

Northern Transport Voices Consumer attitudes to electric vehicle transition

October 2023



Transport for the North (TfN)'s [Transport Decarbonisation Strategy](#) (Dec 2021) sets out the need to rapidly decarbonise surface transport, requiring action across mode-shift, technological change and demand reduction on a significant scale. Over half of surface transport carbon emissions is generated by cars, and a further 11% by vans.

- UK Government has confirmed that sales of new petrol and diesel cars will be banned from 2035
- Although EV uptake is growing, plug-in cars (Plug-in Hybrid Electric Vehicle (PHEV) and Battery Electric Vehicle (BEV)) still only represented 3.4% of all licensed cars on UK roads in March 2023 ([Vehicle Licensing Statistics](#)). Evidence also indicates that the North of England is seeing a slower uptake of EVs than nationally. Upfront cost of purchasing a new EV and having effective supporting charging infrastructure remain key blockers to further EV uptake
- Public charging infrastructure has struggled to keep pace with EV uptake to date, with the North seeing lower levels of overall EV infrastructure development than many other areas
- Evidence in TfN's [Electric Vehicle Charging Infrastructure Framework](#) (Oct 2022) identifies charge point requirements to meet the needs of all place types across the North of England
- Additional evidence is needed to help assess the extent to which different income groups may experience EV uptake and how access to charging might vary. This will develop a more rounded view of how to support a more equal and fairer transition to electric vehicles

This study aims to explore the consumer perspective towards the electric vehicle transition, with a particular focus on barriers experienced, the impact of the cost-of-living crisis, and attitudes towards shared EV charging solutions as well as shared EV ownership models.

- The research looks at how consumers perceive different factors (enablers and barriers) relating to switching to an EV, including issues around cost, and the cost-of-living crisis. Attitudes towards on-street and hub-based residential charging, and EV car clubs, are also explored
- TfN used its online research community, called Northern Transport Voices, to source the participants for this research. The profile of this community of over 500 Northern residents broadly aligns with the demographic profile of the overall population in the North of England
- Members of the research community who drive any type of car or van were invited to complete a **survey comprising 41 questions**, with incentives offered to encourage uptake. Fieldwork took place between **25 March – 24 April 2023**. A total of **204 responses** were received
- In addition, **15 participants** took part in **two 90-minute qualitative focus groups** which took place on **4 May 2023**. One group comprised 7 participants who currently use a self-charging hybrid, PHEV or BEV, and the other comprised 8 participants who intend to switch to a hybrid, PHEV or BEV in the near future (within the next 3 years). The focus groups were delivered in collaboration with Atkins (a design and engineering consultancy)
- The following slides summarise the key findings from the survey and focus groups



Attitudes towards switching to electric vehicles

13% of respondents use a hybrid, PHEV or BEV

How many of the following types of vehicles does your household currently own or have continuous use of? Please include company cars or vans (if available for continuous private use)

	None	One	Two	Three or more
Car (petrol or diesel)	16	141	41	6
Car (hybrid or plug-in hybrid)	186	17	1	0
Car (Electric/battery only)	196	8	0	0
Van (petrol or diesel)	189	14	1	0
Van (hybrid or plug-in hybrid)	204	0	0	0
Van (Electric/battery only)	203	1	0	0
Motorcycle, scooter or moped (petrol or diesel)	197	4	1	2
Motorcycle, scooter or moped (hybrid, plug-in hybrid or electric)	201	2	1	0
Electric bicycle	193	8	3	0
Bicycle	118	34	26	26

- 69% of respondents have one petrol or diesel car, 20% have two cars, and 3% have three or more
- 8% of respondents have a hybrid or plug-in hybrid, and 4% have a battery electric car
- In total, 26 respondents (13%) use a hybrid, PHEV or BEV car or van

Number of responses = 204

58% hybrids/EVs owned outright, compared to 88% Internal Combustion Engine (ICE) vehicles

Which ownership model applies to the car(s) or van(s) your household currently owns or has continuous use of?
Please select all that apply.

	Hybrid/EV users	Petrol/diesel users	Total
Owned outright	58%	88%	84%
Business/company lease	8%	2%	3%
Personal lease/ personal contract hire	31%	7%	10%
Hire purchase	0%	3%	2%
Personal contract purchase (PCP)	15%	2%	4%
Don't know	0%	1%	1%
Total	100%	100%	100%

- Hybrids/EVs much more likely than ICE vehicles to be on personal lease/ personal contract hire (31% compared to 7%), personal contract purchase (PCP) (15% compared to 2%), and business/company lease (8% compared to 2%)
- Respondents in the lowest household income bracket (below £15,000) almost exclusively own the vehicle outright
- All respondents using PCP have above median household income (above £30,000)

Number of responses = 204 (26 hybrid/EV, 178 petrol/diesel)

Demand for second hand hybrids and EVs much smaller than for petrol/diesel

When you consider changing your household's current car or van, will you be looking for a new or second-hand vehicle?

	Hybrid/ EV users	Petrol/diesel users	Total
New	58%	26%	30%
Second-hand	15%	51%	47%
Not applicable	4%	1%	1%
Don't know	23%	21%	22%
Total	100%	100%	100%

Number of responses = 204 (26 hybrid/EV, 178 petrol/diesel)

- Current hybrid/EV users are much more likely than petrol/diesel users to plan getting a new vehicle rather than a second-hand vehicle when replacing their current vehicle
- In contrast, over half of petrol/diesel drivers expect their replacement vehicle to be a second-hand vehicle

Over a third of petrol/diesel drivers unsure when they will next replace current car or van

When are you likely to next consider changing your household's current car or van?

	Hybrid/EV users	Petrol/diesel users	Total
In the next 12 months	27%	13%	15%
1-2 years	31%	26%	26%
3-4 years	12%	15%	15%
5-7 years	15%	8%	9%
8-10 years	4%	3%	3%
More than 10 years	4%	0%	0%
Don't know	8%	34%	31%
Total	100%	100%	100%

- Current hybrid, PHEV or BEV users have clearer plans for replacing their current vehicle - 58% intend to replace current vehicle within the next 2 years, compared to 39% of petrol/diesel users
- 34% of petrol/diesel users do not know when they are likely to replace their current vehicle
- 29% of the ICE drivers who have no replacement plans currently drive vehicles older than 10 years

Number of responses = 204 (26 hybrid/EV, 178 petrol/diesel)

50% of owners of ICE vehicles aged 10+ intend to replace them within 2 years, but 39% have no plans for replacing

Petrol and diesel drivers only: How old is the car or van you personally use most often? **by** When are you likely to next consider changing your household's current car or van?

Age of current vehicle	Plan to replace current vehicle						Total
	In the next 12 months	1-2 years	3-4 years	5-7 years	8-10 years	Don't know	
Up to 3 years	13%	25%	25%	19%	0%	19%	100%
3 – under 5 years	17%	33%	13%	2%	6%	30%	100%
5 – under 10 years	5%	17%	20%	15%	5%	38%	100%
10 years or more	20%	30%	9%	2%	0%	39%	100%
Don't know	25%	0%	0%	0%	0%	75%	100%
Total	13%	26%	15%	8%	3%	35%	100%

Number of responses = 180

- Looking at petrol and diesel users only, 50% of the owners of vehicles older than 10 years plan to replace their current vehicle within the next 2 years, however a notable minority (39%) of the owners of the oldest vehicles (10+ years) do not know when they will next replace their current vehicle
- Owners of the oldest ICE vehicles who have no plans for replacing them are more likely to be in lower income households, however a minority have household incomes above £30,000

Cost-of-living crisis delayed plans to replace current vehicle for quarter of respondents

Has the cost of living crisis changed your previous plans around the timeframe for changing your household's current car or van?

	Hybrid/EV users	Petrol/diesel users	Total
Yes, we are now planning to replace our current vehicle sooner than previously planned	12%	8%	8%
Yes, we are now planning to replace our current vehicle later than previously planned	27%	23%	24%
Yes, we are now no longer planning to replace our current vehicle	4%	9%	8%
No, it has not impacted our plans to replace our current vehicle	46%	57%	55%
Don't know	12%	3%	4%
Total	100%	100%	100%

- Overall, 24% of respondents said that due to the cost-of-living-crisis they are planning to replace their current vehicle later than previously planned
- This was slightly more pronounced for current hybrid/EV users (27%) compared to current ICE users (23%)
- Overall, 55% of respondents said that the cost-of-living crisis hasn't impacted the planned timeframe for replacing their current vehicle

Number of responses = 204 (26 hybrid/EV, 178 petrol/diesel)

56% of respondents seeking lower upfront and/or running costs for next vehicle due to cost-of-living

Has the cost-of-living crisis affected how much you expect to spend on your next vehicle? Please select all that apply.

	Hybrid/EV users	Petrol/diesel users	Total
We will now be looking to purchase a vehicle at a cheaper price/lower monthly payment	27%	17%	19%
We will now be looking to purchase a vehicle with lower maintenance costs	23%	25%	25%
We will now be looking to purchase a vehicle with lower refuelling/charging costs	27%	22%	23%
No, it has not impacted how much we expect to spend on our next vehicle	50%	43%	44%
Don't know	8%	14%	13%
Total	100%	100%	100%

- The cost-of-living crisis appears to be having a slightly greater impact on the cost considerations, rather than timeframe, when thinking about replacing current vehicle
- Overall, 56% of respondents said they will be looking for lower upfront costs and/or lower running costs for their next vehicle compared to previous plans, as a result of the cost-of-living crisis

Number of responses = 204 (26 hybrid/EV, 178 petrol/diesel)

32% of current ICE drivers interested in replacing vehicle with hybrid, PHEV or BEV

When you consider changing your household's current car or van, which of the following fuel types are you likely to opt for?

	Hybrid/EV Users	Petrol/diesel Users	Total
Petrol	12%	36%	33%
Diesel	0%	16%	14%
Hybrid or plug-in hybrid	50%	25%	28%
Battery electric	27%	7%	10%
Other	4%	2%	2%
Don't know	8%	15%	14%
Total	100%	100%	100%

Number of responses = 204 (26 hybrid/EV, 178 petrol/diesel)

- 25% of current petrol/diesel drivers plan to replace current vehicle with a hybrid or plug-in hybrid, and a further 7% are interested in battery electric (BEV)
- 15% are still undecided
- Among current hybrid/EV users, most want to continue using hybrid or electric vehicles, however a small minority are looking to replace their current vehicle with a petrol vehicle

36% of current ICE drivers who intend to replace vehicle in next 2 years may switch to hybrid, PHEV or BEV

Petrol and diesel drivers only: When are you likely to next consider changing your household's current car or van **by** When you consider changing your household's current car or van, which of the following fuel types are you likely to opt for?

	Petrol	Diesel	Hybrid or PHEV	BEV	Other	Don't know	Total
0-2 years	40%	17%	30%	6%	1%	6%	100%
3-4 years	33%	15%	26%	7%	0%	19%	100%
5-7 years	29%	0%	36%	7%	7%	21%	100%
8-10 years	50%	0%	17%	0%	0%	33%	100%
Don't know	32%	22%	16%	10%	2%	19%	100%
Total	36%	17%	24%	7%	2%	14%	100%

- 36% of current ICE drivers who are intending to replace their current vehicle within the next 2 years are considering switching to hybrid, PHEV, or BEV, as are 33% of those planning to replace their vehicle in the next 3-4 years, and 43% of those planning to replace current vehicle in the next 5-7 years

Number of responses = 180

73% of ICE users do not intend to switch to hybrid or electric within next 3 years

Which of the following statements best describes your plans to replace your current vehicle?

	Hybrid/EV users	Petrol/diesel users	Total
I plan to replace my current vehicle with a hybrid or plug-in hybrid vehicle in the next 12 months	12%	6%	7%
I plan to replace my current vehicle with a hybrid or plug-in hybrid vehicle in the next 2-3 years	42%	16%	19%
I plan to replace my current vehicle with a battery electric vehicle in the next 12 months	12%	2%	3%
I plan to replace my current vehicle with a battery electric vehicle in the next 2-3 years	0%	3%	2%
I have no plans to replace my current vehicle with a hybrid/plug-in hybrid or battery electric vehicle within the next 3 years	35%	73%	68%
Total	100%	100%	100%

- 22% of current petrol/diesel drivers intend to replace their current vehicle with a hybrid or plug-in hybrid within the next 3 years
- A further 5% of current petrol/diesel drivers intend to replace current ICE vehicle with a BEV within the next 3 years
- 73% of current petrol/diesel drivers say they do not intend to replace current vehicle with hybrid/PHEV or BEV within next 3 years

Number of responses = 204 (26 hybrid/EV, 178 petrol/diesel)

37% of ICE drivers considering switch to hybrid or PH/BEV had plans delayed by cost-of-living crisis

Petrol and diesel drivers only: Has the cost-of-living crisis changed your previous plans around the timeframe for changing your household's current car or van?

by When you consider changing your household's current car or van, which of the following fuel types are you likely to opt for?

	Petrol/ diesel	Hybrid, PHEV or BEV	Don't know	Total
Yes, we are now planning to replace our current vehicle sooner than previously planned	13%	4%	0%	8%
Yes, we are now planning to replace our current vehicle later than previously planned	16%	37%	17%	23%
Yes, we are now no longer planning to replace our current vehicle	12%	4%	10%	9%
No, it has not impacted our plans to replace our current vehicle	54%	56%	69%	57%
Don't know	5%	0%	3%	3%
Total	100%	100%	100%	100%

- 37% of petrol and diesel drivers who are considering replacing their vehicle with a hybrid/PHEV or BEV in future stated that the cost-of-living crisis had delayed their plans for replacing their vehicle, compared to 16% intending to continue using ICE vehicles, and 24% of all respondents on average

Lack of convenient charging options as much of a barrier to going electric as purchase costs

To what extent do you agree or disagree with the following statements? Switching to an electric vehicle would be difficult for my household because of...

	% Strongly Agree or Agree		Average score	
	Hybrid /EV	Petrol/ diesel	Hybrid/ EV	Petrol/ diesel
Unaffordable purchase costs (upfront, or Personal Contract Purchase repayments)	42%	61%	3.0	3.8
Unaffordable maintenance costs	27%	38%	2.7	3.1
Unaffordable charging costs due to increased cost of energy	38%	51%	3.1	3.4
Lack of convenient private charging options	43%	67%	3.3	3.8
Lack of convenient public charging options	43%	69%	3.3	4.0

- For all respondents, and particularly current petrol/diesel users, unaffordable purchase costs are a key barrier to switching to an EV, although the lack of convenient private and public charging options appears to be at least as much of a barrier as purchase costs, if not slightly more important

Number of responses = 204 (26 hybrid/EV, 178 petrol/diesel)

Lack of private and public charging options more of a barrier for ICE drivers with no private parking

Petrol and diesel drivers only: To what extent do you agree or disagree with the following statements? Switching to an electric vehicle would be difficult for my household because of... **By** Where do you currently park your car or van when you're at home? Please select all that apply.

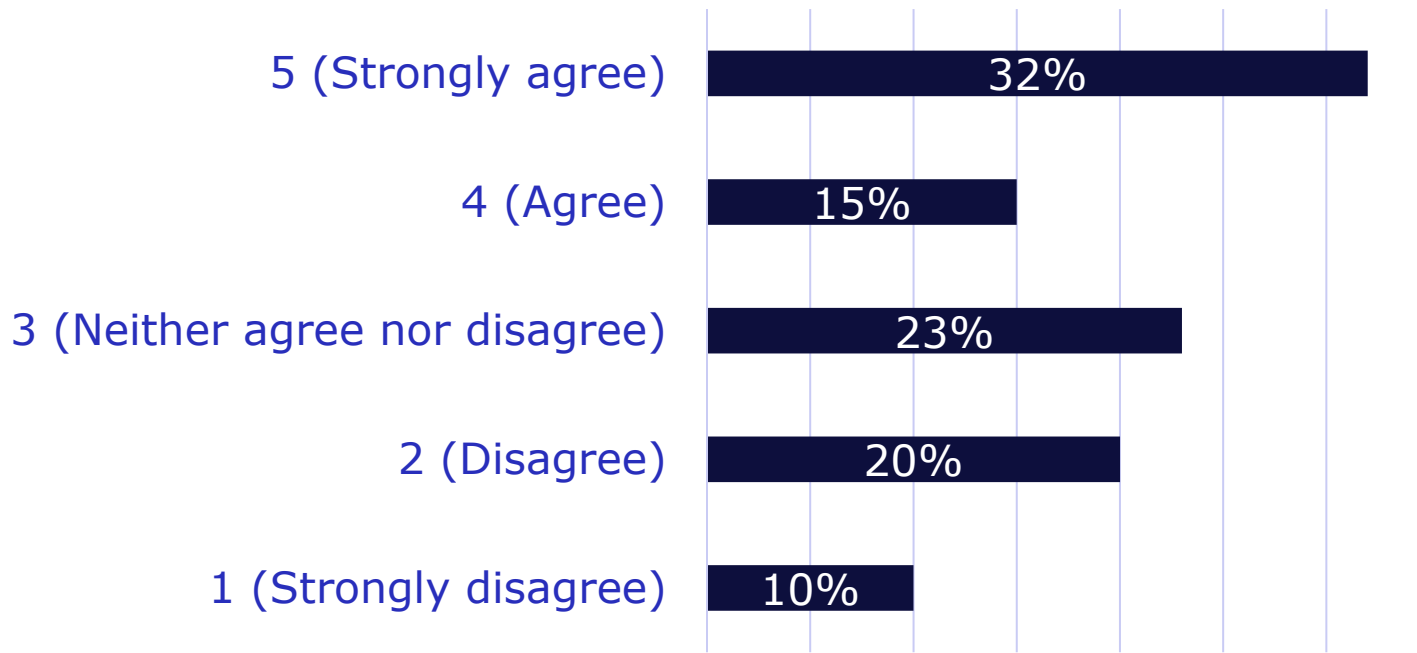
% Strongly Agree or Agree with following statements	Current parking location				
	Garage	Private driveway	Shared driveway	Allocated space in communal car park	On the street
Switching to EV would be difficult because of a lack of convenient private charging options	69%	58%	70%	71%	87%
Switching to EV would be difficult because of a lack of convenient public charging options	77%	64%	90%	57%	80%

- Petrol and diesel drivers who currently park on the street, in shared driveways, or in allocated car park spaces are more likely to see the lack of both private and public charging options as a barrier, compared to those with access to garages or private driveways

Number of responses = 180

Fairly strong interest in adapting charging times to benefit from lower energy prices

To what extent would you be open to changing the time of day that you charge an electric vehicle to take account of lower (e.g. off-peak) energy prices?



Number of responses = 204

- Consumers are fairly open to the idea of changing times of the day when their electric vehicle is charged to benefit from lower energy prices (e.g. outside of peak demand times) – nearly half agree with the idea
- Current hybrid or EV drivers are slightly more open to the idea – 54% agree, compared to 47% among petrol/diesel drivers

Information gaps and market-based factors also identified as barriers to switching

Qualitative research undertaken as part of this study (2 focus groups with 15 participants in total) revealed a multitude of other barriers which are impacting consumer confidence, including **lack of information**, and **limited choices** due to the emerging nature of the EV market

Cost

"I have held back on buying a new electric car due to the additional cost of living rises such as rises in heating costs, interest rates increasing my mortgage costs and general increases in everything. "

Charging infrastructure

"You're back to the chicken and egg, I suppose, aren't you? Do you need the charging infrastructure to be there before you buy the car, or do you buy the car in the hope the infrastructure gets there?"

Information

"Six out of eight dealers I went to to look at a car could not tell me how much it would cost to charge a car. They were selling £35,000 cars with no idea how much it would cost to recharge it to say 80% of its battery. They couldn't even give me a rough figure, so these people are selling these vehicles with no knowledge of what's the cost to run?"

Market confidence

"The second-hand car market, which will be the one that a lot of people will have to buy into because of the prices, your car won't have the manufacturer's claimed range because the battery will have degraded"



Attitudes towards on-street/ kerbside shared charging points

29% of terraced house and 38% of flat residents open to using on-street EV charging

To what extent would you be open to sharing on-street kerbside electric vehicle charging points with your neighbours? This would mean charging on-street overnight once every 2-3 days.

	Detached house	Semi-detached house	Terraced house	Flat	Other	Total
1 (Strongly disagree)	29%	20%	18%	31%	29%	23%
2 (Disagree)	29%	30%	26%	19%	43%	29%
3 (Neither agree nor disagree)	25%	23%	26%	13%	14%	23%
4 (Agree)	8%	12%	8%	13%	14%	10%
5 (Strongly agree)	8%	15%	21%	25%	0%	15%
Total	100%	100%	100%	100%	100%	100%
Average	2.4	2.7	2.9	2.8	2.1	2.6

- On average around 25% of respondents would be open to (i.e. they 'strongly agree' or 'agree' with) using shared on-street EV charging points
- Residents of terraced houses (29%) and flats (38%) are most open to using shared on-street EV charging points

Number of responses = 204

Lack of off-street parking drives greater openness (or resignation) to on-street charging

To what extent would you be open to sharing on-street kerbside electric vehicle charging points with your neighbours? **by** Where do you currently park your car or van when you're at home?

	Private driveway	Shared driveway	Allocated space in a communal car park	Garage	On the street	Total
1 (Strongly disagree)	24%	27%	22%	37%	15%	23%
2 (Disagree)	34%	0%	22%	22%	17%	29%
3 (Neither agree nor disagree)	20%	27%	0%	17%	31%	23%
4 (Agree)	9%	45%	11%	22%	10%	10%
5 (Strongly agree)	13%	0%	44%	2%	27%	15%
Total	100%	100%	100%	100%	100%	100%
Average	2.5	2.9	3.3	2.3	3.2	2.6

- Respondents who currently park their vehicle in an allocated space in a communal car park, shared driveway, or on the street, are most likely to be open to using shared on-street charging points (54%, 45% and 37% respectively), in contrast to those who have access to a private garage or driveway (24% and 22% respectively)

Number of responses = 204

On-street charging points – qualitative feedback from survey respondents

Support for on-street charging points

“Don't mind sharing if we can work something out.”

“Our mileage is such that we don't need to charge every day so sharing a charge point would suit us. And we have fairly good relationships with our neighbours.”

“I live in a terraced street with shared back yards, I will simply have no other option than to share with neighbours.”

Concerns about on-street charging points

Potential disputes due to unmet demand – “Think it could cause problems with neighbours if we all want to charge vehicles “

Vandalism / theft of charging equipment - “People will steal the £300 copper charging cable”

Security of the vehicle – “I am wondering about security for my car and if passers-by may just unplug it . We have high car crime in our area”

Faulty charging points - “What if the machine is faulty and it did not charge my car. At least with diesel and petrol you know how much fuel you have.”

Lack of flexibility/freedom – “Want the ability to charge my own vehicle when I want”

Lack of clarity around costs – “Don't know how it would work with costs“

Pavement clutter – “A danger to pedestrians, especially elderly and blind people”



Attitudes towards community charging hubs

Concept of local charging hubs is somewhat less popular than on-street/kerbside charging points

To what extent would you be open to parking and charging an electric vehicle overnight at a local charging hub?

	Private driveway	Shared driveway	Allocated space in a communal car park	Garage	On the street	Total
1 (Strongly disagree)	32%	18%	11%	39%	35%	31%
2 (Disagree)	42%	9%	44%	32%	29%	38%
3 (Neither agree nor disagree)	15%	36%	22%	17%	21%	17%
4 (Agree)	5%	36%	0%	10%	10%	7%
5 (Strongly agree)	6%	0%	22%	2%	6%	6%
Total	100%	100%	100%	100%	100%	100%
Average	2.1	2.9	2.8	2	2.2	2.2

- Local charging hubs are a less popular idea than on-street/kerbside charging points, with an average support score of 2.2 compared to 2.6 for on-street charging
- Respondents who currently park in an allocated space within a communal car park are most open to the idea of local charging hubs
- Of those who are open to the idea, 19% are willing to walk up to 5 minutes to a hub, while a further 37% are willing to walk up to 10 minutes

Community charging hubs – qualitative feedback from survey respondents

Support for community charging hubs

“We need every solution possible”

“good all round and good for the planet”

“If the cost was reasonable; and in a secure location, then I may be interested”

“I would like to find out more and I think it would be helpful all round”

“Great idea for those who live in say apartment blocks or inner-city, but I think I will always live in the suburbs”

Concerns about community charging hubs

Security of the vehicle – “Your car is less secure. Basically, it's a showroom for thieves”

Personal safety – “I would be worried about getting home in the dark on my own”

Distance from home – “I want my car outside my house, not somewhere I can't see it and would have to go to fetch it in the morning after charging even if I'm not going anywhere”

Getting to and from the hub – “There is not enough parking generally so where would these hubs be, how would I get to/from it to my home?”

Lack of flexibility/freedom – “Inconvenient - I don't use my car every day, so would need to plan to ensure it was charged when I needed it and factor in time to take it and pick it up again”

Space requirements – “If that was the norm, you'd have to build multi storey car parks all over...”



Attitudes towards electric vehicle car clubs

17% of respondents on average would be open to using EV car clubs

To what extent would you be open to using an electric vehicle carpool club, rather than owning or leasing an electric vehicle?

	Hybrid/EV users	Petrol/diesel users	Total
1 (Strongly disagree)	42%	32%	33%
2 (Disagree)	19%	35%	33%
3 (Neither agree nor disagree)	15%	16%	16%
4 (Agree)	8%	8%	8%
5 (Strongly agree)	15%	8%	9%
Total	100%	100%	100%
Average	2.3	2.3	2.3

Number of responses = 204

- On average 17% of respondents 'strongly agree' or 'agree' with the idea of using an EV car club rather than owning or leasing an electric vehicle
- Current EV or hybrid users are somewhat more likely to be open to using EV car clubs (23%)

Electric vehicle car clubs – qualitative feedback from survey respondents

Support for EV car clubs

“Seems inexpensive and good for the environment”

“This seems like a cheaper and better alternative to owning a car and saves me money”

“This would enable me to run only one car instead of two. Now that one of us is retired and uses public transport often, these clubs would solve a lot of issues with owning multiple vehicles”

“As we are low-mileage users, it sounds great for us”

“Sounds a good idea. If I could not afford to pay for my own private car I would try this.”

“I have used a car club in the past and it worked really well. Public transport options need to be a good alternative”

Concerns about EV car clubs

“Would rather not compromise my freedom and independence”

“I don't use a car often enough to cover the cost + the inconvenience of having to get to and from the club every time I want to use a car”

“We have been part of a Car Club before we bought our first electric vehicle. It was quite time consuming going to collect the vehicle and we had issues fitting child car seats in”

“It feels expensive for what it is. I'd consider it more for lower day prices and lower block times”

“Don't really use a car often enough to warrant the cost”

“I am concerned about potential blame for damage by other users, as with hire cars, and the time and stress of checking for damage before taking out each time. “

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