

Electric Vehicle Sales Review Q4 2023



Foresight to drive the industry
January 2024





This publication has been developed in collaboration between Strategy&, PwC's global strategy consulting business, alongside PwC Autofacts' Automotive industry and function experts. Together, we transform organizations by developing actionable strategies that deliver results.

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Executive summary

Annual global BEV sales passed the 10 million barrier

The global BEV market has reached further symbolic landmarks, as sales continue to flourish in many countries. BEV sales in China exceeded the two million mark in Q4 2023, an unprecedented feat in that country in any quarter. Meanwhile, annual BEV sales in the United States rose above 1 million for the first time in the year 2023.

It seems certain too that another major milestone has been passed. Total BEV sales in 2023 in all twenty analyzed markets amounted to 9.97 million. Sales in markets not covered in our study will have undoubtedly brought the total to more than 10 million. Annual BEV growth across all analyzed markets was 28%, far in excess of the 5% increase in sales of ICE vehicles.

Two in three BEV sales, covered in our study, in 2023 were registered in China, which continues to dominate the market. However, largely due to an economic downturn, BEV sales growth in China stuttered somewhat. The number of BEV registrations increased by 24% in 2023. While still impressive, this growth rate fell a long way below the heady heights of 2021 (172%) and 2022 (85%).

BEV growth in the United States was very strong by comparison during 2023, at 54%. However, as sales were initially slow to get off the ground in the US, BEV market share still has a long way to go before it catches up with China (7% vs. 22% in 2023). Another top BEV performer among major markets was France, which registered annual sales growth of 47%. Although Germany possesses the highest BEV market share in the top 5 European markets (18%), its sales growth fell to 11% in 2023, down from 83% in 2021 and 32% in 2022, as government subsidies diminish.

Indeed, although it seems certain that the global BEV market will continue to perform strongly in 2024, various factors add a dose of caution. For example, the widespread trends towards government protectionism and reduced incentives, supply chain challenges resulting from geopolitical conflict, and uncertainty about the commitment of any future US presidential administration to road electrification, may all serve to slow the inexorable rise of the BEV market.



Almost one in three vehicles sold in all analyzed markets in 2023 was electric

30%

Total EV market share in all analyzed markets in 2023. The EV definition includes BEVs, PHEVs and hybrids.



1. News and highlights

As BEV incentives wane, governments move to protect domestic manufacturers

Cutting of BEV incentives continues...

After seeking to stimulate BEV sales growth with subsidies over several years, some governments have recently been scaling back these incentives, due to high costs and believing that the market should now continue to grow naturally without such assistance.

The tough economic environment is without doubt another factor pushing governments to reconsider such incentives. In Germany, for example, the national authorities have ended the country's EV subsidy program, citing the need to overcome the country's budget crisis. Applications for a subsidy of up to €4,500 for the purchase of a BEV, previously scheduled to be available until the end of 2024, are now no longer being accepted.¹

This trend is also apparent on the other side of the world. The Clean Car Discount Scheme in New Zealand, which offered a rebate on the purchase of low-emission vehicles, was scrapped at the end of 2023 as the government sought spending cutbacks.²

...while protectionist measures expand

Governments are looking to cushion domestic manufacturers from intensifying foreign competition or from the potential impact of any slowdown in BEV sales resulting from the gradual withdrawal and reduction in subsidies.

Such policies are becoming very evident in Europe. In France, the government has revamped its existing cash incentive scheme to favour models manufactured in Europe

over those from China or other far away locations. The subsidies of up to €7,000 are now dependent on the model's environmental footprint. As BEVs manufactured in China have a more significant environmental footprint due to the country's reliance on coal and the logistics involved in transporting the vehicles to Europe, several popular models will no longer be eligible for subsidies.³

In October 2023, the European Commission launched an anti-subsidy investigation that could lead to increased tariffs on imports of Chinese BEVs to the EU. Currently, it is said that Chinese OEMs can sell their vehicles at a lower price in Europe due to the receipt of state subsidies in their home country. European OEMs are therefore at a competitive disadvantage because they do not receive similar support from their own national governments.⁴

Further recent developments also offer a short-term boost to the European auto market. The UK and the European Commission have agreed upon a three-year delay on the "rule of origin" legislation, which would have entailed a 10% tariff on many BEVs traded between the two regions.⁵ The European parliament has voted to limit the planned major reduction in petrol engine emissions under the EU's new Euro 7 standards, supporting European OEMs that have a high share of the ICE market in Europe.⁶



CES hosts several new BEV concepts

The Consumer Electronics Show (CES) 2024 in Las Vegas revealed new BEV concepts from major auto players. Indeed, there was a stronger focus at this year's event on BEVs than on automated driving assistance systems (ADAS).

VinFast, Vietnam's leading BEV manufacturer, brought two vehicles to the event – its first pickup truck, the VF Wild, and its mini-SUV, the VF 3. Both models signal the company's ambition to make inroads into the international BEV market.⁷

The joint venture of Sony and Honda, named Afeela, displayed an updated version of its electric sedan concept that was initially unveiled at the CES event last year. Sony Honda Mobility has now joined forces with Epic Games to generate immersive dashboard displays capable of creating detailed 3D maps and augmented reality views of the car's surroundings.⁸

Kia revealed plans to create a series of versatile and adaptable BEVs. In this Platform Beyond Vehicle (PBV) strategy, the same vehicle would serve multiple, interchangeable roles, from a taxi to a delivery van to a personal recreational car.⁹

Meanwhile, two companies announced their ambitions in respect of hydrogen energy. Hyundai discussed its intention to make vehicles running on hydrogen-powered fuel cells, while the supplier Bosch Mobility plans to launch its first hydrogen combustion engine this year.¹⁰



1. News and highlights

More progress seen in battery technology and charging infrastructure

Breakthroughs registered in battery technology

The auto industry continues to make strides in developing battery technology. Such advancements boost driving ranges, accelerate charging time, and reduce the cost of production.

The Chinese BEV manufacturer Nio has developed a battery that offers a range of 1000 kilometres on the CLTC test cycle, significantly more than any BEV battery currently on the market. This next-generation battery will enter mass production in April 2024.¹ Meanwhile, battery startup Our Next Energy, in partnership with BMW, has revealed the impressive long-range capabilities of its dual-chemistry technology. A BMW iX equipped with this hardware travelled 978 kilometres, approximately 75% further than with its standard battery.²

An increasing number of mainstream OEMs are introducing 800-volt technology for their BEVs. This technology enables shorter charging times, with ranges of more than 300 kilometres made possible in ten minutes. Voltage boosting was initially reserved for luxury vehicles, but now more mid-range models from Hyundai, Kia and other Chinese brands, boast this ultra-fast charging technology.^{3,4}

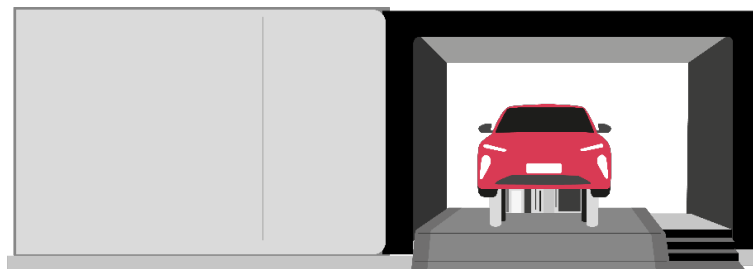
Sodium-ion batteries have long promised an alternative to the lithium-ion variety. They perform better in cold weather and tend to be much cheaper. Now such BEVs are entering production. Battery maker Farasis Energy has reported that the BEV brand JMEV has started producing sodium-powered BEVs. In addition, Hina Battery announced that a

sodium-ion-equipped Yiwei 3 hatchback is being produced by the manufacturer JAC.⁵

Partnerships underway for battery charging and swapping

The Volvo, Polestar and Lotus brands owned by Geely, have come together with Jaguar and Land Rover to form a new alliance in China that will develop battery charging technologies. Another alliance, between the Chinese units of Mercedes-Benz and BMW, have joined forces to build a network of charging stations.⁶

Meanwhile, Geely and Changan have also entered into an agreement with fellow Chinese automaker Nio in the field of battery swapping. The two companies will work together on standards, technology and model development. Battery swapping enables car owners to replace depleted packs quickly with fully charged substitutes, rather than plug the vehicle into a charging point.^{7,8}



OEMs reach deeper into the supply chain

BEVs depend on raw materials for batteries such as lithium, nickel and cobalt. However, supply is vulnerable both to increasing prices due to soaring demand, and to the political instability of the countries where the materials are mined. OEMs are therefore looking to increase their independence and control by ensuring supply through partnerships, long-term purchase agreements, or direct investment in mining exploration companies.

For example, Stellantis has invested in lithium producers Vulcan Energy Resources and Controlled Thermal Resources, while also buying a US\$100 million stake in ACG, which has purchased a copper and a nickel mine in Brazil.⁹ Other OEMs are in ongoing discussions.

The massive benefits of electrification

A PwC Strategy& study in collaboration with Fraunhofer Institute for Systems and Innovation Research (ISI), “European Fleet Electrification”, has estimated the financial savings and emission reductions that will result from the transition towards BEVs.

The study calculates that by 2030, there will be a reduction in the total cost of vehicle ownership (TCO) in Europe of €330 billion, while carbon dioxide emissions will be cut by more than 1 billion tonnes. By 2040, although zero-emission vehicles (ZEVs), will make up close to 100% of vehicle sales in Europe, but they will still only constitute 30% of the total number of vehicles on the road.¹⁰



2. Analyst insights

Used BEVs present an enticing alternative to a new BEV in Germany

With an increasing number of BEVs on the road, more of these vehicles are inevitably becoming available on the used car market.

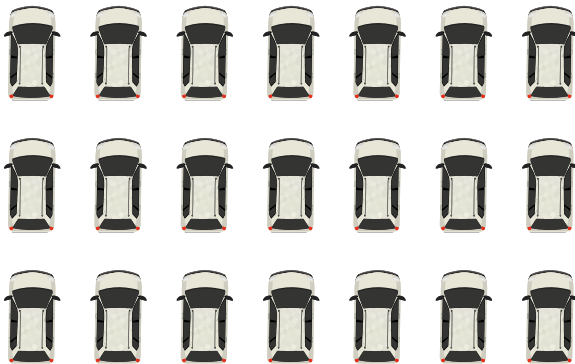
Indeed, there are now 1.2 million BEVs in Germany, representing 2.5% of the total car stock.¹ As more customers become accustomed to looking beyond conventional ICE vehicle purchases, demand for these used BEVs is growing. PwC Strategy&’s 2023 eReadiness survey, which analyzed markets in 18 countries across the world, stated that “used BEV interest is significant, with 60% of BEV owners declaring an interest in purchasing a used car.” That percentage rises to 75% in North America and 71% in the European markets covered.²

According to the eReadiness survey, consumers see several advantages to buying a used BEV. Immediate availability, lower registration fees and ownership taxes, as well as lower upfront cost, are all cited as attractive features.

Strategy& analysis suggests that the current depreciation of BEVs is often significantly more than ICEs in the period of up to three years after manufacture and initial purchase. This presents consumers with an enticing alternative to a new BEV, where the high upfront cost is often a major reason to avoid a BEV.

The analysis compared similar ICEs and BEVs from OEMs where there were comparable models with similar specifications and mileage. On average, the BEVs lost almost 10% more value than ICEs in an equivalent time period. The lost value was greater on lower-priced models

(with an initial price below €55,000), which lost 11.75% more value on average than their ICE equivalent.³



Consumers are also being swayed by the expanding choice of BEVs, and are reassured by the longer driving ranges that they now possess.

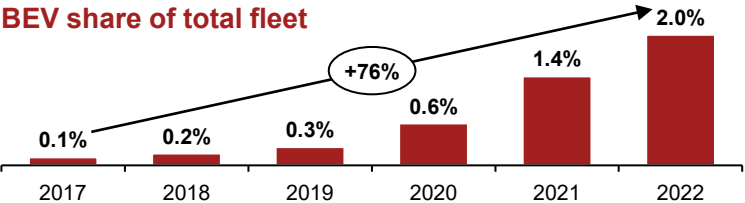
While consumers are still inevitably concerned about the condition of the battery in a used vehicle, nearly all manufacturers offer an eight-year or longer warranty for the battery, significantly longer than the two to three years normally provided for a petrol or diesel car.

Moreover, before making any purchase, a consumer can arrange checks on the battery’s state of health. Whereas these are now readily available in the marketplace, equally thorough checks on the engine of a used petrol or diesel vehicle are less easily accessible.

A used BEV is often a simpler purchase than equivalent ICE vehicles, which are characterized by a wide array of various configurations. On the other hand, the configuration options for BEVs are significantly more limited, making it easier for consumers to decide exactly what they want. Currently, the total cost of ownership (TCO) for a used BEV can look much better compared to a used petrol or diesel car due to the accelerated initial depreciation. Many other TCO aspects favor BEVs such as maintenance, registration and charging costs compared to fuel.

The purchase of a BEV is especially convenient if the intended use of the vehicle is mostly for short journeys. Whereas ICE vehicles are not suited to very regular, brief trips, which cause wear to the engine and reduce efficiency, BEVs are not similarly affected.

Although there are certainly downsides to a used BEV – such as sometimes higher insurance premiums, and battery technology that still has room for development – many consumers are starting to appreciate the ease and suitability of such a purchase.


















2. Analyst insights

Tesla Model Y tops the charts for the full year 2023 in all key regions

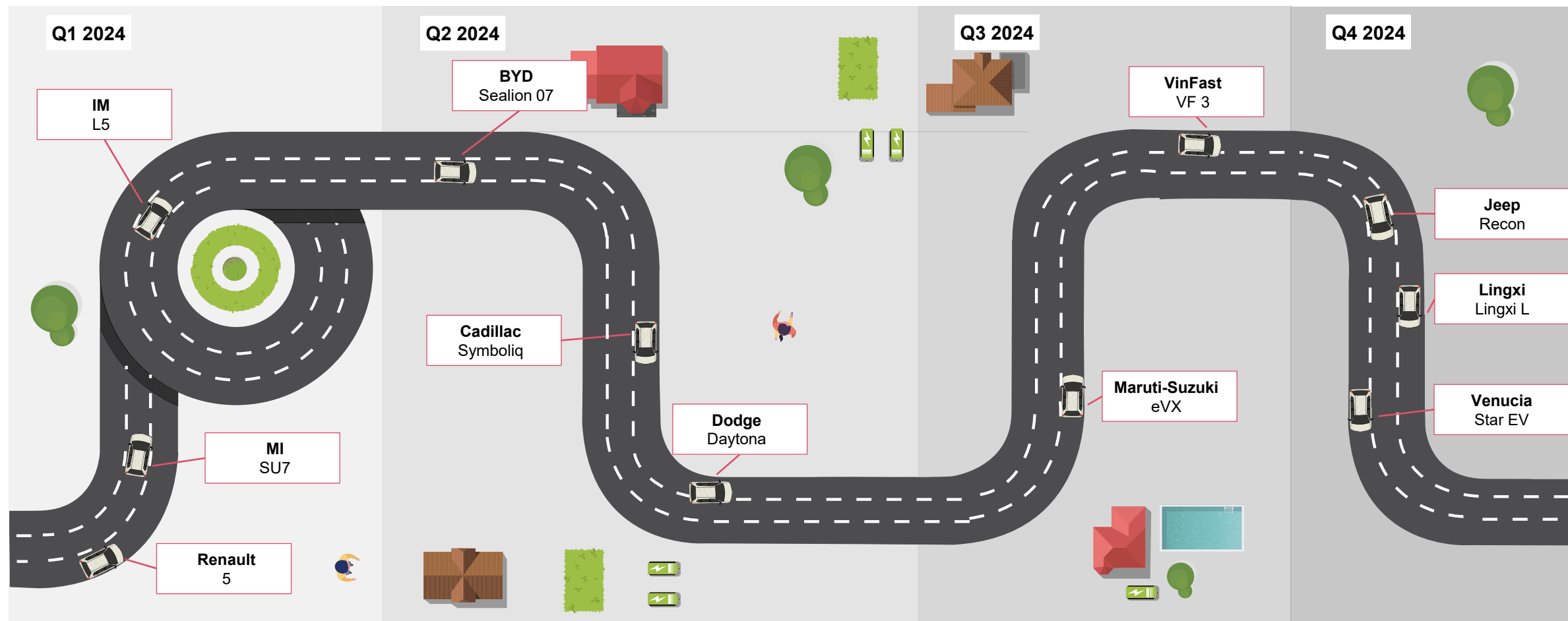
Top BEV models in 2023 (sales volume ranking FY 2023 ↑↓ vs. Q1-Q3 2023)

European Top 4 			USA 			China 		
Model	Sales FY 2023		Model	Sales FY 2023		Model	Sales FY 2023	
 Tesla Model Y	97,806	→ 0	Tesla Model Y	394,497	→ 0	Tesla Model Y	456,394	→ 0
 Tesla Model 3	53,553	↑ 3	Tesla Model 3	220,910	→ 0	BYD Yuan Plus	309,835	↑ 1
 Fiat 500e	52,002	↓ 1	Chevrolet Bolt EV/EUV	62,045	→ 0	BYD Dolphin	299,708	↓ 1
 Dacia Spring	46,298	→ 0	Ford Mustang Mach-E	40,771	→ 0	BYD Seagull	239,270	↑ 3
 Volkswagen ID.4, ID.5	41,790	↓ 2	Volkswagen ID.4	37,789	→ 0	Wuling Hongguang Mini EV	237,863	→ 0
 MG 4	38,339	↑ 1	Hyundai IONIQ 5	33,918	→ 0	Aion Y	235,717	→ 0
 Peugeot E-208	31,366	↓ 1	Rivian R1S	24,783	↑ 2	Aion S	220,904	↓ 3
 Volkswagen ID.3	29,231	→ 0	Ford F-150 Lightning	24,165	↑ 6	Wuling Bingo	167,764	↑ 1
 Skoda Enyaq	28,823	↑ 1	Tesla Model X	23,015	↓ 2	Tesla Model 3	147,270	↓ 1
 Renault Megane Electric	26,340	↓ 1	BMW i4	22,583	↓ 2	Changan Lumin	136,764	→ 0



3. Electric vehicle sales data

New BEV launches drive market growth



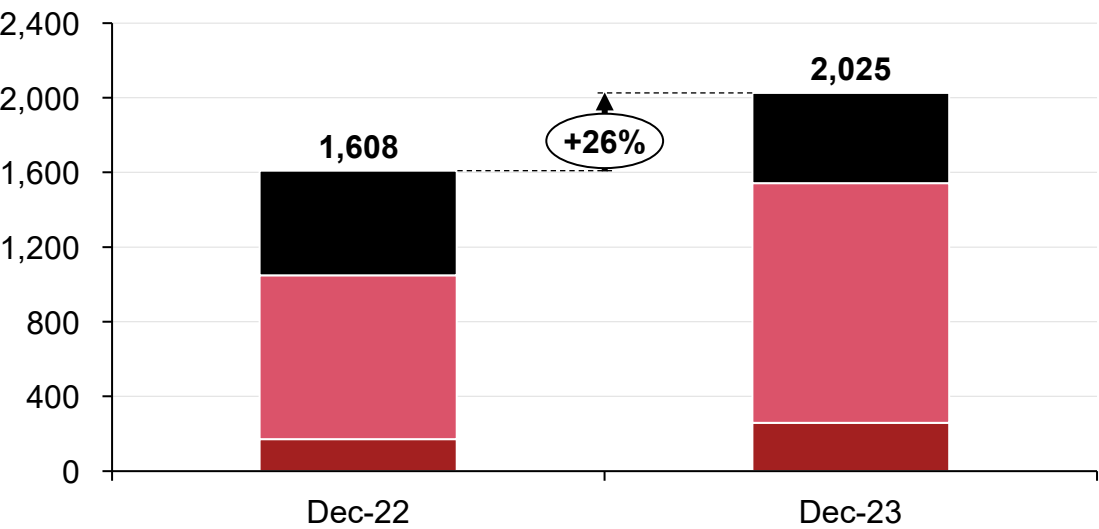


3. Electric vehicle sales data

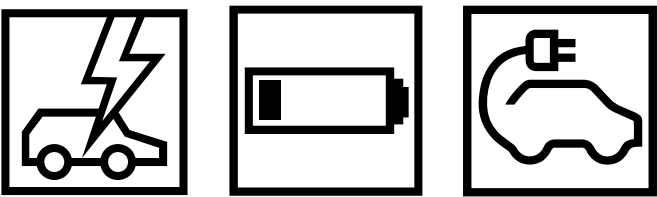
EV sales growth continues

Key Markets

Dec '22 vs. Dec '23 (in '000 units)

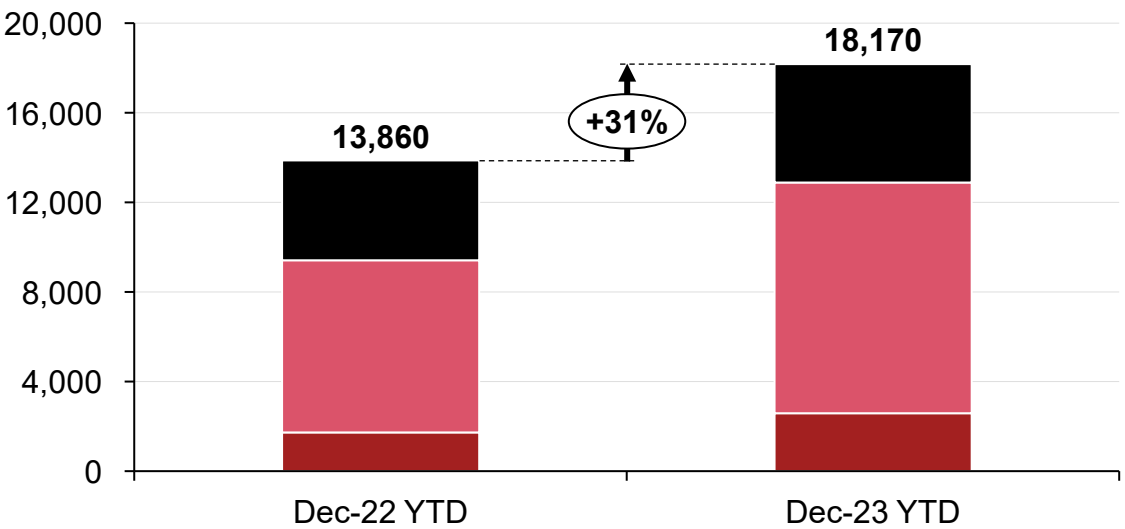


WE 5+5 China USA



Electric Vehicles (EVs*)

YTD Dec '22 vs. YTD Dec '23 (in '000 units)



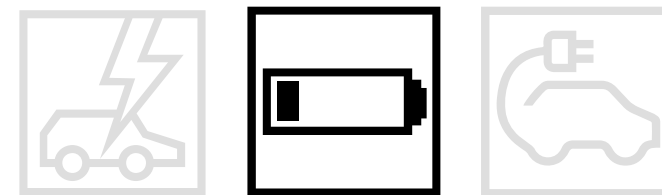
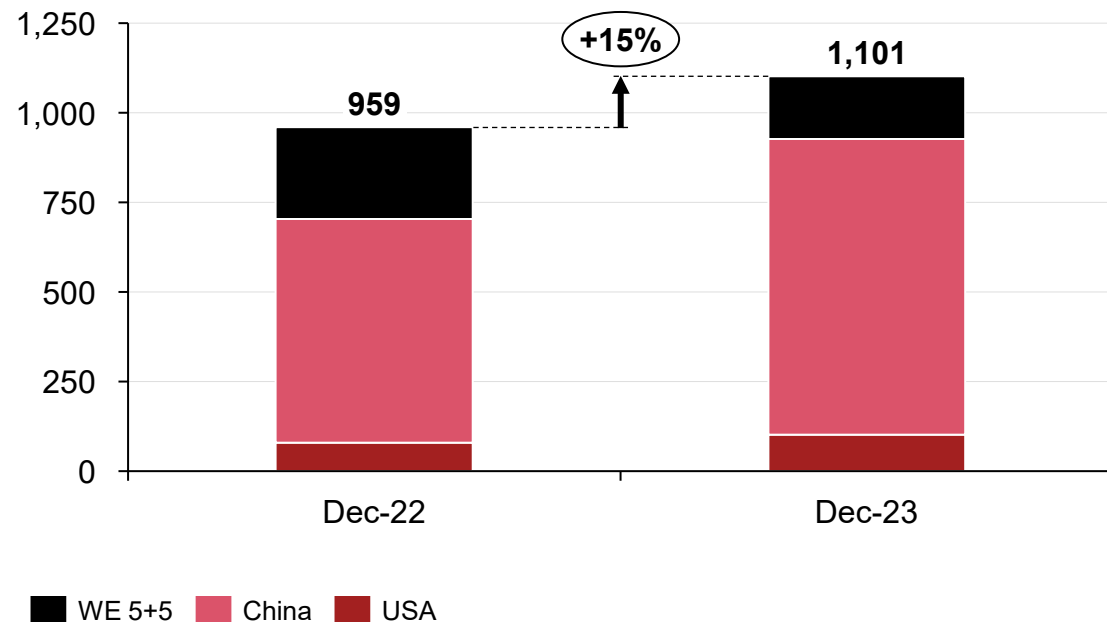


3. Electric vehicle sales data

BEV sales surged in WE 5+5 and China

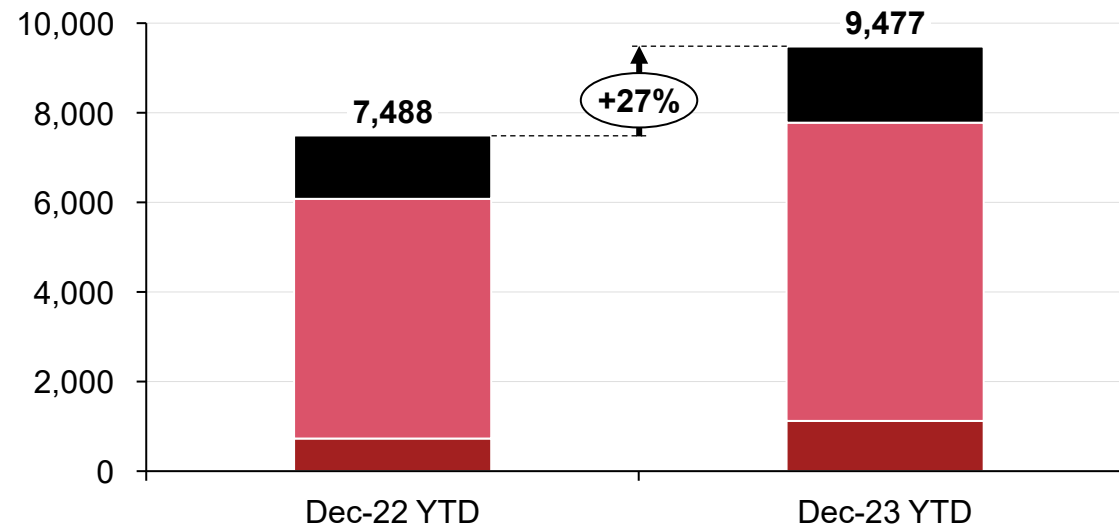
Key Markets

Dec '22 vs. Dec '23 (in '000 units)



Battery Electric Vehicles (BEVs)

YTD Dec '22 vs. YTD Dec '23 (in '000 units)



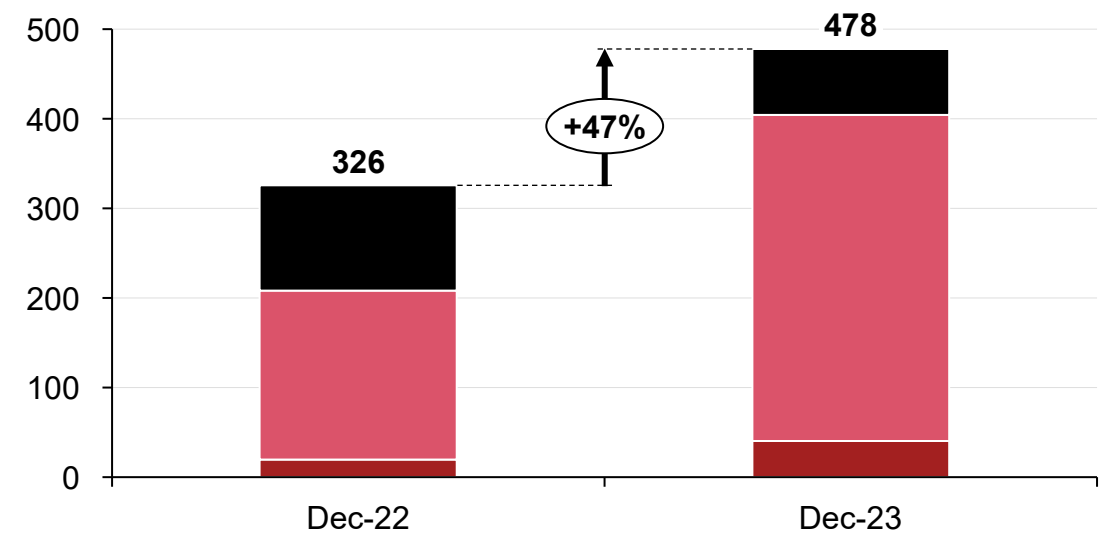


3. Electric vehicle sales data

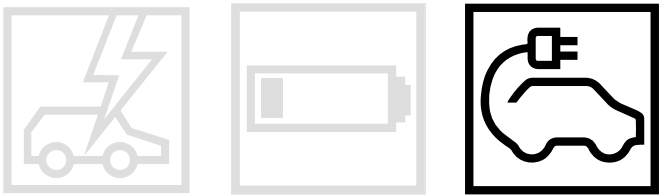
Plug-in momentum stays strong in China

Key Markets

Dec '22 vs. Dec '23 (in '000 units)

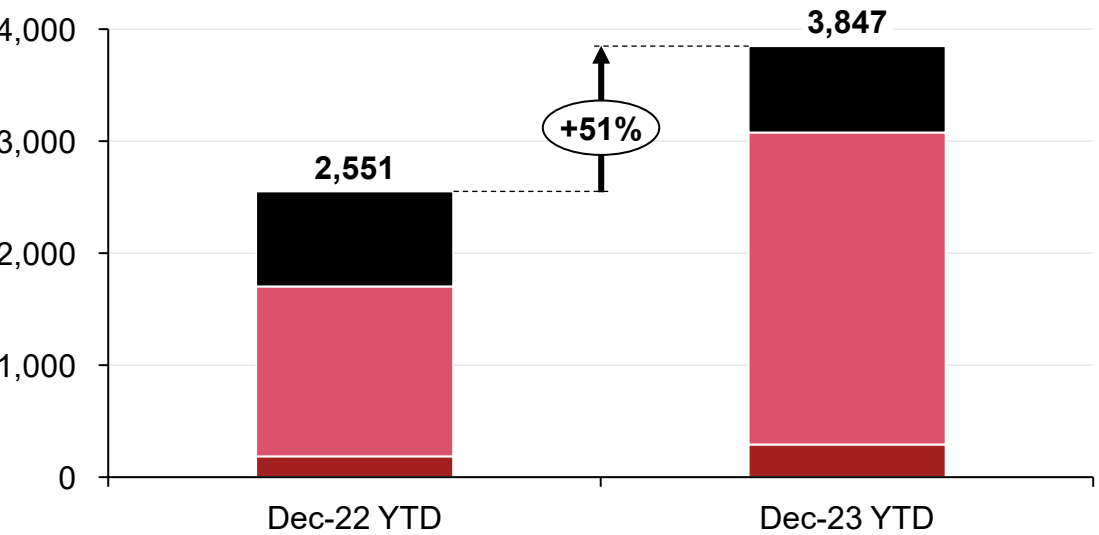


WE 5+5 China USA



Plug-in Hybrid Electric Vehicles (PHEVs)

YTD Dec '22 vs. YTD Dec '23 (in '000 units)





4. Western Europe Top 5 and other European markets

Western Europe 5+5

European Top 5: France, Germany, Italy, Spain, and UK

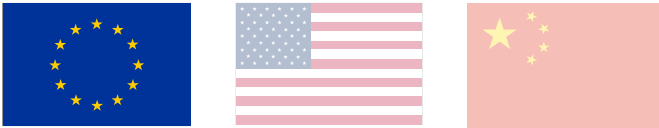
BEV sales in the top 5 European markets grew by 23% during the year 2023, amounting to nearly 1.3 million vehicles sold. This annual sales growth far outstripped the corresponding ICE performance (9%).

The largest BEV sales increase (66%) among these markets was recorded in Spain. However, both Spain and Italy still have much ground to make up on the larger markets of Germany, the UK and France. For example, Germany boasted more than four times the total BEV sales of Spain and Italy put together, despite its population being lower than the other two combined.

BEV sales growth in France during 2023 was significantly higher than in the UK and Germany, at 47% compared to 18% and 11% respectively. Germany still had the highest BEV market share among the European top 5 over the course of the year, at 18%. France and the UK were close behind, both at 17%. The figures in Spain and Italy were much smaller in comparison, at 6% and 4% respectively.

PHEV sales decreased by 13% in the top 5 markets over 2023. This development can be attributed to a fall in PHEV sales in Germany of 52%, to some extent due to the ending of government incentives for PHEV purchases at the end of 2022. By contrast, PHEV sales in the UK and France increased by 39% and 29% respectively during 2023.

PHEV market share in Spain and Italy is slightly higher than the BEV equivalent, although that is likely to change very soon due to the much higher rate of BEV sales growth.



	WE 5+5	Q4 2023	Comparison to Q4 2022
	BEV	461,000	-12%
	PHEV	216,000	-24%
	Hybrid	749,000	+30%
	Total EV	1,426,000	+3%

Other European markets +5: AT, CH, NL, NO, SE

The largest BEV sales growth in the other European markets during the year 2023 was seen in the Netherlands and Austria, with increases of 59% and 39% respectively. BEV sales in Norway, which at 82% has the highest BEV market share in the world by a considerable margin, declined by 24% but less than the total market decline. BEV market share in Sweden and the Netherlands is also impressive, at 38% and 34% respectively.



4. United States

United States

BEV sales in the United States comfortably passed the 1 million mark in 2023, growing by 54% over the course of the year.

BEV market share for 2023 stood at 7%, an almost threefold increase in just two years. The rapid rise can be put down to government incentives, ambitious targets to reduce vehicle emissions, the frequent launch of popular new models, and the development of the country's charging infrastructure. In 2021, BEV market share was below 3%.

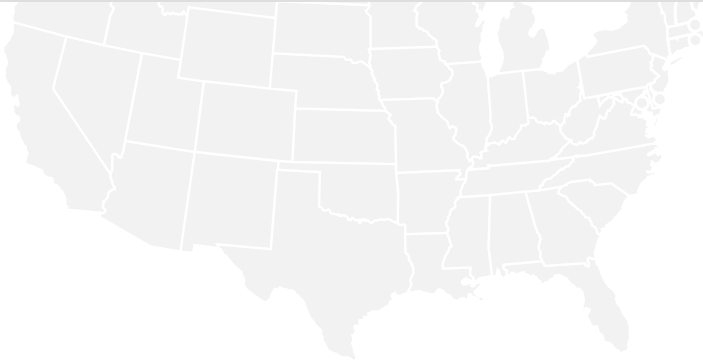
With so much room to make further inroads, the outlook for the continuing development of the BEV market looks rosy. However, there is naturally some uncertainty in election year about whether any future administration will be fully committed to the electrification of the roads.

PHEV and hybrid markets also both performed strongly in 2023, with sales growing by 57% and 44% respectively. Hybrid market share is slightly greater than for BEVs, at 8%.

The growth of the ICE market appears weak by comparison, with sales increasing by just 8% over the course of 2023.



USA	Q4 2023	Comparison to Q4 2022
BEV	281,000	+31%
PHEV	87,000	+75%
Hybrid	330,000	+61%
Total EV	698,000	+49%





4. China and other countries in Asia

China and other Asian countries

China

BEV sales broke through another barrier in Q4 2023. More than two million sales were recorded in the space of one quarter for the first time.

The performance in the last quarter brought total BEV sales during 2023 to more than 6.6 million, representing a 24% increase from the previous year. With 2.8 million sales in 2023, the PHEV market is significantly smaller. However, its rate of growth was far greater during the year, at 84%. The PHEV market is certainly helped by the purchase tax exemption for NEVs (new energy vehicles), whose broad definition incorporates both BEV and PHEV models.

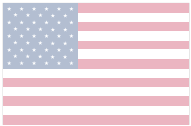
Market share for BEVs and PHEVs during 2023 was 22% and 9% respectively.

Japan

Japan’s BEV sales increased by 39% during the year 2023. However, this growth is from a very low base, with market share still less than 2%. Even the PHEV market share is slightly larger, at exactly 2%. The EV market is almost completely dominated by the sale of hybrids, which boasted a 2023 market share of 55%. Nonetheless, all EV powertrains grew between 34% and 39% during 2023 while ICEs showed a significantly lower, albeit still growing development of 3%.

South Korea

BEV sales in South Korea stagnated in 2023, increasing by less than 1% after several years of very strong growth. Indeed, in 2021, the BEV market grew by 132%. The ICE market also suffered due to the sluggish general economic environment, declining by 5% in 2023.



China	Q4 2023	Comparison to Q4 2022
BEV	2,173,000	+22%
PHEV	997,000	+88%
Hybrid	255,000	+33%
Total EV	3,425,000	+37%



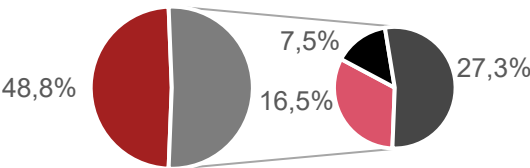
5. Rankings

Shares of EV registrations

EV registrations Dec-23 YTD

WE 5+5

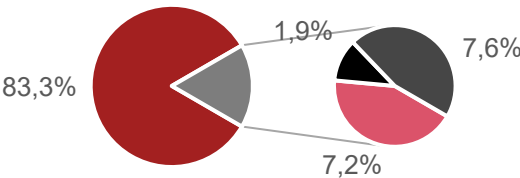
Total registrations	10,323,503
EV registrations	5,360,574



of which BEV	1,703,929
of which PHEV	770,130
of which Hybrid	2,886,515

USA

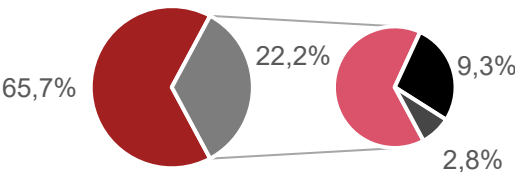
Total registrations	15,461,963
EV registrations	2,584,688



of which BEV	1,118,286
of which PHEV	289,569
of which Hybrid	1,176,833

China

Total registrations	30,045,000
EV registrations	10,297,590



of which BEV	6,657,000
of which PHEV	2,787,400
of which Hybrid	853,190

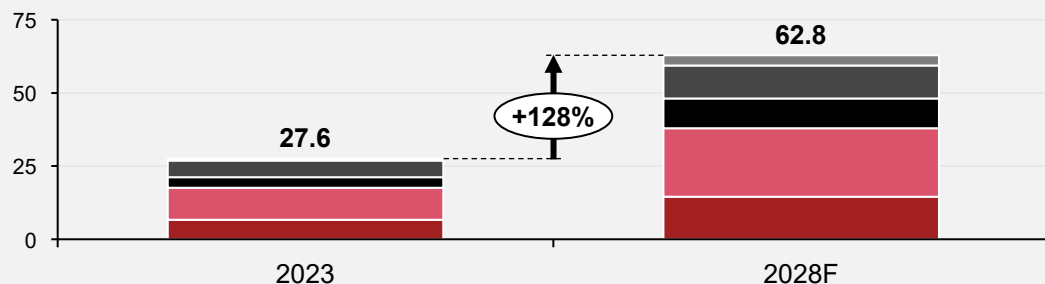
ICE BEV PHEV Hybrid

Electrified vehicle assembly forecast by region

1

Electrified Vehicle Assembly by Region

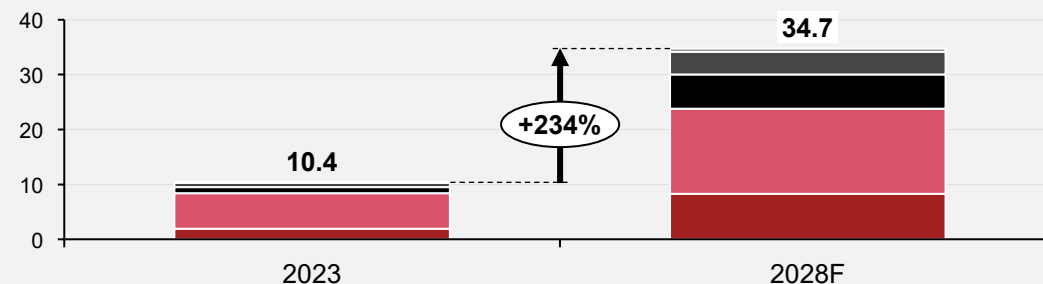
2023 vs. 2028F (in million units)



2

Battery Electric Vehicle Assembly

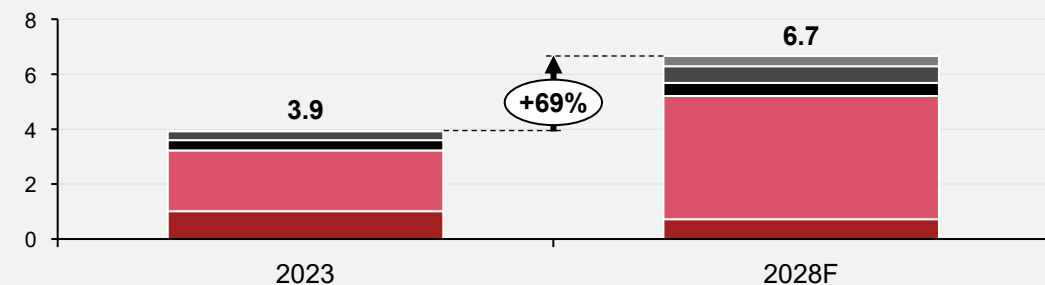
2023 vs. 2028F (in million units)



3

Plug-In Hybrid Vehicle Assembly

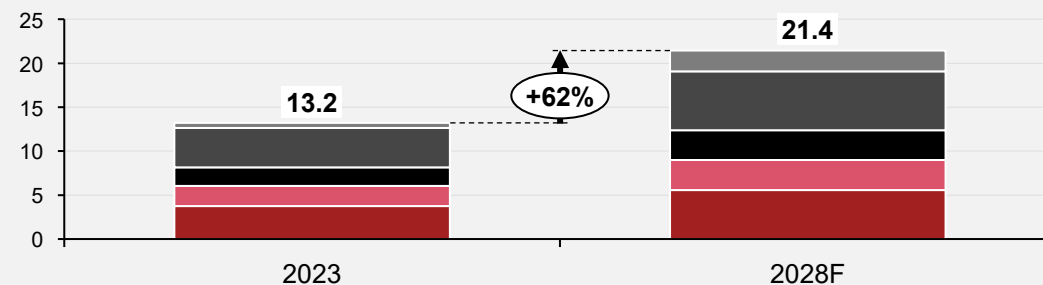
2023 vs. 2028F (in million units)



4

Full and Mild Hybrid Vehicle Assembly

2023 vs. 2028F (in million units)



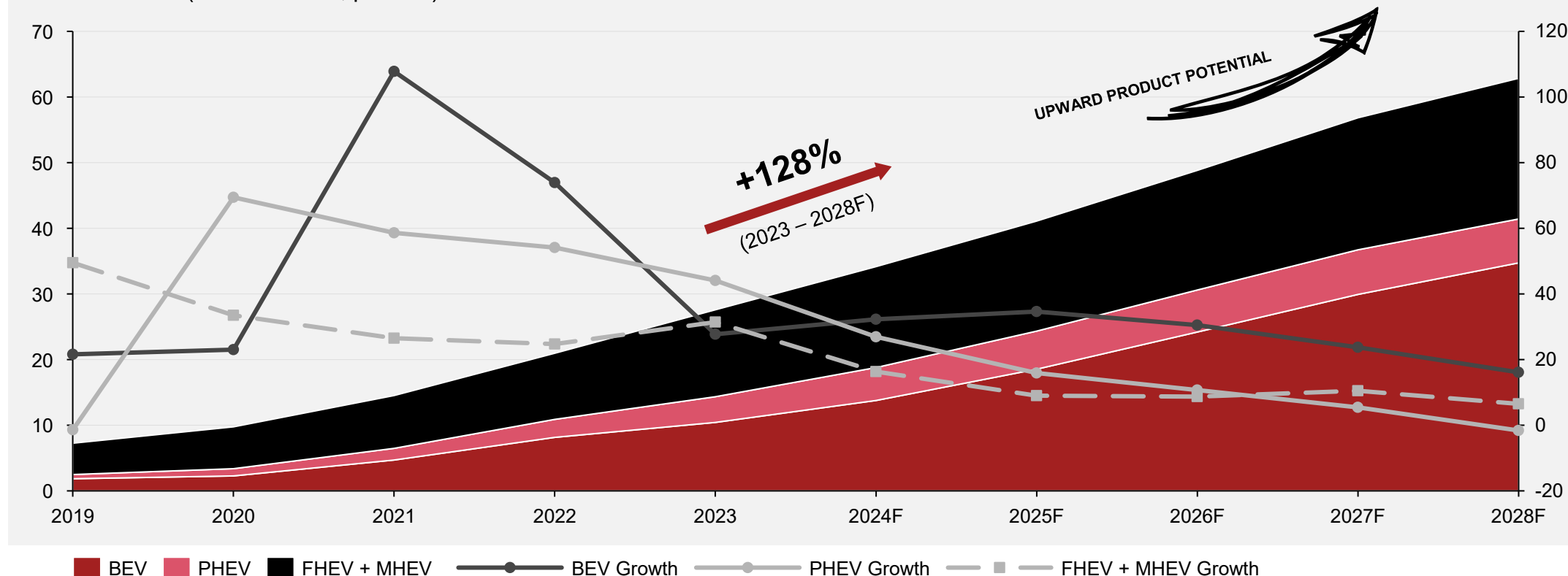
Western + Central Europe China NAFTA Asia-Pacific (w/o China) RoW

Electrified vehicle assembly forecast

5

Global Electrified Vehicles Assembly by Powertrain Type

2019 – 2028F (in million units, percent)

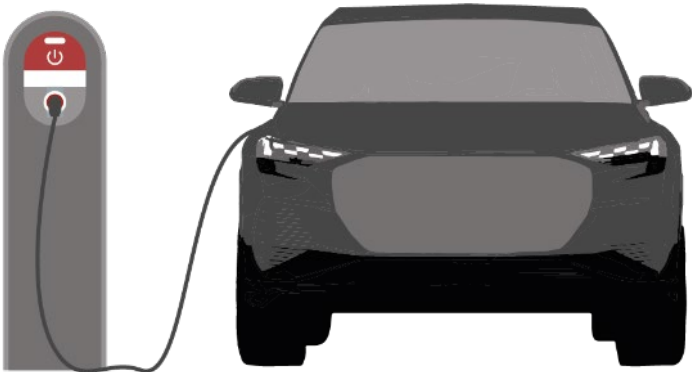




7. Electric vehicle model launches

Overview: BEV model launches

2024 (not exhaustive)



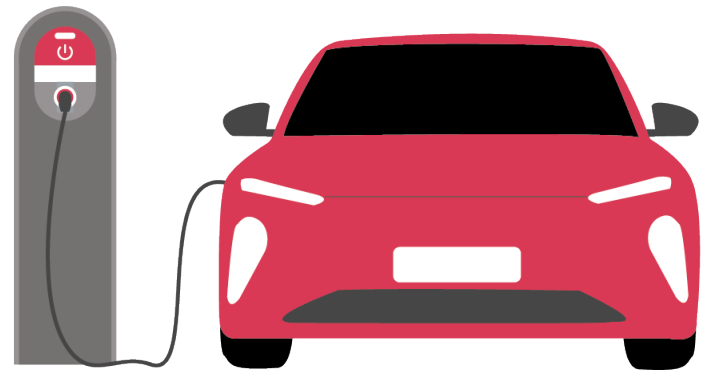
Brand	Model	Launch	Quarter
BYD	Sealion 07	2024	Q2
Cadillac	Symboliq	2024	Q2
Dodge	Daytona	2024	Q2
IM	L5	2024	Q1
Jeep	Recon	2024	Q4
Kia	EV3	2024	Q2
Lancia	Ypsilon	2024	Q2
Lingxi	Lingxi L	2024	Q4
Maruti-Suzuki	eVX	2024	Q3
Mercedes-Benz	EQG	2024	Q2
MI	SU7	2024	Q1
Mini	Aceman	2024	Q2
Renault	5	2024	Q1
Venucia	Star EV	2024	Q4
VinFast	VF 3	2024	Q3



7. Electric vehicle model launches

Overview: BEV model launches

2025–2028 (not exhaustive)



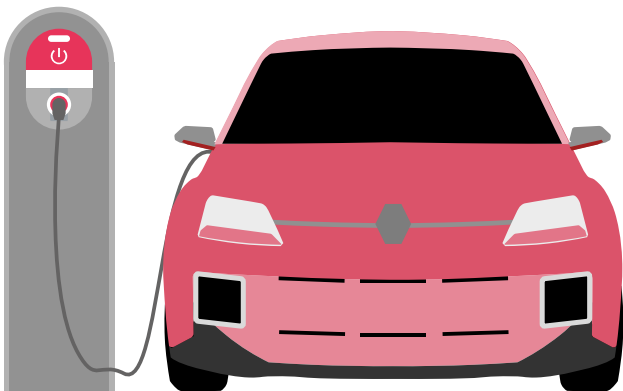
Brand	Model	Launch
Acura	RDX EV	2025
Audi	A4 e-tron	2028
Audi	A8 e-tron	2027
Audi	Urbansphere	2025
BMW	iX5	2026
Buick	Regal EV	2025
Buick	Verano Pro	2027
Chery	Omoda 3	2025
Chevrolet	Monza	2026
Chrysler	Pacifica EV	2028
Fisker	PEAR	2025
Ford	Maverick EV	2028
Foxtron	Model B	2026
Foxtron	Project X	2026
Honda	Passport EV	2027



7. Electric vehicle model launches

Overview: BEV model launches

2025–2028 (not exhaustive)



Brand	Model	Launch
Honda	Pilot EV	2027
Hyundai	Ioniq 4	2026
Hyundai	Ioniq 8	2026
Kia	EV8	2027
Lotus	Elise	2027
Mahindra	BE.05	2025
Maruti-Suzuki	Ertiga	2025
Polestar	Polestar 5	2025
Polestar	Polestar 6	2026
Polestar	Polestar 7	2027
Skyworth	Skyhome	2025
Toyota	bZ2	2028
Toyota	Granvia EV	2028
Volkswagen	ID.2	2026
Volkswagen	ID.3 X	2026



8. Electric vehicle sales data

Electric vehicle sales data

Germany, UK, France, Italy, Spain, WE-5

Legend

MoY = Month-on-Year
QoY = Quarter-on-Year
YoY = Year-on-Year
YTD = Year-to-Date

		Dec-23 YTD	Market Share	Dec-22 YTD	YTD YoY	Q4-23	QoY	Dec-23	MoY	Nov-23	MoY	Oct-23	MoY
France	BEV	298,216	16.8%	203,121	46.8%	93,601	50.6%	37,358	49.5%	30,770	51.6%	25,473	51.0%
	PHEV	162,952	9.2%	126,549	28.8%	46,529	22.5%	17,059	17.3%	14,540	17.8%	14,930	34.4%
	Hybrid	432,290	24.4%	332,663	29.9%	128,680	35.9%	48,135	32.6%	40,053	35.8%	40,492	40.1%
	Total EV	893,458	50.3%	662,333	34.9%	268,810	38.0%	102,552	35.3%	85,363	37.4%	80,895	42.2%
	Other	881,276	49.7%	866,702	1.7%	217,295	-2.2%	78,461	-4.6%	67,346	-6.2%	71,488	5.0%
Germany	BEV	524,219	18.4%	470,559	11.4%	136,930	-30.9%	54,654	-47.6%	44,942	-22.5%	37,334	4.3%
	PHEV	175,724	6.2%	362,093	-51.5%	52,379	-64.2%	17,894	-74.4%	18,124	-59.3%	16,361	-49.0%
	Hybrid	664,580	23.4%	465,228	42.9%	173,725	44.1%	55,687	38.0%	60,463	38.4%	57,575	57.9%
	Total EV	1,364,523	48.0%	1,297,880	5.1%	363,034	-21.9%	128,235	-40.2%	123,529	-15.5%	111,270	6.7%
	Other	1,480,086	52.0%	1,353,477	9.4%	343,509	7.9%	113,648	13.8%	122,172	6.9%	107,689	3.2%
Italy	BEV	66,283	4.2%	49,169	34.8%	20,514	54.2%	6,806	50.6%	7,948	55.4%	5,760	57.2%
	PHEV	69,008	4.4%	64,632	6.8%	16,009	-6.6%	4,482	-12.4%	5,747	-9.8%	5,780	2.4%
	Hybrid	565,431	36.1%	450,938	25.4%	145,726	22.0%	38,855	6.0%	52,679	30.2%	54,192	28.0%
	Total EV	700,722	44.8%	564,739	24.1%	182,249	21.6%	50,143	8.3%	66,374	27.8%	65,732	27.3%
	Other	864,807	55.2%	752,187	15.0%	207,139	8.5%	60,968	3.9%	72,852	7.2%	73,319	14.2%
Spain	BEV	58,865	6.2%	35,398	66.3%	17,004	53.5%	5,896	44.7%	6,053	56.9%	5,055	60.6%
	PHEV	62,473	6.6%	48,197	29.6%	17,045	26.5%	6,546	40.9%	5,509	14.0%	4,990	24.8%
	Hybrid	306,342	32.3%	243,468	25.8%	82,310	19.8%	27,924	22.8%	26,918	7.4%	27,468	31.5%
	Total EV	427,680	45.0%	327,063	30.8%	116,359	24.8%	40,366	28.3%	38,480	14.0%	37,513	33.8%
	Other	521,680	55.0%	486,312	7.3%	121,619	1.5%	41,406	-2.5%	39,834	0.9%	40,379	6.5%
UK	BEV	314,684	16.5%	267,203	17.8%	76,143	-16.9%	27,841	-34.2%	24,359	-17.1%	23,943	20.1%
	PHEV	141,311	7.4%	101,413	39.3%	42,318	54.2%	12,162	45.4%	15,871	55.8%	14,285	60.5%
	Hybrid	601,071	31.6%	479,992	25.2%	139,332	22.2%	41,838	31.9%	49,757	24.0%	47,737	13.2%
	Total EV	1,057,066	55.5%	848,608	24.6%	257,793	10.6%	81,841	-0.6%	89,987	12.9%	85,965	21.1%
	Other	845,988	44.5%	765,455	10.5%	193,353	12.0%	59,251	28.5%	66,538	5.3%	67,564	6.7%
WE 5	BEV	1,262,267	14.0%	1,025,450	23.1%	344,192	-8.5%	132,555	-26.4%	114,072	-2.2%	97,565	22.9%
	PHEV	611,468	6.8%	702,884	-13.0%	174,280	-28.1%	58,143	-43.3%	59,791	-23.6%	56,346	-8.7%
	Hybrid	2,569,714	28.4%	1,972,289	30.3%	669,773	29.5%	212,439	26.6%	229,870	28.5%	227,464	33.2%
	Total EV	4,443,449	49.2%	3,700,623	20.1%	1,188,245	4.6%	403,137	-10.5%	403,733	8.0%	381,375	22.3%
	Other	4,593,837	50.8%	4,224,133	8.8%	1,082,915	5.8%	353,734	7.4%	368,742	3.4%	360,439	6.7%



8. Electric vehicle sales data

Electric vehicle sales data

Sweden, Norway, Netherlands, Switzerland, Austria, WE 5+5

Legend

MoY = Month-on-Year
QoY = Quarter-on-Year
YoY = Year-on-Year
YTD = Year-to-Date

		Dec-23 YTD	Market Share	Dec-22 YTD	YTD YoY	Q4-23	QoY	Dec-23	MoY	Nov-23	MoY	Oct-23	MoY
	BEV	47,621	19.9%	34,165	39.4%	12,727	26.5%	4,019	1.2%	4,330	26.2%	4,378	64.6%
	PHEV	16,956	7.1%	13,268	27.8%	3,871	1.1%	1,146	-6.8%	1,213	-21.1%	1,512	42.4%
	Hybrid	50,630	21.2%	40,858	23.9%	12,247	18.1%	3,865	10.9%	4,129	9.8%	4,253	36.1%
	Total EV	115,207	48.2%	88,291	30.5%	28,845	18.9%	9,030	3.9%	9,672	10.8%	10,143	48.1%
	Other	123,943	51.8%	126,759	-2.2%	27,419	-0.6%	9,467	6.2%	9,228	-2.3%	8,724	-5.3%
Austria	BEV	123,949	33.5%	78,012	58.9%	31,619	10.5%	11,881	-16.8%	10,478	39.3%	9,260	36.2%
	PHEV	47,081	12.7%	34,535	36.3%	8,946	8.6%	2,323	13.7%	3,153	9.6%	3,470	4.6%
	Hybrid	161,220	43.6%	77,951	106.8%	37,994	80.4%	13,449	136.9%	12,744	74.6%	11,801	46.0%
	Total EV	332,250	89.8%	190,498	74.4%	78,559	35.7%	27,653	25.6%	26,375	49.0%	24,531	34.8%
	Other	37,541	10.2%	121,631	-69.1%	4,579	-84.5%	-1,076	-112.1%	1,861	-81.5%	3,794	-64.2%
Netherlands	BEV	104,589	82.4%	138,286	-24.4%	24,915	-57.3%	8,957	-72.6%	8,442	-47.0%	7,516	-22.7%
	PHEV	10,170	8.0%	14,857	-31.5%	3,527	-22.2%	1,954	2.6%	938	-37.5%	635	-43.6%
	Hybrid	7,584	6.0%	9,464	-19.9%	1,900	-49.9%	709	-48.9%	702	-50.9%	489	-49.9%
	Total EV	122,343	96.4%	162,607	-24.8%	30,342	-54.5%	11,620	-67.7%	10,082	-46.5%	8,640	-27.0%
	Other	4,612	3.6%	11,722	-60.7%	1,114	-77.2%	563	-83.9%	266	-60.1%	285	-60.9%
Norway	BEV	112,775	37.8%	96,163	17.3%	30,990	-16.7%	11,408	-37.3%	10,128	-7.7%	9,454	17.6%
	PHEV	61,235	20.5%	66,775	-8.3%	18,184	-5.7%	7,101	-13.9%	5,321	-6.0%	5,762	7.1%
	Hybrid	28,537	9.6%	28,355	0.6%	8,105	11.2%	2,580	13.6%	3,047	16.0%	2,478	3.6%
	Total EV	202,547	67.9%	191,293	5.9%	57,279	-10.2%	21,089	-26.6%	18,496	-3.9%	17,694	11.9%
	Other	95,560	32.1%	107,927	-11.5%	24,073	11.4%	8,605	20.3%	7,432	5.6%	8,036	8.4%
Sweden	BEV	52,728	20.9%	40,172	31.3%	16,493	20.7%	7,240	5.6%	4,748	8.1%	4,505	87.0%
	PHEV	23,220	9.2%	18,336	26.6%	7,009	49.4%	2,782	63.6%	2,164	29.0%	2,063	56.8%
	Hybrid	68,830	27.3%	56,121	22.6%	19,039	17.9%	7,074	23.5%	6,235	12.2%	5,730	17.8%
	Total EV	144,778	57.4%	114,629	26.3%	42,541	23.3%	17,096	19.7%	13,147	13.1%	12,298	43.2%
	Other	107,436	42.6%	111,286	-3.5%	26,767	-7.2%	9,852	-5.7%	8,858	-9.5%	8,057	-6.3%
Switzerland	BEV	1,703,929	16.5%	1,412,248	20.7%	460,936	-12.1%	176,060	-31.3%	152,198	-4.2%	132,678	21.7%
	PHEV	770,130	7.5%	850,655	-9.5%	215,817	-23.8%	73,449	-37.5%	72,580	-20.7%	69,788	-5.6%
	Hybrid	2,886,515	28.0%	2,185,038	32.1%	749,058	30.0%	240,116	28.9%	256,727	28.7%	252,215	32.6%
	Total EV	5,360,574	51.9%	4,447,941	20.5%	1,425,811	3.1%	489,625	-12.6%	481,505	7.0%	454,681	21.8%
	Other	4,962,929	48.1%	4,703,458	5.5%	1,166,867	2.7%	381,145	3.5%	396,387	0.7%	389,335	4.0%
WE 5+5													



8. Electric vehicle sales data

Electric vehicle sales data

Australia, Brazil, China, India, Indonesia, Japan

Legend

MoY = Month-on-Year
QoY = Quarter-on-Year
YoY = Year-on-Year
YTD = Year-to-Date

		Dec-23 YTD	Market Share	Dec-22 YTD	YTD YoY	Q4-23	QoY	Dec-23	MoY	Nov-23	MoY	Oct-23	MoY
Australia	BEV	87,217	7.2%	33,416	161.0%	21,474	84.4%	6,771	33.2%	8,646	94.0%	6,057	188.0%
	PHEV	11,212	0.9%	5,937	88.8%	4,469	230.3%	1,302	183.0%	1,429	233.1%	1,738	274.6%
	Hybrid	98,437	8.1%	81,790	20.4%	28,708	27.8%	9,875	39.4%	9,646	13.1%	9,187	33.9%
	Total EV	196,866	16.2%	121,143	62.5%	54,651	54.1%	17,948	42.2%	19,721	47.0%	16,982	80.1%
	Other	1,019,914	83.8%	960,286	6.2%	262,843	11.9%	80,596	7.0%	92,420	13.2%	89,827	15.4%
Brazil	BEV	19,309	0.9%	8,458	128.3%	11,585	412.4%	6,018	570.2%	3,197	339.8%	2,370	272.6%
	PHEV	33,637	1.5%	10,348	225.1%	12,796	310.8%	5,353	326.2%	4,004	423.4%	3,439	214.4%
	Hybrid	40,981	1.9%	30,439	34.6%	12,036	24.5%	4,908	43.0%	3,400	-2.9%	3,728	36.6%
	Total EV	93,927	4.3%	49,245	90.7%	36,417	142.1%	16,279	191.4%	10,601	112.2%	9,537	113.8%
	Other	2,086,298	95.7%	1,911,217	9.2%	608,971	11.2%	220,456	12.2%	191,233	2.2%	197,282	20.1%
China*	BEV	6,657,000	22.2%	5,351,000	24.4%	2,173,000	22.1%	825,000	32.2%	702,000	14.1%	646,000	19.4%
	PHEV	2,787,400	9.3%	1,515,559	83.9%	997,000	87.8%	364,000	93.1%	323,000	89.6%	310,000	80.1%
	Hybrid	853,190	2.8%	818,993	4.2%	255,100	32.5%	95,000	46.6%	78,800	30.6%	81,300	20.7%
	Total EV	10,297,590	34.3%	7,685,552	34.0%	3,425,100	36.8%	1,284,000	46.4%	1,103,800	30.5%	1,037,300	32.9%
	Other	19,747,410	65.7%	19,163,448	3.0%	5,553,900	13.7%	1,872,000	11.5%	1,866,200	25.9%	1,815,700	5.3%
India**	BEV	82,336	1.6%	38,754	112.5%	21,325	79.7%	7,401	90.1%	7,145	77.5%	6,779	71.8%
	PHEV	309	0.0%	13	2274.2%	84	8264.2%	31	0.0%	28	0.0%	25	2400.0%
	Hybrid	340,174	6.5%	191,920	77.2%	84,392	7.5%	27,790	12.1%	28,182	8.1%	28,420	2.7%
	Total EV	422,819	8.0%	230,687	83.3%	105,801	17.0%	35,221	22.8%	35,355	17.5%	35,224	11.4%
	Other	4,844,876	92.0%	4,709,358	2.9%	1,206,376	-2.8%	402,270	4.7%	399,829	-3.7%	404,278	-8.4%
Indonesia	BEV	17,062	2.2%	10,327	65.2%	6,885	5.5%	3,206	33.4%	1,942	-1.2%	1,737	-19.5%
	PHEV	70	0.0%	10	600.0%	5	0.0%	1	0.0%	2	0.0%	2	0.0%
	Hybrid	51,132	6.6%	5,100	902.6%	17,024	419.5%	6,260	173.5%	6,248	653.7%	4,516	2740.3%
	Total EV	68,264	8.8%	15,437	342.2%	23,914	143.9%	9,467	101.7%	8,192	193.2%	6,255	170.1%
	Other	711,062	91.2%	768,126	-7.4%	176,968	-12.5%	59,523	-12.3%	59,861	-7.8%	57,584	-17.1%
Japan	BEV	43,991	1.7%	31,592	39.2%	10,516	12.4%	3,803	-8.1%	3,331	1.9%	3,382	73.2%
	PHEV	52,143	2.0%	37,772	38.0%	12,446	71.1%	3,607	14.2%	4,661	113.4%	4,178	116.3%
	Hybrid	1,460,133	55.1%	1,089,077	34.1%	373,644	26.1%	116,759	26.1%	134,112	26.5%	122,773	25.7%
	Total EV	1,556,267	58.7%	1,158,441	34.3%	396,606	26.7%	124,169	24.3%	142,104	27.4%	130,333	28.4%
	Other	1,095,130	41.3%	1,064,862	2.8%	243,293	-1.5%	76,461	-5.5%	82,482	1.3%	84,350	-0.4%

*BEV and PHEV sales based on CAAM data; hybrid sales based on CPCA wholesale data; **Partially estimated

Source: PwC Autofacts Analysis, KBA, SMMT, PFA, ANFIA, ANFAC, SCB, OFV, RAI, auto-schweiz, Statistik Austria, CAAM, CPCA, JADA, ODMD, MoRTH, ABVE, FCAI, GAIKINDO, PZPM



8. Electric vehicle sales data

Electric vehicle sales data

Poland, South Korea, Turkey, USA, Analyzed Markets

Legend

MoY = Month-on-Year
QoY = Quarter-on-Year
YoY = Year-on-Year
YTD = Year-to-Date

		Dec-23 YTD	Market Share	Dec-22 YTD	YTD YoY	Q4-23	QoY	Dec-23	MoY	Nov-23	MoY	Oct-23	MoY
Poland	BEV	17,100	3.6%	11,293	51.4%	4,900	44.9%	1,700	38.2%	1,900	62.0%	1,300	32.8%
	PHEV	13,200	2.8%	9,664	36.6%	3,800	60.4%	1,500	88.9%	1,100	49.7%	1,200	42.9%
	Hybrid	187,300	39.4%	136,948	36.8%	55,000	63.9%	19,700	52.3%	17,200	59.7%	18,100	83.6%
	Total EV	217,600	45.8%	157,905	37.8%	63,700	62.0%	22,900	53.1%	20,200	59.3%	20,600	76.4%
	Other	257,430	54.2%	261,844	-1.7%	61,015	-4.3%	19,217	-12.3%	21,485	-0.2%	20,313	0.0%
South Korea	BEV	156,767	9.0%	155,432	0.9%	42,365	5.8%	11,117	87.1%	15,829	2.8%	15,419	-17.5%
	PHEV	10,796	0.6%	13,114	-17.7%	2,220	-30.7%	877	-15.5%	816	-32.7%	527	-44.8%
	Hybrid	374,314	21.5%	259,731	44.1%	113,767	61.2%	39,865	48.6%	41,139	65.3%	32,763	73.6%
	Total EV	541,877	31.2%	428,277	26.5%	158,352	39.1%	51,859	53.4%	57,784	39.2%	48,709	26.5%
	Other	1,197,373	68.8%	1,255,975	-4.7%	286,723	-17.5%	91,390	-28.2%	102,692	-10.3%	92,641	-12.5%
Turkey	BEV	64,515	6.7%	7,733	734.3%	30,967	742.2%	11,289	643.2%	10,591	730.7%	9,087	929.1%
	PHEV	2,468	0.3%	1,005	145.6%	712	52.1%	269	52.0%	227	77.3%	216	32.5%
	Hybrid	102,327	10.6%	63,382	61.4%	34,020	47.7%	15,522	80.1%	10,399	24.2%	8,099	34.1%
	Total EV	169,310	17.5%	72,120	134.8%	65,699	141.8%	27,080	162.6%	21,217	117.0%	17,402	145.7%
	Other	797,031	82.5%	520,540	53.1%	234,752	41.2%	99,336	29.9%	70,207	42.0%	65,209	61.6%
USA	BEV	1,118,286	7.2%	725,064	54.2%	280,996	30.8%	100,928	27.7%	89,559	37.1%	90,509	28.5%
	PHEV	289,569	1.9%	184,823	56.7%	86,846	74.8%	40,127	104.8%	24,682	69.1%	22,037	42.4%
	Hybrid	1,176,833	7.6%	816,422	44.1%	330,271	60.7%	117,690	62.9%	108,782	74.6%	103,799	46.2%
	Total EV	2,584,688	16.7%	1,726,308	49.7%	698,113	48.5%	258,745	51.4%	223,023	56.8%	216,345	37.9%
	Other	12,877,275	83.3%	11,927,300	8.0%	3,149,444	2.8%	1,174,521	7.5%	997,294	2.0%	977,629	-1.7%
Analyzed Markets	BEV	9,967,512	14.0%	7,785,317	28.0%	3,064,949	17.5%	1,153,293	17.2%	996,338	14.3%	915,318	21.7%
	PHEV	3,970,934	5.6%	2,628,900	51.0%	1,336,195	51.6%	490,516	47.5%	432,529	53.4%	413,150	54.8%
	Hybrid	7,571,336	10.6%	5,678,840	33.3%	2,053,020	35.8%	693,485	38.2%	694,635	35.9%	664,900	33.4%
	Total EV	21,509,782	30.3%	16,093,056	33.7%	6,454,164	29.1%	2,337,293	28.5%	2,123,502	27.6%	1,993,368	31.4%
	Other	49,596,728	69.7%	47,246,414	5.0%	12,951,152	6.7%	4,476,915	7.4%	4,280,090	10.6%	4,194,148	2.3%



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Thank you

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