



Steady progress

EV Charging Index Edition 6 2025





MANAGEMENT SUMMARY

Steady improvement

Despite testing market conditions, global EV use and EV charging infrastructure showed solid growth in 2024

Amid a backdrop of political and macroeconomic uncertainty, global electric vehicle use and related charging infrastructure continued to show steady growth in 2024. But beneath this broad trend lie some intriguing regional and national variations, which we analyze in this latest edition of our EV Charging Index. The overall EV sales penetration rate - which includes both battery (BEV) and plug-in hybrid electric vehicles (PHEV) - increased from 20% in 2023 to 25% in 2024. China, which retains a leading position in our Index, saw its sales penetration rate increase from 36% to 49%, though many other mature markets saw little if any growth on this metric.

Improvements in public charging infrastructure provision were more common, with only Middle East and North Africa (MENA) and China seeing a drop in sufficiency rates, although sufficiency remains very high in China. The share of (faster) DC charge points rose across all regions, driving user satisfaction with the overall public charging experience – around four in five survey respondents noted that public charging is becoming more convenient. Despite these improvements, there is still work to be done, as the top user frustrations remain consistent: lengthy charge times and insufficient infrastructure.

What does this mean for our Index scoring? China leads our ranking, while the chasing pack is becoming increasingly tightly grouped as younger markets gain on more mature ones. The likes of France and the UK have closed the gap on the leaders over the last two years, while Southeast Asian markets such as Thailand have improved their scores considerably. It's a similar story in MENA and emerging markets like Brazil and India, suggesting that what these markets may lack in EV sales penetration, they make up for in improvements in charging provision, technology, and user satisfaction.

As EVs become more widespread, user behavior continues to evolve. Environmental benefits remain a leading driver of EV adoption, but these now sit alongside the perception that EVs offer lower operating costs than ICE vehicles. With 80% of users driving 10,000 kilometers or more each year and 72% driving their EVs at least four days a week, EVs are increasingly becoming everyday vehicles.

The vast majority of EV drivers have access to home charging, with the slight decrease observed in 2024 consistent with the gradual shift away from the archetypal early EV adopters with parking on their own private property. Access to private charging at home is much higher among EV drivers in North America than in other regions. Despite 85% of users globally having access to private or shared home charging, EV users still conduct almost half of their total charging away from home, emphasizing the importance of public charging infrastructure.

Lastly, our study looks at the charge point operator market. This has proven a challenging environment, particularly in North America and Europe, but participants continue to evolve rapidly in response.

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Meet "The Drivers"

This year we have some new faces helping bring the EV Charging Index to life. "The Drivers" are fictitious characters that highlight what motivates (and frustrates) real BEV users around the world. While they're not representative of all BEV drivers in their respective countries, the creation of The Drivers was guided by our survey and interview data.

IN THIS REPORT, LET'S SAY HELLO TO FIVE OF THEM:



INGRID, an engineer, lives with her husband and two children in a suburb of Munich, Germany. They share their BEV for work travel, family activities, and weekend trips.



YUE is a technology professional who lives with her husband in a modern apartment in Shenzhen, China. She primarily uses her BEV for commuting and business travel.



OMAR is a 29-year-old IT consultant living in Riyadh, Saudi Arabia. His work frequently takes him to meetings in Riyadh, Jeddah, and international tech conferences.



MAYA, a nurse in Austin, Texas, lives with her partner David and dog Luna. She uses her BEV for weekend adventures in the Hill Country and visits to her parents in Dallas.



ANDREI and his wife have a BEV as a secondary vehicle, mainly to keep up with their daughter's busy schedule. Living in Bucharest, Romania, they use an ICE vehicle for longer trips.

Throughout this report and our surrounding communication, you'll learn a little more about how a few of these drivers utilize their BEV, including what motivated them to purchase a BEV, how they use it, who's in the car with them, where they charge, how far they travel, and some of their frustrations and challenges around EV use. elcome to the sixth edition of our EV Charging Index. This year's study covers 33 markets across the world, and a wide range of indicators on EV adoption, charging infrastructure development, and EV user behavior. It is based on primary research and a survey of 12,000 participants conducted in Q2 2025.

The overall EV Charging Index score captures our assessment of a country's short-to-mid-term potential as an EV charging market, reflecting a variety of criteria. It can also be interpreted as an indicator of relative maturity and scale in different markets. For further details on how we generate this Index, please see the methodology section near the end of this report.

SCORES AND RANKINGS: SOLID GROWTH CONTINUES DESPITE NUMEROUS HEADWINDS

The average score across all markets increased from 47 in Edition 4 of our Index (2022, released 2023) to 56 in Edition 6 (2024, released 2025). This is consistent with general progress in electrification and charging, despite various political and macroeconomic headwinds around the globe. Comparing over a two-year period enables us to better capture longer-term market developments. ► A

Top of the Index again, China has cemented its lead role in the electrification of road transport and continues to excel in charging provision. However, neighbors Japan and South Korea saw their scores decline due to slow EV adoption and charging market development. Our other Asian markets continue to make progress, with the likes of Indonesia, Malaysia, and Thailand all improving their scores.

The picture for Europe is mixed. Mature markets such as Norway and Germany continue to score well overall, despite a slowdown in EV growth in Germany, for example,, while the likes of France and the UK have taken great strides over the last two years.

Political turbulence in the US may be impacting that country's EV market – and by extension its charging market

– but it remains a relatively high scorer as a large EV market with high user satisfaction for its charging infrastructure. Neighboring Mexico and Canada have both seen their scores increase considerably since 2022.

In MENA, Saudi Arabia, Qatar, and the UAE are all still in the early stages of electrification and remain near the bottom of our rankings. However, each market has seen its score rise as progress begins to accelerate.

Lastly, Australia, a new entrant to the Index, scores well in its debut, not far behind more mature markets.

• The average score across all markets increased from 47 in Edition 4 of our Index (2022, released 2023) to 56 in Edition 6 (2024, released 2025). This is consistent with general progress in electrification and charging.

A Electrification progress

Overall progress including some major improvements in two years

EV Charging Index country scores in edition 4 (released 2023) and 6 (released 2025) [maximum score = 100]

80			
	Germany	China Norway	
	China	USA	
70	Norway USA South Korea	UK Germany France Singapore Thailand Netherlands Canada Sweden Belgium Portugal	
60	Netherlands Thailand India Indonesia Singapore Sweden France Switzerland UK	Turkey Indonesia Switzerland Austria India South Korea Australia Malaysia	
50	Canada Romania Vietnam Belgium ^{UAE} Malaysia Japan	Brazil Spain Mexico ^{Vietnam} Italy Romania	
40	Turkey Brazil Saudi Arabia Portugal Spain	Hungary Japan	
30	Italy	Morocco	
	Hungary		
20 —	Edition 4 ¹	Edition 6	

1 Edition released in 2023, reviewed with 2025 scoring methodology - Australia, Austria, Mexico, Morocco not included

Source: Roland Berger EV Charging Index

When we compare our Index scores with EV sales penetration rates (the share of EVs sold as a percentage of total vehicles sold) in each country, we see a broad correlation between the two. However, a high sales penetration rate is no guarantee of extensive charging infrastructure provision or high user satisfation with charging. This can be seen by contrasting Norway with China, for instance. Norway has extremely high sales penetration but scores less highly for infrastructure, with China scoring well in both. Meanwhile, some relatively nascent EV markets, such as India, have a relatively high EV Charging Index score that belies their low EV sales penetration, indicating that they are somewhat ahead of the curve when it comes to charging provision, technology development, and user satisfaction. ► B

B More than just sales

EV sales penetration rates are important, but they don't guarantee a high Index score



G lobal EV sales penetration continued to rise in 2024. However, rates varied considerably across countries, with plenty of stagnation and, in some countries, even decline.

China leads the way once more, with EVs again enjoying rapid growth: almost every second new car sale in China was an EV in 2024 (49%) – up from 36% in 2023. This was the exception among established markets, Western Europe and the United States seeing little growth in EV sales penetration overall. Indeed, Germany recorded its second successive decline, falling from 26% to 22%, although this trend is set to reverse in 2025. Things were different in both MENA and Southeast Asia, with both regions continuing to see plenty of growth in EV sales penetration, albeit from relatively low base levels. ► C

C Steady rise in EV adoption

Growth in EV sales penetration is strongest outside of Europe and the US



EV sales penetration [%, 2023 - 2024]

2023 2024

Figures and indicators at global or regional level in this report consider the Index scope, i.e., 33 countries

Source: Roland Berger EV Charging Index - EV-Volumes.com, IHS databases

2.1/ Europe: EV growth softens

Sales penetration rates paint a mixed picture in Europe. Over 2.7 million new passenger car EVs were sold in 2024 – more than 15% of all new car sales, although this was broadly similar to 2023. As a result, overall penetration in the continent's vehicle parc approached 5%, meaning around one in 20 cars on the road in Europe is now an EV, with the majority BEVs. But with cost headwinds and battery supply chain issues remaining, this growth was in line with our more conservative forecasts.

At a country level, EV sales penetration rates crept up in markets such as Belgium, the UK, and Portugal as consumer perception continues to shift, costs fall, and charging infrastructure improves.

However, rates remained stagnant or declined slightly in numerous others, including France, Italy, and Romania. Germany saw its second consecutive fall following a key policy change in late 2023, which saw the removal of national BEV purchase subsidies.

Looking ahead, the relaxation of emissions regulations at EU level results in a slightly softer outlook across some European markets for EV uptake than was previously forecast over the next two to three years. However, this will likely have little impact on electrification in the long term.

Beyond the major change to German EV subsidies enacted in January 2024, developments in national and local policy elsewhere have been mixed. On the positive side, Austria's Klimafahrplan aims to make all newly registered passenger cars in Vienna emission-free by 2030. Meanwhile, Hungary has received funding from the REPowerEU plan to improve charge point coverage, and Romania will increase its BEV subsidy to EUR 7,500.

However, Switzerland rejected a new national funding program for charger installations in apartment buildings and parking lots. And, in the Netherlands, tax breaks for EVs will end in 2025, signaling a gradual tax increase from 2026 – earlier than expected. The relaxation of emissions regulations at EU level results in a slightly softer outlook across some European markets for EV uptake over the next two to three years.

Meet BEV driver Ingrid | Germany

Ingrid's family of four shares their BEV, primarily using it for daily activities and weekend trips around the region, as well as some work travel during the week. While they have a charger in their garage at home, the family also relies on fast, highway charging stations, particularly for longer journeys.



10 | Roland Berger

2.2/ North America: Steady sales growth but political headwinds beckon

EV sales penetration rates increased across the North America region, with the United States ticking up from 10% to 11%, while Canada rose from 9% to 15% and the nascent Mexican market grew from 1% to 2%.

Despite a slowdown in the growth rate, volume continued to expand across the region, with more than 1.9 million new passenger car EVs sold in 2024, up from 1.6 million in 2023. Key drivers include the availability of new models and reduced pricing as well as rebates from the Inflation Reduction Act (IRA for the United States). These factors have also contributed to an increase in EV leasing. The IRA allows EV leases to qualify for a USD 7,500 tax credit – more appealing than outright purchases and loans, which have more onerous qualification criteria. This funding has allowed dealers to offer attractive monthly leasing payments.

Crucially, the change of administration in the United States has placed doubt on future sales growth for EVs. Federal support is being rapidly withdrawn, while tailpipe emissions regulations are becoming looser.

Currently under consideration, the "Big Beautiful Bill" would remove all EV-related rebates and incentives covered by the IRA – potentially by the end of 2025. Meanwhile, in May 2025, Congress voted to remove a waiver that allowed the California Air Resources Board to set emissions regulations that are stricter than national requirements (Advanced Clean Cars and Advanced Clean Trucks). The matter is now subject to a legal dispute. Whether the waiver is allowed to remain until things are resolved is unclear.

That's not all: of greater importance to OEMs is the turbulent tariff situation, which will have a greater impact than changes to EV rebates. We expect EV sales growth to continue, albeit at a moderate pace with an increased share of PHEVs.

2.3/ Asia-Pacific: Sales penetration varies strongly as growth continues

Regional growth in sales penetration rates was broadly strong across Asia-Pacific, although market maturity varies considerably. EVs represented 49% of new car sales in China, up from 36% in 2023. Thailand, Vietnam, and Singapore all registered EV sales penetration rates of at least 20%, while rates remained steady but low in Japan (4%) and India (2%).

The region is incredibly diverse, with numerous reasons behind the divergence in EV adoption. In China, the clear regional leader, electrification has now been a strategic priority for the government for many years, and this is where over 90% of regional EV sales volumes remain, with more than 11 million new passenger car EVs sold in 2024.

Among its most successful policies is the trade-in subsidy scheme, which has been renewed for 2025 after receiving more than four million applications in 2024. It offers subsidies of up to RMB 20,000 (USD 2,730).

Looking ahead, the Ministry of Industry and Information Technology has proposed draft legislation setting mandatory EV sales targets for automakers: 48% in 2026 and 58% by 2027. Concurrently, massive investments continue in charging infrastructure, aiming to support 20 million EVs by 2025, reduce range anxiety, and enable mass adoption.

Meanwhile, in Japan, EV penetration in new car sales remained between 3-4% for the third year running. The reasons for this are multifaceted, but one factor is the high proportion of Japanese living in apartment complexes, resulting in limited access to private charging facilities. This is coupled with a perceived lack of development in public charging infrastructure, although this is now being addressed by increased government investment and supportive policy. **N** ot so long ago, environmental protection was the key driver behind EV adoption. It's still the number one factor, but it now sits alongside the perception that EVs offer lower operating costs than ICE vehicles. In Asia-Pacific and the Americas, reduced operating cost has even overtaken the green case for using an EV. EVs are increasingly being used as everyday vehicles, with 80% of users driving 10,000 kilometers or more each year and 74% driving their EVs at least four days a week.

3.1/ Why EV drivers go electric

BEV drivers in Asia-Pacific are the most passionate about their vehicles. More than three quarters said they "love having a BEV and take an active interest in running and charging it" (77%). This is slightly higher than in North America (76%), and significantly more than Europe's 62%, where users are more likely to "pay some attention to my usage and charging behavior, but not that into it" (28%).

D Greener and more cost-effective

Lower operating cost is now a major factor in BEV uptake, alongside eco-friendliness



Answers to: What were the key reasons that influenced your decision to buy or lease a battery electric vehicle? [Multiple answers possible]

Lower car usage and maintenance costs than ICE (fuel vehicle)

Suitable for the range I need

Actions to protect the environment

Tax advantage/subsidy

This seems to be linked to market maturity. Just over half of BEV drivers in Norway (50%), Sweden (56%), and the Netherlands (57%) said they "love having a BEV and take an active interest in running and charging it"; much lower than in countries such as Spain (80%), Mexico (88%), and GCC (79%), where BEV drivers still rank among the early adopters. China (81%) is the main outlier here, likely driven by the country's advanced EV ecosystem and consumers' natural enthusiasm for technology and innovation.

Reduced operating cost compared to ICE vehicles is now just as important for BEV drivers as environmental protection. In fact, in North America and Asia it is now the number one purchasing criterion. Tightly grouped behind these two are factors such as driving experience and subsidies as well as suitable range and increasingly sufficient charging infrastructure. ►D



Exceptional driving experience

BEVs have higher level of vehicle intelligence

- Charging and battery swap facilities becoming sufficient
- Policy requirement

In support of the growing importance of lower operating costs, more than half of BEV users say driving an EV is cheaper than driving an ICE vehicle, with less than 15% saying it is more expensive. $\triangleright E$

E Worth it

More than half of respondents think driving a BEV is cheaper than driving an ICE vehicle

Answers to: From your experience, what do you think the cost of driving a kilometer in your battery electric vehicle is versus driving it in an ICE vehicle (i.e., petrol or diesel car)?



Meet BEV driver Yue | China

Living in Shenzhen with her husband, **Yue** uses her BEV for her daily commute as well as some business travel and weekend getaways. For charging, she primarily relies on the shared smart charging stations in her apartment's garage and occasionally uses a battery swap station – a more common infrastructure solution in China. However, she also wishes there were more amenities at public charging stations, especially during busy holiday travel weekends.

Attitude toward BEV

Driving profile

Daily commute

- Short trips
- 10 to 20k km/year

Reason to buy



TECHNOLOGY

Charging location



WORK/PRIVATE

Charging pain points



OUT OF ORDER

NO SERVICES

PUBLIC FAST



BATTERY SWAP



Attitude:

1 point Limited interest in the vehicle, it's just a means to get from A to B **5 points** Huge fan of my BEV, love the experience

3.2/ How drivers use their BEVs

With 80% of users driving 10,000 kilometers or more each year and 74% driving their BEVs at least four days a week, EVs are increasingly becoming everyday vehicles.

This trend is consistent across all regions, with little variation. American users drive their BEVs most frequently, while users in Asia and MENA are more likely to drive their BEV more than 20,000 kilometers each year. In Europe, notable examples of countries with more than 20% of BEV users driving over 20,000 km annually include the Netherlands, Norway, and Germany - mature markets with well-developed public charging infrastructure. By contrast, in Japan, where urban living is more prevalent and EVs still often serve as secondary vehicles, more than 40% of BEV users drive less than 10,000 km each year. ► F

100%

27% 21% 5%

31%

26%

26%

27%

30%

Two to three days a week

One day a week or less

53%

18% 7%

21% 6%

17% 3%

23% 5%

19% 5%

F Daily drivers

BEVs are increasingly used as everyday vehicles

What's your average annual mileage driving your BEV? 100%



How often do you drive your BEV?



Meet BEV driver Omar | Saudi Arabia

Omar's work and social schedule keeps him and his BEV busy. He travels frequently to attend meetings in Riyadh, Jeddah, technology conferences, and outings with friends. Living in a modern high-rise apartment, he primarily charges his car at shared charging stations in the private parking garage and uses highway charging for longer trips. He's interested in cutting-edge technology and Saudi Arabia's tech transformation, so he's eager to see continued expansion of the charging network, including premium charging stations.

Attitude toward BEV

Driving profile

- Daily commute
- Business travel & weekend trips
- 20 to 30k km/year

Reason to buy



TECHNOLOGY

Charging location



пг

√~ | ніghway

Charging pain points



NO SERVICES

Attitude:

1 point Limited interest in the vehicle, it's just a means to get from A to B **5 points** Huge fan of my BEV, love the experience



3.3/ Will BEV drivers remain electric?

Overall, 87% of survey respondents – already BEV drivers – are considering a BEV as their next vehicle. The top three reasons are lower operating cost than an ICE vehicle, environmental protection, and suitability for their required range. \triangleright G

Users in Asia-Pacific (including China) seem most convinced by remaining electric, with 90% considering a BEV as their next car, compared to 84% in Europe and 87% in North America. Chinese consumers are particularly keen, with 99% of respondents considering a BEV for their next car purchase. This reflects China's extensive policy support for electrification, a mature EV ecosystem led by domestic giants, and cultural enthusiasm for technologydriven mobility.

G Committed to going electric

The vast majority of respondents would consider a BEV as their next car

Answers to: Are you considering buying/leasing a BEV as your next car? [Yes]



A mong Asian markets, Japan stands out with only 78% of respondents considering a BEV as their next vehicle; this is relatively low for the region but broadly in line with some other countries. This metric is below 80% for respondents from the likes of Austria, Switzerland, Italy, Spain, and Romania, for instance. These are markets that are less mature, or where consumers have a less positive perception of EVs and charging infrastructure, or where recent policy developments have created uncertainty.

4.1/ Charging infrastructure growth

With EV sales penetration rates rising in most countries, it is vital that charging infrastructure expansion keeps pace. However, despite a healthy 33% expansion in the global number of public charge points in 2024, the ratio of EVs to public charge points deteriorated slightly. This was mainly down to growth in EV sales outstripping infrastructure expansion in China – the world's biggest market – and the Americas, with charging sufficiency largely unchanged in most other regions. Meanwhile, the share of fast DC charge points continues to steadily grow.

The total number of public charge points in our sample countries grew by more than 30% from 3.8 million at the end of 2023 to more than 5 million by the end of 2024. Notably, more than two thirds of the charge points added in 2024 are in China. While some European countries continued substantial infrastructure rollouts (particularly Belgium, Germany, Spain, and the UK), some relatively mature markets, such as Norway, saw more limited growth. In North America, growth was also modest at just above 20%, while it was lower still in the likes of Japan and South Korea. Meanwhile, some relatively early-stage markets, such as the GCC states and Southeast Asia, continued to see rapid growth, albeit from a low base of charge points.

Overall, AC technology remains the basis for the majority of public charge points (60% globally), but the share of DC chargers is increasing. There is some regional

variation here: less than 20% of European public charge points are DC, but this rises to more than 40% in Asia-Pacific and the Middle East and North Africa. ► H

Europe:

Continued rollout with gradual growth in public DC charging

The number of public charge points increased by more than 35% in 2024, while the total number of public charge points now exceeds one million across Europe, of which more than 150,000 are DC. There was also continued growth in the number of private charge points, meaning Europe's total charge-point count grew from approximately seven million to more than nine million in 2024.

Innovation in charging technology is also becoming more widespread. Battery swapping is now available in numerous countries, with NIO opening stations in Scandinavia, Germany, and the Netherlands. Smart charging and vehicle-to-grid pilot schemes are also underway across Europe.

North America:

Modest rollout in the face of uncertainty

Growth in the number of public charge points was more modest in North America, likely reflecting political headwinds and uncertainty in the United States, and the broader challenges faced by some charge point operators. Total charge points increased by a little over 20% during 2024, in line with 2023 but short of 2024 growth rates in Europe and Asia-Pacific.

However, DC public charge points now account for around 25% of all public charge points – an increase of 30% during 2024. This hints at the stronger need for faster public charging in the likes of the US and Canada, where a high share of drivers have access to private charging at home and where driving distances are relatively high given the size of countries.

Asia-Pacific:

China fuels growth, while young markets take off

Growth in total charging capacity continued at pace. Driven almost entirely by China, the total number of charge points in the Asia-Pacific countries in our study increased by more than 40% to 13.5 million. Of these, just under four million are publicly accessible, with 45% DC. Public policy, statebacked expansion, and corporate partnerships helped drive more than 30% growth in public charge point numbers in China, with a 35% increase in public DC charge points. Less mature markets such as Indonesia and Malaysia are seeing rapid growth rates, albeit from a very low base, while Japan and Korea – two of the region's largest in terms of public charge point numbers – continued to lag behind in terms of growth rate.

H Gathering speed

The share of public DC charge points is gradually increasing

DC share of total public charge points [%, 2023 - 2024]



Source: Roland Berger EV Charging Index - desk research



5 points Huge fan of my BEV, love the experience

4.2/ Charging infrastructure sufficiency

In 2024, global public charger sufficiency was broadly flat relative to 2023, with the global EV-to-public-charge-point ratio rising slightly from 10 to 11. This was mainly driven by the fact that growth in the Chinese EV parc outpaced growth in public charging infrastructure (yet sufficiency in China remains very good in relative terms). In Europe and North America, public charge point rollout slightly outpaced EV parc growth. Both regions have relatively high EV-topublic-charge-point ratios, partly reflecting the fact that many EV users in these regions have private charging at home so have less need to charge in public. ▶I However, it is important to note that this ratio includes PHEVs – which can operate on traditional fuel – and refers only to sheer numbers of charge points, not to actual capacity to deliver energy. Further, it requires a nuanced interpretation, as in practice the need for public chargers (both absolute numbers and the relative mix of slower AC and faster DC) depends entirely on many local factors, such as access to home charging and typical driving patterns in the country – there is not a "magic number" that will suit all markets.

| Going public

Public charging sufficiency varies considerably from region to region

Public charging infrastructure sufficiency [EV car parc/public charge point #, 2023 - 2024] The lower the ratio, the better the sufficiency



^{2023 2024}

Source: Roland Berger EV Charging Index – desk research

U se of home charging shows a minor decrease on 2023 – consistent with the general and gradual shift away from the archetypal early EV adopters with a private driveway. North American BEV drivers still do the highest share of charging at home relative to other regions. On a global level, BEV users report conducting just over half their charging away from home, emphasizing the importance of public charging infrastructure. Retail centers are the most popular destinations for public charging. Satisfaction with the EV charging experience is high, and continues to rise in many markets, with improvements across speed, convenience, and cost. Meanwhile, speed remains the number one area for improvement.

Access to charging at home

Ready access to home charging is a key driver of charging behavior as well as EV uptake in the early stages of the market. According to our survey, 85% of BEV drivers use either a private or shared home charger. This is slightly lower than in 2023, when 87% reported owning and using a home charger. The main obstacle to home charging is an unsuitable living environment, such as inner-city apartments, while some BEV drivers also see the purchase and installation of home chargers as too costly or complex. ► J

BEV drivers in North America are most likely to use their own private charger at home (78%) – considerably more than in Europe (66%), China (52%), Southeast Asia (62%), GCC countries (58%), or in Central and Latin America (64%). In Asia and MENA, BEV users are more likely to use semi-private shared chargers such as those in apartment complex parking lots.

Australia leads all countries in terms of access to private home charging, with 82% of respondents owning their own charger, just ahead of Canada, the US, and Norway. When including shared residential charging, Indian EV drivers have the best access, with only 4% having no access to any home charging – a reflection of the affluent EV ownership demographic. At the other end of the spectrum are countries such as Vietnam, where 40% of EV users lack access to any home charging, Romania (38%), and Singapore (30%).

Access to shared residential charging is most common in South Korea (61% of BEV users), reflecting the nature of residential property in current EV user cohorts and the fact that major conglomerates and specialized companies often integrate charging solutions directly into new apartment buildings and commercial properties. In China, driven by the residential property mix as well as the promotion of national charging policies and strong public charging provision by automakers, the proportion of BEV users with their own private charging facilities stands at just 52%.

While 85% of BEV owners have access to charging at home, respondents said they conduct around half their charging away from home, emphasizing the importance of public charging infrastructure. J Home advantage

North American BEV drivers are most likely to charge at home





Yes, my own private home charger

Yes, a semi-private/shared charger that is exclusively for the use of residents (e.g., in private apartment complex parking lot)

No home charger

Types of charging used at home

Home chargers can vary in terms of intelligence and power rating. According to our survey, charger intelligence is broadly similar across most regions, with a moderate degree of penetration for the most intelligent chargers, which can optimize charging based on electricity prices. Europe, Asia-Pacific, and MENA all have 19-22% penetration rates for the most intelligent chargers, some way behind North America and especially the United States (31%). Europe's leading countries in this regard are the UK (32%) and Norway (26%).

Most home chargers fall in the 7-22 kW bracket across all regions, while a sizeable minority of home chargers are 22 kW-plus. GCC countries also reported the greatest proportion of high-powered home chargers of 22 kW-plus, with Saudi Arabia the leader at 35%.

Why some users resist installing a private charge point

Lack of suitable living environment remains the most prevalent reason for EV users to not have a private charge point. In Europe, 53% of respondents cited this as a reason, similar to users in Asia-Pacific (59%) and North America (54%). Such users typically live in properties that lack dedicated or suitable parking to install a charger. South Korea, with its high proportion of dense urban and apartment living, saw 62% of respondents cite living environment constraints.

Cost is also a factor, cited in 36% of responses in Europe, 38% in Asia-Pacific, and 31% in North America. It is the most cited factor in less developed nations, for example India (58% of reponses) and Indonesia (61%).

Home charging vs. public charging

The estimated charging mix – the share of total EV energy from different charging use cases – is broadly reflective of the penetration of private home charging across regions. In Asia-Pacific (including China), BEV users report doing 53% of their charging at home (with 56% of EV users having access to their own private charger at home and an additional 29% having access to a semi-private/shared charger at home), in Europe the equivalent figure is 56%, with 66% of BEV users having access to their own private home charger (and 83% in total having access to either private or semi-private/shared charging at home), while in the Americas, where around three quarters of EV users have access to their own private home charger (more than 90% including semi-private/shared chargers), home charging represents the vast majority of charging. ► K

Charging away from home remains an important part of the mix, then, and where access to fully private home chargers is low, the public charging share is high, even where access to shared residential chargers is relatively high. In addition, it is clear that both slower/AC and faster/ DC modes have important roles to play in the public charging mix.

Countries with a high (>30%) share of total charging done in public include Vietnam, Qatar, Romania, Singapore, China, Morocco, and Italy, while the likes of Norway, Sweden, Australia, and Canada are at the lower end of this scale (15-20%).

This largely reflects the nature of residences (both in EV cohorts and overall) as well as the provision of public charging. Even in some more mature markets, such as China, private home charger access (52%) and usage (40%) remain relatively low – mainly due to living constraints.

K Private vs. public

Home charging dominates, while fast and slow charging both play important roles



Answers to: What's the split of using a home charger and using public facilities?

Home charger (on own private property or in shared private garage/parking area)

- Workplace or private depot charger
- Public slow charger (typically 3-22 kW AC charging)
- Public fast charger (typically DC charging of 50 kW or higher)
- Battery swap & other

Highest share of private/lowest share of public

100% 1% 5% 1% 1% 7% 7% 10% 10 % 11% 12% 11% 11% 73% 71% 70% Canada Norway Australia

Source: Potloc, Roland Berger EV Charging Index survey 2025

Lowest share of private/highest share of public



Meet BEV driver Andrei | Romania

Andrei and his family use their BEV as a "no frills" alternative to their primary (ICE) vehicle, and utilized the government's subsidy to purchase it. As a secondary car, it's used primarily for school drop-offs and city errands, helping keep the cost of ownership and maintenance needs low. The family hasn't invested in a home charger but easily charge the car with home domestic plugs, and typically top up with fast chargers when needed.

Attitude toward BEV

Driving profile

Secondary vehicle (also has an ICE) Quick trips

PUBLIC FAST

Up to 10k km/year

Reason to buy



Charging location

HOME

Charging pain points



INFRASTRUCTURE

Attitude:

1 point Limited interest in the vehicle, it's just a means to get from A to B **5 points** Huge fan of my BEV, love the experience

Asessing user charger experience

Satisfaction with the EV charging experience is high, and continues to rise in many markets. Countries with the most room for improvement include Japan (64% very satisfied or quite satisfied), South Korea (79%), and Austria (83%), while leading lights include Qatar (97%), Brazil (95%), Saudi Arabia (94%), and China (94%). That said, in China, only 33% are "very satisfied" compared to 59% in Qatar and Saudi Arabia and 54% in the US or UAE, indicating some persistent challenges. ►L

Public EV charging use cases

From highways to retail centers, BEV users rely on a range of public charging options, highlighting the importance of a diverse mix of public charging infrastructure.

Users in North America are slightly more likely to charge in retail destinations, while in Europe and Asia-Pacific, BEV users are more likely to use kerbside charging, as a higher share of residences lack private off-street parking provision. About 40% to 60% of BEV drivers in each region use highway charging stations. ► M

L On the up

BEV drivers are increasingly satisfied with the charging experience





M Public charging modes

Shopping destinations are the most commonly used type of public charging

Answers to: You mentioned that you do some or all of your charging away from home. Please select the locations you typically use for charging? [Multiple answers possible]



Perception of convenience and speed in public EV charging

Public EV charging provision continues to develop positively, with around four in five survey respondents noting that public charging is becoming more convenient. Countries in MENA and Asia have made the biggest strides, especially relatively young markets such as Malaysia, Singapore, Thailand, and the GCC states.

China continues its impressive progress, with 79% saying public charging is becoming more convenient,

thanks to state-backed "charge-while-you-park" policies, partnerships between auto OEMs and grid operators, and fast-charging corridors along highways.

Japan is moving more slowly: only 63% say public charging is becoming more convenient (with only 5% saying it is much more convenient). South Korea fares a little better, but only 75% believe public charging is increasing in convenience, reflecting slower developments in EV and charging infrastructure deployment. \triangleright N

N Steadily improving

Most EV users believe EV charging is continuing to become more convenient





Source: Potloc, Roland Berger EV Charging Index survey 2025

In Europe, 70% of respondents believe public charging is becoming more convenient. This partly reflects the relative maturity of charging provision in countries such as Norway, Sweden, and the Netherlands, where convenience levels are already high and fewer BEV users see improvement versus last year. But BEV users in some markets do report strong improvement: 84% of UK respondents and 83% in Portugal say public charging is becoming more convenient. At the other end of the spectrum, less than half of BEV users in Italy share this sentiment. A growing share of users are satisfied with public charging, reflecting the continued expansion of high-power infrastructure across many regions. A majority of global survey respondents (60%) say public charging is generally fast enough, up from 52% in 2023. This has been boosted by significant rollouts of high-power charging infrastructure in the likes of France and Germany over the last couple of years. ► O

• Picking up speed

Fast public charging is becoming more prevalent around the globe





Germany, Norway, UAE, Thailand, and the United States lead the way when it comes to satisfaction with public charging speeds. Japan continues to rank poorly in comparison, reflecting the need to improve network provision.

Perception of public charging costs

One third of survey respondents say public charging prices are higher than expected and should be lower. This is lower than in 2023 and is reflected across all regions – a sign that charging costs have lowered, expectations have been adjusted, or both. China stands out as having particularly acceptable EV charging prices. Just 20% of users consider prices too high, with intense competition among operators, government price caps, and off-peak discounts keeping costs low. Conversely, 45% of UK BEV users say public charging prices are higher than expected, with similar sentiment from survey respondents in the likes of Belgium, Italy, Norway, Japan, and Australia. ► P

Improvement areas

While public charging is rapidly expanding globally, the top user frustrations remain consistent: excessive charge times and insufficient infrastructure. 47% of survey respondents were dissatisfied with the speed of public chargers, while 45% think infrastructure is insufficient, with broad consistency across regions, except China. \triangleright Q

P Worth it

Dissatisfaction with charging costs is falling across the globe



Answers to: Within public charging, what is your opinion regarding the charging costs? (Incl. electricity fees and service fees) [% "higher than expected, should be lower"]

Q What people want

Excessive charge times and insufficient infrastructure are the main areas for improvement in public charging

Answers to: Based on your overall charging experience, which of the following are less satisfactory to you? [Multiple answers possible]



Strong government support for public charging infrastructure, particularly fast chargers, means less than 40% of BEV users in China were dissatisfied with the speed of public chargers, while a similar proportion thought infrastructure was insufficient. In most other countries, these are the leading issues for BEV drivers, but in China they are on par with other common complaints such as lack of catering and other amenities while charging, or broken charge points.

Several European countries are close behind China on perceptions of charging power and public infrastructure sufficiency. Respondents in Austria, the Netherlands, and Norway have fewer complaints about public charging infrastructure sufficiency than in China, though levels of dissatisfaction with charging speeds are higher (Norway in particular has a notably high share of BEV users dissatisfied – 52%). This is consistent with these countries having relatively well-developed public charging networks but high shares of slower AC charge points (Netherlands >95% of public charge points) or DC charging infrastructure that does not consistently deliver high power levels that some users have come to expect with the rollout of HPC (high power charging, i.e., DC infrastructure capable of charging a BEV at 150 kW or greater).

At the other end of the spectrum, charging power/ time and public infrastructure sufficiency are issues that each attract complaints from more than half of our survey respondents in India, South Korea, and Japan, and to a slightly lesser degree in Singapore and Spain. Where these countries lag behind China in charging power and public infrastructure sufficiency, they share common ground in that respondents want better availability of nearby amenities while charging (especially in Japan and India). **R**

Access and information on public charging networks

Our survey suggests that whether an OEM operates its own charging network has little impact on purchasing behavior.

This is particularly the case in Europe and North America, where 15% and 27% of respondents, respectively, cited OEM networks as a significant factor in their EV purchase. This proportion is highest in Indonesia, where 55% of EV users believe OEM networks are extremely important.

Meanwhile, information on public chargers is most commonly obtained through apps from mobility services providers or charge point operators. More than half of BEV users in Asia-Pacific (59%) get information this way, followed by 50% in North America and 45% in Europe.

Japan has the highest percentage of users who prefer apps from OEMs or the car dashboard display (44%). This highlights the importance placed by Japanese auto makers on seamless integration of charging information into the vehicle's dashboard, providing real-time, reliable data on charging locations, alongside their availability and compatibility.

EV battery swaps

BEV users in MENA show a stronger preference for battery swapping, with 69% saying they are willing to try it, compared to 48% in Europe and 50% in North America. The preference is also strong in Asia-Pacific, with 64% willing to try: one factor in this is the automakers' network and government standardization efforts in China, while there is a notably high willingness to try battery swaps in Southeast Asia (75%). Swapping generally appeals to urban dwellers without home charging and taxi fleets that prioritize minimal downtime.

R Different experiences

Satisfaction with charging power, public infrastructure sufficiency, and nearby amenities varies drastically from country to country

Answers to: Based on your overall charging experience, which of the following are less satisfactory to you? [Multiple answers possible]

Lowest share of dissatisfaction with charging power and sufficiency (5 lowest)



Highest share of dissatisfaction with charging power and sufficiency (5 highest)



Charging time too long/lower charging power

Public charging infrastructure not sufficient

Lack of catering and other supporting facilities in charging stations while charging

6/ Charging market dynamics

Europe: Investment challenges remain

In 2024, charge point operators continued to face the challenges of deploying capital to moving and uncertain targets in a dynamic market, and investor sentiment remained subdued after concerns about public charging overbuild in many Western European markets. A high number of public charge points per EV may be good for charging provision, but it can limit utilization and put pressure on charge point operator economics. However, there are indications this is settling and green shoots are appearing for performance and the ability to raise capital.

Some charge point operators are exiting the charging sector as they reassess their strategy, while others undergo restructuring. The market is starting to consolidate, with opportunities for new entrants shrinking as leading incumbents reach meaningful scale and maturity.

Investment criteria shifted from growth toward performance while increasing the focus on Eastern Europe, where the European Bank for Reconstruction and Development invested EUR 15 million in Eldrive, for instance, and Mirova invested EUR 50 million in GreenWay.

Charging for electric medium and heavy duty commercial vehicles also received greater investment attention. Milence, for example, has received more than EUR 100 million of funding under the EU's Alternative Fuels Infastructure Facility program to deploy more than 500 charge points. This sector will increasingly attract private capital.

North America: Profitability proves elusive

While the market remains challenging for charge point operators, those running public charging facilities reported increased utilization, boosted by rideshare agreements, contracts with EV manufacturers, and subscriptions.

The market continues to shift to the NACS – formerly known as the Tesla standard – for both new and existing chargers. This means Tesla and other vehicles can share charging stations, where before there was very little crossover. Profitability continues to prove elusive for charge point operators. Meanwhile, government funding and tax incentives are expected to be withdrawn, further imperiling project economics.

The potential withdrawal of IRA vehicle rebates should slow adoption growth and shift adoption toward PHEVs, potentially reducing growth in demand for ultra-fast charging. This could indicate a shift in business models away from gas station-type charging toward destination and workplace charging, as PHEV owners will charge at home and at convenient locations while parked.

Asia-Pacific: China continues to dominate while local operators begin to emerge

Local operators are becoming increasingly active in most regional markets, but China's charge point operators command the most attention. The country's charging market is led by five major operators – TELD, StarCharge, YKC, State Grid, and Orange Charging – which collectively control around 70% of public charging stations.

OEM-backed and OES-backed charging infrastructure is becoming more prominent in China, with both newer players, such as Tesla, NIO, and Xpeng, and traditional companies such as Volkswagen and Audi entering the market.

CATL and Huawei are also actively developing ultrafast charging and grid-integration solutions, while NIO continues to expand its battery swap network, reaching over 3,360 by mid-2025. I n this year's EV Charging Index, we take a closer look at three geographies: Australia, India, and a subset of countries in the Middle East. While they remain at a relatively early stage in their respective electrification journeys, activity is beginning to pick up, with each market boasting considerable EV potential. ►S

Australia: Nationwide coverage through public-private coordination

Australia's EV charging market is shifting from fragmented pilot programs to a coordinated national build-out. With vast geography and rising EV uptake (around 10% of new car sales in 2024), the key challenge is ensuring equitable charging access across urban and regional areas, while ensuring sufficient charger utilization, which is rising but still below more mature international comparators, notably in rural and regional areas. Public investment through programs like the Driving the Nation Fund has catalyzed charge point deployment, while state-level grants in New South Wales, Victoria, and Queensland are accelerating private sector participation. Notably, Australia now has over 1,800 public DC fast chargers, up from just 500 in 2021. However, significant further investment is essential to avoid a national shortfall of public charge points. The required rate of charger installation through 2033 is approximately eight times higher than today.

Fuel retailers such as Ampol and mobility clubs such as NRMA are emerging as leaders in charge point operation. The next wave of growth focuses on interoperability, smart charging, and residential integration as more homes install AC chargers.

Middle East: Top-down acceleration tied to urban innovation and national branding

EV charging is a key part of national transformation agendas for numerous nations in the Middle East. The likes of the UAE and Saudi Arabia are embedding EV charging into smart city planning, luxury real estate, and Vision 2030 targets. The strength and reliability of the regional energy grid enables it to absorb cyclical EV-related demand without major disruption. Dubai already offers over 700 public chargers, with plans for 1,000-plus by the end of 2025. Saudi Arabia's Public Investment Fund is backing infrastructure providers Electromin and EVIQ to create a nationwide network aligned with local OEMs such as Lucid and Ceer, and recently involved Chinese EV giant BYD in their EV charging infrastructure development. Publicprivate partnerships drive high-speed charging at malls, highways, and residential towers, with 150–350 kW chargers becoming the norm.

India: Mass-market electrification through state-led infrastructure and commercial fleet pull

India's EV charging sector is expanding rapidly, driven by strong government incentives, a booming electric two- and three-wheeler segment, and growing demand from commercial fleets. The FAME II scheme and various state EV policies support both vehicle subsidies and charging infrastructure build-up.

Alongside funding, the public sector also plays a key enabling role by setting guidelines and facilitating land access for charging stations through initiatives like the PM-eBus Sewa scheme, linking EV charging to public transport electrification. Meanwhile, private operators are accelerating charge point deployment across cities and highways. Key challenges – such as grid readiness, land constraints, and interoperability – are being addressed through standardization efforts and public-private coordination.

S Gaining fast

Our three growth regions lag behind on EV penetration but are developing rapidly





Answers to: Generally speaking, how has your electric vehicle charging experience been? [% "very satisfied" or "quite satisfied"]



Answers to: Do you think public charging has been getting more convenient over the past 6 months? [% "much more convenient" or "gradually more convenient"]



Source: Roland Berger EV Charging Index

Takeaways

Continuous improvement Four key takeaways from EV Charging Index 6

- 1/ Consumer pull is growing: Despite numerous political and macroeconomic challenges, EV sales penetration continues to rise. Notably, uptake is increasingly driven by the lower operating costs and high performance of EVs, rather than the ' "carrot and stick" of subsidies and other policies, or environmental benefits.
- 2/ User profiles continue to diversify: EV ownership has now expanded well beyond a small minority of early adopters, with EVs increasingly serving as main cars and as a direct replacement for ICE vehicles. As EVs are more frequently used by drivers living in urban areas, access to private charging at home is slowly declining, creating opportunities for providers of EV charging and adjacent products and services.
- **3/ Improved charging experience:** The sufficiency of public charge points improved in most regions, as did the share of DC charge points, increasing user satisfaction with the overall public charging experience. Meanwhile, EV drivers have an increasingly favorable perception of charging costs.
- **4/ Both public and private charging remain important:** All charging types and use cases remain important parts of the charging mix and fundamental components of user-friendly charging provision across the globe. Charge point operators need to keep this in mind, while addressing the users' wish for more higher-power infrastructure.

EV Charging Index 2025 country and region grouping list

Country	Top-level region	Country groupings used in the Index	# of respondents in the country (BEV drivers)
Australia	APAC	Rest of APAC (excl. China)	250
Austria	Europe	Western Europe	250
Belgium	Europe	Western Europe	250
Brazil	Americas	Central & LATAM	250
Canada	Americas	North America or NAFTA	600
China	APAC	-	1,000
France	Europe	Western Europe	800
Germany	Europe	Western Europe	800
Hungary	Europe	Eastern Europe	200
India	APAC	Rest of APAC (excl. China)	511
Indonesia	APAC	Rest of APAC (excl. China) or SEA	200
Italy	Europe	Western Europe	600
Japan	APAC	Rest of APAC (excl. China)	251
Malaysia	APAC	Rest of APAC (excl. China) or SEA	175
Mexico	Americas	North America or NAFTA	250
Morocco	MENA	-	71
Netherlands	Europe	Western Europe	350

Country	Top-level region	Country groupings used in the Index	# of respondents in the country (BEV drivers)
Norway	Europe	Western Europe or Nordics	500
Portugal	Europe	Western Europe	200
Qatar	MENA	GCC	29
Romania	Europe	Eastern Europe	150
Saudi Arabia	MENA	GCC	163
Singapore	APAC	Rest of APAC (excl. China) or SEA	200
South Korea	APAC	Rest of APAC (excl. China)	450
Spain	Europe	Western Europe	250
Sweden	Europe	Western Europe or Nordics	750
Switzerland	Europe	Western Europe	265
Thailand	APAC	Rest of APAC (excl. China) or SEA	150
Turkey	MENA	-	200
UAE	MENA	GCC	105
UK	Europe	Western Europe	750
USA	Americas	North America or NAFTA	1,000
Vietnam	APAC	Rest of APAC (excl. China) or SEA	30

• Ur EV Charging Index score captures our assessment of a country's short-to-mid-term potential as an EV charging market, reflecting vehicle parcs, electrification rates, charging infrastructure development, and EV user satisfaction. It can also be interpreted as an indicator of relative maturity and scale across different markets.

We have improved our scoring methodology to better reflect the changing dynamics and relative progress in electrification and charging development within countries, reducing the contribution of sheer volumes to the ranking. Factors that feed into our scoring include:

- EV market: passenger car EV sales volumes, passenger car EV sales penetration rate
- **Charging infrastructure:** total number of charge points, public charge point sufficiency, public charging infrastructure growth rate, public charging infrastructure capacity (DC share), battery swap facilities
- Industry innovation: charging technology development and deployment (e.g., pilots)
- **Customer satisfaction:** overall satisfaction with BEV charging experience, home charger installation rate, satisfaction with public charging speeds, satisfaction with public charging convenience, perception of cost of driving a BEV (vs. ICE), perception of public charging costs

Countries are given a total score out of 100, where 100 reflects high short-to-mid-term potential as an EV charging market and 0 reflects limited potential. The score for each country is a weighted average based on 14 main indicators spanning market data (some of which are a compound of more than one input data, e.g., number of EVs and number of charge points) and survey responses from the EV Charging Index Edition 6 survey.

The results from Roland Berger's EV Charging Index Edition 6 survey come from 12,000 BEV drivers in 33 countries and were gathered in Q2 2025. These respondents were distributed as outlined in the foregoing table, which also maps countries to regional groupings they may be associated with in this report and related EV Charging Index Edition 6 materials.

In this study we refer to

- BEV for battery electric vehicle
- PHEV for plug-in hybrid
- EV for electric vehicles including BEV and PHEV

Credits

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Get in touch with our EV Charging global network!



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07.2025

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