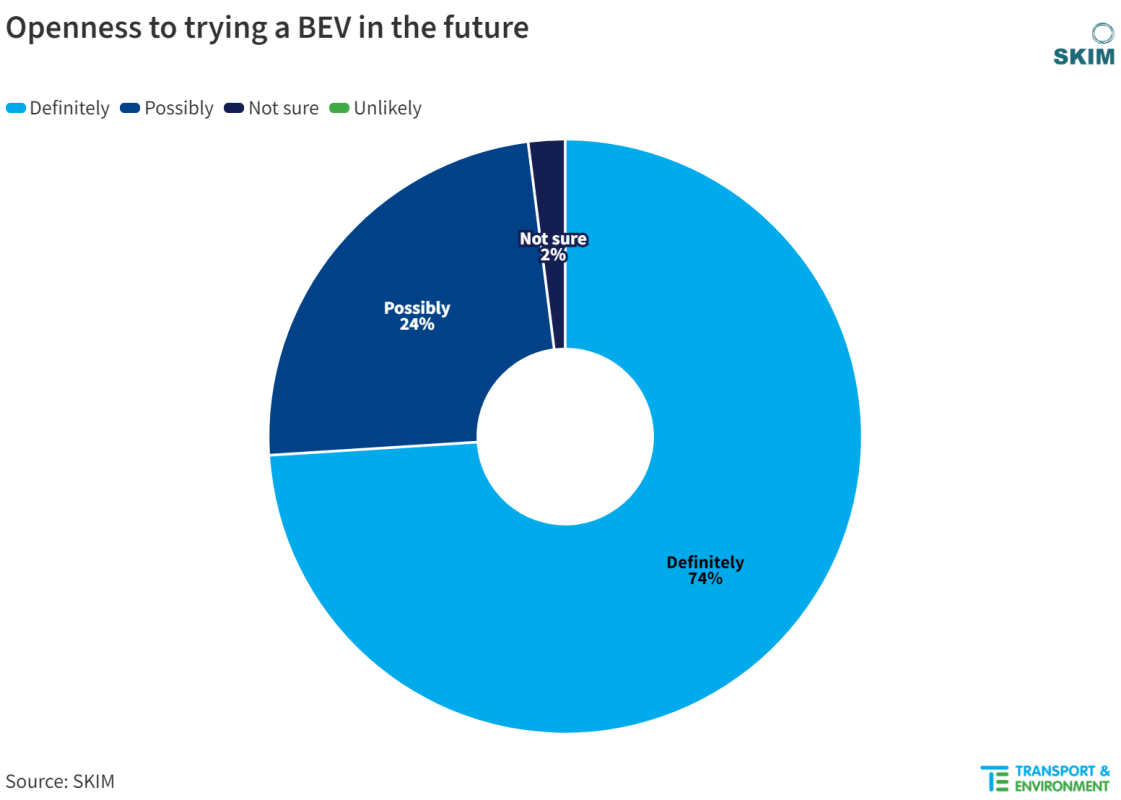


**Figure 4 - Polling of new car buyers' openness to purchasing a BEV**

People do recognise many of the main benefits from making the switch to a BEV and find them appealing. Nearly half of new car buyers surveyed by SKIM cited fuel cost savings as a benefit from switching to a BEV, while the convenience of home charging and savings on maintenance costs also ranked highly.

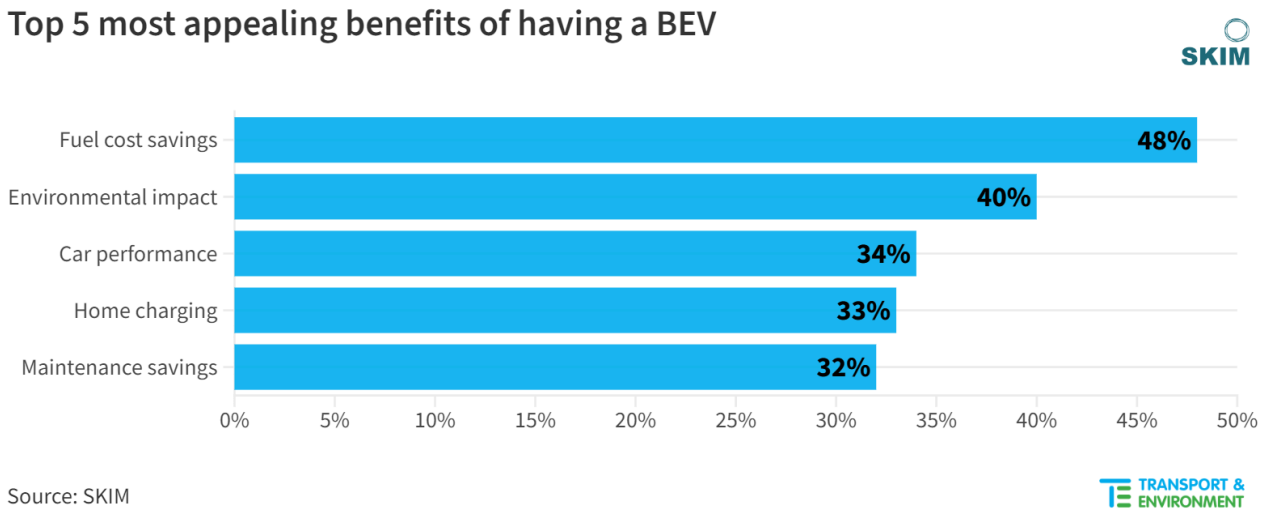


**Figure 5 - Polling of what new car buyers think are the most appealing benefits of having a BEV**

New car sales in the private market account for 20% of all private car sales, with the majority of car sales being made in the used market. New private car buyers are generally wealthier. According to ONS data, on average, the highest gross income decile spends nearly a third more on the purchase of new vehicles than any other decile, while the highest disposable income decile spends nearly two-thirds more than any other decile. The top two income deciles also spend a significantly higher share of their weekly household expenditure on new vehicles compared to lower groups.

While the Government has offered support in the form of grants and public information campaigns such as "Go Ultra Low" in the past, it has since failed to identify key measures to best support private car buyers to make the switch to BEVs, nor sustain clear and consistent public messaging around BEVs. While there have been significant steps, such as passing the ZEV mandate into legislation and developments in charging funding and policy, there are still gaps in policy and messaging to help overcome wider barriers to moving the BEV market into "early majority".

This unclear messaging was compounded by the Prime Minister's decision to rollback on key net zero policies in October, including moving back the phase out date for new petrol and diesel cars to 2035. While this announcement meant little in climate terms, with the ZEV mandate still passing through unscathed, it is likely that it will have had an impact on consumer, as well as business, confidence.

In the meantime, there has been a relentless misinformation among several mainstream media outlets stretching back a couple of years. Last year, this was undoubtedly aimed at weakening the phase out date and the ZEV mandate.

Both the inconsistent Government messaging and high levels of media misinformation were a key focus of a recent report from a House of Lords inquiry into EVs: *"From the outset of our inquiry, even before the*

*target date was changed, witnesses raised concerns about a lack of clear and consistent messaging from the Government, which "provided a vacuum for inaccurate press reporting to fill the void.""*

The Government cannot afford to be complacent with the BEV transition; it has an important role to play in identifying potential, cost-effective interventions that could influence the decision making of the early majority, particularly interventions that will increase the appetite for BEVs in the new private market. While the ZEV mandate will deliver a guaranteed and increasing supply of BEVs to the UK, help bring prices down and a wider variety of models to the market, the Government shouldn't solely rely on this regulation to resolve wider market and confidence issues.

## 3. What is holding back the early majority?

The research carried out by SKIM for T&E found that the barriers for new car buyers to switch to BEVs are complex. At a top level, the primary barriers cited by car buyers are unsurprising and correlate with other polling on this matter.

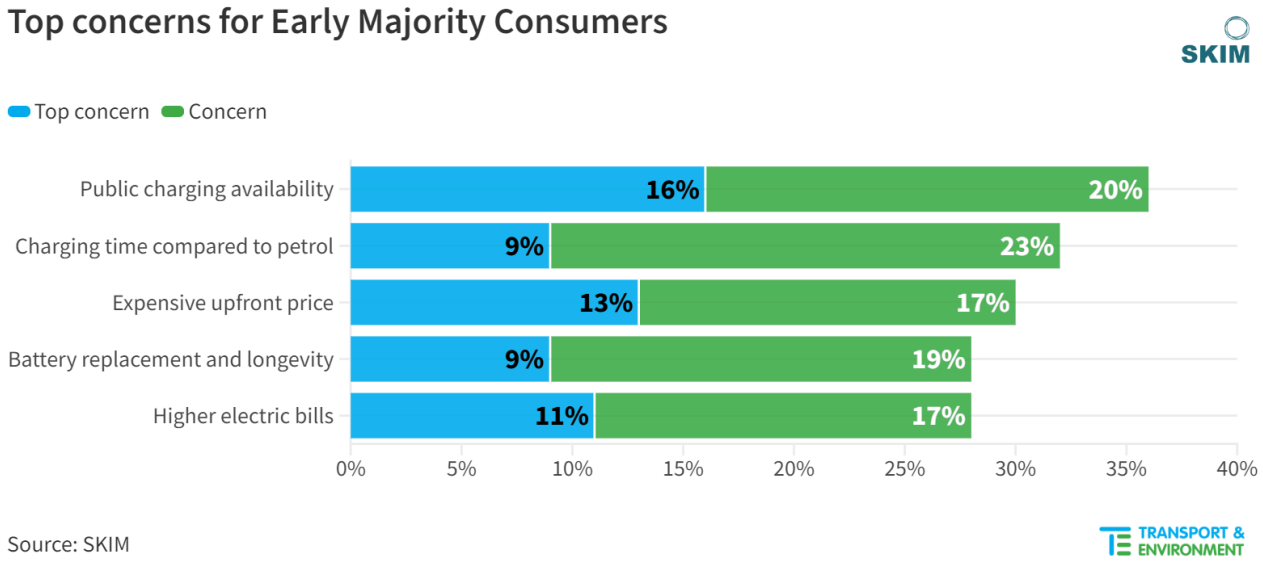


**Figure 6 - Polling of top concerns for new car buyers for purchasing a BEV**

Broadly, the research finds that a trifecta of failures by Government, industry and media are all contributing to the scepticism among new car buyers to switch to a BEV.

- Government: Failure to inform and incentivise citizens
- Industry: Failure to address consumer needs and concerns
- Media: Failure to convey the facts on BEVs or, in some cases, actively spread misinformation

Using the COM-B model (capability, opportunity and motivation), the research has sought to understand the main decision factors for buying an EV, enabling us to better understand where there are currently gaps or failures in policy or knowledge and information for the buyer.

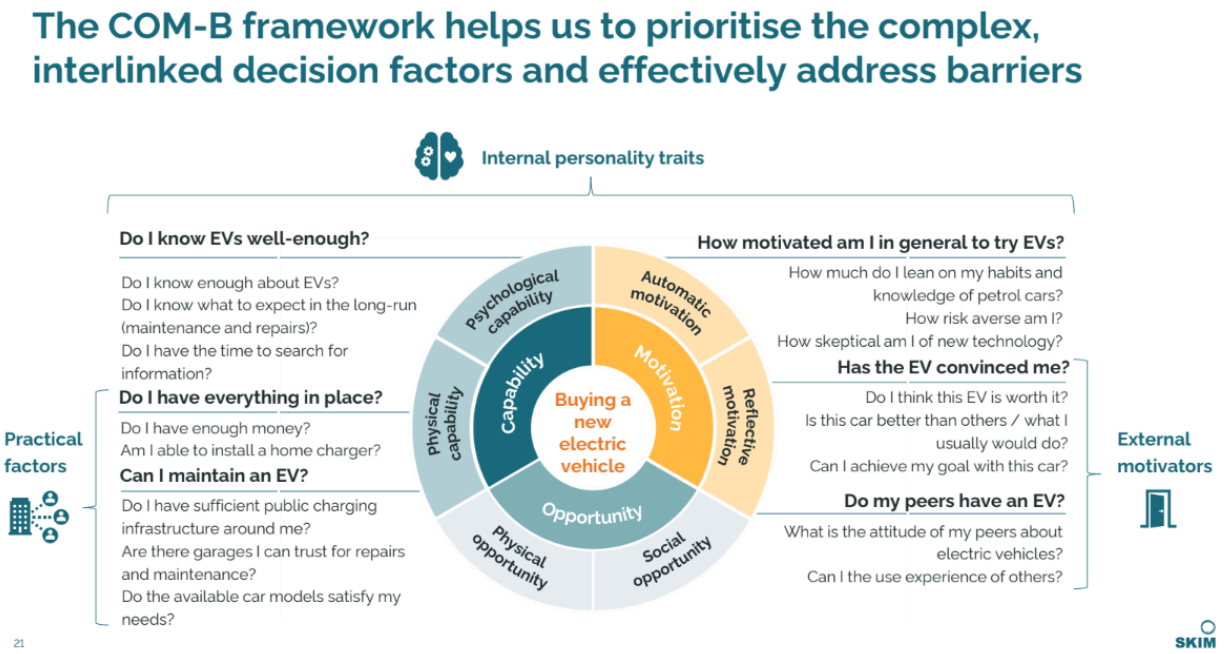


**Figure 7 - The COM-B framework for effective change, from SKIM research**

While a number of decision factors relating to BEV adoption are physical or practical factors such as cost and access to charging infrastructure, many can be attributed to what information and knowledge the person has, as well as their exposure to the experiences of other BEV drivers. Many of these factors will be influenced by negative perceptions developed as a result of media coverage. While some of these negative perceptions are based on elements of truth, many are blown out of proportion and feed an underlying narrative that the British public isn't ready to adopt EVs at scale. There is clearly a need for more robust efforts to counter this misinformation with clear, concise and reliable information for drivers to rely upon when making decisions over their next car purchases.

Even with the more physical or practical factors, such as cost and access to charging infrastructure and maintenance and repair services, much of this also relates to the information people are receiving, i.e. are people aware of what charging infrastructure is near their home, or aware of support available to install chargers at their home, or aware of warranties required for new EVs? While some of these physical and practical factors do require new policy interventions, they also require clearer communication of existing policies and progress, as well as for the public to have more trust in the Government delivering on such policies.

## 3.1. Lack of reliable information and negative perceptions

For some, making the transition to a BEV seems like a big step, fraught with potential difficulties, unknowns and concerns about the technology, infrastructure and the ease of getting from A to B. While there are legitimate concerns around lack of access to public charging infrastructure in some areas and higher upfront costs, many of the wider concerns around BEVs have been driven by misinformation in the

media and a failure of the Government and industry to communicate, a) the reality of owning a BEV, and b) the policies in place to support BEV drivers.

The UK, much like other countries, has seen an overwhelming wave of misinformation in the media during the past couple of years about BEVs. In tandem, the Government has failed to give confidence to drivers around making the switch to EVs. While the Government has recently published a guidance document on its website around EVs, it is not enough to try and attempt to tackle much of the misinformation that is influencing the British public at the moment.

The British public lack access to objective, clear and reliable information around EVs, as well as an understanding of existing policies and measures that are already in place. For example, while there are concerns around charging infrastructure availability and reliability, many people don't have a clear idea of how charging rollout is progressing or that there are new consumer regulations in place to mandate minimum levels of reliability, require easier payments and access to 24/7 help. Additionally, while concerns around battery longevity are high among car buyers, many are unaware that new EVs from 2024 have to come with an 8 year or 100,000 mile warranty - the battery would need to be replaced under the warranty if battery capacity fell below 70% in this period.

Not only has the Government not provided clear enough information around BEVs as well as communicating existing policies and progress, Prime Minister Rishi Sunak also contributed to wider uncertainty around the transition by pushing back the phase out of new petrol and diesel cars to 2035. Not only has this created confusion among car buyers, with 65% of new car buyers surveyed by SKIM not knowing the correct date for the phase out date is 2035, but it has also likely contributed to the uncertainties and concerns around whether UK drivers are ready to make the switch. At a time when the public needed reassurance that the UK was on the right track on EVs, the Prime Minister reinforced fears that the technology and infrastructure isn't ready yet by saying the UK needs "more time to prepare". This is at odds with the Government's ZEV mandate that will require 22% of new sales to be zero emissions this year, moving up to a third in 2026 and over half in 2028.

While the Government does have an important role to play in ensuring there is better access to objective, clear and reliable information, there is a wider issue of a lack of trust from the public towards the Government. While this has clear implications for how well placed the Government is to deliver information about BEVs to the public, it shows that the public need to see the Government delivering on promises and making clear progress in supporting drivers to switch to an BEV. This lack of trust also stretches to industry, in particular energy companies, with the public concerned about potential future rises in energy prices and what that could mean to the cost of charging a BEV.

The reality of people's genuine experiences of BEVs is wildly different to the perceptions that people receive through media coverage, however. Lived experiences are undoubtedly an important factor behind demystifying the transition but many people haven't necessarily had these experiences to rely on.

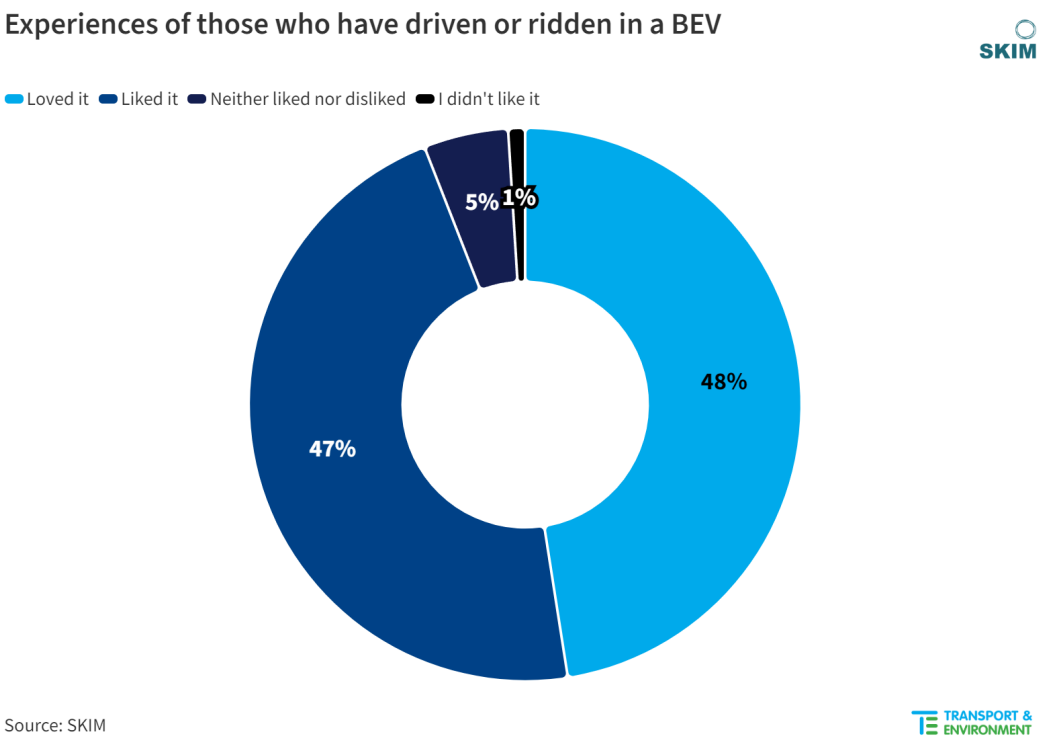


**Figure 8 - Polling of new car buyers direct experiences with BEVs**

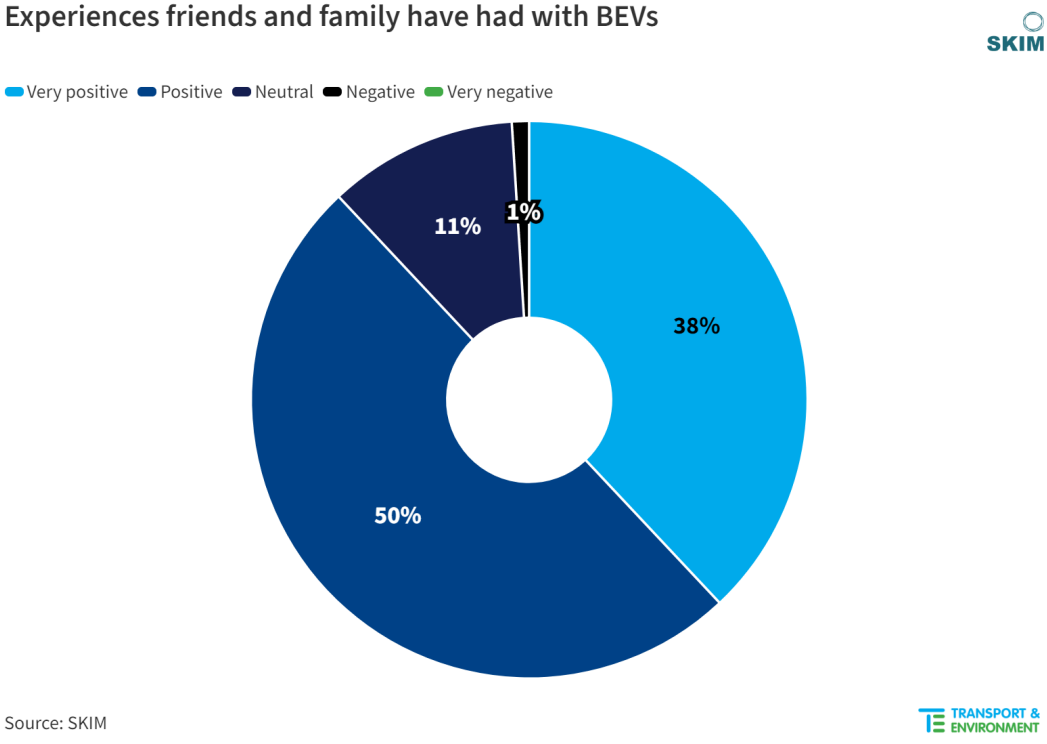


**Figure 9 - Polling of new car buyers' perceptions of friends and family experiences of using BEVs**

### 3.1.1. Trust in maintenance, repair and longevity

Another concern raised during this research was around trust in the longevity of the EV, particularly the battery, and the ability to easily access reliable maintenance and repair of the vehicle when needed.

Perceptions around battery health have been partly influenced by misinformation in the media with claims that batteries may need to be replaced regularly at great expense. These perceptions may also partly be influenced by people's experiences with other technologies, such as mobile phones, that often quite noticeably start to deplete in battery life after two to three years. The reality for BEVs has been quite different. While there is no definitive answer, some carmakers suggest batteries could last between 15-20 years. However, only 14% of car buyers surveyed by SKIM thought that batteries last 10 years or more.

Meanwhile, car manufacturers have routinely offered 8 year warranties for EVs ensuring that consumers have a reasonable amount of protection when purchasing the car. In fact, an 8 year or 100,000 mile warranty is now a requirement for all new BEVs sold in the UK as part of the ZEV mandate. This, together with the evidence building around battery longevity, should give car buyers confidence that the technology will last but these pieces of information are not filtering through to the public.

BEVs are also a lot more reliable than petrol equivalents, largely down to the fact that EVs have far fewer moving parts and, as a result, far less that can go wrong with them. This means the need for maintenance and repairs, in theory, should be far less over the lifetime of an EV thus saving the driver money in the long run. However, there are concerns around the experience and expertise of car garages in maintaining and repairing EVs, including with roadside assistance. While this should improve over time, drivers need to be given confidence that they will get the support they need.

## 3.2. Trust in the charging network

Concerns around charging infrastructure are often the most cited in the media. It is therefore of no surprise that access to public charging infrastructure ranked as the top barrier among car buyers for switching to an EV. People cited queues at chargepoints, chargepoints not working when they get there and time taken to charge an EV among the reasons for being concerned about relying on the public network, much of this largely being a result of overexaggerated media coverage of these issues.

In the focus groups, there was clearly more concern about access to charging infrastructure in Yorkshire compared to London. While the focus groups cannot tell us the full story, it does highlight that the visibility of public infrastructure in London plays a big role in lowering that barrier for prospective BEV drivers. Meanwhile, data from EVA England, provided to T&E UK, of its members in a recent charging survey shows that the experiences of BEV drivers of the charging network is generally more positive for those living in Yorkshire than those in London. BEV drivers in Yorkshire say they're less likely to experience range anxiety or have concerns over finding a public charger - both of these are likely to be influenced by the higher levels of off-street parking but highlights that disparity between perception of non-BEV drivers and experience of BEV drivers in different regions.

Targeting those who have access to off-street parking for the early majority is a no brainer when identifying the next groups of BEV drivers, but even these groups require persuading. People are not being made aware of the convenience and cost saving potential of home charging, despite many energy providers now offering special tariffs for overnight BEV charging. Some feedback in the focus groups highlighted that people think that their high energy bills mean that charging a BEV at home would be as expensive as filling up with petrol, with further feedback suggesting that there is a lack of trust that energy companies wouldn't put up prices that wipe out any economic benefit of home charging.

Even with these issues overcome, there are further perception concerns. While average drivers would only need to charge their car once every week or two,[3] people tend to think about their car purchase based on what their longest journeys are rather than their most common or average use. This not only means that people think about their desire for comfort for the occasional long journeys for holiday, for example, but also, for a BEV, the distance the car can travel on a full battery. For those occasional long journeys, people will need to identify places to stop and charge their car which adds time and anxiety about whether those chargers will be free or in correct working order.

This highlights the importance of a robust, reliable and evenly spread out network of rapid and ultra-rapid en-route chargers with clear visibility of where they're located, how much they'll cost and how fast they'll charge. While progress is being made in this area, it's clear that there is still much work to be done.

## 3.3. Cost of living

Behind public charging availability, upfront costs of EVs were cited as the second most significant barrier to EV adoption among people surveyed by SKIM. This view was also echoed in the focus groups. For many, the gap between the upfront costs of an EV compared to an equivalent petrol car is too high, despite the cheaper running costs.

Recent analysis of new car prices by AutoTrader showed there is a significant gap for many models on the market still. For example, a Fiat 500e is listed as 78% more expensive than a Fiat 500, and a Peugeot e-2008 is 22% more expensive than a petrol Peugeot 2008. This is also reflected in SUV models, with a Skoda Enyaq around 19% more expensive than its equivalent Skoda Kodiaq. There are some that are bucking the trend, however. A VW ID.3 is 9% cheaper than a VW Golf, while Tesla prices have seen significant drops in the last couple of years.

There will be continued downward pressure on prices. The ZEV mandate will increase competition among manufacturers to scale up EV sales, with a third of sales needing to be EV by 2026 which, based on 2023 total sales figures[4], would result in over 600,000 new BEVs coming to market. This should help to bring prices down in the UK as manufacturers vie to increase demand to avoid penalties included in the

[3] National Travel Survey 2023, Annual mileage of cars by ownership, fuel type and trip purpose (miles): England, 2002 onwards (NTS0901a_mileage)
[4] Dataforce 2023

regulation. More broadly, experts at Bloomberg New Energy Finance[5] expect the prices of BEVs to reach parity with petrol equivalents between 2025 and 2027 (or 2028 at the latest).

### 3.3.1. Where are the small, affordable BEVs?

For many years, the cars of the mass market were the small, affordable hatchbacks like the Ford Fiesta, Fiat Punto, VW Golf. Instead, the new car market is being increasingly dominated by larger, premium car models - a trend that transcends all fuel types, including BEVs. T&E research shows that carmakers, particularly European carmakers, are prioritising the production of SUV models over smaller, more affordable models in the transition to BEVs. In fact, some manufacturers, e.g. Volvo, have committed to only selling SUVs in the UK.

Carmakers are prioritising SUVs because they are able to make far greater profit margins from them. T&E analysis of six major European carmakers shows that the revenue, or gross income, per car has grown between 33% and 52% between 2019 and 2022, three to four times more than inflation. This has resulted in net profit increases from €40 to €1,920 in 2019 to €510 to €8,940 in 2022 across the carmakers analysed.

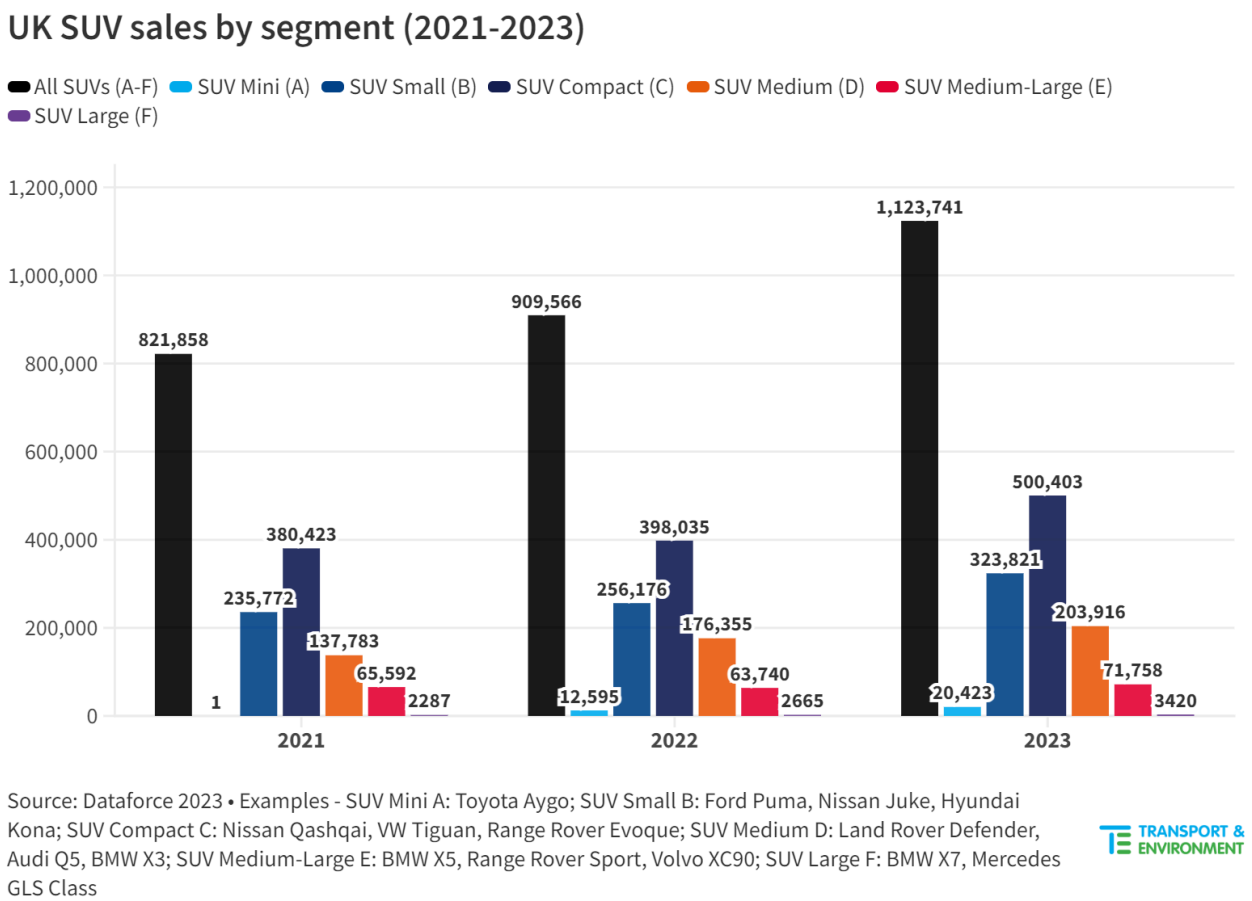


**Figure 10 - UK SUV sales by car segment (A-F) 2021-2023**

[5] BloombergNEF, Electric Vehicle Outlook 2023

In 2023, total SUV sales grew by 24% from 2022, with SUVs now making up 60% of new car sales. This trend is also seen in the BEV market, with over 60% of new BEVs in 2023 coming in SUV segments. In the used car market, only one of the top 10 selling models was an SUV - the used market, where the majority buy their cars, is dominated by smaller, affordable cars like the Ford Fiesta and Focus, VW Golf and Polo, Vauxhall Corsa and Astra. These types of models are being gradually rolled back by manufacturers.

### 3.3.2 Other costs

Beyond just the upfront cost of the car itself, people are also concerned about broader costs associated with EV ownership. While EVs are undoubtedly cheaper to run, significantly so for the 70% of drivers who park on private property or in a garage[6] and should be able to charge at home, people are concerned about potential implications on energy bills. There appears to be a level of disconnect for the public between increases in domestic energy bills from charging at home and the savings they would make by not paying for petrol at the pump. In part, this can be explained by a level of scepticism and mistrust with energy companies around the cost of energy, particularly off the back of spikes in bills over the last couple of years.

Meanwhile, according to ZapMap, the average cost of using the UK's public EV charging network increased by 11% during 2023, with the average cost of using rapid and ultra-rapid chargers - going from 73p per kWh to 81p, while the average cost of slow and fast charging went from 49p to 55p.

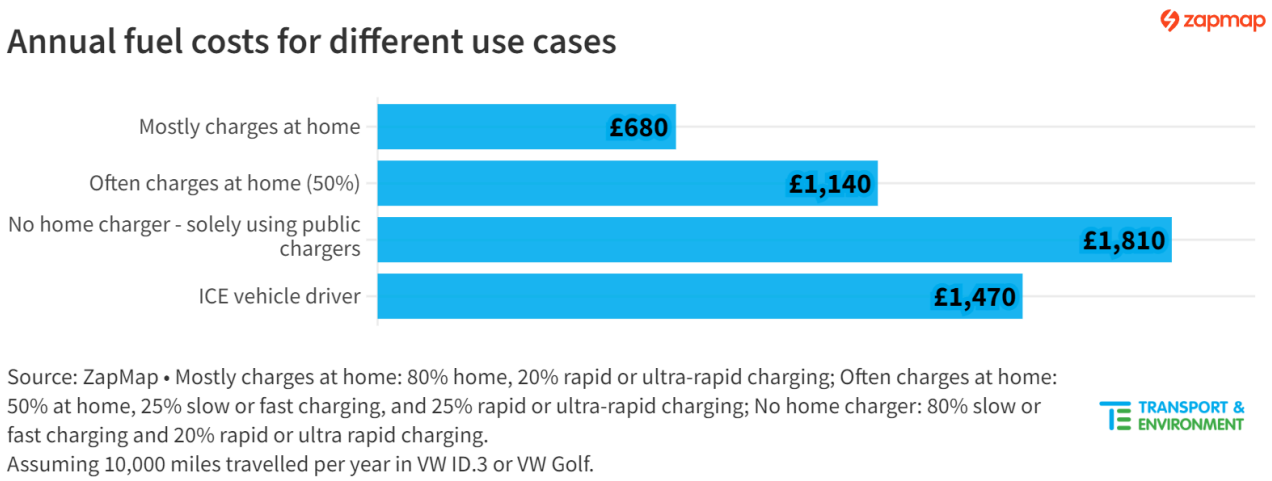


**Figure 11 - Zap-Map[7] estimates of annual fuel costs for different driver profiles**

Another cost premium that BEV drivers may be faced with is higher insurance costs. There have been numerous media reports recently of BEV owners being quoted increasingly high car insurance premiums

[6] National Travel Survey 2023, Where vehicle parked overnight by rural-urban classification of residence: England, 2002 onwards (NTS0908)
[7] https://www.zap-map.com/ev-stats/charging-price-index

compared to other fuel types, with The Guardian reporting in September that insurance premiums for BEVs have grown 72%, compared to 29% for petrol and diesel models. Meanwhile, other reports claim that insurance companies are requiring battery casings to be replaced in cases of minor damage and even writing off cars in cases of minor physical damage to the battery.

Further research by Thatcham found that BEV incident claims cost 25% more and take 14% longer than other fuel types and that "understanding and competence in rectifying the damage continues to develop". The research suggests that there remains a lack of affordable or available repair solutions and parts for BEVs, and any vehicle manufacturer-led repair, recycling or repurposing schemes remaining undeveloped in the UK market. All of this contributes to high insurance premiums for BEVs, which could be a major barrier for car buyers if solutions are not found soon.

Insurance companies have cited that premiums are higher in part due to the lack of experience of working with BEVs due to the transition still being in its early stages, but with around 920,000 BEVs on UK roads and millions more in other countries, we are now surely at the stage where insurance companies have enough data to make more informed decisions. It should also be noted that other powertrains are also seeing increases in insurance premiums, suggesting there is a wider market problem too.

## 4. A Plan for EV Drivers: Kick starting the early majority

While there are several barriers - perceived and real - to BEV adoption among new car buyers, most of them are resolvable. But these solutions require the Government to play an active role, rather than leaving the market to deliver on its own. Government intervention is needed to support the market and consumers. The Government's recent "Plan for Drivers" doesn't go far enough in identifying policies that can best support people to switch from a petrol or diesel car to electric.

People want to be reassured that switching to a BEV is the right thing to do. For many, the switch seems a big step when in reality it will largely be seamless for a lot of people and will end up saving many drivers money. What is apparent from this research is that people require social proof - people don't want to move fast, get it wrong and have a bad experience.

A number of the incentives or guarantees that the "early majority" deem to be most influential are already in place, but it also shows how wider guarantees around the operation of the car are among the most appealing.

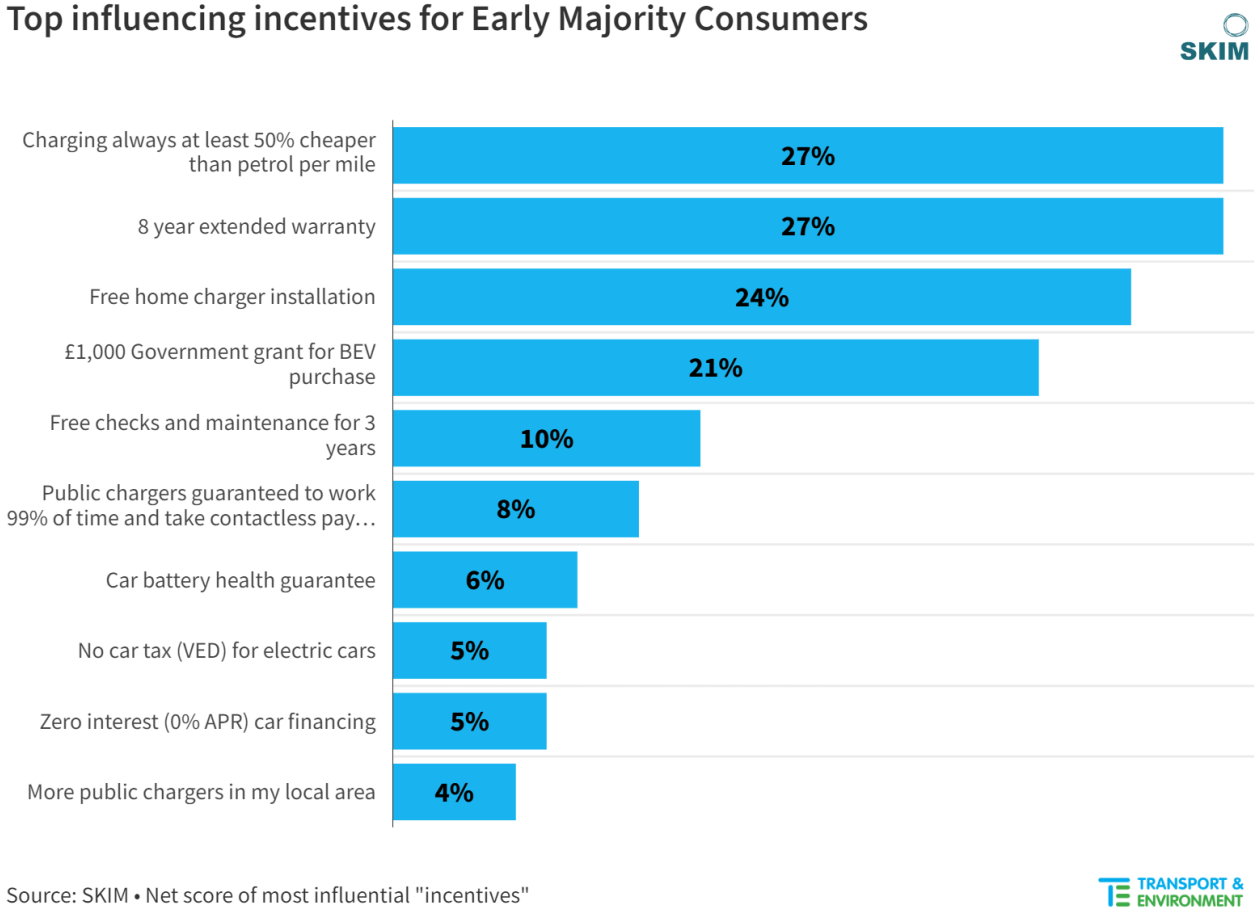


**Figure 12 - Polling of new car buyers most preferred incentives or measures that would influence them to purchase a BEV**

The Government should identify several key areas that drivers either need to be reassured and provided clear, concise and reliable information about or practical issues that require further or new policy intervention. Among these could be: battery health and durability, access to affordable and skilled repair and maintenance services, fairer insurance costs, transparency on charging costs, access to on-street and rapid chargers, and accessibility of chargepoints, support to cover higher upfront costs.

## 4.1. Providing better consumer information & improving public confidence

It is clear from the research that there is a gap between the knowledge and confidence of the British public compared to the reality of actually owning a BEV. People feel that either they or the technology isn't ready and persistent misconceptions are a key factor behind this.

The Government has an important role to play in ensuring that the public can feel greater confidence about making the switch. Previously the Government ran the "GoUltraLow" campaign alongside industry, aimed at enabling people to understand the benefits of BEVs and detail the variety of them on the market. While the Government does not necessarily need to revive this exact campaign, it is clear that there is a

lack of an independent voice on BEVs that can provide clear, objective information about the transition. The concerns people have are less about individual stories in the media, but more a combination that creates a general feeling of uncertainty among car buyers in making the switch. People are led to feel that switching to a BEV could be a risk - Government and industry have a critical role to play in “derisking” BEVs in the minds of the public.

Often, car buyers do not know where to go for information regarding concerns they might have regarding things like installing a home charger, how to find and use a public charger, and broader issues like battery life, maintenance and repair for BEVs. The Government should work closely with industry and consumer organisations to deliver a clear communications plan to address this. Specifically, work should be done to ensure better engagement with people in rural areas who, according to this research, have higher levels of uncertainty about switching to a BEV, despite being more likely to have access to off-street parking.

According to SKIM’s research, people tend to get most of their information from car manufacturers or car review websites when researching for buying a new car, while nearly half get information from dealerships. Working closely with the car industry and dealers to ensure there is consistent information being provided to consumers will be crucial for influencing purchasing decisions.

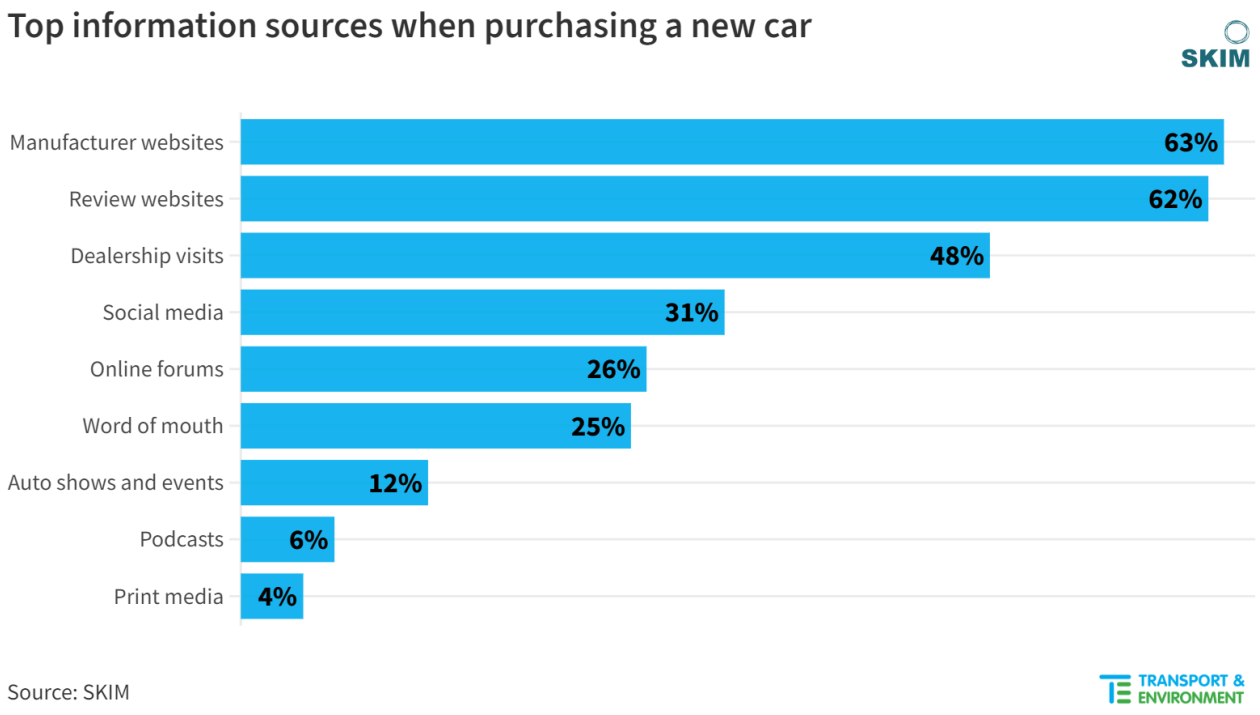


**Figure 13 - Polling of new car buyers sources for information when purchasing a car**

Beyond providing more consistent messaging and ensuring the public are able to access reliable information about BEVs, there are wider interventions that could help boost the confidence of the public. One concern that is regularly cited, particularly among potential buyers of used BEVs, is the perceived uncertainty about the longevity of a battery. While studies are showing that battery life is

generally holding up well and well beyond previous expectations, the Government could introduce a battery health guarantee or certification scheme to provide more transparency and, as a result, confidence for consumers. This would need to come with investment into better battery health monitoring and agreement on the metrics to use.

Furthermore, access to reliable maintenance and repairs is another concern among the public. People are unsure about the ease at which they can access the skills that are needed if they break down. The House of Lords report cited HEVRA suggesting that upskilling of car mechanics is progressing well, but that policy uncertainty from the Government hasn't been helpful to keep this progress up. While mechanics are taking advanced courses for BEVs before 2030, the evidence submitted suggested this could slow as a result of the Prime Minister's rollback on the phase out of new petrol and diesel cars which could result in skills gaps and higher repair costs for consumers. The Government should ensure there is investment in place to ensure a fast reskilling of the sector well before 2030, seeing as over half of new sales will be BEVs by 2028.

**Policy recommendations**

- Invest in consumer information campaigns and develop a clear communications strategy, working with industry and consumer groups
- Work with carmakers to standardise essential consumer information on carmaker websites
- Introduce a battery health guarantee scheme for BEVs
- Invest in faster reskilling of the maintenance and repair sector to ensure there is expertise and confidence for fixing BEVs

## 4.2. Levelling up charging infrastructure

The charging network is seen as one of the biggest barriers among drivers. While there are clearly issues with regional distribution of chargers, disparity of public charging cost vs home charging, visibility of the charging network, many of the issues are also to do with perceptions and overall confidence than they are with the quality and scale of the existing network. Even though people may only very exceptionally take long journeys for leisure or work, people plan their car purchases around these exceptional circumstances. For the same reason that people want bigger cars or boot space for their annual roadtrip down to Cornwall, people also want a car they know they'll reliably be able to charge en route and at their destination.

The reality is that nationally, charging rollout is going incredibly well with, according to ZapMap, a 46% increase in chargers in 2023 compared to 2022. This is well ahead of the 30% that is needed to hit the Government's expected need of 300,000 public chargers by 2030. However, there are regions that are falling behind which makes clear the need for "levelling up" the charging network. When looking at Government data at a regional level, several regions are falling behind - particularly Northern Ireland, but so are the North West, Yorkshire and the East Midlands. These regions are falling behind, which makes a clear case for the need to "level up" charging rollout faster. The patchy coverage of chargers is going to feed fears that people have that they can't necessarily rely on the network around the country.

The Government has an important role to play here. While the Government has developed an EV Infrastructure Strategy, it has not been sufficiently backed by clear and delivered policies to speed up rollout of infrastructure. For example, while the Government announced funding for its Rapid Charging Fund back in 2022, to help support grid upgrades along the strategic road network and motorways for rapid charger installations, funding has yet to be rolled out in full. Meanwhile, the Government's target for every motorway service area to have at least six rapid chargers by the end of 2023 was missed. Chargepoint operators still continue to cite issues around time and administrative burden to access or upgrade grid connections, which requires urgent remedy.

Additionally, while local authorities are responsible for managing the rollout of charging infrastructure locally, there are clearly still issues with regards to capacity and expertise within individual councils, as well as a lack of clear policy guidance from Government. Local authorities need support to develop clear strategies around installing the right chargers in the right places for their communities. The Government also hasn't brought forward an obligation on local authorities, as initially planned, to ensure they are delivering strategies.

Building on the need for better consumer information in section 3.1, this couldn't be more the case for the charging network. People will be largely unaware of the recently introduced consumer experience regulations that require minimum levels of reliability, payment roaming across charging networks and contactless payments and 24/7 helplines. These regulations will go a long way to alleviating concerns that people have but people are not aware of them being in place.

While these regulations were a big step, they could go further. Drivers need to know where there are chargers, whether they are working, whether they are in use, busy or booked up, and how much they can be expected to pay for what speed. While much of this information is available through sites like ZapMap, there are still gaps in information. One of the major themes that came from this research was that people don't want to take what they see to be a big risk. We also know that, while people largely won't be solely or regularly reliant on the public charging network, people tend to choose their car based on their most extreme use case (e.g. their annual trip down to Cornwall). If people don't feel they have the information they need to be confident to make that journey and use the public charging network, they are likely to be put off making the switch to a BEV.

Finally, on the consumer experience of public chargers, guidelines on accessibility of public chargepoints (PAS 1899:2022) were introduced to provide best practice for ensuring the design of chargepoints met the needs and was suitable for people with disabilities and other accessibility needs. While this was a welcome step, it remains unclear to what extent these guidelines are being applied in practice. The Government should ensure that it is monitoring this and be prepared to mandate these guidelines on chargepoint operators if the industry is failing to meet standards. Beyond this, public chargers also need to feel safe with proper lighting and CCTV. The chargepoint network must work for all users.

Meanwhile, another issue is the inequity of higher costs of using a public charger, even on-street outside someone's home, compared to charging at home on a driveway or in a garage. Many have surmised that a

big part of this issue is down to the fact that domestic electricity VAT is capped at 5%, while it's 20% for public charging. This has led to calls for VAT to be equalised at 5% for both, to help bring the cost of public charging down. We agree that action needs to be taken and a VAT cut could be one way of addressing this, but the Government would need to ensure there is clear pricing transparency from the industry so that it can monitor whether that cut is being passed onto consumers. This is important given evidence that fuel retailers have failed to pass cuts in fuel duty onto consumers, prompting action around price transparency. If a VAT cut, or monitoring thereof, is not possible the Government should explore alternative measures such as expanding trials of Agile Streets to broaden access to off-peak electricity prices for on-street charging where there is low demand.

The majority (70%) of drivers park their cars on private property or in a garage meaning they should be able to install a home charger and benefit from the significant cost savings this brings. However, while a grant for installing a home charger still exists for renters, it has been scrapped for homeowners. This could be a fairly low cost policy to reintroduce for any applicants for a couple of years, alleviating a cost barrier for potential BEV buyers.

Another 8% park their cars in shared residential car parks and another 6% in other car parks - while new residential car parks must have charging installed, there is no policy in place to cover existing residential car parks. The Government also turned down the opportunity to put in requirements for non-residential car parks to install charging. Requirements on landowners to install chargers at new and existing non-residential car parks, similar to the requirements in the EU's Energy Performance of Buildings Directive (EPBD), would make a lot of sense to ensure there are a wider variety of charging options available close to people's homes.

For those who park on-street, local authorities should work with chargepoint operators and providers of other solutions like charging gullies to identify the best options for residents in individual areas.

**Policy recommendations**

- Deliver clear policy guidance to local authorities to ensure they are installing the right infrastructure in the right places.
- Speed up the rollout of the rapid charging fund to ensure access to grid connection upgrades along the strategic road network and at MSAs, and address the wider issues around queues and administratively burdensome processes for accessing grid upgrades to ensure charging can scale up quicker.
- Build on the consumer experience regulations by ensuring the high standards of information provided by charging companies and apps around charging costs, charger availability and reliability. The Government should also adopt the RAC and FairCharge's Public Charging Charter which calls for a 48 hour repair target for broken chargers, better signage on motorways and major roads to identify locations and numbers of rapid and ultra-rapid chargers, and penalties for non-electric car drivers parked in charging bays. In addition, the Government should introduce minimum safety standards to ensure proper lighting and CCTV at public chargepoints.

- Explore avenues that would ensure greater application of accessibility standards (PAS:1899) by chargepoint operators and local authorities.
- Require all existing non-residential building car parks with 20+ parking spaces to install charging for at least 10% of parking spaces, in line with the EU's EPBD.
- Reintroduce the home charger grants for all.
- Cut VAT on public charging or explore alternative mechanisms to bring the cost of public charging down.
- Explore policies like a "right to plug" to provide further rights for tenants and leaseholders to install charging including in multiple occupancy buildings and in cases where landlords are blocking or holding back installations.

## 4.3. Addressing cost issues

New BEV prices will continue to drop over the next couple of years. This is happening anyway due to wider market conditions, but the ZEV mandate should help to push this further as competition between manufacturers to increase their share of BEV sales deepens.

As mentioned above, one of the major problems in the new BEV market is that it is dominated by larger, premium vehicles. In fact, SUVs made up over 60% of new BEV sales in 2023, higher than the share for other powertrains. Car manufacturers, across all powertrains, are prioritising the sales of SUVs as they are able to access higher margins as a result. While the manufacturers may see this as a win, the consumers are most definitely losing out.

If the BEV market is to move beyond the early adopters stage, which has been largely made up of company car drivers and people with higher incomes or wealth, then manufacturers need to start providing more affordable models that people want. While things are starting to change, and the introduction of new Chinese BEV manufacturers to the European market may further put pressure on European OEMs, things need to go faster. If the market can't deliver then the Government should explore ways it can encourage manufacturers to prioritise smaller, more affordable models. The Government should review weights and dimension regulations of cars and set a width limit on new cars from 2030 to stymie the ongoing growth of car sizes, as well as introduce a new weight-based tax on new car sales similar to France. But the Government could also explore other measures within the ZEV mandate when the regulation is reviewed in 2027 that adds incentives for manufacturers to prioritise entry level BEVs.

While there is clearly a gap in upfront cost, it's important to consider the levels of taxation levied on a car at the point of purchase. When comparing how polluting cars, particularly highly polluting cars, are taxed when bought new (first year vehicle excise duty (VED)) in the UK to other countries, T&E analysis shows that the UK falls quite far behind many European neighbours on this.

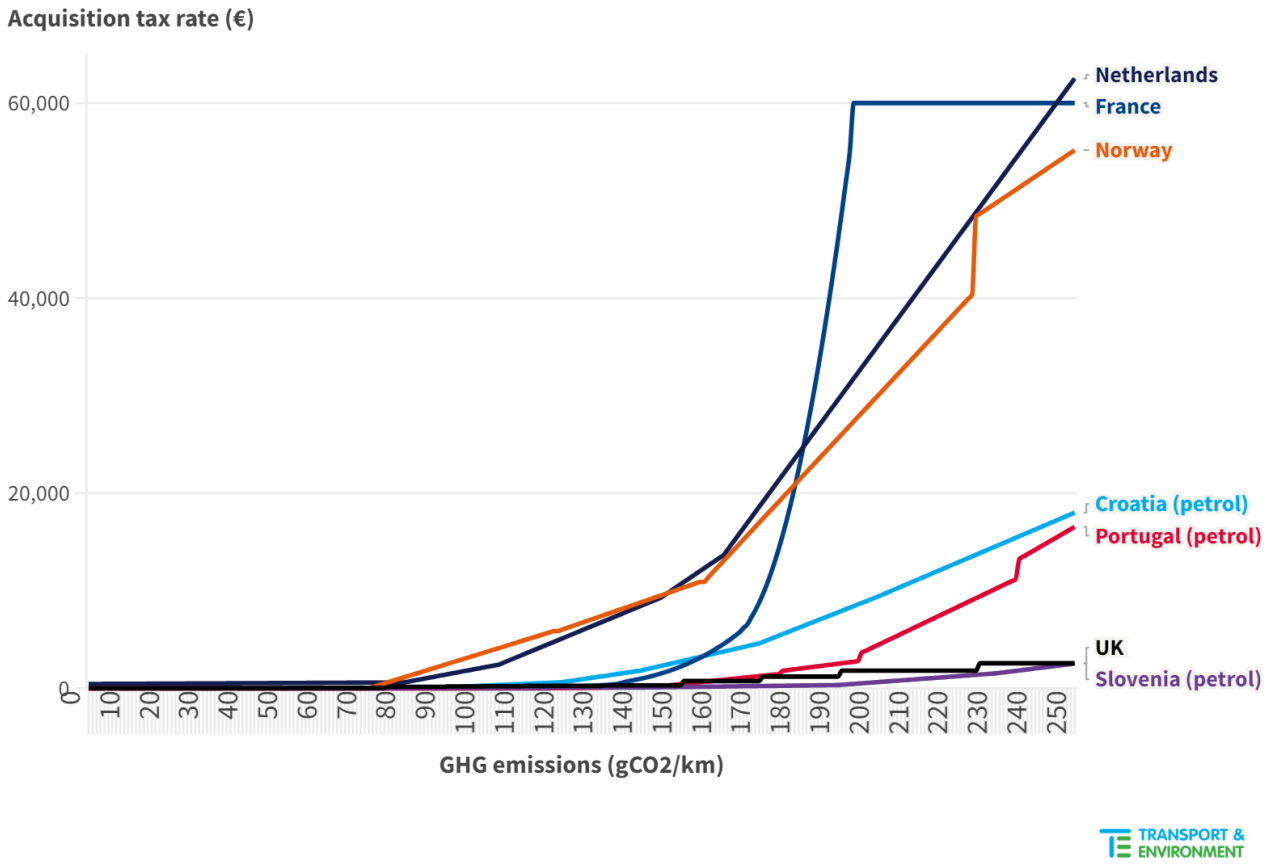


**Figure 14 - Comparison of acquisition tax rates applied to new cars based on CO2**

Currently, oversized, overpolluting cars are undertaxed in the UK which is something the Treasury could address through changes to first year VED. This would be an equitable source of revenue for the Treasury as buyers of these types of cars tend to be wealthy or company car drivers.

The UK's main incentive to support BEV uptake is in the corporate channel, via benefit-in-kind. Benefit-in-kind is geared to favour BEVs over other fuel types. The result of this has been a massive acceleration in BEV uptake in the corporate channel, with particularly significant growth from the leasing segment where 40% of new registrations were BEVs in 2023. These changes to BiK have enabled the growth of salary sacrifice schemes which are dominated by BEVs. The UK could make more of the corporate incentives by widening access to salary sacrifice to more groups.

Beyond this, the Government should actively monitor the progression of the private BEV market for the need for potential, targeted incentives to help boost sales in the coming years. However, support may be more appropriate when seeking to achieve wider social or environmental goals. For instance, this could mean prioritising supporting later BEV adopters to switch, e.g. through scrappage schemes and social leasing programs, or targeted measures for high mileage drivers where there is a clear carbon saving justification.

**Policy recommendations**

- Increase first year VED on new higher polluting cars and introduce a new weight-based tax for the heaviest new cars to ensure these cars are no longer under-taxed.
- Explore ways to ensure carmakers are prioritising the sales of smaller, more affordable BEVs in the UK.
- Explore opportunities to widen access to salary sacrifice schemes to more groups.
- Take action on insurance premiums for BEVs.
- Monitor the private BEV market to identify the need for targeted incentives in the future.

## 5. Conclusions

The UK's BEV transition is approaching a critical phase. Moving from early adopters to the early majority brings new challenges, expectations and perceptions to overcome and address. While the Government has made good progress in implementing the ZEV mandate, which will help scale up the supply of BEVs for the new car market, challenges around infrastructure, cost of living, and wider perceptions around operating BEVs hold people back from making the switch currently.

The Government has an active role to play in tackling these issues, rather than just expecting the market or time to help paper over the cracks. However, this must be done in conjunction with carmakers and wider automotive industry, charging industry, consumer groups and other stakeholders. The reality is that the new car buyers are far more open to BEVs than the media would have you believe, meaning the potential for scaling up the private market for BEVs is enormous.

But this will only happen with concerted efforts to: level up charging infrastructure across the country, maximise the consumer experience of charging and ensure people have easy and equitable access to affordable charging; bring more affordable BEV models to market that are more appealing to mass market car buyers; and building more trust in the technology by tackling misinformation in the media and ensuring the public have access to clear information from trusted sources.

## Further information

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