



European
Commission

Consumer Monitor 2022

EUROPEAN ALTERNATIVE FUELS OBSERVATORY



COUNTRY REPORT:
SPAIN



Mobility and
Transport

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European Alternative Fuels Observatory

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Contents

1. The EAFO EU consumer monitor: key findings & conclusions	4
2. Consumer monitoring results: general population views on driving battery electric vehicles in Spain.....	6
Socio-demographics general population	6
Attitude and motivation towards battery electric vehicles	7
Main barriers and opportunities to adopt battery electric vehicles	7
3. Consumer monitoring results: Mobility and recharging behaviour of battery electric drivers in Spain.....	9
Socio-demographic indicators for the BEV driver	9
Mobility behaviour and vehicle ownership of battery electric drivers	10
Purchase and lease price paid by BEV drivers	10
Factory range and range satisfaction of fully electric cars used by BEV drivers.....	11
Recharging behaviour of battery electric drivers	11
4. Comparative results Spain vs other EU countries.....	15
5. Spain in the European context	17
AI. Consumer monitoring methodology & approach.....	18

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 10 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 presents the results for **Spain** in two main parts:

Part 1 presents the surveyed Spanish's attitude, interest, and the information that could support BEV (potential) drivers. It is based on the results of the Spanish general population surveyed through the panel, which include 1,682 valid responses from BEV (18) and non-BEV drivers (1,664).

Part 2 focuses only on BEV drivers from both datasets by merging the panel and the AVERE dataset, with 100 valid responses in total. This gives an insight into the Spanish BEV driver's 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 Spain 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, 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., Berceibar, 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 Spanish BEV driver is currently represented as a 35-55-year-old male, living in a detached house and with a relatively high income who has a university or higher education diploma.
- b. A majority of Spanish participants are interested in BEVs, 35% are familiar with these, and 40% consider buying a BEV in a time frame of 0-5 years. 69% have a positive attitude towards BEVs, and as in the other EU surveyed countries, the most important BEVs advantage is that these are better for the climate. Spanish 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 Spanish participants are willing to pay 25,000 € for a BEV and 35% of the BEV drivers paid a purchase price between 20,000 € and 40,000 €.
- d. BEVs' insufficient range was not considered a disadvantage. A minimum desired range between 300 km to 500 km was the choice of 34% of all Spanish drivers surveyed. 500 km and more would be the preference of 44%.
- e. 44% of the surveyed Spanish indicated that they are not aware of any subsidies for electric vehicles driving despite of the financial support measures applied by the Spanish National and local governments. Information on batteries and/or driving range was considered the most relevant to support electric driving.
- f. 97% of Spanish BEV drivers use their vehicle daily or several times a week. Their BEV is mostly new (77%) and privately owned (84%).
- g. As in the other nine countries surveyed the most important characteristic of a public recharging session is the recharging speed. For the BEV Spanish drivers, short waiting times to access a recharging point and the possibility to pay per kWh are important. Payments through a charging card or app are also relevant. The latter is the number one payment option in the ten EU countries. On the other hand, 31% 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 Spanish BEV drivers use public slow recharging points somewhat often (28%). Fast public recharging points use frequency is relatively low when compared to the other EU countries surveyed (14%). Moreover, 68% of Spanish BEV drivers recharge often at home.

Thanks to these results, the following **conclusions could be made about the 3 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 € to 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. 23% of the Spanish BEV drivers bought a second-hand BEV, while 4% indicated that they lease a car for which the majority (77%) pay less than 500 € per month.
4. BEV range insufficiency: The BEV factory range was enough for 92% of the Spanish BEV drivers. 45% indicated a factory range of 300-500 km. Range satisfaction can be related to the km driven per day (88 km), and the main activity for which the BEV is used (commuting and work). Moreover, for holidays or trips beyond 500 km, the Spanish BEV drivers considered problems related to 'charge anxiety' slightly more relevant than 'BEVs' range anxiety'.
5. Public recharging network: Spanish BEV drivers do not have a clear overview of the public recharging points in their vicinity, they also consider that there is not sufficient choice between different recharging operators, and that there are usually not sufficient facilities at highway recharging stations. In this sense, information on the recharging network was also one of the support measures that (potential) Spanish 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 Spain (and in other EU countries) 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>

2. Consumer monitoring results: general population views on driving battery electric vehicles in Spain

This section presents the **results of the Spanish general population surveyed through the panel: 1,682 valid responses from BEV (18) and non-BEV drivers (1,664)**. 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 **Spanish 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 differences when compared to Spanish non-BEV drivers are the higher percentage of female drivers and that non-BEV drivers are represented by an older age group who has a secondary education and lives in an apartment or studio.

Although most 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.

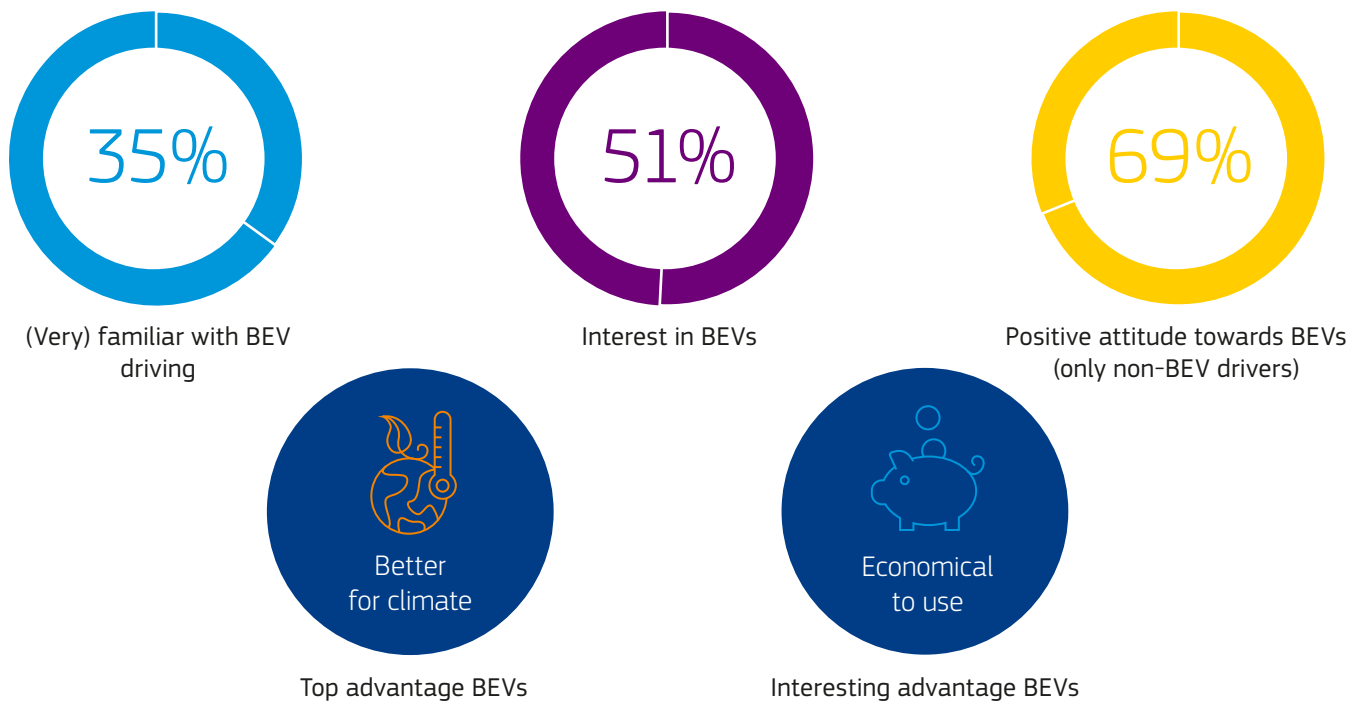
Table 1: Socio-demographic results from the survey for the general population

	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 €	4%	8%
800-1999 €	14%	31%
2000-3999 €	36%	40%
4000-5999 €	26%	16%
≥ 6000 €	20%	5%
Education		
Early childhood-primary education	10%	17%
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%	9%
Attached house	13%	13%
Detached house	57%	37%
Other	1%	1%

Attitude and motivation towards battery electric vehicles in Spain

A minority of respondents in **Spain** indicated that they are (very) familiar with BEVs. 51% are interested in battery electric driving and 69% have a positive attitude towards BEVs. As in the case of the other nine countries surveyed, the main advantage of BEV is that these are better for the climate (no tailpipe emissions). Moreover, Spanish drivers also consider BEVs' economical use as an advantage.

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

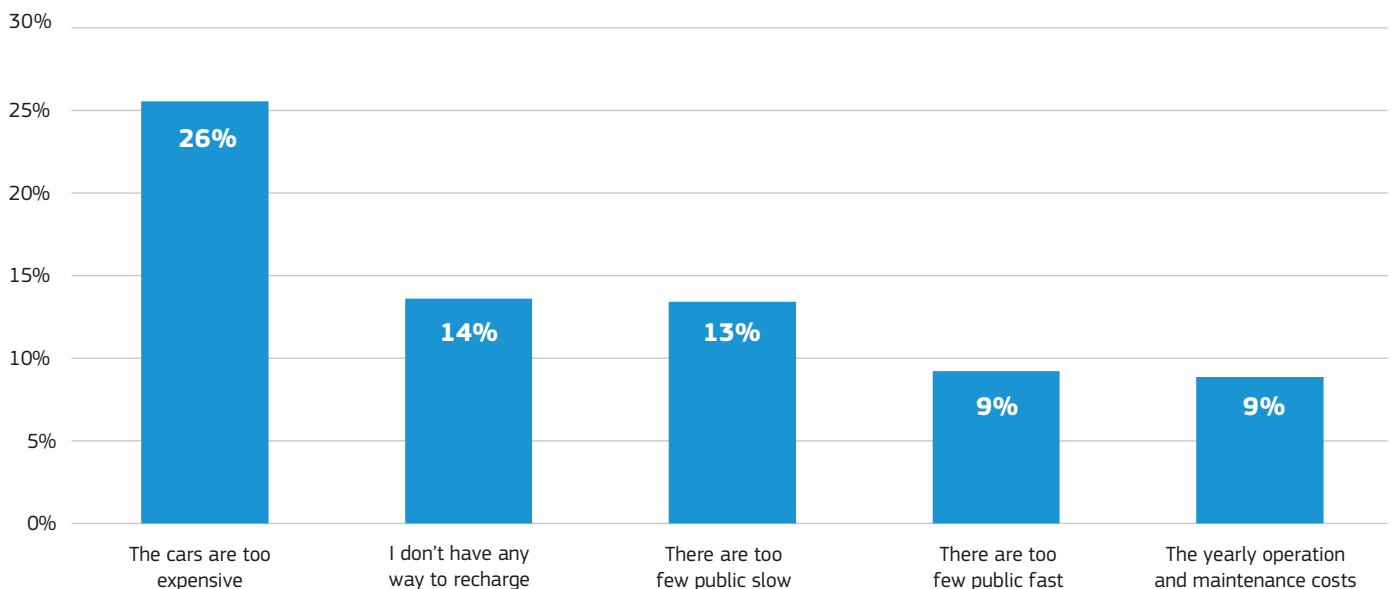


Main barriers and opportunities to adopt battery electric vehicles

Disadvantages of driving battery electric vehicles in Spain

Spanish survey participants were asked to choose the most relevant disadvantages of driving battery electric vehicles. As previously reported, these include the price of BEVs (and for the Spanish drivers their car operation and maintenance costs) and limited recharging options (either private or public). In this case, BEVs' range was not perceived as a disadvantage.

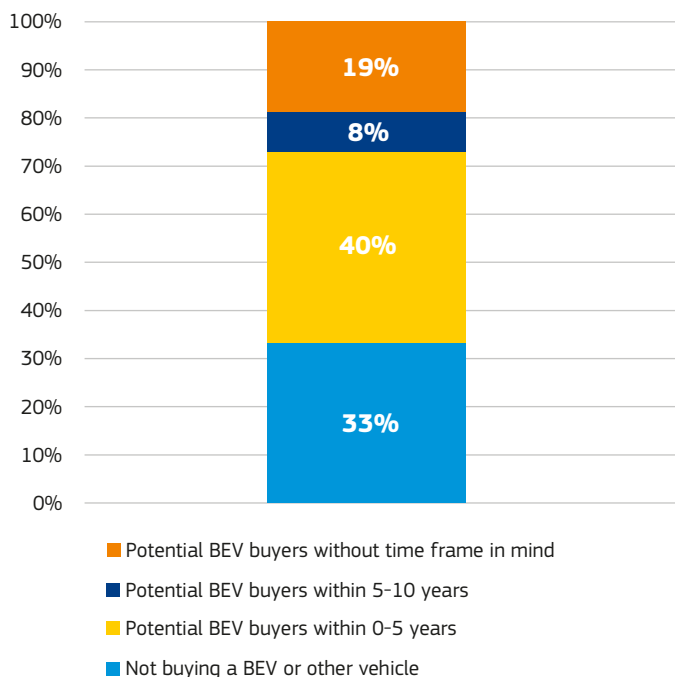
Figure 1: Spanish driver's top five identified disadvantages of battery electric vehicles



Time frame to buy a battery electric vehicle in Spain

33% of the **Spanish** respondents do not consider buying a battery electric vehicle. 40% would do so in a time frame of 0-5 years.

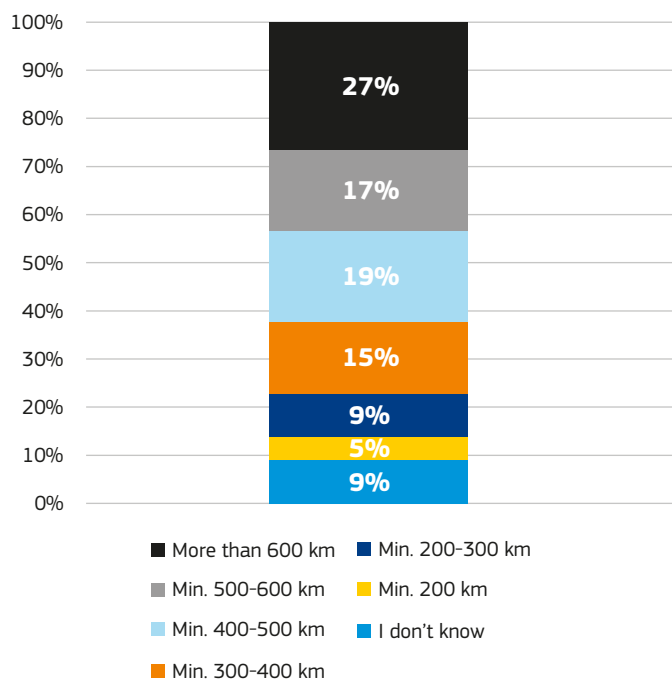
Figure 2: Spanish drivers' time frame to buy a battery electric vehicle



Desired range battery electric vehicle in Spain

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 to 500 km was the choice of 34% of all **Spanish** drivers surveyed. 44% would prefer a range of 500 km and more.

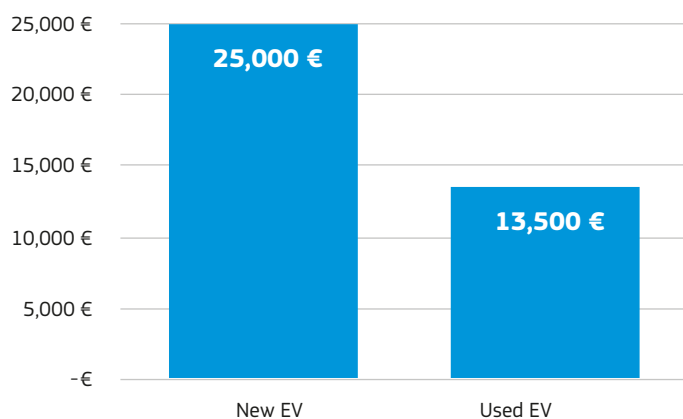
Figure 4: Spanish drivers desired range of a battery electric vehicle



Willingness to pay and desired range of a battery electric vehicle in Spain

The median price that all **Spanish** respondents are willing to pay for a used BEV is 54% of the price of a new car. When looking at only the BEV drivers (merged datasets) for 35% of them the purchase price paid is between 20,000 € and 40,000 €.

Figure 3: Spanish drivers' willingness to pay for a new & used 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 12 BEVs models available with a purchase price between 20,000 € to 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.

In Spain there is a tax ownership reduction of 75% for BEVs in main cities like Barcelona, Madrid, Zaragoza, etc. Moreover, the Spanish government also offers subsidies for purchasing BEVs, and these cars are also fully exempt from registration taxes and the 'special tax' for CO₂ emissions⁹.

Interestingly, 44% of the surveyed Spanish indicated that they are not aware of any subsidies for electric driving and that they still will value more information on batteries and/or driving range, and on cost comparison with fossil fuel cars to have a clearer opinion about electric driving.

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

⁹ <https://alternative-fuels-observatory.ec.europa.eu/transport-mode/road/Spain/incentives-legislations>

3. Consumer monitoring results: Mobility and recharging behaviour of battery electric drivers in Spain

This section focuses on **BEV Spanish drivers** (only) from both datasets (the merged panel and AVERE dataset, with 100 valid responses in total). The results of the EAFO 2022 survey give an insight into who the Spanish 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 Spain

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 **Spanish BEV drivers** (only), they are represented by a 35-55-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 Spanish driver

Gender	
Female	13%
Male	87%
Other	0%
Age groups	
-35	20%
35-55	58%
55+	22%
Net income	
< 800 €	0%
800-1999 €	17%
2000-3999 €	41%
4000-5999 €	27%
≥ 6000 €	16%
Education	
Early childhood-primary education	10%
Secondary education	31%
University or other higher education (e.g., college, polytechnic, academy)	59%
Accommodation	
Apartment/studio	45%
Semi-detached house	17%
Detached house	17%
Attached house	21%
Other	0%

Mobility behaviour and vehicle ownership of battery electric drivers in Spain

Most **Spanish BEV drivers** surveyed use their vehicle several times a week or daily. Most BEVs are new privately owned cars, driven by more 'experienced' BEV drivers. It is also worth noticing that 23% of the Spanish BEV drivers bought a second-hand vehicle.

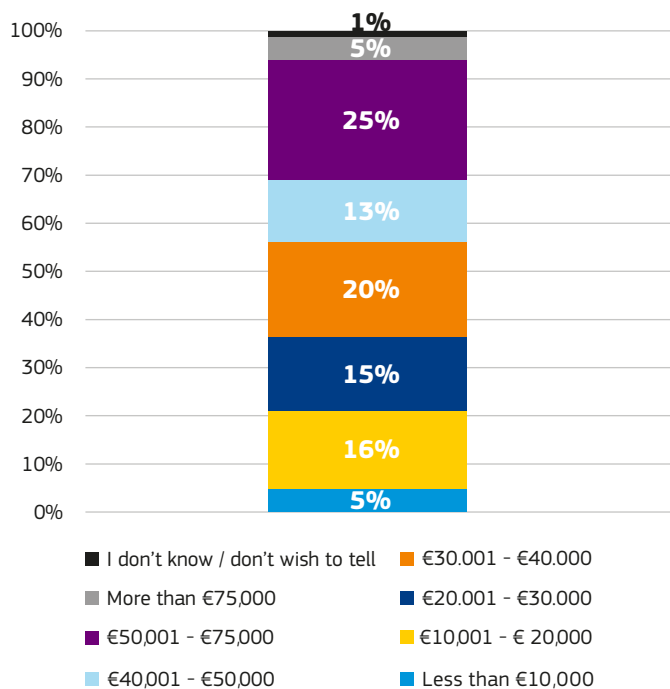
Table 4: BEV driver behaviour and vehicle ownership

<1 year to 3 years as BEV driver	37%
3 years to 5 years or longer as a BEV driver	63%
Average km driven a year	14,777
Average km driven a day	88
BEV drivers using their vehicle daily to several times a week	97%
Main activity when driving their BEV	Commuting and work activities
BEV ownership	
Leased BEV	4%
BEV company car (if employee)	12%
Privately owned BEV	84%
New vs., second-hand BEVs	
New BEV	77%
Second-hand BEV	23%

Purchase and lease price paid by BEV drivers in Spain

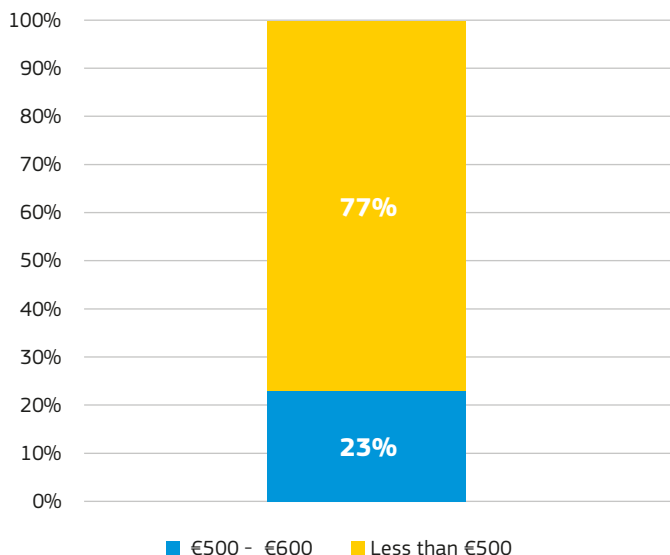
35% of the **BEV Spanish drivers** surveyed indicated that the purchase price paid for a BEV is between 20,000 € and 40,000 €. 38% of the BEV drivers paid between 40,000 € and 75,000 €. 21% paid between 10,000 € and 20,000 €.

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



On the other hand, most of the **Spanish 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 only 3% of the Spanish full electric car drivers surveyed.

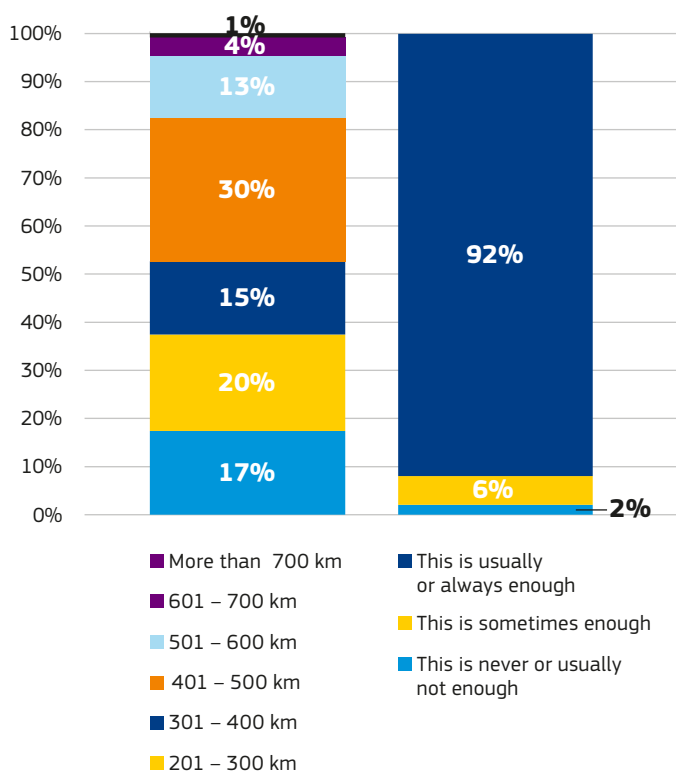
Figure 6: Spanish BEV drivers lease price for their battery electric vehicle



Factory range and range satisfaction of fully electric cars used by BEV drivers in Spain

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. 35% of the **Spanish BEV drivers** indicated a factory range of 200-400 km. For 43% this is between 400-600 km.

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



It is noteworthy that a majority of Spanish BEV drivers who drive battery electric vehicles reported that the original range of their vehicles was sufficient when asked about it.

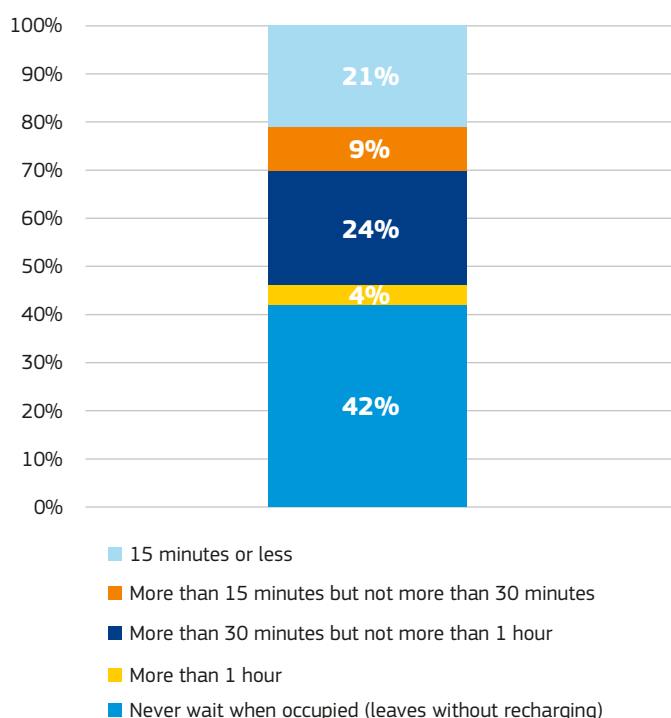
In addition, range satisfaction can be related to the km driven per day (88 km), and the main activity for which the BEV is used (commuting and work activities).

Recharging behaviour of battery electric drivers in Spain

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

Surveyed BEV Spanish drivers were asked what the longest waiting time was to use a public recharging point. 42% never wait when this is occupied (they leave without recharging), while 21% waited for 15 minutes or less. Still, 33% waited between 15 minutes to 1 hour. Furthermore, 31% of respondents do not always take the battery level into account when recharging.

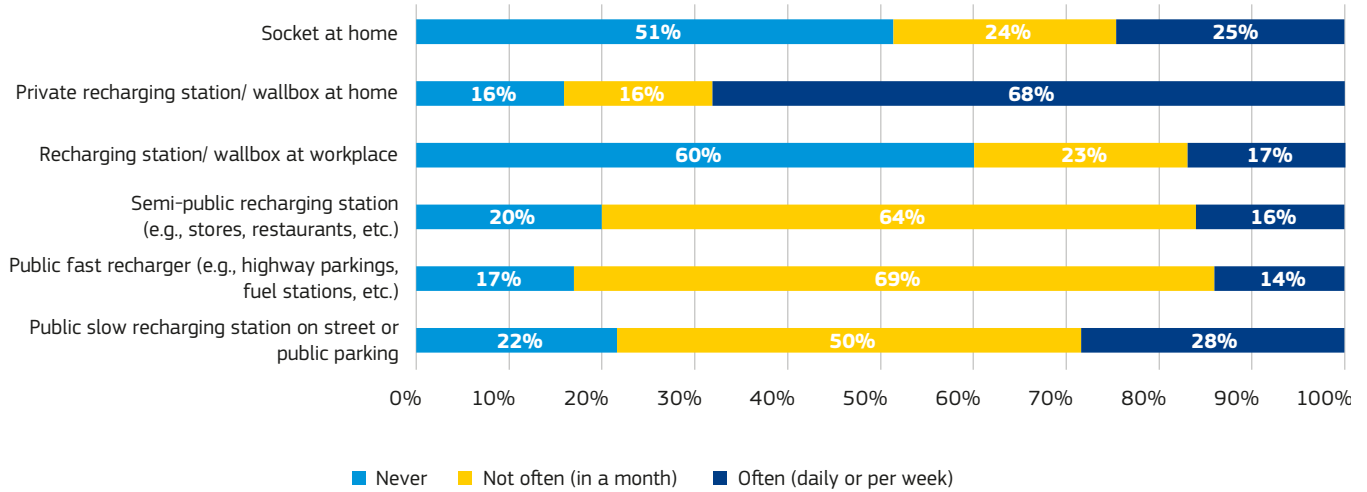
Figure 8: Spanish drivers waiting times when using a public recharging point



Recharging location and frequency of use by BEV Spanish drivers

For **BEV Spanish drivers** a private recharging station or wallbox at home is the most frequently used location. Public slow recharging stations on the street or public parking and public fast recharging stations are somehow often used (28% and 14% respectively).

Figure 9: Recharging location and frequency of use by Spanish BEV drivers



Important characteristics of a public recharging session for BEV Spanish drivers

Spanish 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 the possibility to pay per kWh being chosen above having a subscription pass/app

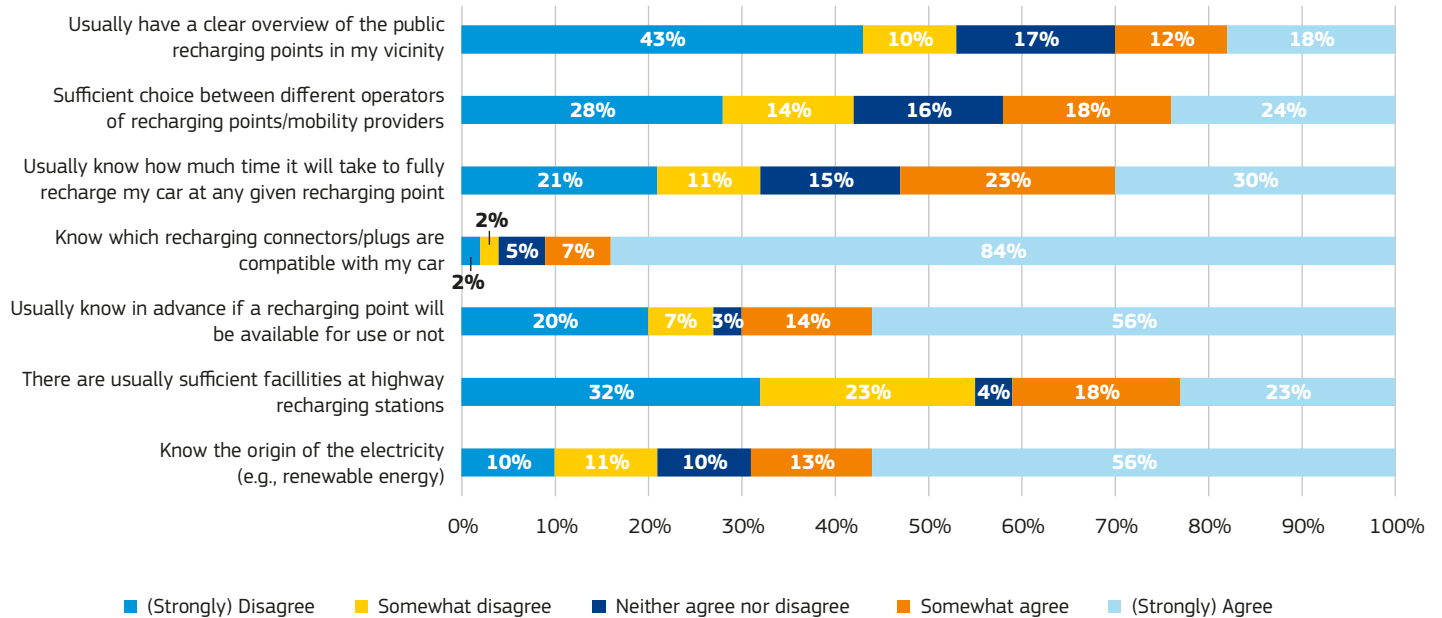
Table 5: Important characteristics of a public recharging session

Recharging speed / power output of the recharging point, so I can get the quick-est possible recharge	1
Short/no waiting time to access the recharging point, to avoid queuing	2
Possibility to pay per kWh only (instead of per minute or per session)	3
Easy access and payment via my recharging subscription (pass/app)	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

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

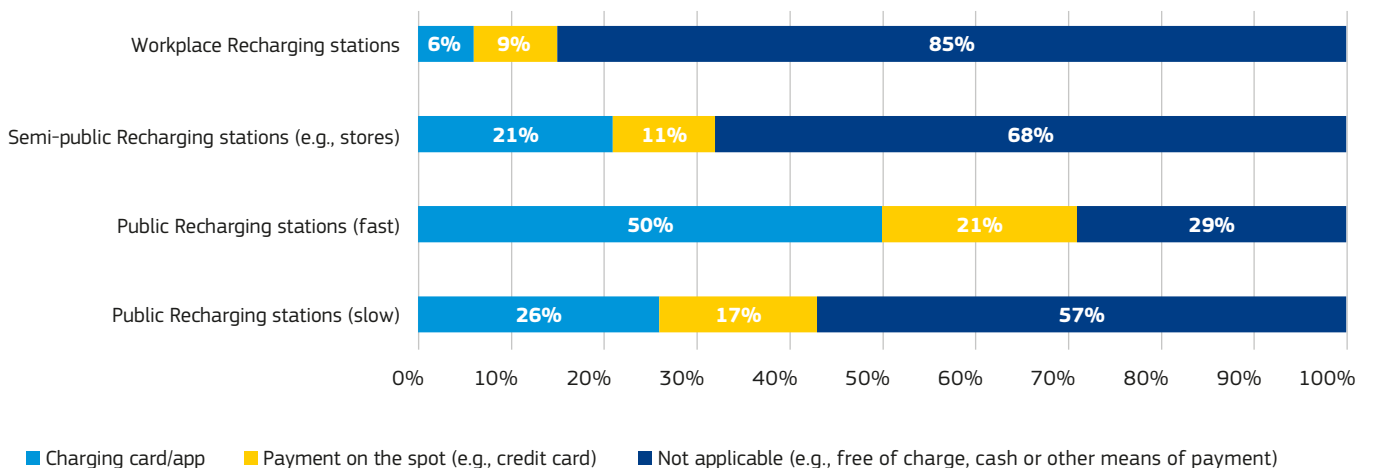
Most **Spanish BEV drivers** know which recharging connector is compatible with their car, know in advance if a recharging point is available, and know the origin of the electricity at the public recharging point. On the other hand, they do not have a clear overview of the public recharging points in their vicinity, they also consider that there is not sufficient choice between different recharging operators, and that there are usually not sufficient facilities at highway recharging stations. In this sense, information on the recharging network was also one of the support measures that potential Spanish BEV drivers would welcome.

Figure 10: Public recharging points opinions of Spanish BEV drivers



In the case of public recharging stations (both slow and fast) a charging card/app is the first option used. Work place recharging stations mostly use other payment means or are free of charge, while for semi-public recharging stations, both cards/apps and other payment means are an option.

Figure 11: Payment options at recharging stations



Main problems encountered by Spanish BEV drivers when traveling abroad

Holidays or other trips beyond 500 km were also an important activity for 49% of the **Spanish BEV drivers**. Nevertheless, 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 traveling 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
I find it complicated or prohibitively expensive to pay for my recharging abroad (roaming issue)	5
I find it overly burdensome to plan my trip in function of my recharging needs	6
Due to the slow and therefore long recharging times, I would lose too much time for recharging my car	7

4. Comparative results Spain vs other EU countries

The number one BEV driving disadvantage identified in all cases is the purchase price of the cars. Spanish BEV respondents have mostly been driving a vehicle for three to five years or more. Moreover, the most important characteristic of a public recharging session in the ten EU countries surveyed is the 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) ¹⁰
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.	

¹⁰ 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%		

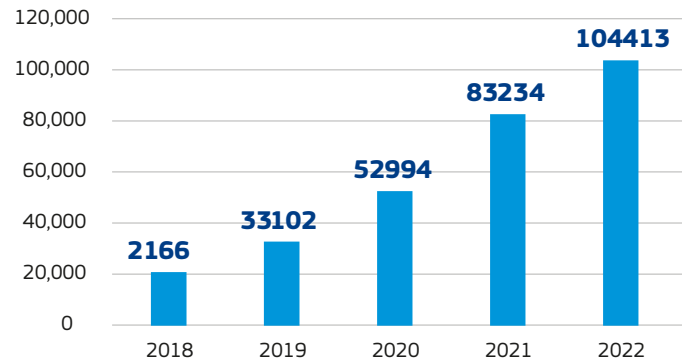
5. Spain in the European context

Spain has a population of 47,394,223 inhabitants¹¹, with 81% of them living in urban areas. The Spanish government has developed policies that promote climate-friendly, sustainable, and energy-efficient mobility¹². Different actions are taken in this sense, including road transport electrification.

The Spanish government has implemented different incentives, including tax benefits, VAT exemptions and subsidies to support the uptake of electric vehicles and recharging infrastructure (an overview of these can be found in [in EAFO incentives & legislation, Spain](#)).

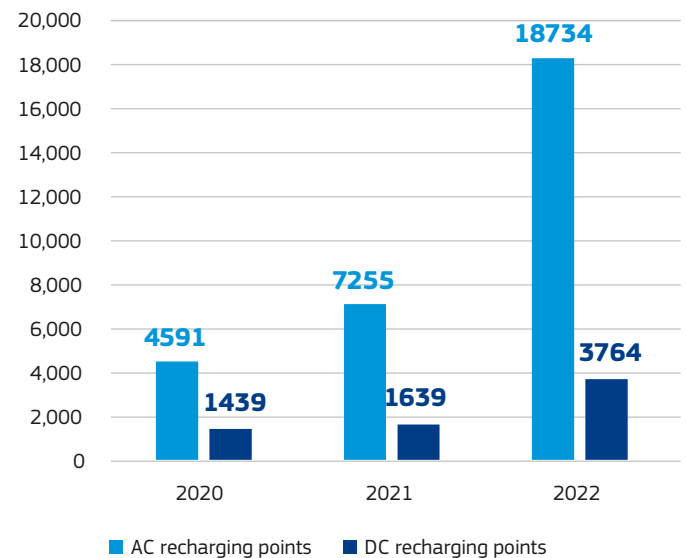
The EAFO portal shows that at the end of 2022 there were 104,413 BEV cars in the country, with 31,412 registered that year. This means that 0.42% of the total passenger vehicles in Spain are now fully electric.

Figure 12: Evolution of BEV cars in Spain (EAFO portal)



Moreover, the public recharging infrastructure network has grown in the last couple of years. According to the EAFO portal, by the end of 2022, there were 18.734 (AC) slow public charging points and 3.746 (DC) fast public ones¹³.

Figure 13: Evolution of recharging points in Spain (EAFO portal)



11 <https://alternative-fuels-observatory.ec.europa.eu/transport-mode/road/Spain>

12 https://cdn.mitma.gob.es/portal-web-drupal/esmovilidad/ejes/211223_es.movilidad_accesibilidad_ALTA_vf.pdf

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 \(europa.eu\)](#)

Consumer monitoring methodology & approach

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 1,682 responses were considered as valid for the general population. Out of these, there were 1,664 non-BEV and 18 BEV drivers (1.1% of the total responses). For the AVERE data set there were 82 valid responses from BEV drivers. The total number of BEV Spanish drivers surveyed from both datasets is 100.

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 100. 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))

¹ The ten countries surveyed were: Austria, Belgium, Denmark, France, Germany, Hungary, Italy, Netherlands, Slovenia, and Spain

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