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Commission

Consumer Monitor 2022

EUROPEAN ALTERNATIVE FUELS OBSERVATORY
EUROPEAN AGGREGATED REPORT



Mobility and
Transport

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European Alternative Fuels Observatory

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1. The EAFO EU consumer monitor: key findings & conclusions

Through different European policies, the energy and transportation sectors are compelled to intensify the adoption of renewable energy sources and hasten the electrification of various transport modes. In particular, the recently approved Alternative Fuels Infrastructure Regulation (AFIR), sets a framework for an EU-wide approach for the deployment of refuelling and recharging infrastructure, including road transport electrification¹.

The European Alternative Fuels Observatory (EAFO) supports the EU transport electrification policies by providing information on the evolution of alternative fuel vehicles and recharging/refuelling infrastructure at the EU level and per country. The EAFO also includes a dedicated section for policy makers and consumers, addressing a wide range of stakeholders including different government levels, vehicle manufacturers and other e-mobility industry companies, automobile organisations, etc.

As part of the EAFO consumer section², a survey was launched in September 2022 in ten EU countries³ to better understand consumers' intentions to adopt battery electric vehicles (BEVs), their e-mobility and recharging behaviour, and the challenges they perceive or encounter in this sense. Detailed information on the survey methodology is available in annex I. Please note that the 2022 'elektrisch rijden monitor'³ (Electric driving monitor) of the Dutch partner ANWB was used as an example. Moreover, there were two channels used to distribute the EAFO Consumer Monitor survey:

- A panel to have a representation of the general population including non-BEV and BEV drivers.
- The EAFO partner AVERE reached BEV drivers with a broad dissemination of the survey.

This report highlights the main findings of the 2022 EAFO Consumer Monitor survey focusing on passenger BEV cars, and the presents the **EU aggregated results of the ten surveyed countries** in two main parts:

Part 1 presents the EU surveyed participants' attitude, interest, and the information that could support BEV (potential) drivers. It is based on the general population surveyed through the panel, which include 16,664 valid responses from BEV (380) and non-BEV drivers (16,284).

Part 2 focuses only on BEV drivers, from both datasets by merging the panel and the AVERE dataset, with 1,378 valid responses in total. This gives an insight into the EU-aggregated BEV drivers' e-mobility and recharging behaviour.

The report is complemented with a comparison of the results using key indicators for the ten countries surveyed and the EU aggregated results. Finally, this report includes an overview of the 2022 situation in the EU-27 in terms of passenger BEVs and recharging infrastructure using the EAFO's latest numbers.

For more than a decade, three main barriers have been identified regarding the mass up-take of passenger battery electric vehicles (BEVs): **purchase price, driving range and availability of recharging infrastructure**. There have been significant advances in this sense: battery costs have dropped by 90%, vehicle range has increased from 100-150 km up to 400+ km, there is an important growth in new BEVs registrations, and the recharging infrastructure network is expanding. Nevertheless, BEVs represent only 1.23% of the total passenger cars fleet in the EU-27, and the recharging infrastructure coverage is still limited in some countries and urban areas^{4,5}.

1 <https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A52021PC0559>

2 <https://alternative-fuels-observatory.ec.europa.eu/consumer-portal>

3 [ANWB Elektrisch Rijden Monitor 2022. Rapportage consumenten perspectief elektrisch rijden](#)

4 [Van Mierlo, J., Berecibar, M., El Baghdadi, M., De Cauwer, C., Messagie, M., Coosemans, T., Jacobs, V. A., & Hegazy, O. \(2021\). Beyond the State of the Art of Electric Vehicles: A Fact-Based Paper of the Current and Prospective Electric Vehicle Technologies. World Electric Vehicle Journal, 12\(1\), 1-26. \[20\]](#)

5 <https://alternative-fuels-observatory.ec.europa.eu/>

* The ten countries surveyed were: Austria, Belgium, Denmark, France, Germany, Hungary, Italy, Netherlands, Slovenia, and Spain

Taking these barriers and developments into account, the key findings of the 2022 EAFO consumer monitor are:

- a. Focusing only on BEV driver respondents (part 2), the EU-aggregated BEV driver is represented as a -35-year-old male, living in a detached house and with a relatively high income who has a university or higher education diploma.
- b. 41% of EU participants are interested in BEVs and 30% are familiar with these cars. 31% consider buying a BEV in a time frame of 0-5 years. 54% have a positive attitude towards BEVs, and in all EU surveyed countries the most important BEVs advantage is that these are better for the climate. EU drivers also consider that BEVs are economical to use and identified this as an advantage.
- c. In the ten surveyed countries the number one BEVs disadvantage is their price. The EU participants are willing to pay 25.000 € for a BEV and 41% of the BEV drivers paid a purchase price between 20.000 € and 40.000 €.
- d. BEVs' insufficient range is also considered a limitation. A minimum desired range between 300 km to 500 km was the choice of 38% of all EU drivers surveyed. 500 km and more would be the preference of also 38%.
- e. 42% of the surveyed EU drivers indicated that they are not aware of any subsidies for electric vehicle driving despite the financial support measures applied by different governance levels. Information on batteries and/or driving range was considered the most relevant to support electric driving.
- f. 97% of EU BEV drivers use their vehicles daily or several times a week. Their BEV is mostly new (67%) and privately owned (70%).
- g. In all ten EU countries surveyed the most important characteristic of a public recharging session is recharging speed. For the EU BEV drivers payments through a charging card or app are also important. The latter is the number one payment option in all the countries. On the other hand, 30% of BEV respondents do not always take the battery level into account when recharging.
- h. Limited recharging private or public options are also considered a disadvantage. The EU BEV driver's frequency of use of fast public recharging points is of 21% for slow recharging stations and 10% for public fast rechargers. Moreover, 48% of the EU BEV drivers recharge often at home.

Thanks to these results, the following **conclusions could be made about the three main barriers identified:**

1. **BEV costs and desired range:** In March 2023 there were only twelve BEVs models available with a purchase price between 20,000 € - 35,000 €. These twelve models represent 5% of the total BEVs models in the market. The driving range barrier could be linked to a lack of affordable new BEVs with a range of 300 km or more⁶.
2. **BEV costs:** Information beyond the BEV purchase price, including the existing models' km range, the Total Cost of Ownership⁷, and the available financial support could help potential BEV drivers to have a clearer opinion on electric driving.
3. **BEV costs:** the second-hand and leasing options at an affordable price need to be further considered. 33% of the EU BEV drivers bought a second-hand BEV, while 22% indicated that they lease a car for which the majority (57%) pay between less than 500 € a month.
4. **BEV range insufficiency:** The BEV factory range was enough for 86% of the EU BEV drivers. 45% indicated a factory range of 200-400 km. Range satisfaction can be related to the km driven per day (126 km) and the main activity for which the BEV is used (leisure and other activities such as doctor's appointments). Moreover, for holidays or trips beyond 500 km, the EU BEV drivers considered problems related to '*charge anxiety*' slightly more relevant than '*BEVs' range anxiety*'.
5. **Public recharging network:** EU BEV drivers do not have a clear overview of the public recharging points in their vicinity and they do not consider that there is a sufficient choice between different operators of recharging points/mobility providers. In this sense, information on the recharging network was also one of the support measures that potential EU BEV drivers would welcome.

Finally, the EAFO 2022 Consumer Monitor survey results also show the need to address those groups less represented among BEV drivers in the ten EU countries surveyed such as females, households having a lower income, or lower education level.

6 <https://alternative-fuels-observatory.ec.europa.eu/consumer-portal/available-electric-vehicle-models>

7 <https://alternative-fuels-observatory.ec.europa.eu/consumer-portal/calculator>

Consumer monitoring results: general population views on driving battery electric vehicles in EU surveyed countries

This section presents the **results of the EU general population surveyed through the panel: 16,664 valid responses from BEV (380) and non-BEV drivers (16,284)**. It focuses on their attitude, interest and information that could support them to further drive BEV cars.

Socio-demographics general population

Based on the survey results, the **EU BEV driver** is represented as a -35-year-old male, living in a detached house, and with a monthly income between 2,000 € and 3,999 € who has a university or higher education diploma. The main difference between both groups are the percentage of female drivers, the age group, education level and that non-BEV drivers live in an apartment or studio.

Although most EU BEV drivers surveyed live in a detached house, 22% live in an apartment or studio, which could influence their recharging location options if they do not have access to a parking spot with a charging station/wallbox.

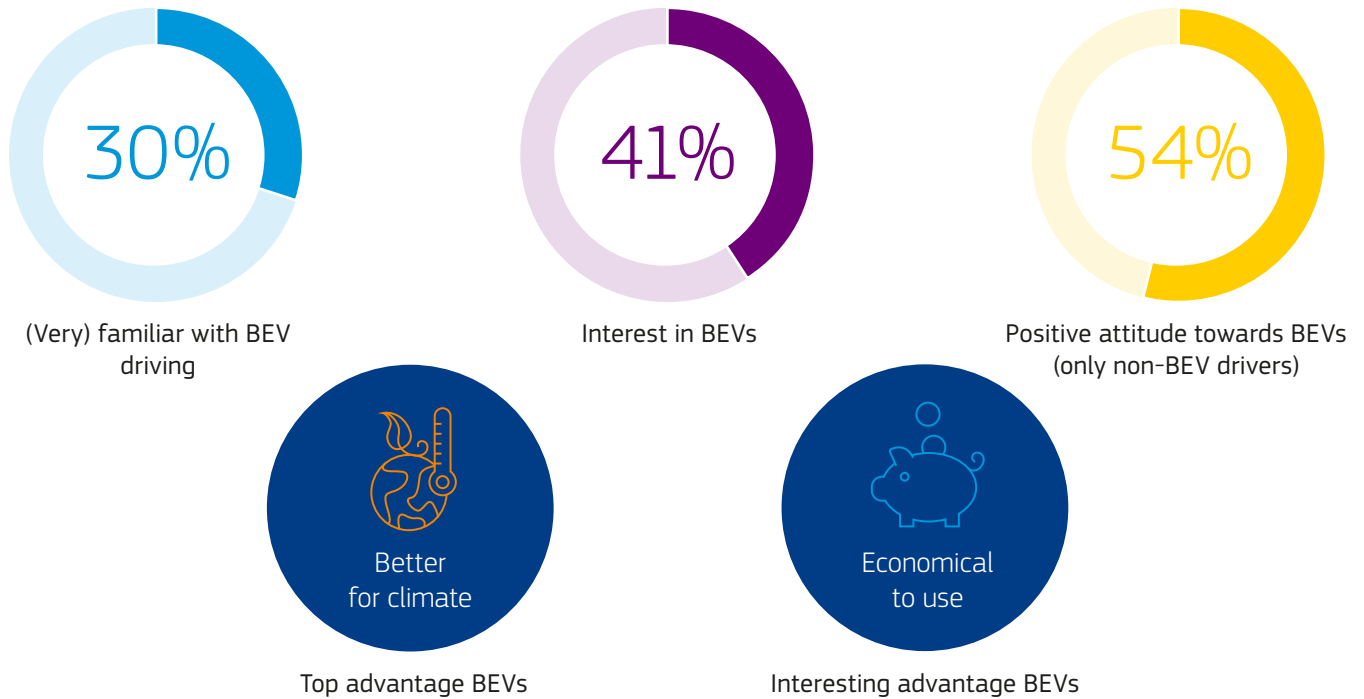
Table 1: Socio-demographic results from the survey for the general population

	BEV driver	Non-BEV driver
Gender		
Female	39%	51%
Male	61%	49%
Other	0%	0%
Age group		
-35	41%	25%
35-55	35%	36%
55+	24%	39%
Net income		
< 800 €	5%	7%
800-1999 €	14%	31%
2000-3999 €	36%	40%
4000-5999 €	26%	16%
≥ 6000 €	19%	6%
Education		
Early childhood- primary education	10%	16%
Secondary education	35%	49%
University or other higher education (e.g., college, polytechnic, academy)	55%	34%
Accommodation		
Apartment/studio	22%	40%
Semi-detached house	7%	8%
Attached house	12%	13%
Detached house	57%	37%
Other	0%	2%

Attitude and motivation towards battery electric vehicles in the EU surveyed countries

A third of respondents at **EU level** indicated that they are (very) familiar with BEVs, 41% are interested in these cars, and 54% have a positive attitude towards BEVs. In all the ten countries surveyed, the main advantage of BEVs is that these are better for the climate (no tailpipe emissions). Moreover, EU drivers consider BEVs' economical use as an advantage.

Table 2: General population opinion and views on battery electric vehicles

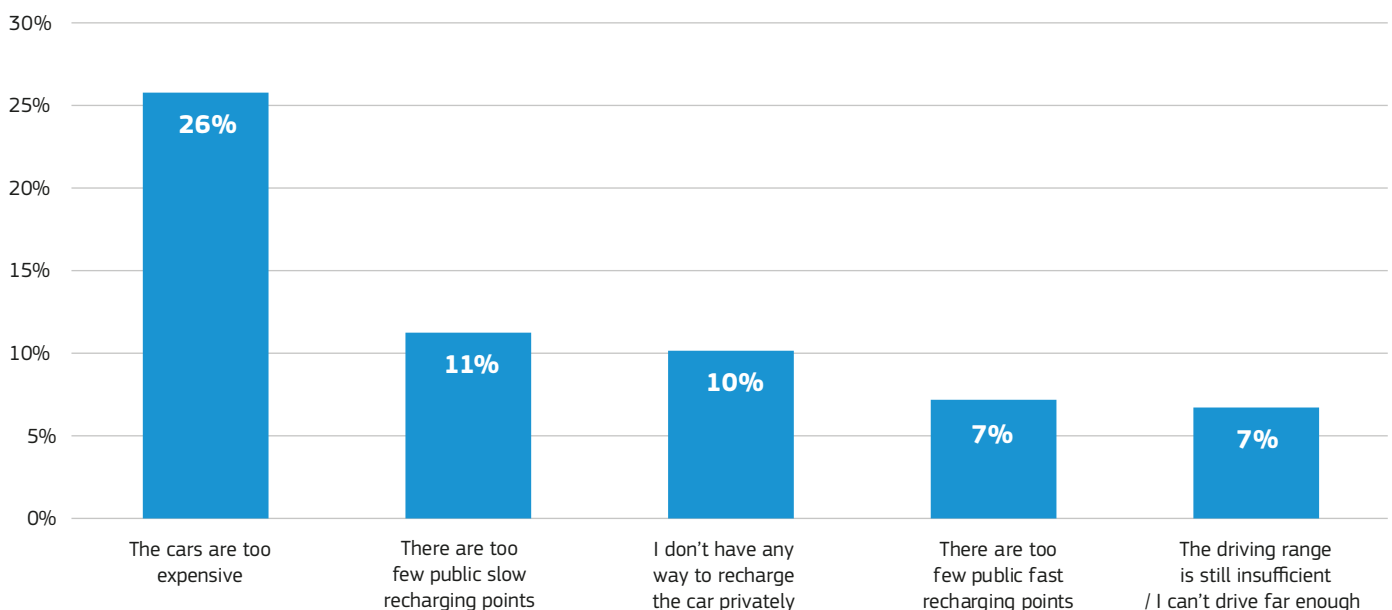


Main barriers and opportunities to adopt battery electric vehicles

Disadvantages of driving battery electric vehicles in the EU surveyed countries

EU survey participants were asked to choose the five most relevant disadvantages of driving battery electric vehicles. As previously reported, these include the price of BEVs, limited recharging options (either private or public), and BEVs' range.

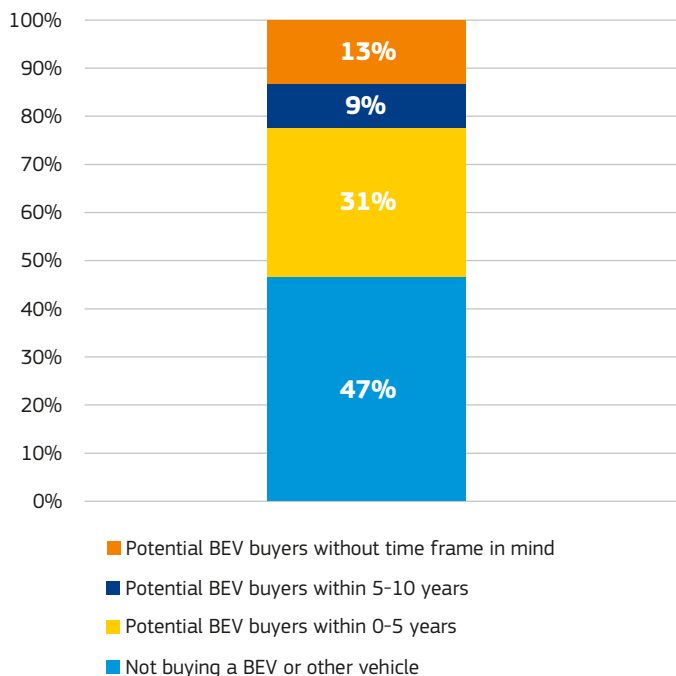
Figure 1: EU drivers' top five identified disadvantages of battery electric vehicles



Time frame to buy a battery electric vehicle in the EU surveyed countries

47% of the EU respondents do not consider buying a battery electric vehicle. 31% would do so in a time frame of 0-5 years.

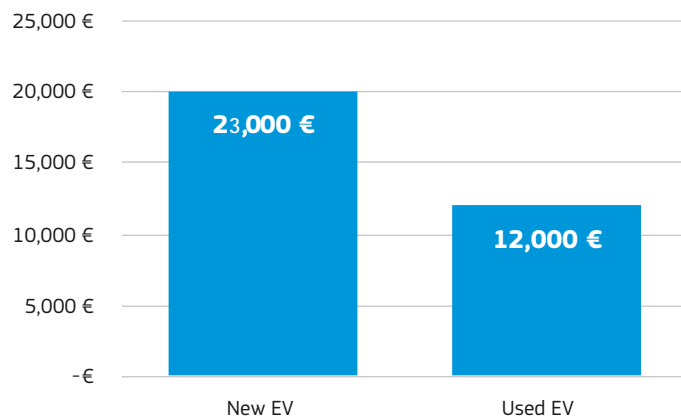
Figure 2: EU drivers' time frame to buy a battery electric vehicle



Willingness to pay and desired range of a battery electric vehicle in the EU surveyed countries

The median price that all EU respondents are willing to pay for a used BEV is 52% of the price of a new car. When looking at only the BEV drivers (merged datasets) for 41% of them the purchase price paid is between 20,000 € and 40,000 €.

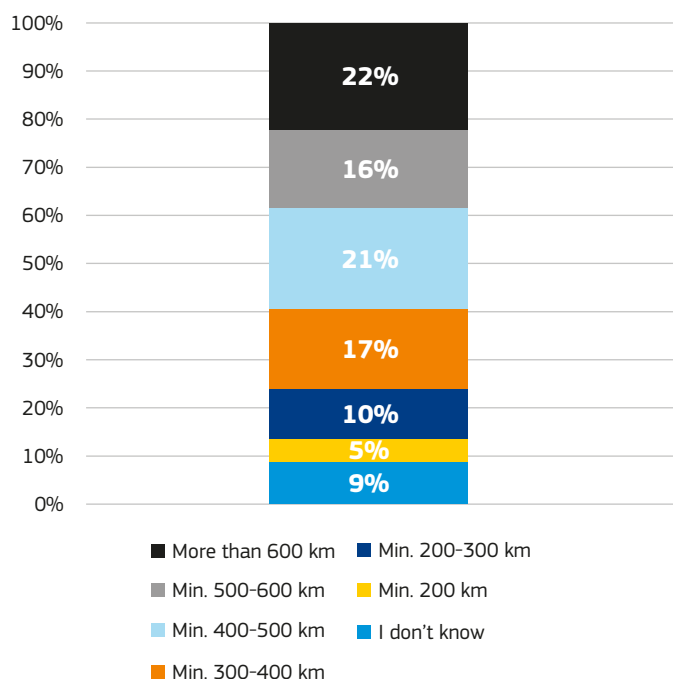
Figure 3: EU drivers' willingness to pay for a new & used battery electric vehicle



Desired range battery electric vehicle in the EU surveyed countries

In the 2022 survey desired range was described as the number of km that can be driven with a full battery without recharging. A minimum desired range between 300 km and 500 km was the choice of 38% of all EU drivers surveyed. 38% would prefer a range of 500 km and more.

Figure 4: EU drivers desired range of a battery electric vehicle



The current BEV market consists of a considerable amount and variety of models (178) with a range between 300 and +600 km (models' variance in March 2023 according to the EAFO). On the other hand, there are only twelve BEVs models available with a purchase price between 20,000 € - 35,000 € (representing 5% of the total BEVs models in the market). These have an average range of 193 km (min 95 km, max 300 km), and include mostly cars in the A and B segments (supermini, e.g., city cars), with a couple of models in the C segment (compact, e.g., small family cars)⁸.

The European Union has implemented different financial mechanisms to support road transport electrification:

- [The European Investment Bank \(EIB\) Transport Lending Policy](#) ensures that the Bank's activities are consistent with EU policies. The 'Cleaner Transport Facility' supports the deployment of cleaner transport vehicles and their associated infrastructure.
- [The Alternative Fuels Infrastructure Facility \(AFIF\)](#) combines grants from the Connecting Europe Facility (CEF) to install alternative fuels infrastructure along the trans-European network (TEN-T). The total budget between 2021 and 2023 of this initiative is of 1,575 M€.
- The EU has different funding programmes that provide funding for projects addressing transport electrification. The EU has contributed with 1,417 M€ to finished projects, and with 581 M€ to on-going ones. An overview of the different EU programmes can be found at the EU Transport Research and Innovation Monitoring and Information System portal [TRIMS](#). Calls for proposals are published at the [EU Funding & tender opportunities portal](#).

8 <https://alternative-fuels-observatory.ec.europa.eu/consumer-portal/available-electric-vehicle-models>

3. Consumer monitoring results: Mobility and recharging behaviour of battery electric drivers in EU surveyed countries

This section focuses on **BEV EU drivers (only) from both datasets (the merged panel and AVERE dataset, with 1,378 valid responses in total)**. The results of the EAFO 2022 survey give an insight into who the EU BEV driver is, their mobility behaviour, purchase cost and range expectation towards BEVs. Results on recharging behaviour are also presented.

Socio-demographic indicators for the BEV driver in the EU surveyed countries

The table below shows the main socio-economic indicators of the BEV respondents. Based on the survey results and when looking at a bigger sample of **EU BEV drivers (only)**, they are represented as a -35-year-old male, living in a detached house, and with a monthly income between 2,000 € and 3,999 € who has a university or other higher education diploma.

Table 3: Socio-demographic results from the survey for the BEV EU driver

Gender	
Female	19%
Male	81%
Other	0%
Age groups	
-35	16%
35-55	51%
55+	34%
Net income	
< 800 €	4%
800-1999 €	17%
2000-3999 €	39%
4000-5999 €	25%
≥ 6000 €	15%
Education	
Early childhood-primary education	4%
Secondary education	46%
University or other higher education (e.g., college, polytechnic, academy)	50%
Accommodation	
Apartment/studio	20%
Semi-detached house	8%
Detached house	9%
Attached house	62%
Other	1%

Mobility behaviour and vehicle ownership of battery electric drivers in the EU surveyed countries

Most **EU BEV drivers** surveyed use their vehicle several times a week or daily. Most BEVs are new privately owned cars, driven by 'recent' BEV drivers.

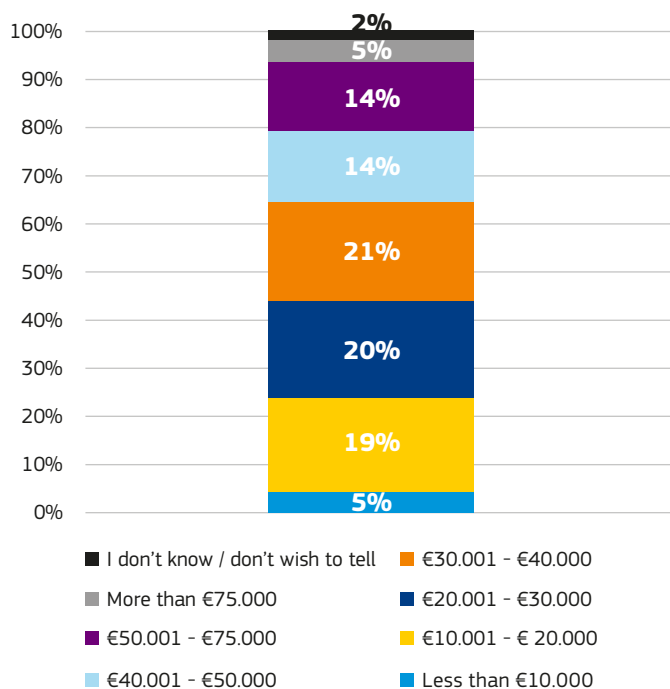
Table 4: BEV driver behaviour and vehicle ownership

<1 year to 3 years as BEV driver	62%
3 years to 5 years or longer as a BEV driver	38%
Average km driven a year	19,915
Average km driven a day	126
BEV drivers using their vehicle daily to several times a week	97%
Main activity when driving their BEV	Shopping & other activities (e.g., doctor's appointments)
BEV ownership	
Leased BEV	22%
BEV company car (if employee)	8%
Privately owned BEV	70%
New vs., second-hand BEVs	
New BEV	67%
Second-hand BEV	33%

Purchase and lease price paid by BEV drivers in the EU surveyed countries

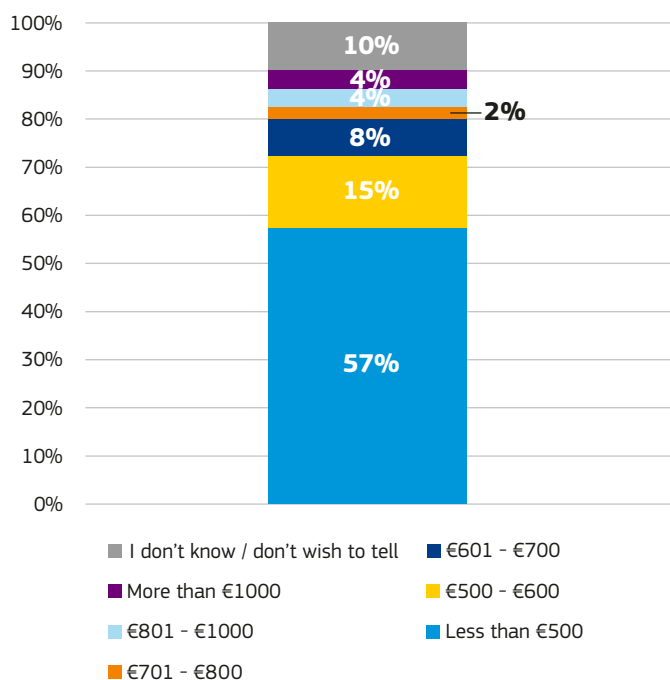
41% of the **EU BEV drivers** surveyed indicated that the purchase price paid for a BEV is between 20,000 € and 40,000 €. 33% paid between 40,000 € or more. 19% paid between 10,000 € and 20,000 €.

Figure 5: EU BEV drivers' purchase price for their battery electric vehicle



On the other hand, 57% of the **EU BEV driver participants** that responded that their first car is leased (privately or for business purposes) pay less than 500 € per month. This could be an interesting alternative to purchasing a vehicle, although this applies to 22% of the EU full electric car drivers surveyed.

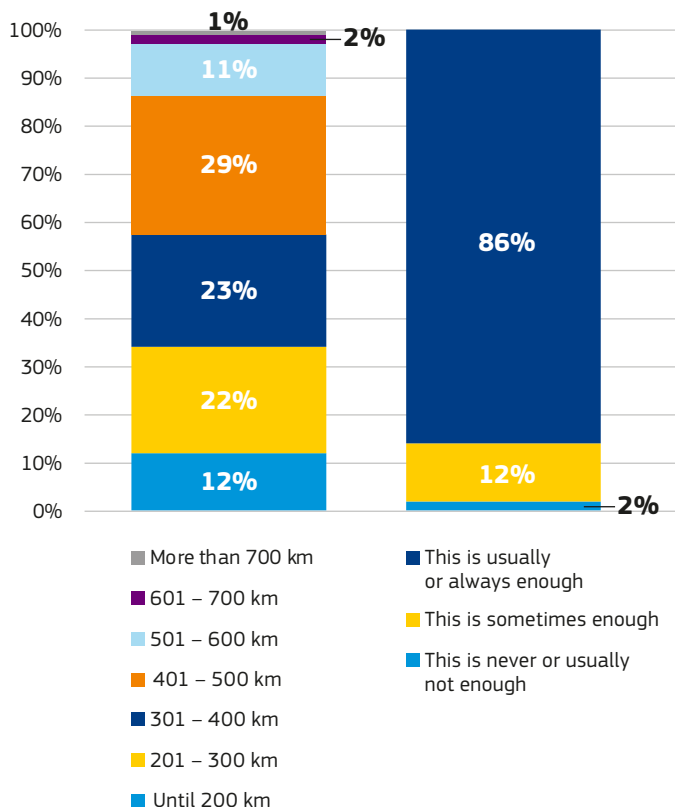
Figure 6: EU BEV drivers lease price for their battery electric vehicle



Factory range and range satisfaction of fully electric cars used by BEV drivers in the EU surveyed countries

Factory range refers to the km a new BEV can drive with the available vehicle battery after running a World Harmonised Light Vehicle Test Procedure (WLTP) test cycle. 45% of the EU BEV drivers indicated a factory range of 200-400 km.

Figure 7: Factory range and range satisfaction according to EU BEV drivers



It is noteworthy that most EU drivers who drive battery electric vehicles reported that the original range of their vehicles was sufficient when asked about it.

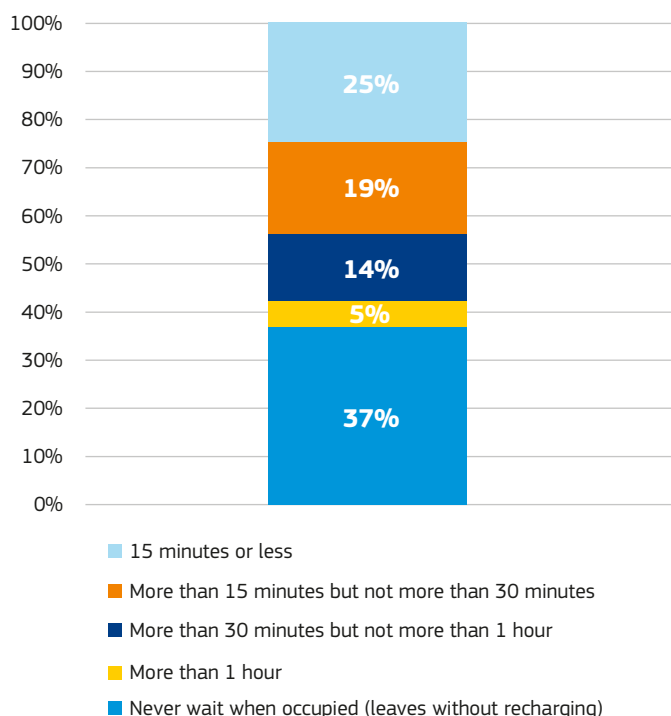
In addition, range satisfaction can be related to the km driven per day (126 km), and the main activity for which the BEV is used (leisure and other activities e.g., doctor's appointments).

Recharging behaviour of battery electric drivers in the EU countries surveyed

Recharging according to battery level and waiting time at public recharging points of EU BEV drivers

Surveyed EU BEV drivers were asked what the longest waiting time was to use a public recharging point. 37% never wait when this is occupied (they leave without recharging), while 25% waited for 15 minutes or less. Still, 33% waited between 15 minutes to 1 hour. Furthermore, 30% of respondents do not always take the battery level into account when recharging.

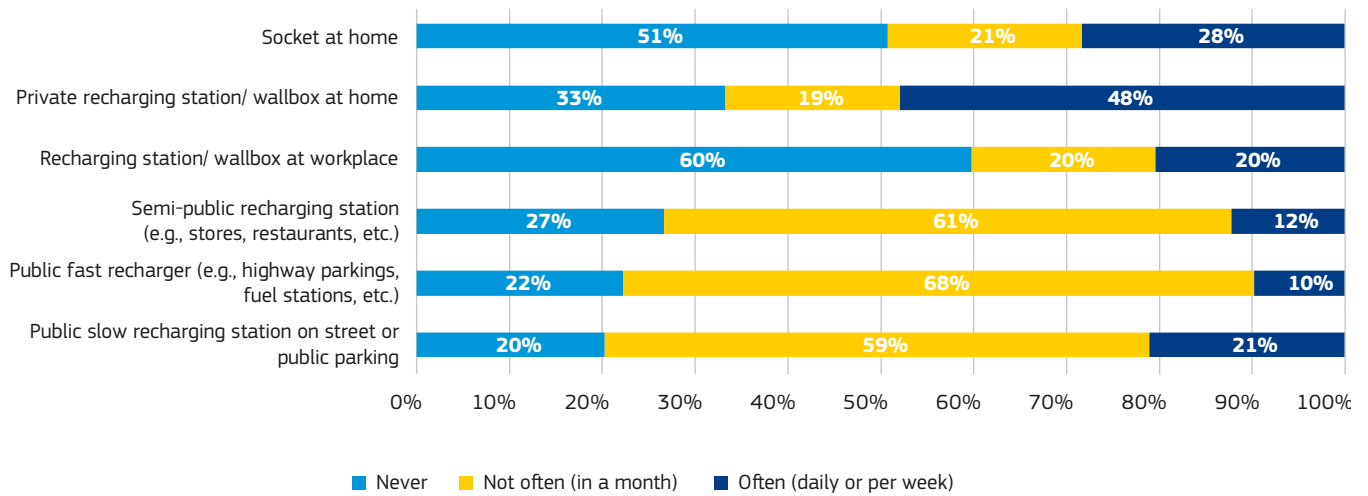
Figure 8: EU BEV drivers waiting times when using a public recharging point



Recharging location and frequency of use by EU BEV drivers

For **EU BEV drivers** a private recharging station or wallbox at home is the most frequently used location. Public slow and fast recharging stations are relatively often used (21% and 10% respectively).

Figure 9: Recharging location and frequency used by EU BEV drivers



Important characteristics of a public recharging session for EU BEV drivers

EU BEV driver respondents were asked to indicate the most important characteristics of a public recharging session. The recharging speed for a quick session was the most important. Next to this, characteristics related to payment options were considered relevant, with a subscription pass/app being chosen above a spot payment option. Moreover, the possibility to pay per kWh was also considered as being a convenient option.

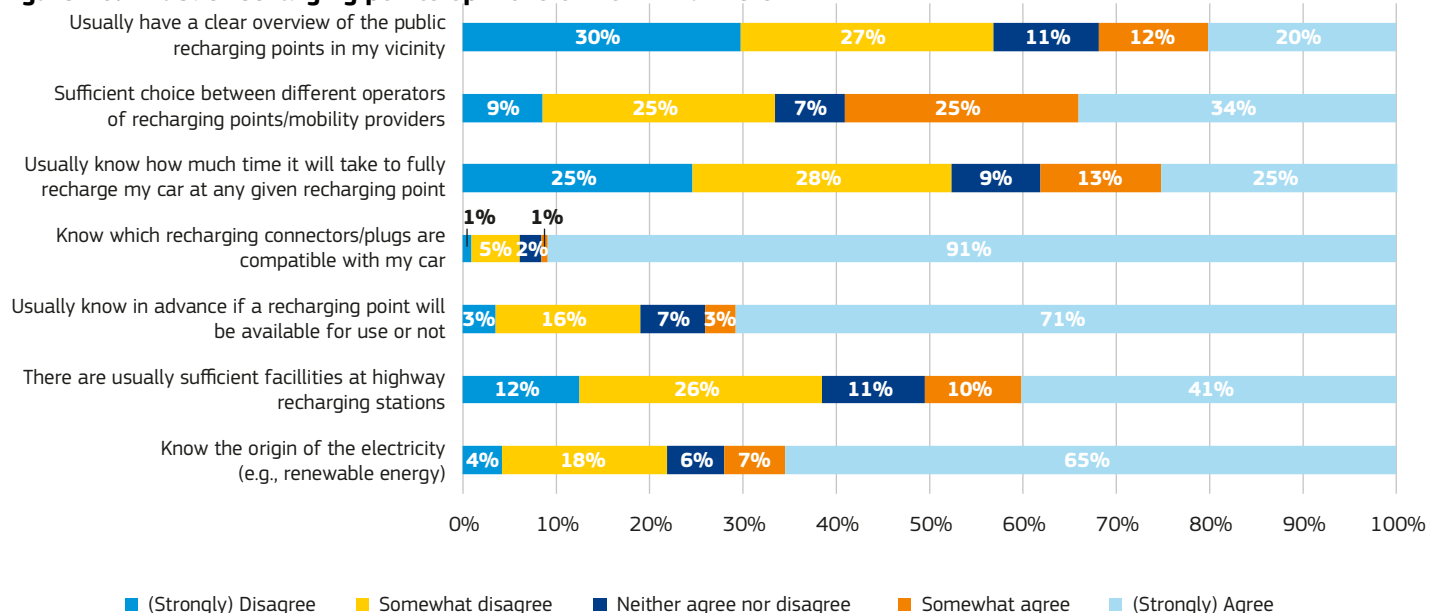
Table 5: Important characteristics of a public recharging session

Recharging speed/power output of the recharging point, so I can get the quickest possible recharge	1
Easy access and payment via my recharging subscription (pass/app)	2
Possibility to pay per kWh only (instead of per minute or per session)	3
Short/no waiting time to access the recharging point, to avoid queuing	4
Clear and transparent price information, so I know how much I will be charged for my recharging session	5
Convenient on the spot payment options (e.g., debit/ credit card)	6
Possibility to do something else while your car recharges/amenities on site (food, coffee, toilets, etc.)	7
Integrated cable, so there is no need to get the cable out of the trunk	8

EU BEV drivers' opinion and payment options at public recharging points

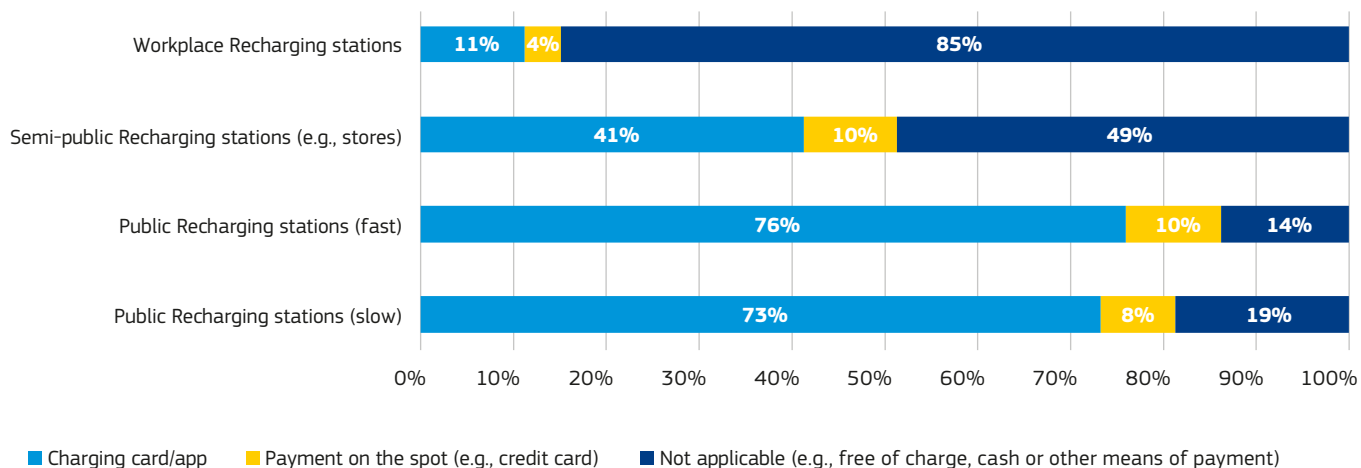
Most **EU BEV drivers** know which recharging connector is compatible with their car, know in advance if a recharging point is available, and know the origin of the electricity at the public recharging point. On the other hand, they do not have a clear overview of the public recharging points in their vicinity, and they do not consider that there is a sufficient choice between different operators of recharging points/mobility providers. In this sense, information on the recharging network was also one of the support measures that potential BEV EU drivers would welcome. In addition, AFIR (art. 18) foresees the identification of operators and mobility providers and the data that shall provide, including the geographical location of recharging points.

Figure 10: Public recharging points opinions of EU BEV drivers



In the case of public recharging stations (both slow and fast), a charging card/app is the first option used. Workplace recharging stations mostly use other type of payments (e.g., free of charge, cash, etc.), while for semi-public recharging stations, both cards/apps other means of payment are an option.

Figure 11: Payment options at recharging stations



Main problems encountered by EU BEV drivers when travelling abroad

Holidays or other trips beyond 500 km were also an important activity for 48% of the **EU BEV drivers**. When they were asked to rank the main problems they encountered when travelling abroad, the range limitations of their BEV only came in fourth place.

Table 6: Problems encountered when travelling abroad

I don't think I can recharge my car at my travel destination	1
There are too few recharging stations along the way	2
I don't have enough information about where to recharge while on the road	3
Due to the limited range of my electric car, I would have to stop too often to recharge my car along the way	4
Due to the slow and therefore long recharging times, I would lose too much time for recharging my car	5
I find it overly burdensome to plan my trip in function of my recharging needs	6
I find it complicated or prohibitively expensive to pay for my recharging abroad (roaming issue)	7

4.

Comparative results of the EU countries surveyed

The number one BEV driving disadvantage identified in all cases is the purchase price of the cars. Moreover, the most important characteristic of a public recharging session in the ten EU countries surveyed is recharging speed, with a charging card or app being the most used payment option at public recharging points.

Table 7: Barriers and opportunities BEV driving (general population)

Country	Main disadvantage	% BEV potential drivers	Not aware of subsidies for electric driving	Existing financial incentive (end 2022) ⁹
Austria	BEVs are too expensive	48%	34%	VAT deduction and exemption from tax for BEVs. No CO ₂ tax. Purchase subsidies.
Belgium		47%	54%	Limited or exemption from registration and ownership taxes at the regional level. Federal deduction of investments for companies. Limited or exemption on road taxes.
Denmark		56%	49%	Registration tax reductions. Company car tax deduction. Taxes on ownership are based on CO ₂ emissions.
France		40%	35%	Registration tax exemption. BEVs, FCEVs (fuel cell electric vehicles), and PHEVs (Plug-in Hybrid Electric Vehicles -with a range of > 50km) are exempt from the mass-based malus. Purchase subsidies. Exemption from CO ₂ -based tax components.
Germany		53%	33%	Motor vehicles tax exemption. Company car tax deduction. Tax exemption for charging at the workplace. Exemption from the annual circulation tax for CO ₂ emission. Purchase subsidies.
Hungary		66%	44%	Tax-exempt from registration, ownership, company car tax and property transfer tax.
Italy		63%	45%	Ownership tax exemption for a period of five years after registration. Afterwards reduced rate (compared to petrol cars). Company car tax discount. Purchase subsidy.
Netherlands		49%	41%	No purchase & motor vehicle taxes. Minimum rate (16%) for company car tax. Purchase subsidy.
Slovenia		39%	47%	Purchase subsidy & long-term loans at subsidised rates. The minimum additional tax rate on acquisition.
Spain		67%	44%	Ownership tax reduction of 75% for BEVs in main cities. Purchase subsidies. BEVs are fully exempt from paying the car registration tax. Exemption from 'special tax' for CO ₂ emissions.
EU 10 countries		53%	42%	Financial support through grants and loans.

⁹ For more detailed overview, please refer to the "Incentives & legislation" page on the country report pages of [EAFO](#)

Table 8: Mobility & ownership of car BEV driver (merged datasets)

Country	3 years to 5 years or longer as BEV driver	BEV drivers using vehicle daily / several times a week	Leased BEV (business or private)	BEV company car (if employee)	Privately owned BEV	New BEV	Second-hand BEV
Austria	42%	95%	29%	11%	60%	73%	27%
Belgium	11%	90%	17%	28%	55%	60%	40%
Denmark	15%	90%	3%	3%	94%	50%	50%
France	46%	99%	20%	3%	77%	77%	23%
Germany	20%	92%	26%	9%	65%	79%	21%
Hungary	47%	99%	16%	9%	75%	49%	51%
Italy	28%	91%	16%	13%	71%	87%	13%
Netherlands	28%	97%	21%	16%	63%	70%	30%
Slovenia	45%	93%	61%	8%	31%	60%	40%
Spain	63%	97%	4%	12%	84%	77%	23%
EU 10 countries	38%	97%	22%	8%	70%	67%	33%

Table 9: Recharging behaviour BEV drivers (merged datasets)

Country	Waiting time 15 min or less at recharging point	Never waits for recharging point (leaves without recharging)	BEV drivers recharging often without/ not always considering battery level	% time using slow public recharging point daily/ per week	% time using fast public recharging point daily/ per week	Most important characteristic public recharging session	Most used payment option at slow & fast public recharging point
Austria	32%	46%	32%	9%	5%	Recharging speed to get the quickest possible recharge	Charging card or app
Belgium	25%	41%	64%	24%	9%		
Denmark	21%	14%	34%	47%	28%		
France	21%	31%	38%	18%	9%		
Germany	22%	44%	18%	14%	10%		
Hungary	22%	37%	21%	11%	8%		
Italy	17%	30%	45%	53%	22%		
Netherlands	30%	32%	31%	29%	16%		
Slovenia	20%	36%	43%	35%	13%		
Spain	21%	42%	31%	28%	14%		
EU 10 countries	25%	37%	30%	21%	10%		

5. The European context

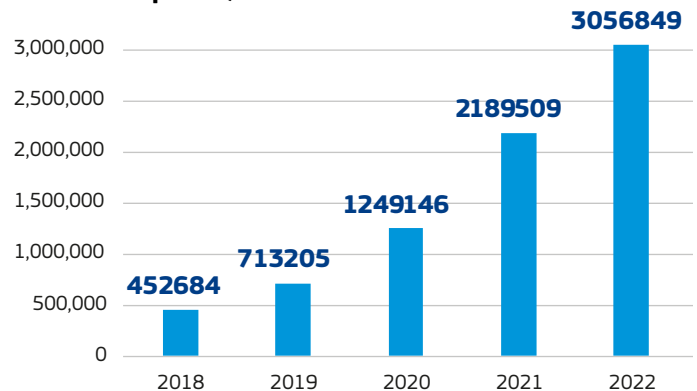
The EU-27 has a population of 477,007,596 inhabitants¹⁰, with 75% living in urban areas¹¹. The European Green Deal strategy was launched in 2019 to meet the Paris Agreement to achieve climate neutrality by 2050. With the 'Fit for 55' package the EU aims to translate the ambitions of the Green Deal into law, reducing net greenhouse gas emissions by at least 55% by 2030 compared to 1990. In 2023, the EU Parliament and EU Council have adopted key pieces of legislation to reach these goals including:

- A separate ambitious Emissions Trading System (ETS II) for fuels for road transport and buildings.
- A Social Climate fund to combat energy and mobility poverty. This new fund will benefit households, micro-enterprises and transport users that are vulnerable and particularly affected by the impact of the transition towards climate neutrality¹².
- A regulation on CO₂ emissions for new cars and vans.
- More recharging and refuelling infrastructure through the Alternative Fuel Infrastructure Regulation (AFIR). The main objectives are to ensure a sufficient infrastructure network for recharging and to achieve full interoperability throughout the EU.

An overview of relevant EU legislation can be found at the [EAFO Policy makers section](#). The latest developments and updates are also available through the [EAFO news](#).

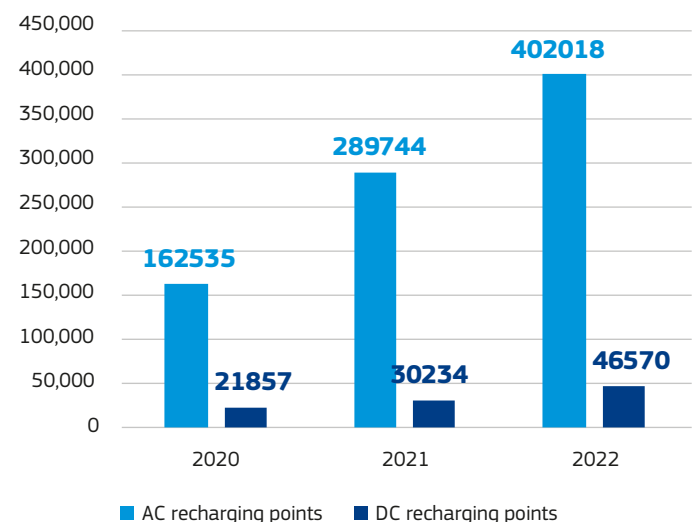
The EAFO portal shows that at the end of 2022 there were 3,056,849 battery electric vehicle cars in the EU-27, with 1,117,053 of them being registered that year. This means that 1.19% of the total passenger vehicles in the EU are now fully electric¹³.

Figure 12: Evolution of BEV cars in the EU-27 (EAFO portal)



Moreover, the public recharging infrastructure network has considerably grown in the last couple of years. According to the EAFO portal, by the end of 2022, there were in the EU-27 402,018 (AC) slow public recharging points, and 46,570 (DC) fast public ones.

Figure 13: Evolution of recharging points in EU-27 (EAFO portal)



10 <https://alternative-fuels-observatory.ec.europa.eu/transport-mode/road/european-union-eu27>

11 [Urban population \(% of total population\) - European Union | Data \(worldbank.org\)](https://data.worldbank.org/SH.UH.SRVS.CV.XD)

12 <https://www.europarl.europa.eu/news/en/press-room/20220516IPR29635/social-climate-fund-to-help-those-most-affected-by-energy-and-mobility-poverty>

13 The EAFO and the 2022 consumer monitor use the AFIR definition of recharging points. More information can be found at [Recharging systems | European Alternative Fuels Observatory \(europa.eu\)](#)

For the 2022 launch of the EAFO consumer monitor survey, ten countries¹⁴ were selected as the representative first scope to further promote the EAFO consumer monitor towards all EU-27 countries. Furthermore, the results of the ten countries surveyed are the basis for an EU aggregated report.

The survey was conducted using a panel on the general population of each of the selected countries. In parallel, the same survey was addressed to BEV drivers of each country via the EAFO partner AVERE. Both surveys were launched at the beginning of September 2022.

For the panel the aim was to reach 2,000 responses per country.

The survey was open for 1 month. For the survey launched through AVERE, the threshold was to reach 100 respondents per country. To achieve this, the survey was closed at the beginning of December 2022.

The datasets were subjected to validation tests, including:

- Respondents should have completed the survey until the end and should have agreed to the terms and conditions of the survey.
- Respondents who filled out the survey in less than three minutes are excluded from the survey, as it was deemed impossible to fill out the survey thoroughly and in its entirety in under three minutes.
- Respondents who indicated unusually high values to open questions with continuous variables (kilometres driven in a day, kilometres driven in a year, purchase price of a BEV and purchase price of an Internal Combustion Engine Vehicle-ICEV) were excluded from the results.
- Respondents who indicated not owning a drivers' licence were excluded.
- Respondents who came up in nonsensical patterns of answers to open questions were excluded.

The validation of the datasets was finalised in mid-October. For the AVERE dataset the validation was carried out in early January 2023. A total of 16,664 responses were considered as valid for the general population. Out of these, there were 16,284 non-BEV and 380 BEV drivers (2.3% of the total responses). For the AVERE data set there were 998 valid responses from BEV drivers. The total number of BEV EU drivers surveyed from both datasets is 1,378.

To compare and later weigh the results per education level, the respondent's answers were standardised and converted to the International Standard Classification of Education (ISCED) notation¹⁴. Moreover, respondents were considered BEV drivers when their first, second or third car is a BEV. The results of the survey were weighted according to education levels, age group and gender of the population, respective to each country. The survey weights were computed using the post-stratification and conditional variance estimation technique. The resulting weights were trimmed between 0.3 and 3. The weighting process allows to make claims about the target population, instead of the survey sample alone. Because of the weighting process, all results are presented as a percentage of the total.

To improve the relevance of the analysis of the BEV drivers alone, the survey conducted on BEV drivers (from AVERE) was combined with the survey conducted on the general population. As previously mentioned, the total BEV responses after combining both data sets are 998. As a result of the choice to combine the datasets, the proportion of BEV drivers in the analysis is not representative of the population proportion. However, claims can be made about the BEV-driving population.

¹⁴ [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=International_Standard_Classification_of_Education_\(ISCED\)](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=International_Standard_Classification_of_Education_(ISCED))

* The ten countries surveyed were: Austria, Belgium, Denmark, France, Germany, Hungary, Italy, Netherlands, Slovenia, and Spain

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