CTEK – ELECTRIC VEHICLE SURVEY

ELECTRICAL VEHICLE OWNERSHIP AND TAKE UP IN EUROPE

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CTEK | E-MOBILITY

FOREWORD

As the global leader in battery charging solutions, CTEK has over a decade of expertise and technological innovation in the rapidly expanding electric vehicle (EV) market.

We've been working extensively with the public sector, private businesses and international vehicle manufacturers to develop the technology and infrastructure that EVs will need to help create a future that's fossil fuel-free.

This report explores and addresses the challenges that EV owners and non-owners face as Europe looks to meet its crucial environmental targets.

Cecilia Routledge,
Global Head of E-Mobility for CTEK

INTRODUCTION

With climate change issues continuing to make news across the world, a sustainable transport policy that cuts dependence on fossil fuels is fast becoming a priority for many countries.

The EU wants 30 million zero emission vehicles on its roads by 2030 as part of its aim to be climate neutral by 2050*. This will mean building on the rapidly expanding market for electric vehicles (EVs), which more than doubled across the region in 2020**.

The availability of EVs is growing and with more and more high-profile vehicle manufacturers stating that their entire model ranges will be electrically powered by the end of the decade, the EV is going to be a critical and somewhat obvious choice for many buyers in the years to come.

But what are people's views on EVs now and how do they see the future of the EV?
Between February and March 2021, CTEK conducted a comprehensive survey of over 15,000 people of different ages and occupations across five European countries – Germany, the Netherlands, Norway, Sweden and the UK. We asked EV owners what their experience was with their current vehicles and their thoughts on EV charging in general. We also asked non-owners whether they'd consider buying an EV – and if not, what were their reasons?

* https://ec.europa.eu/clima/policies/strategies/2050_en

** https://www.jato.com/ev-registrations-in-europe-more-than-doubled-in-2020/

OUTCOME REPORT SUMMARY

This report outlines and summarises the findings on our respondents' attitudes to EV ownership and the charging infrastructure, as well as the perceived incentives and barriers, to those who do not own an EV, for owning, running and replacing an electric vehicle in Europe in 2021.

RESPONSES FROM EV OWNERS

WHY DID YOU BUY AN EV?

The main reasons people stated for buying an EV were lower running costs – which included the cost of charging and maintenance (average 38%) – and that EVs were better for the environment (average 24%). These responses were consistent across most countries and most age groups.

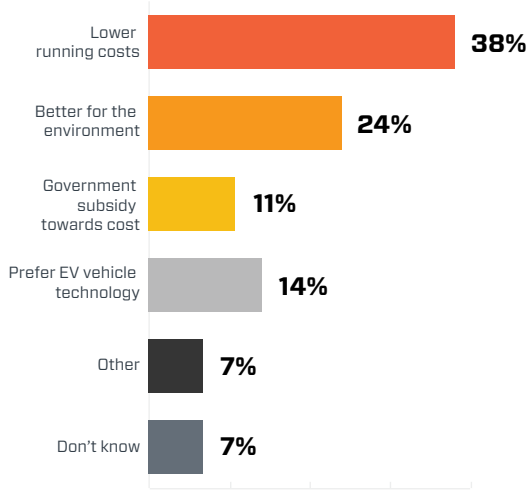
Running costs were a higher factor for people in Norway (59%) and for half of the overall 45-54 age group (50%), while the UK considered environmental factors most highly (35%).

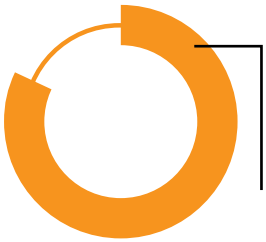
Out of all the age groups, the 18-24 group said they preferred the technology in EVs compared to conventional vehicles (23%).

Although each of the countries surveyed offered some kind of incentive to purchase an EV, very few owners said they had taken advantage of government subsidies, with the highest response to take up from German owners (18%) and the lowest from Norway (6%).

An average of 82% of EV owners also said they would buy an EV again and this was evenly reflected across all countries, genders and age groups.

What was your main reason for purchasing an EV?





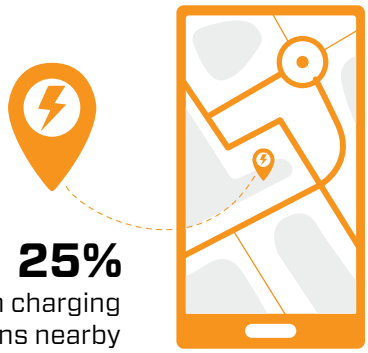
82%
An average of 82% of EV owners would buy an EV again

RUNNING AN EV

Anxiety regarding charging locations – where they were and how to find them – was the main concern for EV owners, with an average response of 25%, which varied only slightly between age groups and genders.

The limited range of EVs available – makes and models available to purchase – was the next biggest concern (average 17%). Although this was fairly low across most nationalities (9-22%), it was a particular concern for people from the Netherlands (46%). Despite this, 'range of EVs available' was generally low and consistent across all age groups and genders (15-19%).

The original retail cost of the vehicle was the third highest concern for owners (average 16%), with people from Norway being the least concerned (4%). The split in gender, though still relatively small, showed the retail cost had been more of an issue with males (20%) as opposed to females (11%).



25%
Not enough charging locations nearby

EV CHARGING AT HOME

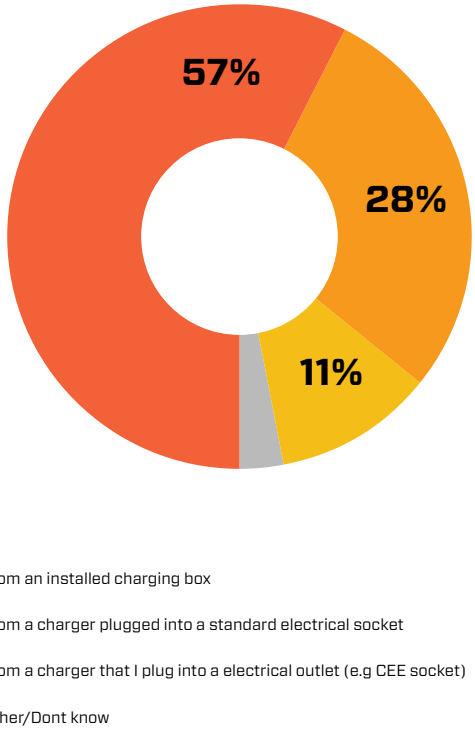
Charging at home using the owner's personal charging outlet was the most frequently used location for charging an EV (66%) and also the preferred place to charge (57%). People didn't appear to find charging at home at all inconvenient, with an average of just 5% saying they did.

The preference for home charging was higher in the UK (78%) and Norway (76%), and significantly higher in the 45+ age groups (average 82%). However, these figures were lower for the 18-34 age group (average 42%).

The countries with the highest take up of charging outlets installed in EV owners' homes were also Norway (73%) and the UK (69%). Owners from Germany, Sweden and the Netherlands were more likely to use a charger plugged into a standard electrical socket at home, rather than an installed charging point (average 45%).

Nearly half of those who had installed a home charging outlet (average 42%) said they were unlikely to ever change it, but 10% said they might change it within the next 12-24 months. The main reasons for considering a change were the lack of certain functions on their existing charger, such as load balancing and the ability to connect to other power sources (e.g. solar).

How do you charge your EV at home?

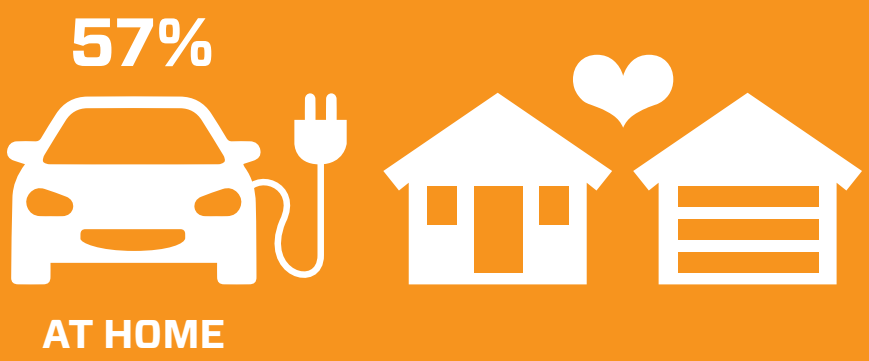


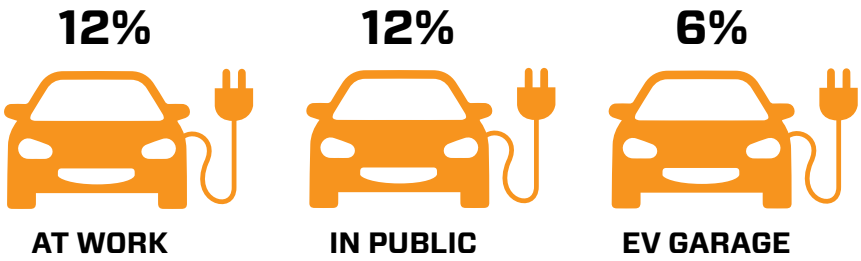
EV CHARGING AT OTHER LOCATIONS

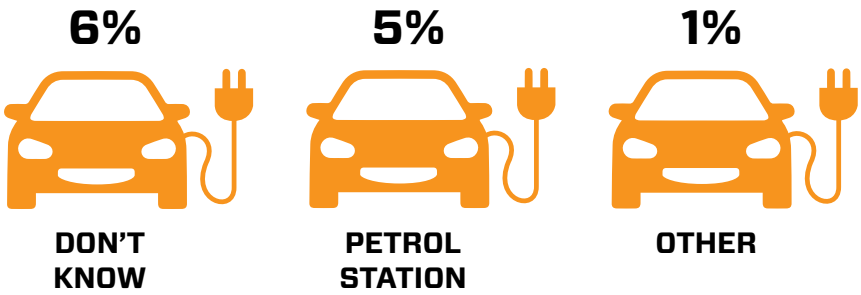
The most used charging locations, other than the home, were public places (e.g. EV parking spaces – average 29%) and workplaces (average 21%, although the UK scored low with just 12%). People in the 18-34 group showed a higher response for these locations at 30-38%, while the 55+ group were lowest with an average of just 11%.

The least frequently used places to charge were petrol stations and designated parking garages, which had an average of 14% and 13% respectively. These were also the least preferred places to charge.

WHERE DO YOU PREFER TO CHARGE YOUR EV?





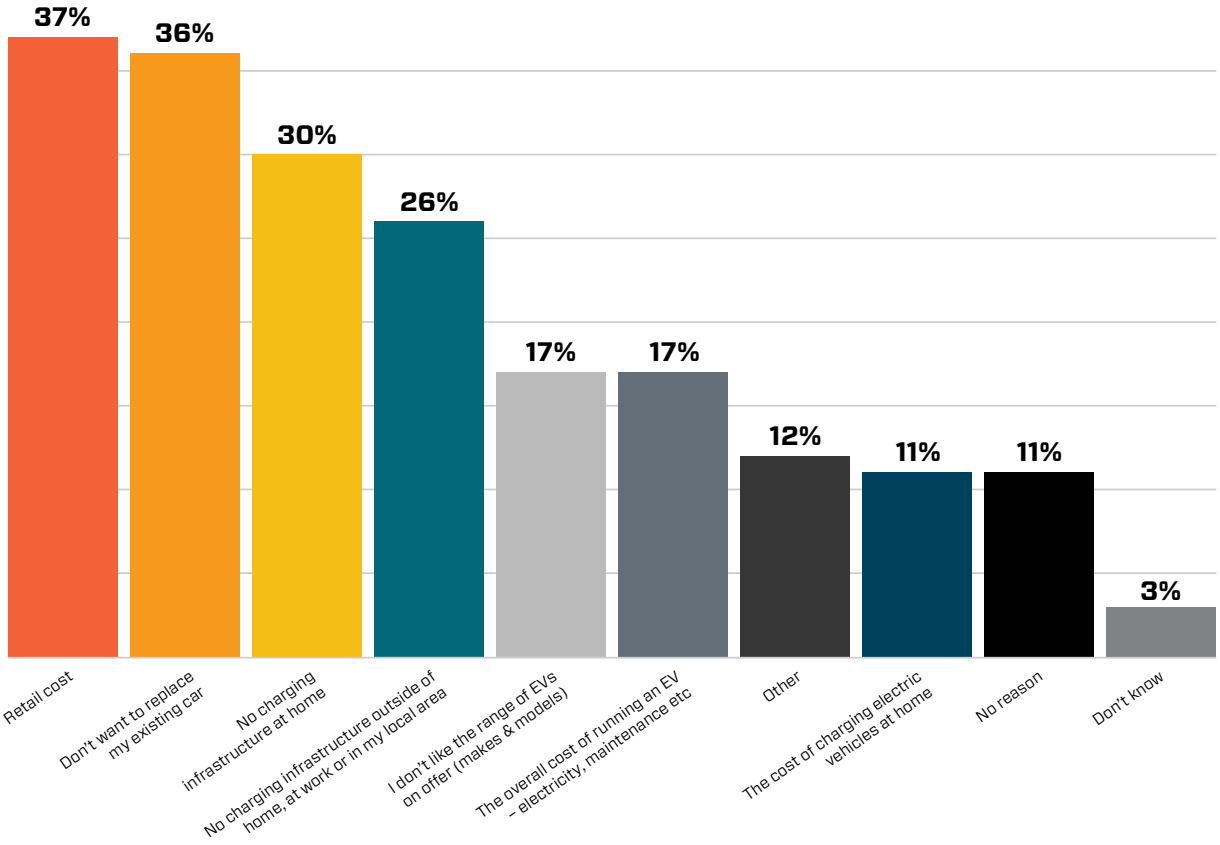


WOULD YOU BUY AN EV?

Retail cost was the main reason a lot of non-owners haven't bought an EV (average 37%), with the highest concern about price in the UK (52%) and the least concern in Norway (18%) and the Netherlands (16%). Concern about retail cost was more or less evenly felt by all age groups and genders (31-40%).

Non-owners were also not concerned about charging an EV at home (average 11%) but there was some concern about not having the appropriate infrastructure at home (average 30%, but lower in the Netherlands and Norway). There was also similar concern to owners about not having the appropriate charging infrastructure in their local area or at work (average 26% but again, lower in the Netherlands and Norway).

WHY HAVEN'T YOU BOUGHT AN EV YET?



EVS – LIKELY TO BUY OR UNLIKELY?

The main barrier to buying an EV seemed to be that a lot of people across all nationalities, age groups and genders simply didn't want to change their existing vehicle at the moment. This was consistent with an average 36%, but rose to 44% for the 55+ age group.

However, when asked whether non-owners were either likely or unlikely to buy an EV in the future, the 18-44 age group said they were much more likely to buy (average 52%), while the 45-55+ group was lower at 38%.

Males were more likely to buy an EV than females (48% as opposed to 36%) and most nationalities also tended towards 'likely to buy', with the highest response coming from the UK at 49%.

ELECTRIC OR HYBRID?

Out of all non-owners who said they were likely to buy an EV in the future, there was an equal split between choosing a pure electric vehicle (38%) or buying a plug in hybrid electric/petrol vehicle (37%). The 18-44 age groups leaned more towards pure electric with the 45-54 group equally split, but the 55+ group preferred hybrid. More males (45%) opted for pure electric than females (25%).

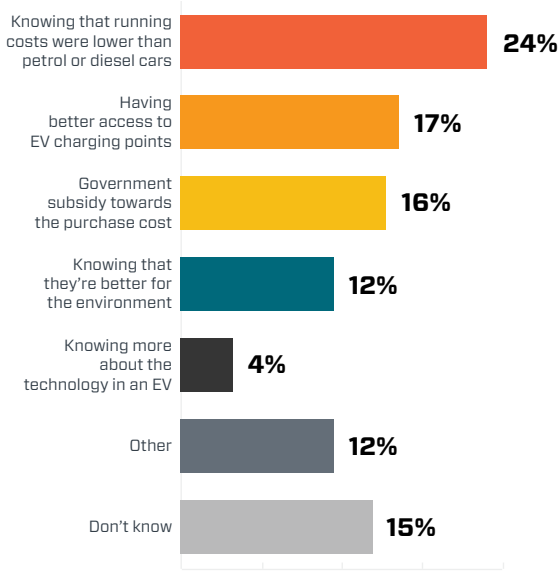
Across the nationalities, most people preferred pure electric, although Sweden showed a marked preference for hybrid (50% as opposed to 34% for pure electric).

Not everyone had already made their mind up though, with an average of 26% not knowing which version they'd go for yet. This figure was higher in the UK at 37%.

38%
likely to buy a pure electric vehicle

37%
likely to buy a plug in hybrid electric/petrol vehicle

What would make you buy an EV?



WHAT WOULD MAKE YOU BUY AN EV?

According to our respondents, there was no real, clear reason to persuade them to buy an EV at the moment – the most popular being lower running costs (average 24%) and better access to EV charging points (17%). Government subsidies (16%), environmental concerns (12%) and familiarity with EV technology (4%) don't really seem to have persuaded people to buy an EV yet, irrespective of nationality, age or gender.

24%
Lower running costs

EV CHARGING INFRASTRUCTURE: ALL RESPONDENTS

An average of 70% of all respondents agreed that there wasn't enough EV charging infrastructure to meet the growing demand for electric vehicles. This was consistent across all countries – even those that would be considered as being ahead of the game in EV technology and ownership.

70%
of respondents agreed there wasn't enough EV charging infrastructure to meet growing demand for electric vehicles

CONCLUSIONS

One of our most significant findings was that 61% of owners and non-owners agreed that electric vehicles are the future of road travel and this was reflected across all nationalities, age groups and genders.

So does this mean that EVs will be the future? It seems highly probable – especially if manufacturers continue to announce that they're turning their production lines over to electric. And forecasts show that by 2030, EVs could be the most obvious and widely available choice for people thinking of buying any type of passenger or commercial vehicle.

Our survey highlights a few frustrations with EV ownership (purchase cost, range, etc) but the low scores suggest that these are very minor compared with the advantages of EV ownership. In fact, it's likely that as technology moves forward, costs will come down and range will increase so these might not be issues in the future.

The main inconvenience for owners was the EV charging infrastructure. While many people were happy to invest in home charging points, there was still disappointment with local, regional and national charging networks. This was also a major consideration for non-owners and could remain a disincentive to buying an EV until the charging infrastructure is improved.

The growing preference for destination based charging – where owners charge their EVs on the move rather than just at home – highlights the importance of establishing a comprehensive charging network that serves EV drivers wherever they are.

Overall, the survey shows that there is clear support for EV vehicles from owners and non-owners alike, especially in the 18-44 age groups who scored highly in the 'likely to buy' section of the survey. Coupled with the finding that 82% of EV owners said they would definitely buy an electric vehicle again, it looks like EV ownership will certainly be on the increase in the future.

61%
of respondents agreed that electric vehicles are the future of road travel

AVERAGE STATS FROM THE SURVEY

What was your main reason for purchasing an EV?

Lower running costs	**38%**
Better for the environment	**24%**
Government subsidy towards cost	**11%**
Prefer EV vehicle technology	**14%**
Prefer EV vehicle technology	**7%**
Don't know	**7%**

What are your main concerns running an EV?

Not enough charging locations nearby	**25%**
Limited range of EV's available	**17%**
Original retail cost	**16%**
Having to charge in a public place	**10%**
Having to charge at home	**5%**
Other	**11%**
Don't know	**16%**

How do you charge your EV at home?

From an installed charging box	**57%**
From a charger plugged into a standard electrical socket	**28%**
From a charger that I plug into an electrical outlet (e.g. CEE socket)	**11%**
Other	**2%**
Don't know	**1%**

Where do you prefer to charge your EV?

At home	**57%**
At work	**12%**
In public places (e.g. at a parking space with EV charging)	**12%**
In designated parking garages with EV charging	**6%**
At a petrol station	**5%**
Other	**1%**
Don't know	**6%**

Why haven't you bought an EV yet?

Retail cost	**37%**
Don't want to replace my existing car	**36%**
No charging infrastructure at home	**30%**
No charging infrastructure outside of home, at work or in my local area	**26%**
I don't like the range of EVs on offer (makes & models)	**17%**
The overall cost of running an EV – electricity, maintenance etc	**17%**
The cost of charging electric vehicles at home	**11%**
Other	**12%**
Don't know	**3%**
No reason	**11%**

What would make you buy an EV?

Knowing that running costs were lower than petrol or diesel cars	**24%**
Having better access to EV charging points	**17%**
Government subsidy towards the purchase cost	**16%**
Knowing that they're better for the environment	**12%**
Knowing more about the technology in an EV	**4%**
Other	**12%**
Don't know	**15%**

ABOUT THIS SURVEY

All figures, unless otherwise stated, are from YouGov Plc. Total sample size was 15, 174 adults (aged 18+). Fieldwork was undertaken between 11 February and 15 March 2021. The survey was carried out online.

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