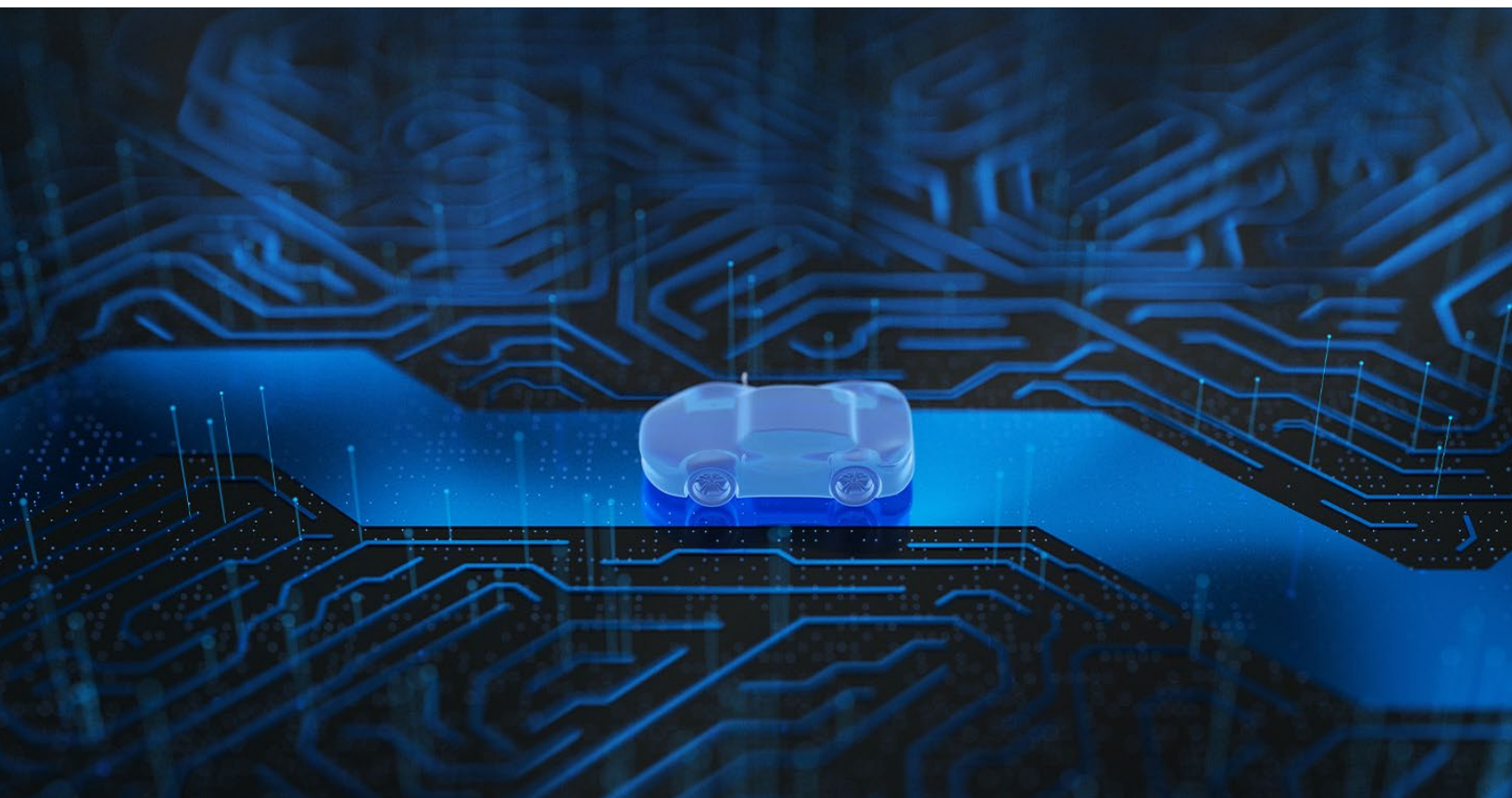


McKinsey Center for Future Mobility

# New twists in the electric-vehicle transition: A consumer perspective

Our annual mobility survey examines how consumer priorities and expectations are shaping the transition to electric vehicles in major markets.

*This article is a collaborative effort by Patrick Hertzke, Patrick Schaufuss, Philipp Kampshoff, and Timo Möller, with Anna-Sophie Smith and Felix Rupalla, representing views from McKinsey's Automotive & Assembly Practice and the McKinsey Center for Future Mobility.*



**The automotive industry** is amid the largest transformation to occur since cars began to replace horse-drawn wagons. Electric vehicles (EVs) continue to gain market share, cars are becoming more connected, and autonomous vehicles are increasingly starting to appear on more streets worldwide. But the transition to new technologies has not been without challenges and twists, especially in the EV sector. After rising rapidly for years, EV sales growth has slowed in many regions. Meanwhile, new competitors, especially those from China, are entering the EV market and attracting attention by offering innovative and technologically sophisticated vehicles that are often more affordable than offerings from incumbents.

Along with regulation, infrastructure buildup, technology evolution, and model supply, consumers are a central piece of the EV puzzle, and their behavior helps explain the global adoption curve. Consequently, OEMs and other industry stakeholders should stay close to the current consumer pulse on EVs to understand demand patterns, including region-specific trends. Our Mobility Consumer Pulse Survey, conducted annually in major automotive markets worldwide since 2016, sheds light on some of the most recent market twists, including the impact of Chinese

EVs, vehicle features that consumers find most compelling, and the perceived obstacles that make buyers hesitant to transition from an internal combustion engine (ICE) vehicle to an EV. (For more information on the survey, see sidebar, “Our methodology.”) The 2025 survey is still ongoing and will eventually include respondents from nine countries. This article contains insights gathered during the first wave, which included respondents from China, Europe, and the United States.

### **Intent to purchase an EV varies by region, and the differences are increasing**

Although EV uptake has increased worldwide, it has always varied by region. In 2024, for instance, about 50 percent of vehicles sold in China were EVs. Of these, 28 percent were battery electric vehicles (BEVs), 15 percent plug-in hybrid electric vehicles (PHEVs), and 6 percent extended-range electric vehicles (EREVs). China is the only market where EREVs are now available at scale. By contrast, EVs accounted for only 21 percent of vehicles sold in Europe (14 percent BEV, 7 percent PHEV).<sup>1</sup> EV sales were lowest in the United States, at 10 percent (8 percent BEV, 2 percent PHEV), with uptake varying vastly by state and region.<sup>2</sup>

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<sup>1</sup> Europe, in this article, refers to the four countries where our survey was conducted: France, Germany, Italy, and the United Kingdom.

<sup>2</sup> Based on data from EV Volumes, S&P Light Vehicle Sales, and McKinsey Center for Future Mobility.

## **Our methodology**

**The 2025 McKinsey Mobility Consumer Pulse Survey**, which is being conducted online, began in February 2025 and is ongoing. As of mid-March, we have analyzed survey responses from 19,491 mobility users across six markets: China, France, Germany, Italy, the United Kingdom, and the United States. The second wave, which will include respondents from India, Saudi Arabia, and the United Arab Emirates, will conclude in April.

The sample includes about 3,000 car owners per market, of which 1,000 were EV owners. When averages are shown, the data is weighted to represent car parc market shares. The sample composition of EV owners and ICE owners is representative of brand market shares in each country, as well as representative of demographics.

The McKinsey Center for Future Mobility has conducted this survey since 2016.

Across regions, EV purchase intent is highest among customers who already have experience with an EV. Surprisingly, this also includes multicar households that currently have an ICE and a BEV, with the majority indicating they will replace their ICE with a BEV as their next car. This finding contradicts the commonly held assumptions that BEVs are only used as the secondary household car, driven for shorter trips, and that consumers may keep an ICE as backup in their garage forever.

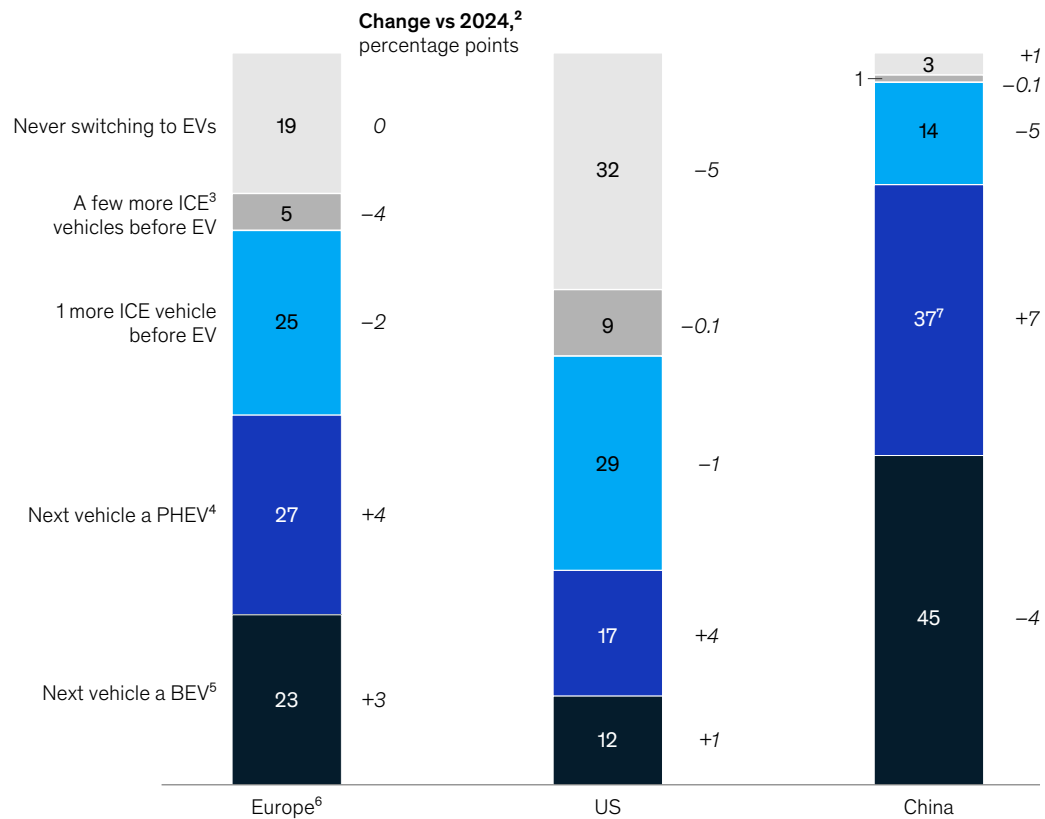
EV uptake is likely to continue to grow across regions. In China, 45 percent of respondents state that their next car will be a BEV; this compares with 23 percent in Europe and 12 percent in the United States. In a departure from current sales trends, customer intent to purchase a PHEV is higher than intent to buy a BEV in the United States and Europe, and it is almost as high as BEV intent in China. These findings highlight the continued relevance of hybrids in the EV transition (Exhibit 1).<sup>3</sup>

<sup>3</sup> Stated intent in a survey cannot be directly translated to actual sales because of stated-intent bias, meaning survey respondents typically overestimate their purchase behavior because they do not have to spend real money in a survey. Most likely, actual EV sales will be below the intent-to-purchase numbers.

Exhibit 1

## Consumer intent to transition to a plug-in hybrid electric vehicle or a battery electric vehicle varies by region.

### Electric vehicle (EV) transition sentiment,<sup>1</sup> 2025, % of respondents



Note: Figures may not sum to 100%, because of rounding.

<sup>1</sup>Question: Which type of powertrain are you considering buying for your next vehicle when you replace your current (electric/combustion engine) model?

<sup>2</sup>Excluding UK. <sup>3</sup>Internal combustion engine. <sup>4</sup>Plug-in hybrid electric vehicle. <sup>5</sup>Battery electric vehicle. <sup>6</sup>France, Germany, Italy, and UK. <sup>7</sup>Including 9% extended-range electric vehicles.

Source: MCFM Mobility Consumer Pulse 2025, Feb 2025, global n = 25,904, China, Europe (France, Germany, Italy, and UK), and US n = 19,491; data also available for India, Saudi Arabia, and United Arab Emirates

When we compared the regional patterns to those in previous surveys, we found that the differences among countries are growing.

### **Strong sales growth in China**

China has been experiencing EV growth at unbroken high levels, with sales accounting for more than 50 percent of all vehicles sold in some months. Globally, China's EV sales are by far the largest. Sales and customer data suggest that the future of China's market will be electric, with more than 80 percent of Chinese respondents stating that their next car will likely be electric. This demand suggests that the market has transitioned from "regulatory push" to "consumer pull." In the short term, hybrids (both PHEVs and EREVs) will likely play an important role in supporting the transition to BEVs.

### **Moderate growth in Europe**

In Europe, the EV share of new-car sales declined slightly over the past 18 months, going from 24 percent in 2022 to 21 percent in 2024. The recent survey shows an increase of five percentage points in the number of people who plan to buy a PHEV or BEV as their next vehicle, compared with the 2024 survey. Despite this rise, European EV sales are unlikely to be high enough to satisfy the mid-to-long-term regulatory targets in the European Union.

When looking at specific European countries, different trends emerge:

- **Germany.** Demand fell after the government ended purchase subsidies at the end of 2023, but it has recently picked up. (The 2025 survey shows an increase of eight percentage points in EV purchase intent compared with February 2024.) Germany is also the only European country in the survey where BEV purchase intent, at 30 percent, outweighs PHEV intent, at 18 percent.
- **Italy.** EV purchase intent is growing moderately in Italy. Consistent with past years, more Italian respondents want a PHEV than a BEV: 41 percent versus 17 percent.
- **United Kingdom.** Of British respondents, 25 percent state that they plan to get a BEV as

their next vehicle, and 22 percent want a PHEV, both of which exceed the UK purchase intent levels in previous years.

- **France.** EV purchase intent is growing moderately, with 21 percent of French car buyers planning to get a BEV and 29 percent opting for a PHEV.

### **A slow transition in the United States**

In the United States, EV sales and consumer interest in EV purchases have remained flat over the past few years, but the results vary significantly by location (by state and by specific location within a state). In states that have adopted the rules of the California Air Resource Board (CARB), for example, 38 percent of respondents state that their next car will be electric (BEV or PHEV), compared with 25 percent in non-CARB states. EV purchase intent is highest in California (above 50 percent) but is well below 20 percent in about 25 other states, mostly in the South and Midwest. The contrast between residents of urban and rural areas is equally stark: EV transition sentiment in urban areas (51 percent) is more than 2.5 times higher than that in rural areas (18 percent). Purchase intent for hybrid EVs—both plug-in and full hybrids—is higher than that for BEVs. These trends suggest that the overall EV transition in the United States will continue at a slow pace, and ICE and hybrid-electric-vehicle (HEV) technology will remain relevant over the longer term. OEMs should review their portfolios accordingly.

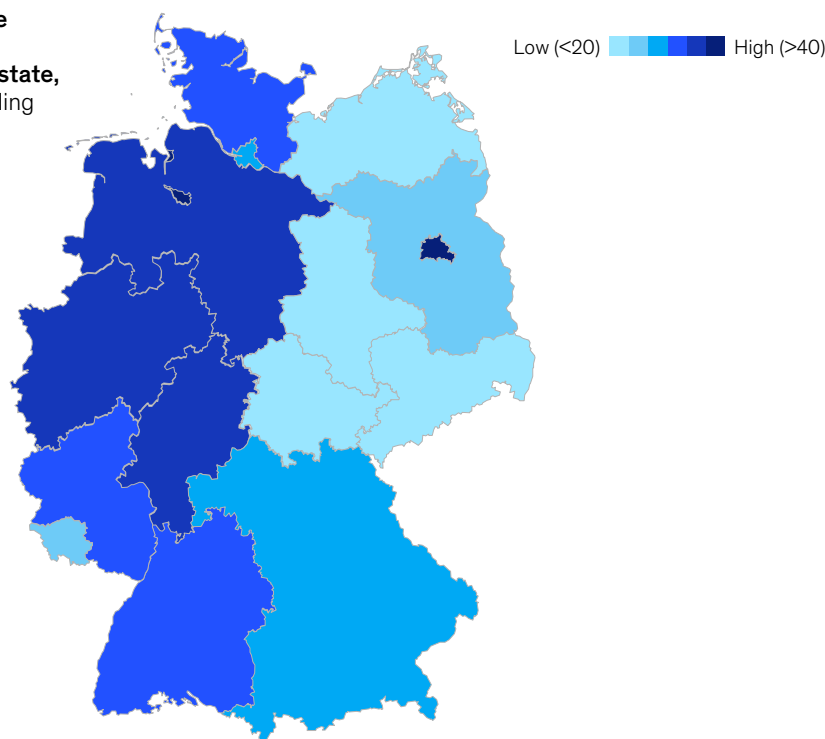
### **Differences within regions**

While customers' EV purchase intent differs across regions, the survey data also shows large discrepancies within countries. Around the globe, customers in urban areas are more open to EVs than residents of rural areas are. This divide is likely related to several factors, such as the demographic makeup of these regions, with rural customers being older and having lower incomes, on average, than those in urban areas, and the sparser public charging infrastructure. The differences within countries or regions can result in hypergranular markets. For instance, BEV transition intent is much higher in western federal states in Germany than in eastern states (Exhibit 2).

## Exhibit 2

### Germany provides an example of the significant regional differences in battery electric vehicle purchase intent.

**Battery-electric-vehicle (BEV) transition intent in Germany, by federal state,**  
% of respondents intending to transition to BEV



Note: The boundaries, names, and designations used on this map do not imply official endorsement or acceptance by McKinsey & Company.  
'Question: Which type of powertrain are you considering buying for your next vehicle when you replace your current (electric/combustion engine) model?'  
Source: MCFM Mobility Consumer Pulse 2025, Feb 2025, global n = 25,904, China, Europe (France, Germany, Italy, and UK), and US n = 19,491; data also available for India, Saudi Arabia, and United Arab Emirates

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### Globally, consumers share similar concerns and expectations about EVs

Issues related to range, price, and charging continue to be top concerns for potential EV buyers. Factors that would convince respondents to switch to an EV include a more built-out public charging network and faster battery recharging speed. Better value stability for EVs is also a concern, especially as EV technology is still evolving.

When asked what factors would tip the balance in favor of an EV purchase, a longer driving range

topped the list and was cited by almost half of respondents (Exhibit 3). Respondents also were asked to identify the average minimum real driving range<sup>4</sup> that would convince them to consider shifting to an EV; their average response is about 500 kilometers (310 miles), up from 425 kilometers (264 miles) in the 2022 survey. Many prospective buyers are concerned about range because they think about “edge cases,” such as long vacation trips, rather than their typical daily driving behavior when estimating their needs. Current BEV owners tend to have range requirements about 10 percent lower than those without EV driving experience.

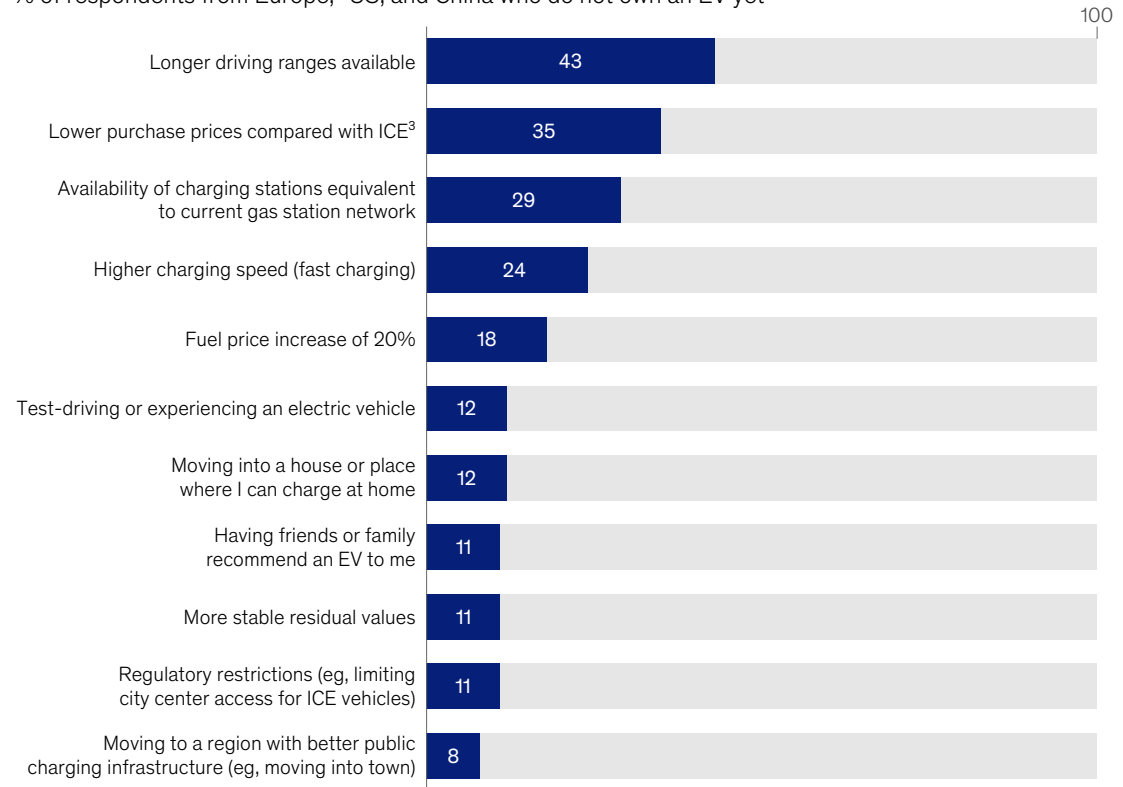
<sup>4</sup> Real driving range refers to the actual range achieved when driving under real-world conditions. This is typically less than the range stated by the OEM, which is based on performance under test conditions.

### Exhibit 3

## Several factors would tip respondents in favor of an electric vehicle.

### Tipping points expected to cause more serious consideration of electric vehicles (EVs),<sup>1</sup>

% of respondents from Europe,<sup>2</sup> US, and China who do not own an EV yet



<sup>1</sup>Question: What would be a tipping point for you to more seriously consider or purchase an electric vehicle soon?

<sup>2</sup>France, Germany, Italy, and UK.

<sup>3</sup>Internal combustion engine.

Source: MCFM Mobility Consumer Pulse 2025, Feb 2025, global n = 25,904, China, Europe (France, Germany, Italy, and UK), and US n = 19,491; data also available for India, Saudi Arabia, and United Arab Emirates

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Cost issues also rank high on the list of tipping points, with 35 percent of respondents stating they would not purchase an EV unless it was less expensive than a comparable ICE vehicle. Car buyers typically give more consideration to the purchase price, which has a significant impact on their short-term finances, than to the potentially favorable benefits for total costs of ownership over time.

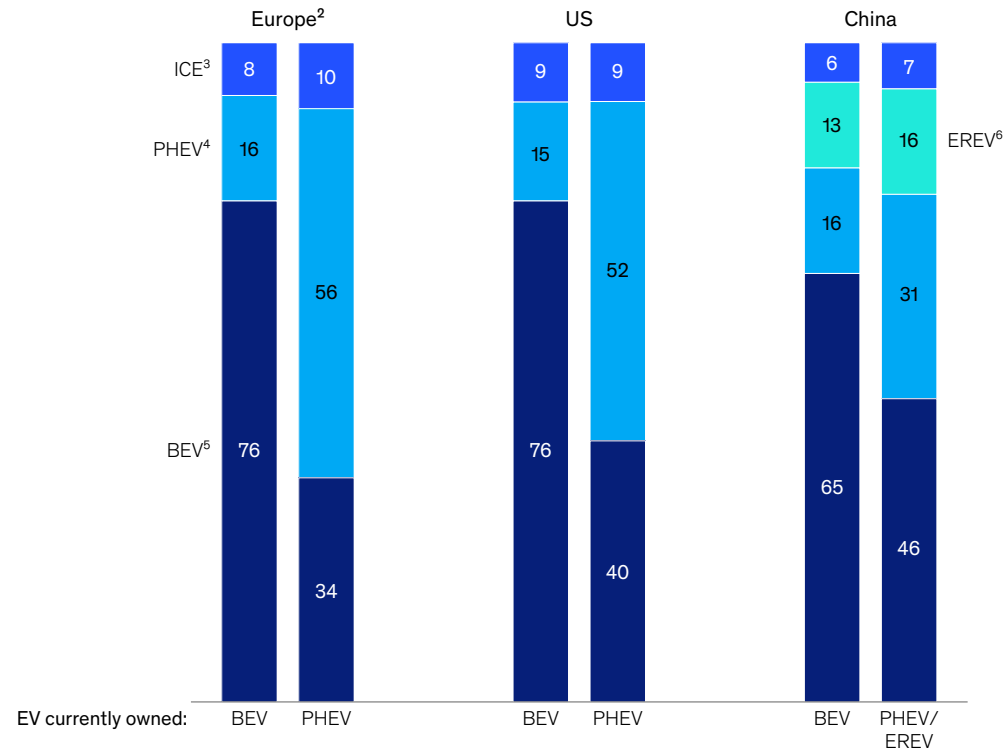
### The BEV repurchase rate is high, and relatively few would revert to ICE vehicles

Across regions, most current BEV owners expect to get another BEV for their next vehicle (Exhibit 4). Of those who say they plan to switch to another vehicle type, most prefer PHEVs, and under 10 percent want to revert to an ICE vehicle.

Exhibit 4

## Most electric-vehicle owners would not switch back to a combustion engine powertrain.

Preferred powertrain for next vehicle,<sup>1</sup> % of respondents by type of electric vehicle (EV) currently owned



Note: Figures may not sum to 100%, because of rounding.

<sup>1</sup>Question: Which type of powertrain are you considering buying for your next vehicle when you replace your current (electric/combustion engine) model?

<sup>2</sup>France, Germany, Italy, and UK. <sup>3</sup>Internal combustion engine. <sup>4</sup>Plug-in hybrid electric vehicle. <sup>5</sup>Battery electric vehicle. <sup>6</sup>Extended-range electric vehicle.

Source: MCFM Mobility Consumer Pulse 2025, Feb 2025, global n = 25,904, China, Europe (France, Germany, Italy, and UK), and US n = 19,491; data also available for India, Saudi Arabia, and United Arab Emirates

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In China, 13 percent would prefer an EREV. Across geographies, switching from EV to ICE is only temporary; under 1 percent of EV owners state that they will never buy an EV again.

Our survey also shows that PHEV ownership is often a stepping-stone to a BEV purchase, with many PHEV owners in all regions planning to transition to a BEV next. As with BEVs, few PHEV owners plan to revert to ICE vehicles across all geographies.

## EV purchase criteria differ across regions

Across regions, battery range is the most important factor for respondents considering an EV purchase (Exhibit 5). To appeal to EV buyers, OEMs may need to provide more information about driving range, because many consumers mistakenly believe their daily routine must involve frequent recharging, even if they travel short distances. EV price and charging speed are also major purchase priorities.



Exhibit 5

## Purchase criteria for electric vehicles vary across regions.

### Purchase criteria for electric vehicles,<sup>1</sup>

% of respondents who consider electric vehicles

■ Bottom 5 criteria ■ Top 5 criteria

	Europe <sup>2</sup>		US		China	
Battery driving range	8	49	9	51	11	38
Purchase price	10	47	11	43	19	21
Battery recharging speed capability	9	38	11	40	11	35
Safety standards	9	23	9	28	11	35
Vehicle brand/OEM reputation	18	21	13	22	14	23
Cutting-edge vehicle technology	18	20	19	18	17	20
Driving performance and handling	14	20	11	28	11	37
Exterior design, look, and colors	22	18	18	17	20	21
Maturity of advanced driver assistance system (ADAS)	23	9	28	8	16	21
Connectivity offers/digital car experience	27	8	25	10	17	17

<sup>1</sup>Question: Which of the following aspects are the 5 most important for your purchase decision when buying an electric vehicle? And which of the following aspects are the 5 least important when buying an electric vehicle?

<sup>2</sup>France, Germany, Italy, and UK.

Source: MCFM Mobility Consumer Pulse 2025, Feb 2025, global n = 25,904, China, Europe (France, Germany, Italy, and UK), and US n = 19,491; data also available for India, Saudi Arabia, and United Arab Emirates

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The differing expectations show that OEMs are no longer likely to find long-term success by developing a global version of each vehicle. Instead, they should thoroughly understand customer preferences in each region and customer group, including the vehicle features that generate the most excitement, and then adapt their offerings to suit these needs within the technological and production constraints of their model lineup.

While range and charging speed are among the top EV purchase criteria in all regions, other expectations differ vastly. Consumers in Europe and the United States mostly anchor on price, followed by safety and

performance. By contrast, Chinese EV buyers place much higher importance on driving performance, driver assistance features, and cutting-edge technology. These findings reflect that EVs already have relatively lower prices than ICE vehicles in China.

There is also a significant divide in customer expectations based on age and location within countries. Around the world, urban and younger customers focus on in-car technology and are less concerned about driving range. By contrast, rural and older customers have higher concerns about range, total cost of ownership, and energy consumption.



## EV buyers are more likely to switch brands than ICE buyers

Many people who buy ICE vehicles stick with the same brand. Across geographies, current EV owners show less loyalty, with the highest switching rate reported in China—almost two out of three car buyers, independent of brand segment (Exhibit 6). And in Europe and the United States, switching rates are higher for premium vehicles than for volume vehicles.

The survey responses suggest that switching rates are high not only because brand is becoming less important but also because critical concerns about EV specifications, such as range and charging speed, are influencing consumers. Consumers first search

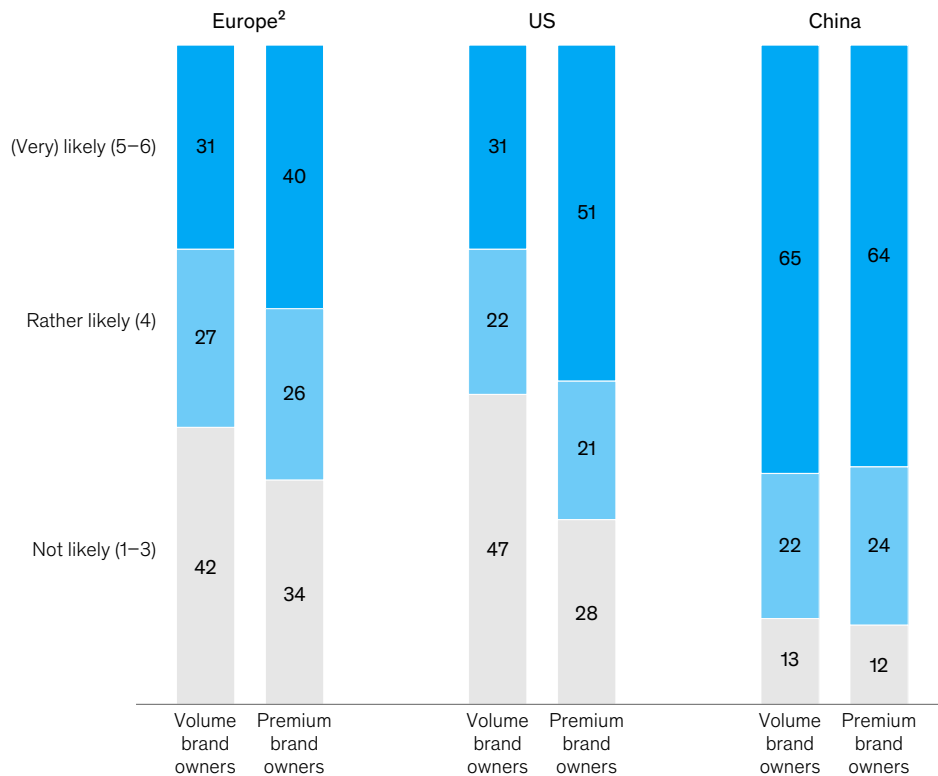
for vehicles that meet their desired specifications and then look for a brand that satisfies them. Switching rates are likely to decline as more EV models that meet customer needs come on the market. In the short term, however, OEMs may see changes in market share unless they intensify their efforts to retain customers and offer products that meet their customers' needs.

Among European survey respondents, 24 percent say they are interested or very interested in Chinese EVs. Interest in Chinese EVs is also strong among US consumers (27 percent), even though protective trade measures currently prevent the sale of Chinese EVs.

Exhibit 6

## Many consumers are open to switching automotive brands when they transition to an electric vehicle.

**Likelihood of switching brand when moving to electric vehicle,<sup>1</sup> % of respondents**



<sup>1</sup>Question: When buying an electric vehicle, how likely are you to switch to another car brand than the one you currently own? Likelihood rated on a scale of 1–6, where 1 is “not at all likely” and 6 is “very likely.”

<sup>2</sup>France, Germany, Italy, and UK.

Source: MCFM Mobility Consumer Pulse 2025, Feb 2025, global n = 25,904, China, Europe (France, Germany, Italy, and UK), and US n = 19,491; data also available for India, Saudi Arabia, and United Arab Emirates

## Consumers focus on price, so more affordable EVs may boost demand

The price difference between comparable ICE vehicles and BEVs can strongly influence adoption rates. In Europe and the United States, only about a third of respondents say they are willing to pay a premium for a BEV over a comparable ICE vehicle

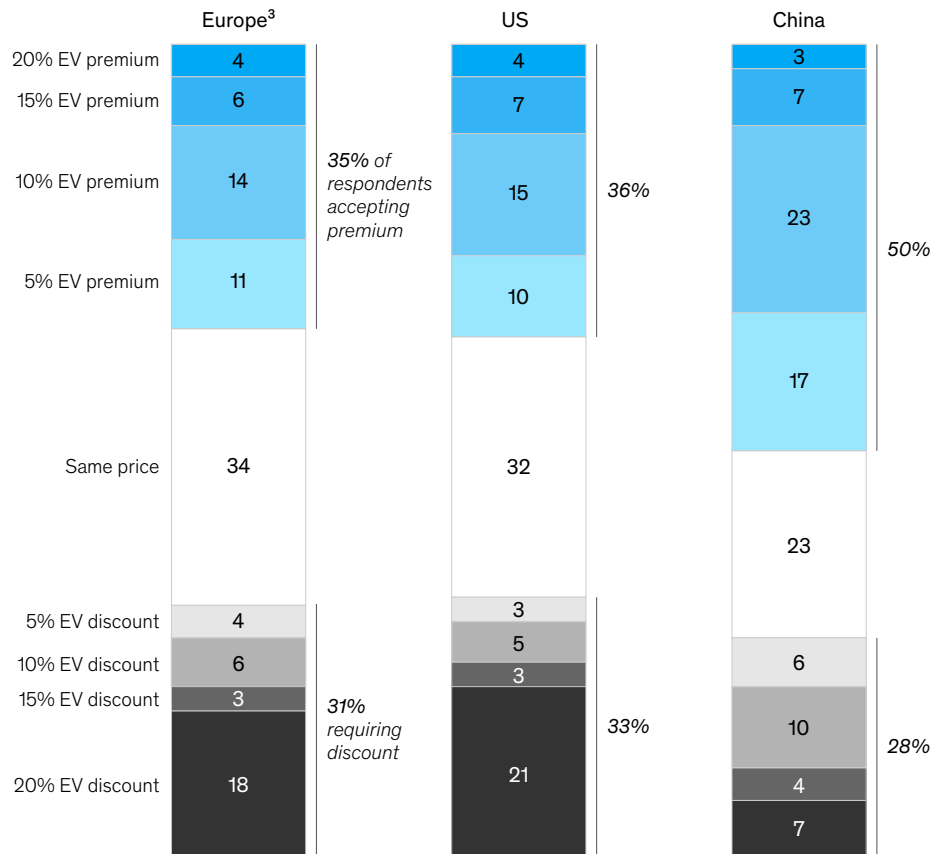
(Exhibit 7). Many expect price parity or lower prices for BEVs than for their ICE alternatives.

While subsidies may help stimulate demand, governments may not offer them or may discontinue them after a certain period. For a more lasting approach to price reduction, incumbent OEMs can strive to lower their cost base.

Exhibit 7

## Willingness to pay a premium for electric vehicles versus comparable combustion engine alternatives is marginal and differs by market.

**Willingness to pay a premium for a battery electric vehicle over a comparable ICE<sup>1</sup> vehicle,<sup>2</sup>**  
% of respondents considering an electric vehicle (EV) in the future



Note: Figures may not sum, because of rounding.

<sup>1</sup>Internal combustion engine.

<sup>2</sup>Question: How much more would you be willing to pay to switch from a conventional combustion engine car to a full battery electric vehicle, or what additional discount would be needed for you to switch?

<sup>3</sup>France, Germany, Italy, and UK.

Source: MCFM Mobility Consumer Pulse 2025, Feb 2025, global n = 25,904, China, Europe (France, Germany, Italy, and UK), and US n = 19,491; data also available for India, Saudi Arabia, and United Arab Emirates

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Only 33 percent of global survey respondents say they are likely or very likely to buy an EV at current price levels (Exhibit 8). But if subsidies or other price disruptions make the EV prices comparable to those for ICE vehicles, 55 percent of respondents describe themselves as likely or very likely to make a purchase. This figure rises to 63 percent if subsidies reduce EV prices below those of ICE vehicles.

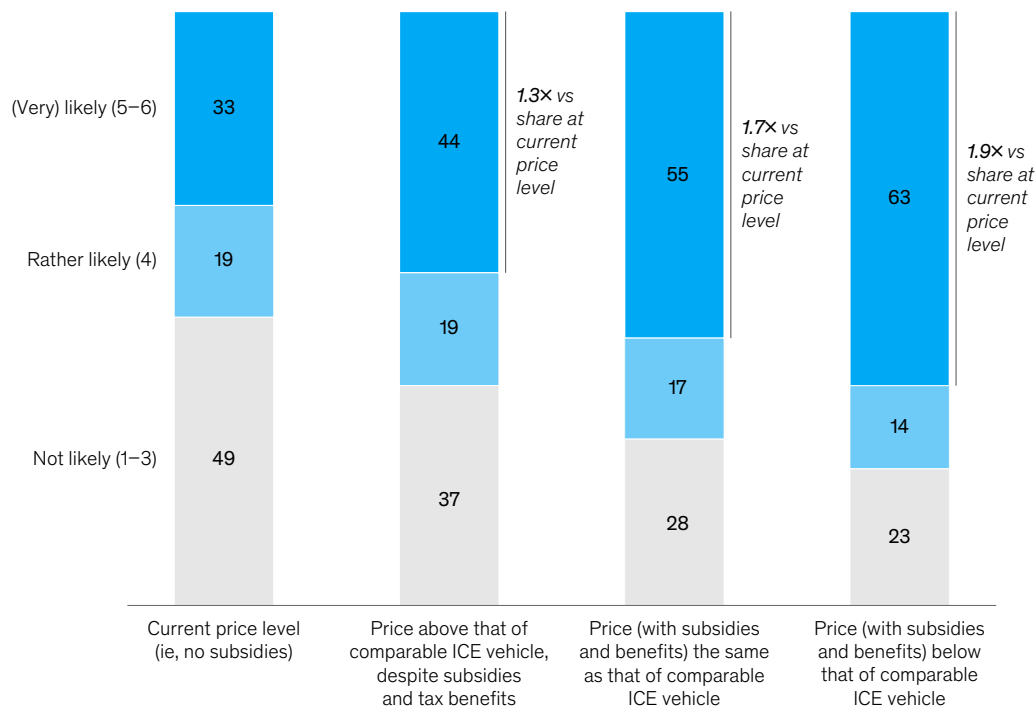
In China, average EV prices are now the lowest of any region and often below those for ICE vehicles.

Chinese consumers also value EVs slightly more than ICE vehicles because of several factors, including the driving experience. These factors contribute to a more advanced EV transition in China than in Western markets. China's EV landscape—which is characterized by fast innovation cycles, increasing model variety, a broad range of new market entrants, and aggressive pricing strategies—is also accelerating the transition.

Exhibit 8

## Lower purchase prices can significantly increase consumers' willingness to purchase an electric vehicle.

**Electric-vehicle purchase likelihood,<sup>1</sup> depending on purchase price level vs comparable ICE<sup>2</sup> vehicle,**  
% of respondents in Europe,<sup>3</sup> US, and China



Note: The displayed data are survey results reflecting customer sentiment. McKinsey does not make policy recommendations. Figures may not sum to 100%, because of rounding.

<sup>1</sup>Question: Today, electric vehicles mostly still trade at slightly higher purchase prices than for comparable combustion engine cars. How likely are you to purchase one at ... ? Likelihood rated on a scale of 1–6, where 1 is "not at all likely" and 6 is "very likely."

<sup>2</sup>Internal combustion engine.

<sup>3</sup>France, Germany, Italy, and UK.

Source: MCFM Mobility Consumer Pulse 2025, Feb 2025, global n = 25,904, China, Europe (France, Germany, Italy, and UK), and US n = 19,491; data also available for India, Saudi Arabia, and United Arab Emirates

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## OEMs need to take clearer actions to appeal to EV buyers and unlock demand

With rising customer expectations, incumbents should double down on improving both their products and their sales strategies. Meanwhile, EV start-ups, lacking in name recognition, should build targeted customer activation strategies, especially if they are entering new geographies. The following activities along the customer journey can help both groups.

### Improving the customer journey

As with traditional cars, customers pass through multiple stages when deciding whether to purchase an EV. Since many people may be purchasing an EV for the first time, OEMs may need to adjust the typical strategies they use to attract customer

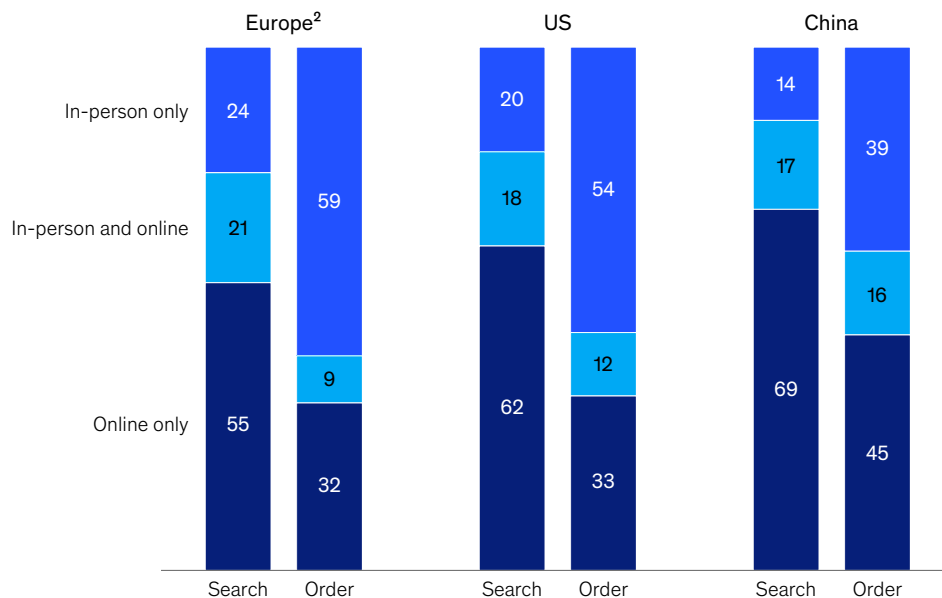
interest and seal the deal. Throughout the process, one fact is clear: An omnichannel experience is important because, as survey responses show, customers in all regions prefer online interactions at certain points but want an in-person experience at other stages of the purchase journey (Exhibit 9).

**Search and configuration.** Most customers start their purchase journey online, and almost 60 percent of car buyers say they exclusively rely on digital channels for research and vehicle configuration. OEMs should optimize this stage because it determines whether customers will consider purchasing their brand. They should be very transparent about EV specifications, such as range and charging speed, and ensure that consumers can easily find and interpret data on these topics.

Exhibit 9

## Customers expected an omnichannel purchase journey.

Preferred purchase channel along the electric-vehicle customer journey,<sup>1</sup> % of respondents



Note: Figures may not sum to 100%, because of rounding.

<sup>1</sup>Question: What are your channel preferences when considering getting your next electric vehicle?

<sup>2</sup>France, Germany, Italy, and UK.

Source: MCFM Mobility Consumer Pulse 2025, Feb 2025, global n = 25,904, China, Europe (France, Germany, Italy, and UK), and US n = 19,491; data also available for India, Saudi Arabia, and United Arab Emirates

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Online tools, such as personalized-range-need calculators based on driving patterns, can help alleviate customer concerns. At this stage, it is also paramount that OEMs educate customers about the electric range they actually need. The survey reveals that many customers anchor on high range requirements but revise their needs downward when they think about their daily trip patterns. Given that lower ranges mean smaller and cheaper batteries, convincing customers to accept shorter ranges will enable lower sale prices and better cost structures for OEMs.

OEMs may also benefit from using online channels to dispel other common misconceptions about EV batteries, such as the belief that they depreciate extremely quickly or need frequent replacement. Battery guarantees can also help.

**Test drives.** While much of the EV consideration process occurs online, more than 85 percent of car buyers say they want to take a test drive before purchase. OEMs can continue educating consumers at this stage, such as by including a charging experience as part of the test drive. In our survey, 49 percent of respondents say they would be interested in or excited to have such an opportunity. Other new approaches can also help. For instance, about 56 percent of respondents are interested in long test drives over an entire weekend, and 51 percent would appreciate support with the installation of a personal charging device at home.

By contrast, only 17 percent of respondents are excited about technology-supported innovations, such as augmented reality, to explore vehicle colors and features. These findings emphasize that it is critical for customers to have direct physical experience with vehicles.

**Negotiation and ordering.** When asked about ironing out purchase details and placing the final order, half of the car buyers surveyed say they want to do this in person with a dealer. OEMs should therefore ensure a seamless transition between online and in-person channels—for example, by allowing customers to easily transfer the vehicle configurations they created online to the dealers who place the order.

Interestingly, 35 percent of respondents say they would prefer to place their final order online, yet many OEMs do not offer this service—in some cases because doing so is illegal (for example, some US states prohibit direct-to-consumer sales of vehicles). When it comes to offering online journey elements, OEMs should consider the significant divide in purchase preferences by customer group. Across dimensions, Gen Z and millennial car buyers—those under the age of 45—are significantly more excited about online options than their Gen X and baby boomer counterparts. Similarly, urban residents are more excited about conducting purchase activities online than their rural counterparts are.

### **Striving for a lower cost base**

Lower prices could help tip the balance in favor of EVs. To maintain healthy margins at lower average price levels, OEMs need to evaluate their cost structures and eventually optimize them. New EV start-ups have achieved a cost base per vehicle that is 30 to 50 percent below that of established OEMs.

Overall product costs are particularly low for Chinese OEMs, both new entrants and domestic incumbents. This occurs because they have lower factor costs (such as those for battery components) and more cost-effective vehicle architecture, including streamlined electrical-electronic architecture, among other reasons. China's competitive landscape is still maturing and may consolidate in the future.

For best results, incumbents should rethink their costs at the product level, as well as their overall cost structures. They can achieve improvements through radical design-to-value/design-to-cost programs, optimization of supply chains (especially for battery system components), and structure cost optimization.

### **Developing strong portfolio strategies that consider the addition of EREVs**

OEMs can also address customer concerns about battery range by considering the addition of EREVs to their portfolio. These vehicles combine a small ICE-powered generator with an electric powertrain, which extends the electric-only driving range to 100 to 200 miles (160 to 320 kilometers) versus a comparable PHEV's range of 20 to 40 miles (30 to 60 kilometers).

EREVs have a total range of 400 to 500 miles (650 to 800 kilometers). These vehicles represent the largest growth segment in China, but they are not yet available in Europe and were only recently introduced to the US market in selected models.

After being introduced to the EREV concept, a sizable share of respondents in Europe and the United States indicate interest in these vehicles for their next car (Exhibit 10). Since many of these respondents would otherwise get a traditional ICE vehicle, EREVs might attract more people to electric driving. Interest in EREVs is also high in China,

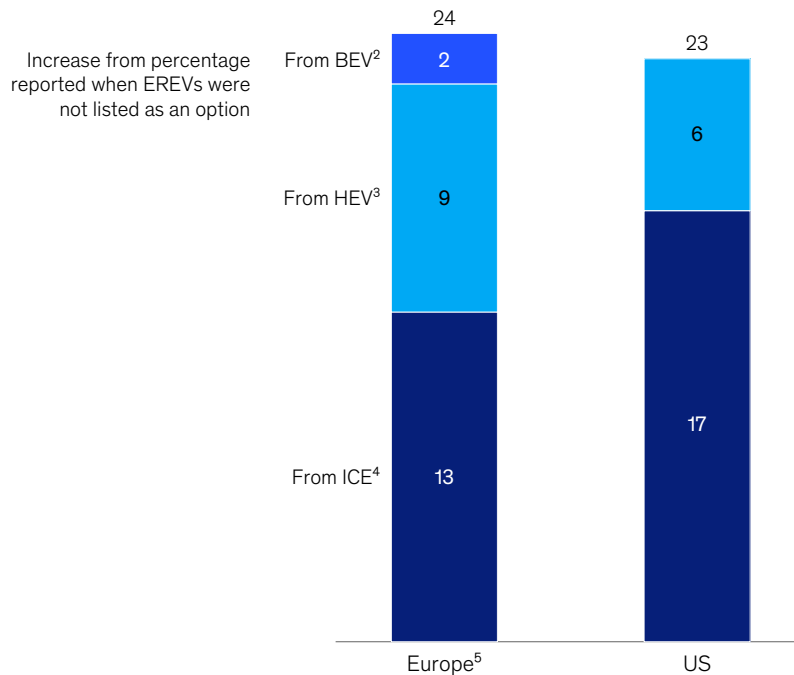
where these vehicles are already available, and survey responses suggest they might become even more popular.

As with PHEVs, EREVs may serve as a transition technology that helps customers become more comfortable with the idea of purchasing a full BEV. These vehicles might also put some pressure on OEMs to strive for even greater range for their BEV models because customers with EREV experience may not be willing to consider vehicles that need more frequent recharging.

Exhibit 10

### Many consumers in Europe and the United States would consider extended-range electric vehicles if available.

Preference for extended-range electric vehicle (EREV) if available at next purchase,<sup>1</sup> % of respondents



<sup>1</sup>Question: What is your most likely next powertrain? (Asked before and after introduction of EREV concept.) <sup>2</sup>Battery electric vehicle. <sup>3</sup>Hybrid electric vehicle.

<sup>4</sup>Internal combustion engine. <sup>5</sup>France, Germany, Italy, and UK.

Source: MCFM Mobility Consumer Pulse 2025, Feb 2025, global n = 25,904, China, Europe (France, Germany, Italy, and UK), and US n = 19,491; data also available for India, Saudi Arabia, and United Arab Emirates

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EREV demand may differ by region, necessitating extensive market research before OEMs commit to introducing them in new markets. Further, adding another powertrain to the portfolio adds complexity and requires significant investments. These considerations should be carefully balanced with the market opportunity. Before entering the game, OEMs could also thoroughly consider whether they should make or buy EREVs or form partnerships to enable these offerings. They should also consider that regulatory guidelines are still uncertain, especially in Europe.

Beyond introducing EREVs, OEMs may need to make some region-specific portfolio adjustments. For instance, they may need to keep ICE and HEV powertrains in their US portfolios for longer periods if the transition to EVs does not proceed as quickly as it does in China and Europe. Similarly, OEMs may need to include more PHEVs than BEVs in their portfolios for certain countries.

#### **Differentiating EVs through superior battery technology**

Given that range and charging speed are among the most important purchasing factors for customers, they are becoming the central battleground for differentiation. For instance, the minimum acceptable range is now about 500 kilometers (310 miles), but a 650-to-700-kilometer range (400–435 miles) would help differentiate an EV

from competitors. For charging time, most people considering an EV purchase say 30 minutes is sufficient. (In this amount of time, drivers could bring the charge up to over 80 percent on a highway charger if they arrived with only 10 percent of their charge remaining). A third of EV considerers who do not yet own an EV expect charging times of 20 minutes or less. The average BEV on the market does not yet meet these criteria; charging times under 20 minutes are currently possible only with a few new premium models (those with an 800-volt system architecture) at 250-kilowatt direct-current (DC) fast chargers, which are seldom available. This situation could soon change, however, as some OEMs have already announced significantly faster charging capabilities. As these new products come to market, customer expectations could adjust.

It is important to note that buyers value range more than charging time. Survey responses indicate that willingness to pay for additional range can be almost double the willingness to pay for shorter charging times. For instance, the number of respondents saying they are willing to pay for 50 kilometers (30 miles) of additional range is about double the number willing to pay for charging time that is ten minutes faster.<sup>5</sup> That said, expectations for range and charging vary by vehicle size and segment, and it is up to OEMs to decide where they need to meet or overshoot these expectations.

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<sup>5</sup> Insight from a conjoint simulation of a BEV purchase.

## **About the McKinsey Center for Future Mobility**

**These insights were developed** by the McKinsey Center for Future Mobility (MCFM). Since 2011, MCFM has worked with stakeholders across the mobility ecosystem by providing independent and integrated evidence about possible future-mobility scenarios. With our unique, bottom-up modeling approach, our insights enable an end-to-end analytics journey through the future of mobility—from consumer needs to a modal mix across urban and rural areas, sales, value pools, and life cycle sustainability.



### Differentiating through advanced driver assistance systems

As new players enter the EV market, capturing consumer attention could become more difficult. OEMs that develop strong advanced driver assistance systems (ADAS) might gain an edge. Survey respondents, especially those in the premium segment, say that ADAS will be an important differentiator in coming years.

In China, where ADAS technology has long been a critical differentiator, respondents now rank it as the fourth most important EV feature for premium brands and expect it to reach first place by 2030 (Exhibit 11). Our survey also reveals that ADAS is gaining importance with European and American buyers, with its rank expected to rise by 2030.

In China, about 66 percent of respondents indicate that they are likely to buy a vehicle with Level 3 autonomy if one is available when they are ready to make their next purchase, compared with only about 20 percent of buyers in Western markets. Chinese EV manufacturers have shown more progress than Western OEMs in developing ADAS features, and their brands have generated a strong local following.

While ADAS technology has broad appeal, several factors can affect interest levels. For instance, ADAS interest is highest in urban areas in both Europe and the United States, but the urban–rural divide is wider in the United States. EV buyers also tend to have higher expectations for ADAS than ICE buyers in all markets, especially in the West.

Exhibit 11

### Consumers see advanced driver assistance systems as an important differentiator for brands, especially in the premium segment, in the future.

**Differentiators of premium automotive brands today vs in 10 years,<sup>1</sup>**  
ranking by respondents owning premium vehicle

Ranking in 10 years vs today: ● Lower ○ Same ● Higher	Europe <sup>2</sup>			US			China		
	Today	In 10 years	Trend	Today	In 10 years	Trend	Today	In 10 years	Trend
Quality of workmanship	1	1	○	1	1	○	1	3	●
Pricing	2	2	○	2	3	●	9	12	●
Flawless service	3	6	●	9	10	●	7	9	●
Sustainability	4	3	●	8	7	●	6	5	●
Powertrain technology	5	5	○	4	4	○	2	2	○
Exterior design	6	8	●	3	9	●	13	11	●
Brand image, prestige, and heritage	7	9	●	5	5	○	3	4	●
Interior design	8	11	●	6	8	●	12	14	●
Value stability	9	7	●	7	6	●	5	6	●
<b>Advanced driver assistance systems</b>	<b>10</b>	<b>4</b>	<b>●</b>	<b>10</b>	<b>2</b>	<b>●</b>	<b>4</b>	<b>1</b>	<b>●</b>
Country of production	11	14	●	13	14	●	14	13	●
Attractive offers during ownership	12	13	●	11	12	●	8	8	○
Digital car ecosystem	13	12	●	12	11	●	10	7	●

<sup>1</sup>Question: Today/In 10 years, by which aspects can a premium-brand carmaker differentiate most from its competitors? Ranking based on % of respondents identifying the factor as being among the top 5 today and in 10 years. Respondents had 14 factors from which to identify the top 5.

<sup>2</sup>France, Germany, Italy, and UK.

Source: MCFM Mobility Consumer Pulse 2025, Feb 2025, global n = 25,904, China, Europe (France, Germany, Italy, and UK), and US n = 19,491; data also available for India, Saudi Arabia, and United Arab Emirates

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## The future of cars: Intelligent connected vehicles?

Over the past year, OEMs have launched many successful new EV models, which are often referred to as intelligent connected vehicles (ICVs). These vehicles are sparking strong customer interest and reaping a substantial share of sales through their overall product substance and branding. ICVs can include features such as these:

- advanced driver assistance systems, such as autonomous parking or Level 2+ capabilities (L3 vehicles will soon be driven in pilots)
- advanced battery technology specifications pairing long driving range with superfast recharging times (sometimes enabled by 800-volt system architecture)
- smart cockpits, supported by various technologies, such as AI-enabled voice assistants, immersive multidisplay solutions, and advanced personalization features
- high-end interior comfort and smart cabins, supported by multifunctional seats (such as zero-gravity features and massage), interior modularity, and immersive sound solutions
- a digital ecosystem with connectivity and entertainment solutions

In China, vehicles with these functionalities have gained high popularity. In Western markets, selected customer groups show excitement, but many still place higher importance on more traditional vehicle specifications, such as energy consumption and engine performance. The increasing availability of Chinese EVs may raise consumer expectations in Western countries as advanced technologies become more affordable.

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The global transition to EVs varies considerably across the world's major regions. Some markets, such as China, are clearly moving to an electrified future, but the EV transition is proceeding more uncertainly in other markets. To encourage electrification, OEMs should address customer concerns about EVs, including those related to charging and battery range, through consumer education, technology advances, or the addition of EREVs to the portfolio. Some company-specific challenges also loom. Chinese OEMs, which are entering new markets, may need to establish their brand and reputation in unfamiliar locations, while Western companies may need to create vehicles with superior ADAS and EV technologies to compete with new entrants. The insights in McKinsey's 2025 Mobility Consumer Pulse survey can serve as a starting point for OEMs as they develop region-specific strategies.

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