

Global Automobiles

EV tracker Nov 23: New global sales record; Special: US elections = uncertainty

Industry Overview

A new BEV sales record in Nov-23 but EU pricing weakens

Nov-23 global BEV sales were around 1m units (+11% y/y; +9% m/m), a new record high. China grew for a 4th consecutive month to c600k units (+c23% y/y) while US sales continue to oscillate around c100k units (+41% y/y in Nov). EU sales remain lacklustre (c208k unit sales; +11% y/y). The situation is unlikely to improve as German EV subsidies were abruptly cancelled (see [Sudden stop of German subsidies...](#) for more details). We anticipate this will drive OEMs to increase **price discounts, which are already creeping up in Germany** (Exhibit 25 & Exhibit 27-Exhibit 28).

TSLA back ahead of BYD; BMW vs MBG; GM/Ford/STLA

1) Tesla regained the top BEV selling spot in Nov by increasing M/S by 5ppts m/m to 17.5% (below YTD trend of 18.2% though), mainly over **BYD** (-1.3ppts m/m), which did however increase BEV sales for the 11th month in a row. **2) MBG** won share across regions, while **BMW** gained most share in the US (+1ppt m/m), driving both premium carmakers global M/S up by 0.2 ppts m/m. **BMW** keeps though its record high M/S lead over **MBG** in Nov (c1.5ppts). **4) GM** dropped 0.4ppts M/S m/m on lacklustre Chevy Bolt sales in the US ahead of the launch of the Equinox EV. **5) Ford's** F-150 lightning jumped threefold to a new high of c4.4k units sales. Ford global BEV M/S remained flattish though. **5) STLA BEV** global BEV M/S was weak at just 2.4% in Nov.

USA BEV outlook 2024: Slower growth & election risks

We published the BEV outlook for Europe already on 15 Dec (see: Europe Auto Year Ahead 2024). Our US team has updated its outlook on 09 Jan (see: [US Auto Year Ahead 2024](#)) and lowered its EV adoption forecast due to lower than expected sales growth in H2 23. Essentially, we are pushing US BEV sales penetration rate estimates forward by 1 year ('24 10% Vs prior 12%, '25 15% vs prior 17%, '30 33% vs prior 36%), but there remains still some downside risk. Depending on the US election outcome (see page 2), there is a risk that the IRA scheme and emission regulation will be modified again. The Democrat and Republican parties have very different views on environmental policies and hence on xEV incentive schemes. We expect that a Democrat victory would accelerate a transition to clean vehicles, while a Republican win would delay the transition. If the IRA scheme is removed, this could lead the BEV sales penetration rate to remain flat at c10% of LV sales from FY24-26 and accelerate only again as of FY27.

Asia xEV outlook 2024: 1) Growth in HEV 2) China exports

The key topics for the APAC auto sector in 2024 are (1) growth in HEV demand, and (2) growth in BEV exports. In China, we expect PHEV growth to outstrip BEV growth even as the BEV push continues. In Japan, India, and Indonesia we see growth in demand centring on HEVs for the time being, with BEVs further down the road. Korea has a relatively high BEV sales ratio, but we expect notable growth in HEV demand again in 2024. We assume that Chinese vehicle exports increase 18% YoY in 2024 to 5.7mn.

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Refer to important disclosures on page 27 to 29.

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Jargon buster

M/S = market share

(B)EV = (Battery) electric vehicle

PHEV = plug-in hybrid EV

xEV = PHEVs and BEVs

HEV: Hybrid EV

LV(P) = light vehicle (production)

OEM = original equipment manufacturer

NMC = Nickel Manganese Cobalt

LFP = lithium iron phosphate battery

M/S: Market share

PC: passenger cars

CV: commercial vehicles

NA = North America; APAC: Asia-Pacific

STLA = Stellantis

TSLA: Tesla

IRA: Inflation Reduction Act

US BEV outlook: Elections = Uncertainty

2024 Elections have the potential to be extremely consequential for the Auto industry as the political parties have materially different views on the electrification of the industry. At a high level, we believe it is fair to summarize the opposing views by saying that the Democrat party is pushing for electrification while the Republican party has a more conservative approach towards it. We think that the outcome of this round of elections is particularly important because it could have a significant impact over the regulatory body, either already enacted or merely proposed, that governs the transition to EVs. Given the uncertain nature of elections we draft two scenarios where we present the potential developments: one in which the Democrat party takes control and the other in which the Republican party wins control.

Scenario: Democrats win and take control

We would expect that if both congress and presidency were controlled by Democrats, electrification efforts could step up, although government intervention would likely be geared towards the stick rather than the carrot ([see EPA proposal note](#)) this time.

Exhibit 1: Possible effect on EV new entrants and incumbents in the scenario of a Democrat victory

A Democrat administration is likely to take a stronger stance towards electrification given the proposed legislation. This would be beneficial to EV new entrants

Democrats	BofA's Expectations	EV New Entrants	Incumbents
IRA	Although the IRA has been one of the key acts of the Biden administration, demand for an adjustment to the bill rose across the political spectrum, including in the democrat party. We think there is room for a more restrictive application of the law, especially around the rule allowing commercial vehicles (and thereby leases) to avoid the stringent requirements required to qualify for the credit.	Uncertain	Uncertain
CAFE	Democrats may seek a further tightening of CAFE and EPA standards, which would be particularly punitive for lower fuel efficiency and polluting vehicle manufacturers.	Positive	Negative
EPA regulation		Positive	Negative
Advanced Clean Cars II	We wouldn't expect any change from current trajectory but possibly a wider adoption beyond CA, at least in those states led by a Democrat majority.	Positive	Negative
Tariffs	We believe that both political parties agree on stronger import duties.	Positive	Positive

Source: BofA Global Research estimates; Glossary: IRA: Inflation Reduction Act; CAFE: Corporate Average Fuel Economy; EPA: U.S. Environmental Protection Agency

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Scenario: Republicans win and take control

Republicans have showed more skepticism towards the transition to EVs. Although the Republican party has not disclosed a specific plan for the electrification of the industry, messaging suggests to us that the legislative and regulatory efforts to stimulate EV adoption could be tempered or even repealed.

Exhibit 2: Possible effect on EV new entrants and incumbents in the scenario of a Republican victory

A Republican administration is likely to take a more prudent approach towards electrification and, given the latest commentary, most of the key proposed legislation may get dismissed, which would be beneficial to incumbents at least in the short term

Republicans	BofA's Expectations	EV New Entrants	Incumbents
IRA	It appears likely that Republicans will try to curtail the government funding of consumer incentives, but the procedure to do so is unclear. A less extreme approach could call for a more restrictive set of requirements related to accessibility of incentives.	Negative	Negative
CAFE	We would expect a republican administration is likely to block the proposed new CAFE and EPA parameters that Democrats have been pushing for.	No Change	Positive
EPA regulation		No Change	Positive
Advanced Clean Cars II	On the Californian Advanced Clean Cars II, we expect political turmoil. In 2019, the Trump administration revoked California's waiver on emissions, which set up a precedent that it may repeat during a Republican administration. In this case, regulation of emissions at the federal level would be governed by current EPA standards.	Negative	Positive
Tariffs	We believe that both political parties agree on stronger import duties.	Positive	Positive

Source: BofA Global Research estimates; Glossary: IRA: Inflation Reduction Act; CAFE: Corporate Average Fuel Economy; EPA: U.S. Environmental Protection Agency

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More details, also on our BEV market outlook for the US in this note: [Year Ahead 2024: Five Auto themes & top stock picks as volatility remains](#), 09 January 2024

Global BEV sales and market share (I)

Exhibit 3: Global EV volumes by OEMs (sorted by highest sales in the latest month)

Nov-23: Tesla regains the top selling spot, but BYD is still growing sales sequentially. Weak Stellantis sales ahead of 2024 model launch offensive

BEV	2022	2023	2Q 22	3Q 22	4Q 22	1Q 23	2Q 23	3Q 23	Aug-23	Sep-23	Oct-23	Nov-23
Global unit sales	7,747,767	8,861,992	1,661,854	2,102,109	2,458,674	1,882,806	2,400,792	2,660,115	923,466	931,456	919,127	999,152
Tesla Inc.	1,314,470	1,613,465	255,084	343,893	405,320	422,747	466,014	435,176	167,471	154,095	114,954	174,574
BYD	913,992	1,387,414	182,086	258,103	329,366	264,257	352,589	432,683	143,822	151,224	168,351	169,534
VW Group	578,397	669,033	119,182	151,283	208,462	137,104	179,849	203,333	69,611	67,582	72,677	76,070
Wuling	455,836	370,775	112,687	115,095	121,801	77,634	97,469	101,105	31,797	37,593	45,889	48,678
Geely Auto Group	275,576	376,352	45,134	87,052	102,999	75,049	99,164	112,036	38,675	36,605	43,857	46,246
BMW Group	218,933	324,979	41,821	50,726	89,014	65,563	89,414	93,992	34,542	33,370	35,693	40,317
GAC	288,072	455,123	57,049	87,234	96,908	82,917	138,703	152,098	53,807	51,902	41,953	39,452
SAIC	203,190	254,505	46,594	48,441	66,622	53,693	67,621	74,489	23,891	27,981	26,711	31,991
Mercedes-Benz Group	153,805	220,182	33,510	35,682	52,616	45,762	60,982	67,374	20,925	25,530	21,226	24,838
Stellantis	301,623	310,783	79,653	70,228	89,626	74,803	94,702	92,371	32,657	34,835	24,580	24,327
Changan Automobile Group	201,589	191,564	34,606	50,053	80,493	46,162	44,482	55,992	16,772	19,594	23,071	21,857
Xiaopeng	122,825	122,043	35,988	29,659	22,365	18,261	23,252	40,396	13,804	15,449	20,010	20,124
Hyundai Motor	211,153	224,534	53,391	51,131	57,708	50,940	66,618	67,228	24,859	19,043	19,922	19,826
GM	112,815	164,068	22,346	38,950	36,197	31,781	37,380	54,988	15,653	20,837	20,884	19,035
NIO Inc.	124,704	144,589	25,643	32,342	40,515	31,379	25,499	55,467	20,580	15,457	16,077	16,167
Kia	161,142	161,661	44,728	40,470	33,527	37,642	42,865	49,745	18,425	15,002	15,653	15,756
Chery Automobile	257,084	103,238	65,601	78,550	58,578	18,697	27,265	30,007	9,348	12,167	11,812	15,457
Geely-Volvo Car Group	117,973	155,801	22,394	21,548	52,930	41,345	47,351	38,513	12,680	14,139	13,865	14,727
Renault	161,158	145,146	37,618	38,133	55,637	38,143	37,688	39,853	14,314	12,481	15,233	14,229
Leap Motor	110,438	96,549	30,415	35,610	23,561	10,752	23,694	34,251	11,886	13,268	14,758	13,094
Ford	105,589	100,134	24,477	29,376	34,274	18,501	24,659	33,823	11,234	12,554	10,658	12,493
Market share												
Tesla Inc.	17.0%	18.2%	15.3%	16.4%	16.5%	22.5%	19.4%	16.4%	18.1%	16.5%	12.5%	17.5%
BYD	11.8%	15.7%	11.0%	12.3%	13.4%	14.0%	14.7%	16.3%	15.6%	16.2%	18.3%	17.0%
VW Group	7.5%	7.5%	7.2%	7.2%	8.5%	7.3%	7.5%	7.6%	7.5%	7.3%	7.9%	7.6%
Wuling	5.9%	4.2%	6.8%	5.5%	5.0%	4.1%	4.1%	3.8%	3.4%	4.0%	5.0%	4.9%
Geely Auto Group	3.6%	4.2%	2.7%	4.1%	4.2%	4.0%	4.1%	4.2%	4.2%	3.9%	4.8%	4.6%
BMW Group	2.8%	3.7%	2.5%	2.4%	3.6%	3.5%	3.7%	3.5%	3.7%	3.6%	3.9%	4.0%
GAC	3.7%	5.1%	3.4%	4.1%	3.9%	4.4%	5.8%	5.7%	5.8%	5.6%	4.6%	3.9%
SAIC	2.6%	2.9%	2.8%	2.3%	2.7%	2.9%	2.8%	2.8%	2.6%	3.0%	2.9%	3.2%
Mercedes-Benz Group	2.0%	2.5%	2.0%	1.7%	2.1%	2.4%	2.5%	2.5%	2.3%	2.7%	2.3%	2.5%
Stellantis	3.9%	3.5%	4.8%	3.3%	3.6%	4.0%	3.9%	3.5%	3.5%	3.7%	2.7%	2.4%
Changan Automobile Group	2.6%	2.2%	2.1%	2.4%	3.3%	2.5%	1.9%	2.1%	1.8%	2.1%	2.5%	2.2%
Xiaopeng	1.6%	1.4%	2.2%	1.4%	0.9%	1.0%	1.0%	1.5%	1.5%	1.7%	2.2%	2.0%
Hyundai Motor	2.7%	2.5%	3.2%	2.4%	2.3%	2.7%	2.8%	2.5%	2.7%	2.0%	2.2%	2.0%
GM	1.5%	1.9%	1.3%	1.9%	1.5%	1.7%	1.6%	2.1%	1.7%	2.2%	2.3%	1.9%
NIO Inc.	1.6%	1.6%	1.5%	1.5%	1.6%	1.7%	1.1%	2.1%	2.2%	1.7%	1.7%	1.6%
Kia	2.1%	1.8%	2.7%	1.9%	1.4%	2.0%	1.8%	1.9%	2.0%	1.6%	1.7%	1.6%
Chery Automobile	3.3%	1.2%	3.9%	3.7%	2.4%	1.0%	1.1%	1.1%	1.0%	1.3%	1.3%	1.5%
Geely-Volvo Car Group	1.5%	1.8%	1.3%	1.0%	2.2%	2.2%	2.0%	1.4%	1.4%	1.5%	1.5%	1.5%
Renault	2.1%	1.6%	2.3%	1.8%	2.3%	2.0%	1.6%	1.5%	1.6%	1.3%	1.7%	1.4%
Leap Motor	1.4%	1.1%	1.8%	1.7%	1.0%	0.6%	1.0%	1.3%	1.3%	1.4%	1.6%	1.3%
Ford	1.4%	1.1%	1.5%	1.4%	1.4%	1.0%	1.0%	1.3%	1.2%	1.3%	1.2%	1.3%
Penetration rate												
BYD	50.6%	57.7%	51.9%	49.7%	50.9%	51.9%	54.6%	59.3%	59.5%	58.7%	65.2%	64.4%
VW Group	8.4%	9.8%	7.2%	8.4%	11.4%	8.1%	9.3%	10.5%	11.3%	10.0%	11.6%	11.3%
Geely Auto Group	19.4%	26.5%	16.3%	24.6%	23.4%	22.4%	27.7%	27.9%	30.3%	24.5%	28.3%	27.4%
BMW Group	11.7%	17.6%	9.6%	11.1%	17.2%	14.1%	17.4%	18.7%	21.6%	19.1%	20.7%	21.1%
GAC	12.2%	21.0%	10.7%	13.8%	15.4%	17.6%	21.0%	24.9%	25.8%	24.1%	18.9%	19.4%
SAIC	5.8%	9.0%	6.8%	5.0%	7.1%	8.4%	8.8%	9.0%	8.7%	9.8%	9.4%	10.7%
Mercedes-Benz Group	9.3%	14.3%	8.3%	8.6%	12.1%	11.4%	14.1%	15.4%	15.0%	15.9%	16.3%	18.5%
Stellantis	6.8%	7.3%	6.7%	6.6%	8.2%	6.5%	7.5%	8.2%	9.3%	8.8%	6.8%	6.9%
Changan Automobile Group	12.8%	12.7%	12.1%	12.9%	16.8%	12.9%	11.4%	12.7%	11.6%	12.6%	13.6%	14.8%
Hyundai Motor	6.6%	7.4%	6.7%	6.3%	7.0%	6.4%	7.8%	8.1%	9.2%	6.8%	7.5%	6.6%
GM	3.2%	4.8%	2.6%	4.2%	3.7%	3.8%	3.7%	5.5%	4.6%	6.2%	7.1%	6.3%
Kia	7.0%	7.4%	7.5%	6.9%	6.0%	6.3%	6.8%	8.4%	9.9%	7.4%	8.4%	8.4%
Chery Automobile	33.5%	13.9%	41.9%	34.3%	27.4%	13.4%	15.3%	12.8%	12.4%	13.6%	12.5%	15.6%

Source: BofA Global Research, EV volumes

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EV OEMs/Models in focus for investors

Exhibit 4: Unit sales of certain BEV models and OEMs which we think investors have a special focus

Let us know if you have special requests, we have the data

Model	2021	2022	Q1-23	Apr-23	May-23	Jun-23	Q2-23	Jul-23	Aug-23	Sep-23	Q3-23	Oct-23	Nov-23
VW Group	455,985	578,397	137,104	52,134	60,716	66,999	179,849	66,140	69,611	67,582	203,333	72,677	76,070
VW ID.3	76,329	77,866	23,211	9,451	8,167	8,249	25,867	13,381	13,178	13,793	40,352	15,724	16,237
VW ID.4	121,719	174,387	35,250	13,803	17,958	19,560	51,321	17,143	16,601	14,545	48,289	17,030	16,948
VW ID.6	18,788	37,974	3,100	1,818	2,486	1,614	5,918	1,685	1,229	1,386	4,300	1,433	1,266
VW ID.5	0	20,421	5,294	1,827	2,548	3,561	7,936	2,492	2,847	2,403	7,742	1,784	2,277
Audi Q4 e-tron	21,051	53,762	21,429	8,270	9,143	9,515	26,928	8,259	9,645	11,311	29,215	11,342	10,377
Audi Q8 e-tron	0	21	6,223	2,119	3,296	4,018	9,433	3,602	4,180	4,975	12,757	4,589	4,919
Cupra Born	3,412	32,633	8,045	2,870	3,234	3,666	9,770	3,817	5,330	4,267	13,414	4,176	3,913
Skoda Enyaq	44,438	53,946	12,144	5,235	6,482	7,296	19,013	7,462	8,331	7,490	23,283	8,548	9,163
Porsche	40,610	35,035	9,358	2,476	2,685	4,122	9,283	3,488	2,914	3,242	9,644	3,340	3,842
Porsche Taycan	40,610	35,035	9,358	2,476	2,685	4,122	9,283	3,488	2,914	3,242	9,644	3,340	3,842
Mercedes-Benz Group	101,605	153,805	45,762	18,170	20,394	22,418	60,982	20,919	20,925	25,530	67,374	21,226	24,838
Mercedes EQS	1,607	21,215	5,149	1,636	1,734	1,696	5,066	1,457	1,389	1,473	4,319	1,246	1,450
Mercedes EQE	0	13,852	7,347	2,719	3,823	3,475	10,017	3,143	3,056	3,870	10,069	3,753	3,920
Mercedes EQS SUV	0	943	3,064	1,282	1,341	1,536	4,159	1,511	1,440	1,480	4,431	980	1,280
BMW Group	104,715	218,933	65,563	23,825	31,681	33,908	89,414	26,080	34,542	33,370	93,992	35,693	40,317
BMW 3-Series L (i3)	0	17,793	10,130	3,085	3,925	4,787	11,797	2,402	5,290	5,274	12,966	5,763	6,141
BMW iX3	38,670	54,385	15,597	5,895	6,633	6,663	19,191	5,237	6,817	7,027	19,081	6,136	6,429
BMW i4	496	40,825	14,236	5,867	8,095	8,277	22,239	6,435	7,051	6,594	20,080	7,197	9,145
BMW iX	4,418	38,960	9,677	3,063	4,133	4,486	11,682	3,916	4,940	5,014	13,870	3,165	4,047
BMW i7	0	1,177	1,184	482	526	814	1,822	720	1,108	1,135	2,963	1,103	1,169
Stellantis	216,887	301,623	74,803	24,270	33,516	36,916	94,702	24,879	32,657	34,835	92,371	24,580	24,327
Fiat 500	44,733	67,012	14,145	4,077	6,429	8,081	18,587	5,164	5,925	6,285	17,374	5,139	4,690
Peugeot e-208	44,624	49,283	13,816	3,971	4,370	5,529	13,870	3,231	4,219	7,103	14,553	3,136	3,232
Renault Group	142,047	161,083	41,467	12,149	10,815	16,546	39,510	13,936	15,125	13,412	42,473	16,237	15,223
Renault Megane	45	33,151	11,079	3,519	3,375	5,053	11,947	3,399	4,585	3,268	11,252	4,527	4,298
Dacia Spring	27,309	49,035	14,353	4,247	3,668	4,936	12,851	6,034	6,013	4,890	16,937	6,193	5,518
Hyundai Motor	245,670	372,295	88,582	35,209	35,780	38,494	109,483	39,644	43,284	34,045	116,973	35,575	35,582
Hyundai Ioniq 5	45,757	99,636	21,618	8,570	9,156	8,997	26,723	9,599	10,407	8,570	28,576	8,967	8,429
Kia EV6	19,095	78,706	16,484	7,723	7,656	7,405	22,784	7,685	9,550	6,970	24,205	6,678	5,424
Toyota Motor Corp.	18,942	25,304	19,674	8,951	9,695	10,649	29,295	6,715	11,891	10,350	28,956	9,112	9,339
Toyota BZ4X	0	8,333	12,911	4,296	4,368	4,727	13,391	3,821	4,403	3,621	11,845	3,304	3,225
GM	504,420	568,651	109,415	43,082	48,531	43,236	134,849	50,213	47,450	58,430	156,093	66,773	67,713
Chevrolet Bolt EUV	3,851	32,533	15,528	4,277	3,727	4,833	12,837	4,030	4,701	4,687	13,418	2,696	3,775
Ford	55,848	105,589	18,501	5,758	8,263	10,638	24,659	10,035	11,234	12,554	33,823	10,658	12,493
Ford F-150 Lightning	76	15,627	4,432	1,369	1,749	1,476	4,594	1,599	1,056	985	3,640	3,761	4,446
Tesla Inc.	936,310	1,314,470	422,747	116,289	138,388	211,337	466,014	113,610	167,471	154,095	435,176	114,954	174,574
Tesla Model 3	500,386	476,470	131,938	38,303	40,146	68,994	147,443	33,747	46,593	26,043	106,383	31,989	54,327
Tesla Model Y	410,982	771,297	280,104	73,707	93,193	132,377	299,277	75,699	115,715	121,358	312,772	78,235	115,192
Rivian Automotive	938	20,342	8,466	2,529	2,942	5,071	10,542	4,819	4,969	5,892	15,680	5,569	5,752
Rivian R1T	913	16,074	4,193	1,043	1,445	2,238	4,726	1,934	1,643	2,340	5,917	1,936	2,035
Lucid Motors	125	4,477	1,462	549	537	692	1,778	500	626	586	1,712	509	527
Lucid Air	125	4,477	1,462	549	537	692	1,778	500	626	586	1,712	509	527
Xpeng	98,701	122,825	18,261	7,090	7,522	8,640	23,252	11,143	13,804	15,449	40,396	20,010	20,124
Xpeng P7	60,607	59,441	6,370	4,068	4,447	5,201	13,716	5,014	4,347	4,719	14,080	3,983	3,130
NIO Inc.	93,482	124,704	31,379	7,195	5,864	12,440	25,499	19,430	20,580	15,457	55,467	16,077	16,167
NIO et5	0	11,813	18,806	4,352	3,281	5,129	12,762	5,493	7,132	3,935	16,560	4,675	5,233
NIO es6	42,235	41,958	4,573	306	1,016	4,677	5,999	10,252	9,335	7,921	27,508	5,688	5,700
Polestar	28,723	49,282	11,939	4,087	5,234	5,646	14,967	5,752	5,572	4,874	16,198	3,775	4,180
Polestar 2	28,723	49,282	11,939	4,087	5,234	5,646	14,967	5,752	5,572	4,874	16,198	3,775	4,180
BYD	327,267	913,955	264,257	104,254	121,232	127,103	352,589	137,637	143,822	151,224	432,683	168,351	169,534
BYD Yuan Plus / Atto-3	1	201,772	94,253	38,437	33,099	37,031	108,567	30,254	32,701	35,594	98,549	47,134	33,076
BYD Dolphin	29,590	205,248	70,567	30,629	30,709	26,664	88,002	31,830	32,298	27,324	91,452	32,933	41,346
BYD Seagull	0	0	0	1,500	14,300	16,560	32,360	28,001	34,841	35,012	97,854	37,837	44,603
Geely Auto Group	71,165	275,576	75,049	33,296	29,824	36,044	99,164	36,756	38,675	36,605	112,036	43,857	46,246
Geely Panda Mini	0	19	18,050	10,615	7,215	7,238	25,068	6,691	8,832	10,221	25,744	13,052	15,188
Zeekr X	0	0	0	0	349	2,401	2,750	4,035	4,165	1,725	9,925	2,654	4,714
Volvo	25,725	68,691	29,406	10,990	11,662	9,732	32,384	5,942	7,108	9,265	22,315	10,090	10,547
Volvo XC40	24,570	44,682	20,683	6,330	7,695	5,837	19,862	3,832	4,879	6,467	15,178	7,094	7,438

Source: BofA Global Research, EV volumes

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Global BEV sales and market share (II)

Exhibit 5: Global & US, Europe, China xEV volumes and penetration rate

Global xEV penetration reaches historical highs over YTD records in EU and China; not just BEV- but also PHEV sales increase a lot

	2022	2023	2Q 22	3Q 22	4Q 22	1Q 23	2Q 23	3Q 23	Aug-23	Sep-23	Oct-23	Nov-23
BEV Units sales												
Europe	1,684,923	2,006,017	347,101	378,948	610,118	471,875	551,692	593,253	216,778	210,658	180,831	208,366
USA	801,185	1,054,360	185,224	209,076	247,902	255,556	287,900	308,733	103,718	104,614	100,640	101,531
China	4,725,569	5,009,141	1,018,225	1,358,222	1,426,811	972,276	1,339,034	1,539,686	531,575	536,561	558,152	599,993
Global	7,747,767	8,861,992	1,661,854	2,102,109	2,458,674	1,882,806	2,400,792	2,660,115	923,466	931,456	919,127	999,152
BEV Penetration Rate (%)												
Europe	13.1%	15.1%	10.7%	12.4%	17.8%	12.8%	14.4%	16.8%	21.0%	15.8%	15.2%	19.4%
USA	5.8%	7.4%	5.3%	6.1%	6.9%	7.1%	7.0%	7.7%	7.7%	7.8%	8.3%	8.2%
China	20.2%	21.5%	20.5%	21.5%	22.2%	18.5%	21.1%	22.8%	23.6%	22.2%	23.0%	24.3%
Global	10.0%	11.4%	9.2%	10.6%	11.9%	9.7%	11.3%	12.2%	13.0%	12.1%	12.4%	13.3%
PHEV Units sales												
Europe	1,026,864	909,423	240,863	215,034	332,415	231,298	254,332	242,945	68,719	92,362	89,825	91,023
USA	189,284	247,027	48,151	41,463	57,397	55,766	75,761	75,882	24,375	28,257	19,216	20,402
China	1,517,400	2,372,815	289,524	435,220	541,797	445,750	609,705	731,272	245,847	261,043	284,258	301,830
PHEV Penetration Rate (%)												
Europe	8.0%	6.8%	7.4%	7.1%	9.7%	6.3%	6.6%	6.9%	6.7%	6.9%	7.5%	8.5%
USA	1.4%	1.7%	1.4%	1.2%	1.6%	1.5%	1.8%	1.9%	1.8%	2.1%	1.6%	1.6%
China	6.5%	10.2%	5.8%	6.9%	8.4%	8.5%	9.6%	10.8%	10.9%	10.8%	11.7%	12.2%
Global	3.7%	4.8%	3.4%	3.6%	4.6%	4.0%	4.6%	5.0%	5.0%	5.2%	5.5%	5.8%
xEV Units sales												
Europe	2,711,787	2,915,440	587,964	593,982	942,533	703,173	806,024	836,198	285,497	303,020	270,656	299,389
USA	990,469	1,301,387	233,375	250,539	305,299	311,322	363,661	384,615	128,093	132,871	119,856	121,933
China	6,242,969	7,381,956	1,307,749	1,793,442	1,968,608	1,418,026	1,948,739	2,270,958	777,422	797,604	842,410	901,823
Global xEV unit sales	10,608,641	12,570,818	2,273,619	2,825,523	3,420,658	2,660,304	3,388,125	3,761,890	1,279,265	1,331,671	1,328,794	1,431,705
xEV Penetration Rate (%)												
Europe	21.0%	21.9%	18.1%	19.5%	27.4%	19.0%	21.1%	23.7%	27.6%	22.7%	22.7%	27.8%
USA	7.1%	9.2%	6.6%	7.3%	8.4%	8.6%	8.8%	9.6%	9.6%	9.9%	9.9%	9.8%
China	26.7%	31.8%	26.4%	28.4%	30.7%	26.9%	30.7%	33.7%	34.5%	33.0%	34.8%	36.5%
Global	13.7%	16.2%	12.6%	14.2%	16.5%	13.7%	15.9%	17.2%	18.0%	17.3%	18.0%	19.1%

Source: BofA Global Research, EV-volumes

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Exhibit 6: Global BEV Sales by Model – Top selling models (sorted by highest sales in the latest month)

Tesla Models jump back at the top of the list while BYD's Atto 3 sales weakened

Global BEV Sales by Model	2022	2023	2Q 22	3Q 22	4Q 22	1Q 23	2Q 23	3Q 23	Aug-23	Sep-23	Oct-23	Nov-23
Tesla Model Y	771,297	1,085,580	147,056	207,970	248,438	280,104	299,277	312,772	115,715	121,358	78,235	115,192
Tesla Model 3	476,470	472,080	91,870	117,253	139,702	131,938	147,443	106,383	46,593	26,043	31,989	54,327
BYD Seagull	0	212,654	0	0	0	0	32,360	97,854	34,841	35,012	37,837	44,603
BYD Dolphin	205,248	324,300	28,916	68,977	77,678	70,567	88,002	91,452	32,298	27,324	32,933	41,346
BYD Yuan Plus / Atto-3	201,772	381,579	38,419	61,452	85,357	94,253	108,567	98,549	32,701	35,594	47,134	33,076
Wuling HongGuang Mini	424,035	213,925	107,471	108,425	107,778	69,850	52,204	47,496	15,863	16,148	20,343	24,032
Wuling Bingo	0	139,054	0	0	0	3,312	41,178	48,048	13,892	19,606	23,744	22,772
Aion Y	119,725	213,429	25,359	36,964	38,502	31,068	60,966	71,589	26,719	27,004	27,140	22,666
VW ID.4	174,387	168,838	34,075	51,550	59,350	35,250	51,321	48,289	16,601	14,545	17,030	16,948
VW ID.3	77,866	121,391	14,140	19,326	31,401	23,211	25,867	40,352	13,178	13,793	15,724	16,237
Geely Panda Mini	19	97,102	0	0	19	18,050	25,068	25,744	8,832	10,221	13,052	15,188
Changan Lumin	60,273	124,981	1,867	21,620	36,786	24,033	28,890	41,569	11,793	14,494	15,538	14,951
Aion S / Aion S Plus	116,165	206,166	22,699	32,071	44,165	48,314	67,292	66,635	22,650	21,548	11,730	12,195
BYD Qin Plus	119,943	111,262	25,944	34,329	35,628	23,850	30,964	34,969	11,663	11,844	9,390	12,089
Ora R3 / Good Cat	66,533	82,662	14,712	21,759	10,128	9,186	26,365	27,072	9,765	9,903	9,243	10,796
MG 4 / Mulan	10,508	85,197	451	1,128	8,929	16,930	21,140	26,596	8,713	10,232	10,025	10,506
Audi Q4 e-tron	53,762	99,291	7,548	12,179	23,061	21,429	26,928	29,215	9,645	11,311	11,342	10,377
BYD Han	144,569	99,964	35,830	39,189	40,358	19,173	28,917	32,844	10,506	10,554	9,480	9,550
Chery QQ Ice Cream	96,529	60,529	25,984	26,647	15,785	9,821	15,861	18,517	5,543	7,235	7,111	9,219
Skoda Enyaq	53,946	72,151	13,400	14,586	16,944	12,144	19,013	23,283	8,331	7,490	8,548	9,163
BMW i4	40,825	72,897	7,429	10,083	20,184	14,236	22,239	20,080	7,051	6,594	7,197	9,145
Hyundai Ioniq 5	99,636	94,313	25,875	23,116	24,330	21,618	26,723	28,576	10,407	8,570	8,967	8,429

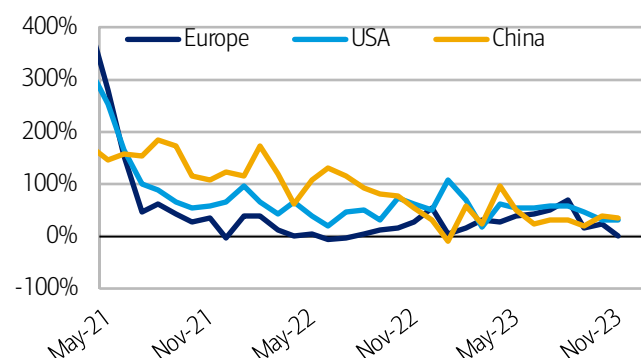
Source: BofA Global Research, EV-volumes

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Global EV sales data by region

Exhibit 7: Global BEV+PHEV Y/Y changes

Global xEV sales grew 28% y/y, driven by the US and China both >30% y/y

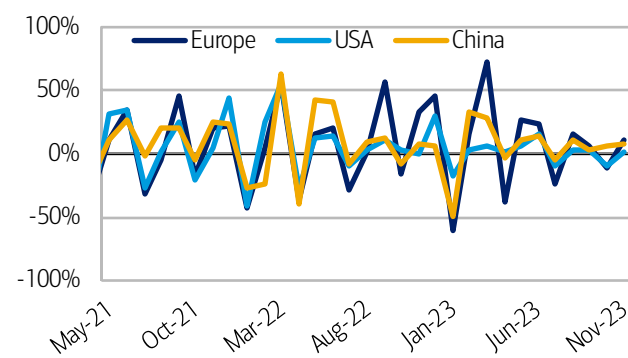


Source: EV-volumes, BofA Global Research

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Exhibit 8: Global BEV+PHEV M/M changes

Volumes were up across regions, with EU leading the gains (+11%)

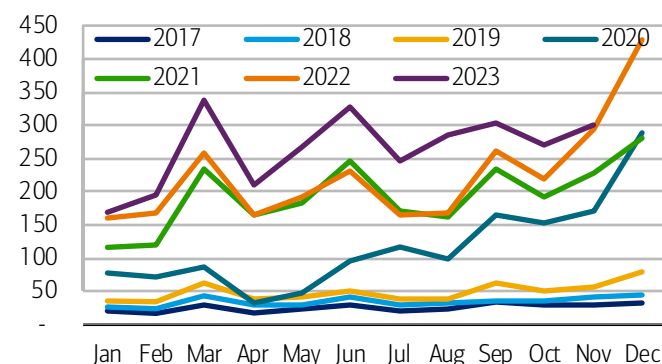


Source: EV-volumes, BofA Global Research

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Exhibit 9: Europe monthly (BEV+PHEV) sales volumes

EU xEV sales were almost flat y/y at 299k units

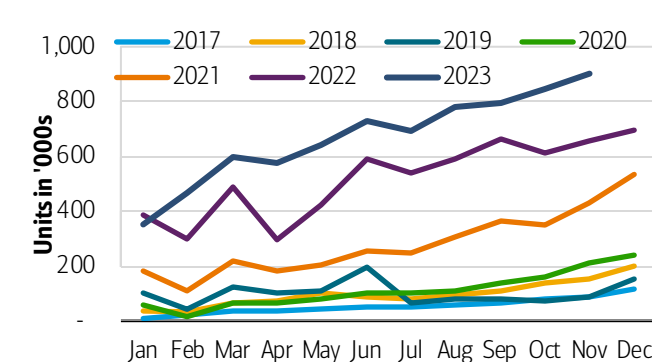


Source: EV-volumes, BofA Global Research

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Exhibit 10: China monthly (BEV+PHEV) sales volumes

China xEV sales topped 902K sales, up c242k y/y

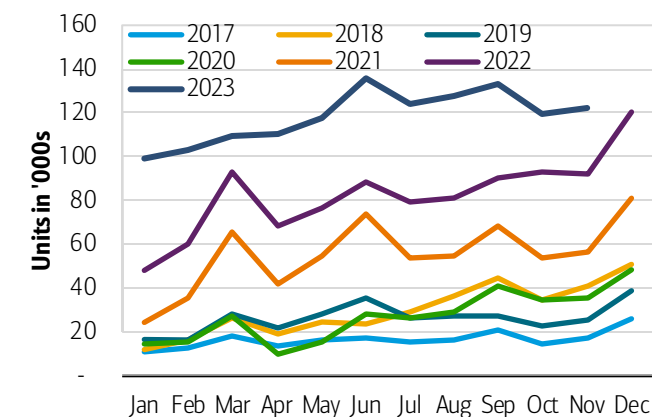


Source: EV-volumes, BofA Global Research

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Exhibit 11: US monthly (BEV+PHEV) sales volumes

US xEV sales stood at 122k in Nov at par with previous month

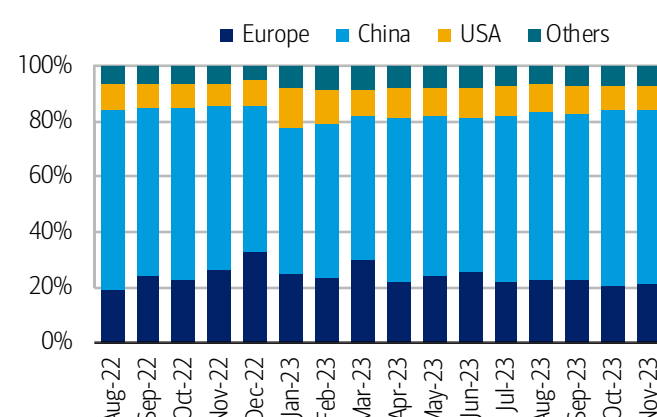


Source: EV-volumes, BofA Global Research

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Exhibit 12: Global BEV+PHEV sales contribution by regions

EU regained some share over USA in Nov m/m



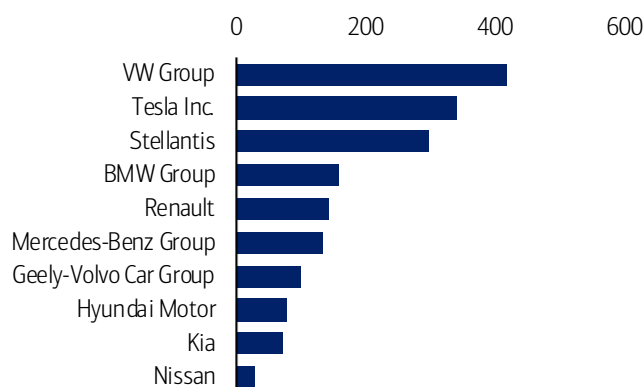
Source: EV-volumes, BofA Global Research

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Top-10 BEV OEMs models sales by regions in 2023

Exhibit 13: EU Top-10 BEV sales OEMs YTD (Units in '000s)

VW remains market leader in Europe, but the market is competitive

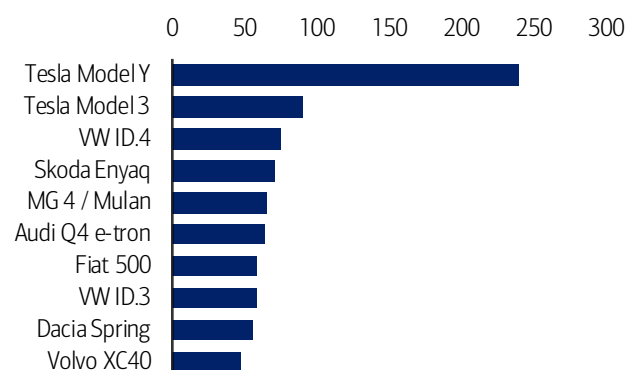


Source: EV-volumes, BofA Global Research

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Exhibit 14: EU Top-10 sales models YTD (Units in '000s)

The model Y dominates the market, but the rest are close to each other

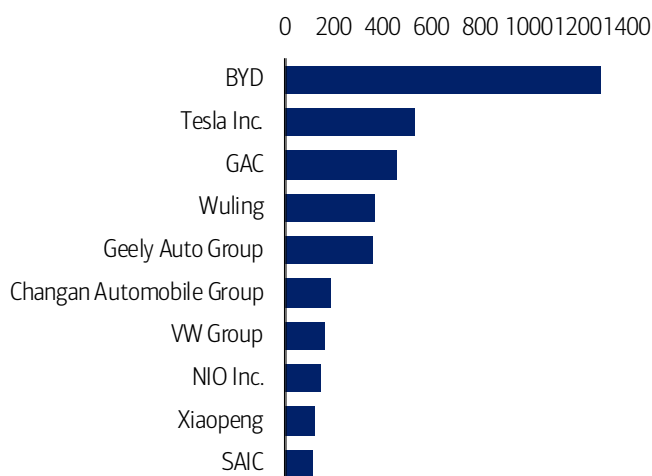


Source: EV-volumes, BofA Global Research

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Exhibit 15: China Top-10 BEV sales OEMs YTD (Units in '000s)

BYD is the no 1 OEM by sales in China, with VW down in 7th only

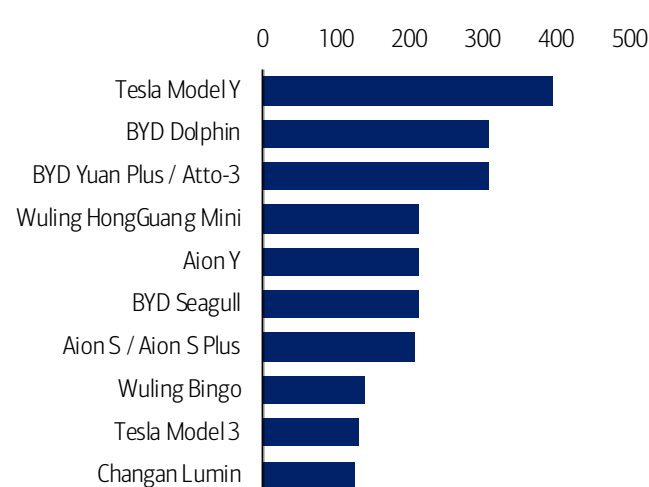


Source: EV-volumes, BofA Global Research

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Exhibit 16: China Top-10 sales models YTD (Units in '000s)

The Model Y still leads in China, with no EU OEMs model in the top 10

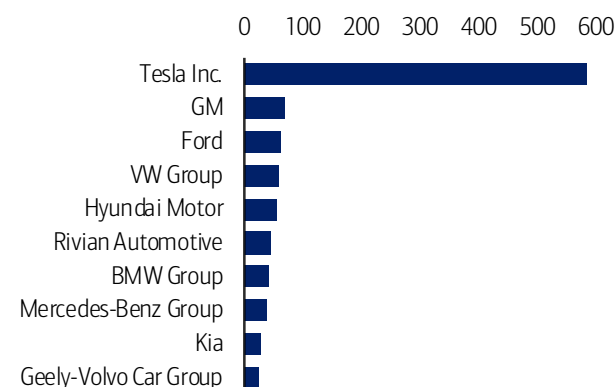


Source: EV-volumes, BofA Global Research

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Exhibit 17: US Top-10 sales OEMs YTD (Units in '000s)

Tesla is by far the largest BEV player in the US

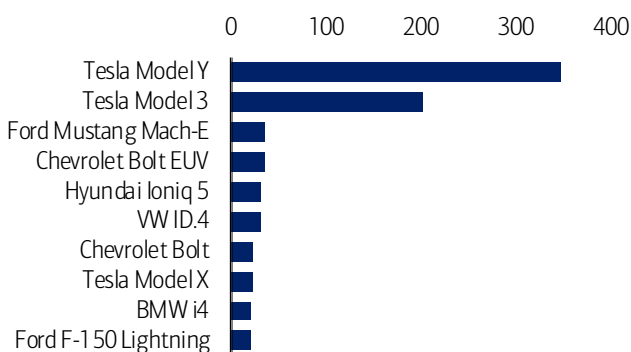


Source: EV-volumes, BofA Global Research

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Exhibit 18: US Top-10 sales models YTD (Units in '000s)

Tesla's models dominate the market, with the premium model X also in the top 10 in the US



Source: EV-volumes, BofA Global Research

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BEV production vs sales tracker

The only OEMs which have continued to gain significant global BEV market share in H1 23 have been Tesla & BYD. In contrast, most legacy OEMs have high-flying BEV sales plans and aim for significant BEV sales penetration increases in 2023 but seem to have problems to match these targets. **VW** has already cut back its BEV penetration rate target from 10% to 8-10% in 2023 and **Ford** has issued a warning on its BEV targets with its Q2 results. We think that BEV sales have performed worse than expected for most legacy OEMs in H1 2023. This probably resulted into BEV overproduction H1 2023. In the table below, we compare reported global BEV unit sales for H1 2023 (Source: EV Volumes) vs the estimated production figures by S&P (from Sept 23). It might be the case that S&P's production estimate is just too high, but we assume here it reflects reality. Our comparison shows that only Tesla, BYD, Volvo Cars and BMW had a good balance vs production (supply) & sales (demand). **Mercedes and most legacy mass OEMs (particularly VW & Ford) produced too many EVs in H1 23.** In general, the fear remains that too high inventories lead to higher price discounts on some BEVs and that the EV price war from China will spill over to the US and Europe too.

Exhibit 19: EV sales & production since Q1 2022

TESLA and BYD 's production closely precedes sales while Ford, VW & Mercedes seem to have produced too many EVs

OEM		Q1-22	Q2-22	Q3-22	Q4-22	2022	Q1-23	Q2-23	H1-23	Q3
BMW	Production	40,282	58,292	62,699	90,430	251,703	83,982	97,290	181,272	99,811
	Sales	37,372	41,821	50,726	89,012	218,931	65,467	88,837	154,304	93,915
	Delta prod/sales	2,910	16,471	11,973	1,418	32,772	18,515	8,453	26,968	5,896
	as % sales	7%	28%	19%	2%	13%	22%	9%	15%	6%
BYD	Production	147,921	182,477	262,803	326,603	919,804	272,186	368,881	641,067	423,619
	Sales	144,439	182,088	258,105	329,367	913,999	264,257	352,591	616,848	433,186
	Delta prod/sales	3,482	389	4,698	-2,764	5,805	7,929	16,290	24,219	-9,567
	as % sales	2%	0%	2%	-1%	1%	3%	4%	4%	-2%
Ford	Production	24,618	27,396	34,415	39,989	126,418	25,650	55,038	80,688	46,724
	Sales	17,462	24,477	29,376	34,272	105,587	18,498	24,656	43,154	33,800
	Delta prod/sales	7,156	2,919	5,039	5,717	20,831	7,152	30,382	37,534	12,924
	as % sales	29%	11%	15%	14%	16%	28%	55%	47%	28%
Hyundai motors	Production	85,497	83,851	90,935	110,566	370,849	132,413	143,416	275,829	124,557
	Sales	91,340	98,119	91,601	91,233	372,293	88,581	109,484	198,065	116,847
	Delta prod/sales	-5,843	-14,268	-666	19,333	-1,444	43,832	33,932	77,764	7,710
	as % sales	-7%	-17%	-1%	17%	0%	33%	24%	28%	6%
MBG	Production	40,881	36,620	51,354	77,847	206,702	97,934	97,937	195,871	96,660
	Sales	31,997	33,510	36,388	61,170	163,065	58,748	73,631	132,379	79,403
	Delta prod/sales	8,884	3,110	14,966	16,677	43,637	39,186	24,306	63,492	17,257
	as % sales	22%	8%	29%	21%	21%	40%	25%	32%	18%
STLA	Production	61,225	73,460	68,620	84,120	287,425	98,946	114,443	213,389	106,350
	Sales	62,116	79,653	70,228	89,605	301,602	74,760	94,655	169,415	92,009
	Delta prod/sales	-891	-6,193	-1,608	-5,485	-14,177	24,186	19,788	43,974	14,341
	as % sales	-1%	-8%	-2%	-7%	-5%	24%	17%	21%	13%
TSLA	Production	305,407	258,580	365,923	439,701	1,369,611	440,808	479,700	920,508	504,881
	Sales	310,173	255,084	343,893	405,317	1,314,467	422,750	466,020	888,770	445,554
	Delta prod/sales	-4,766	3,496	22,030	34,384	55,144	18,058	13,680	31,738	59,327
	as % sales	-2%	1%	6%	8%	4%	4%	3%	3%	12%
VW Group	Production	95,486	148,406	165,362	208,638	617,892	221,117	216,182	437,299	199,225
	Sales	99,472	119,184	151,283	208,462	578,401	137,121	179,856	316,977	200,254
	Delta prod/sales	-3,986	29,222	14,079	176	39,491	83,996	36,326	120,322	-1,029
	as % sales	-4%	20%	9%	0%	6%	38%	17%	28%	-1%
RNO	Production	27,081	44,004	53,150	57,093	181,328	45,991	48,901	94,892	34,334
	Sales	29,770	37,618	38,133	55,637	161,158	38,151	37,697	75,848	39,599
	Delta prod/sales	-2,689	6,386	15,017	1,456	20,170	7,840	11,204	19,044	-5,265
	as % sales	-10%	15%	28%	3%	11%	17%	23%	20%	-15%
Volvo Cars	Production	24,792	22,843	30,901	50,342	128,878	47,511	49,391	96,902	49,453
	Sales	21,101	22,394	21,548	52,928	117,971	41,338	47,345	88,683	38,138
	Delta prod/sales	3,691	449	9,353	-2,586	10,907	6,173	2,046	8,219	11,315
	as % sales	15%	2%	30%	-5%	8%	13%	4%	8%	23%

Source: BofA Global Research, EV Volumes, S&P Global production; * Hyundai Motor = Hyundai & Kia brand

BofA GLOBAL RESEARCH

Europe: BEV + PHEV sales

Exhibit 20: Europe BEV sales by OEMs (units)

TESLA seasonality drive M/S loss across all other OEMs

BEV unit sales	2021	2022	2023	2022	3Q22	4Q22	1Q23	2Q23	3Q23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23
EU OEMs															
VW Group	310,208	357,910	417,471	71,348	82,953	143,537	94,449	118,443	122,653	46,329	39,502	45,233	37,918	39,485	42,441
Stellantis	194,689	284,703	297,144	76,518	64,854	83,926	72,086	89,989	89,228	35,804	24,097	31,508	33,623	23,209	22,632
BMW Group	76,082	131,297	157,658	27,077	29,677	47,596	30,368	41,670	45,927	16,136	13,924	16,746	15,257	18,733	20,960
Renault	139,482	156,575	143,027	36,228	37,025	54,727	37,456	37,237	39,275	15,469	12,956	14,146	12,173	15,039	14,020
Mercedes-Benz Group	89,283	111,712	132,485	25,062	23,232	39,081	29,406	33,924	41,882	12,386	11,807	13,120	16,955	12,515	14,758
US OEMs															
Tesla Inc.	170,115	233,059	339,336	26,207	53,549	93,743	94,609	93,249	94,948	48,928	18,953	36,918	39,077	19,127	37,403
Ford	23,417	29,175	28,605	6,038	7,312	9,745	5,771	8,092	9,194	3,848	2,302	2,959	3,933	2,832	2,716
Asian OEMs															
Hyundai Motor	74,115	86,637	76,230	19,545	19,865	24,939	19,186	20,631	23,544	7,517	7,519	9,939	6,086	6,224	6,645
Kia	62,778	72,649	72,921	18,420	15,447	15,702	15,471	19,221	24,093	7,631	7,075	9,005	8,013	6,823	7,313
Nissan	41,974	35,974	29,245	5,764	8,358	13,734	7,582	7,246	8,654	2,634	2,083	2,693	3,878	3,103	2,660
Toyota Motor Corp.	8,836	13,508	27,823	2,974	2,520	5,707	7,115	8,058	7,942	2,849	2,295	3,126	2,521	2,386	2,322
Honda Motor	3,477	2,120	1,592	782	336	386	215	223	642	77	56	309	277	325	187
Others															
Geely-Volvo Car Group	35,780	80,305	100,306	12,399	12,285	41,368	27,317	29,453	24,327	9,089	7,187	7,851	9,289	9,316	9,893
Total BEV	1,283,322	1,684,923	2,006,017	347,101	378,948	610,118	471,875	551,692	593,253	227,501	165,817	216,778	210,658	180,831	208,366
EU Market Share (%)															
EU OEMs															
VW Group	24.2%	21.2%	20.8%	20.6%	21.9%	23.5%	20.0%	21.5%	20.7%	20.4%	23.8%	20.9%	18.0%	21.8%	20.4%
Stellantis	15.2%	16.9%	14.8%	22.0%	17.1%	13.8%	15.3%	16.3%	15.0%	15.7%	14.5%	14.5%	16.0%	12.8%	10.9%
BMW Group	5.9%	7.8%	7.9%	7.8%	7.8%	7.8%	6.4%	7.6%	7.7%	7.1%	8.4%	7.7%	7.2%	10.4%	10.1%
Renault	10.9%	9.3%	7.1%	10.4%	9.8%	9.0%	7.9%	6.7%	6.6%	6.8%	7.8%	6.5%	5.8%	8.3%	6.7%
Mercedes-Benz Group	7.0%	6.6%	6.6%	7.2%	6.1%	6.4%	6.2%	6.1%	7.1%	5.4%	7.1%	6.1%	8.0%	6.9%	7.1%
US OEMs															
Tesla Inc.	13.3%	13.8%	16.9%	7.6%	14.1%	15.4%	20.0%	16.9%	16.0%	21.5%	11.4%	17.0%	18.5%	10.6%	18.0%
Ford	1.8%	1.7%	1.4%	1.7%	1.9%	1.6%	1.2%	1.5%	1.5%	1.7%	1.4%	1.4%	1.9%	1.6%	1.3%
Asian OEMs															
Hyundai Motor	5.8%	5.1%	3.8%	5.6%	5.2%	4.1%	4.1%	3.7%	4.0%	3.3%	4.5%	4.6%	2.9%	3.4%	3.2%
Kia	4.9%	4.3%	3.6%	5.3%	4.1%	2.6%	3.3%	3.5%	4.1%	3.4%	4.3%	4.2%	3.8%	3.8%	3.5%
Nissan	3.3%	2.1%	1.5%	1.7%	2.2%	2.3%	1.6%	1.3%	1.5%	1.2%	1.3%	1.2%	1.8%	1.7%	1.3%
Toyota Motor Corp.	0.7%	0.8%	1.4%	0.9%	0.7%	0.9%	1.5%	1.5%	1.3%	1.3%	1.4%	1.4%	1.2%	1.3%	1.1%
Honda Motor	0.3%	0.1%	0.1%	0.2%	0.1%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.1%	0.1%	0.2%	0.1%
Others															
Geely-Volvo Car Group	2.8%	4.8%	5.0%	3.6%	3.2%	6.8%	5.8%	5.3%	4.1%	4.0%	4.3%	3.6%	4.4%	5.2%	4.7%

Source: EV-volumes, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 21: Europe Top 15 BEV sales by model (sorted by highest sales in the latest month)

BMW i4 and iX exhibited strong sequential improvement

Europe unit sales	Q3 22	Q4 22	Q1 23	Q2 23	Q3 23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Nov-23	2022	2023
Tesla Model Y	38,409	54,734	72,555	66,048	70,124	21,957	33,322	12,173	23,575	34,376	19,126	111,757	239,430
Tesla Model 3	15,132	35,750	19,784	23,342	23,110	6,264	14,162	6,407	13,005	3,698	17,524	58,469	90,837
Skoda Enyaq	14,205	16,190	11,735	18,519	22,760	6,296	7,118	7,227	8,137	7,396	8,901	43,655	70,370
Audi Q4 e-tron	8,676	15,492	15,419	16,748	16,961	5,956	5,802	4,653	5,442	6,866	7,121	31,625	64,013
MG 4 / Mulan	757	6,703	12,767	18,590	20,679	6,540	7,804	6,437	6,735	7,507	6,716	7,460	65,702
BMW i4	5,240	12,672	7,661	12,538	10,268	4,576	4,899	3,437	3,846	2,985	6,193	23,120	41,968
BMW iX1	0	1,802	5,365	10,572	12,110	4,049	4,164	3,457	4,801	3,852	5,715	1,802	38,391
Dacia Spring	11,709	17,405	14,282	12,752	16,880	3,636	4,895	6,007	5,997	4,876	5,492	39,810	55,576
VW ID.4	17,448	27,405	16,252	25,569	22,965	8,609	10,268	8,698	8,465	5,802	5,422	57,507	75,411
Volvo XC40	5,289	17,294	14,434	13,260	9,673	5,601	3,567	2,276	3,008	4,389	5,275	26,540	47,798
Fiat 500	14,137	19,379	13,992	18,291	17,061	6,323	7,953	5,102	5,854	6,105	4,604	52,758	59,014
Togg T10X	0	0	0	808	4,796	306	502	627	1,965	2,204	4,401	0	13,572
Renault Megane	10,666	18,086	11,079	11,947	11,251	3,375	5,053	3,399	4,585	3,267	4,248	32,975	43,022
VW ID.3	11,817	24,027	17,444	17,999	15,309	5,611	6,460	4,288	6,878	4,143	4,213	44,781	58,877
Cupra Born	9,561	14,673	8,035	9,604	12,993	3,175	3,582	3,731	5,214	4,048	3,794	30,427	38,452

Source: EV-volumes, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 22: Europe PHEV sales by OEM (units)

EU PHEV sales appear to have peaked in June – M/S winners in Nov include BMW and Volvo Cars over Stellantis

PHEV unit sales	2021	2022	2023	2022	3Q22	4Q22	1Q23	2Q23	3Q23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23
EU OEMs															
VW Group	238,727	186,206	173,147	40,908	42,118	63,665	36,161	42,791	48,037	18,649	15,959	13,031	19,047	23,477	22,681
BMW Group	153,832	142,983	121,443	36,107	28,206	42,863	30,475	34,904	32,549	12,521	10,441	10,226	11,882	10,500	13,015
Mercedes-Benz Group	149,340	134,494	114,574	25,330	31,114	42,770	29,038	30,288	30,548	11,483	9,711	8,678	12,159	12,000	12,700
Stellantis	123,583	148,130	135,785	40,723	24,922	46,935	36,432	41,527	34,765	17,364	11,244	9,654	13,867	12,542	10,519
Tata-JLR	29,058	25,183	41,403	5,275	5,641	6,553	13,298	9,935	11,162	3,864	4,154	2,896	4,112	3,408	3,600
Renault	37,600	16,448	10,139	5,106	3,347	3,041	3,330	1,889	2,883	966	901	888	1,094	1,028	1,009
US OEMs															
Ford	55,116	58,907	50,523	12,388	10,042	24,910	12,973	14,195	14,858	5,222	4,973	4,428	5,457	4,344	4,153
Asian OEMs															
Kia	54,702	67,255	53,619	17,835	19,025	18,702	12,590	14,828	15,190	5,558	4,922	4,615	5,653	5,669	5,342
Toyota Motor Corp.	24,477	26,637	28,081	6,901	5,722	6,816	5,162	8,019	9,307	3,659	2,784	2,785	3,738	2,861	2,732
Hyundai Motor	27,445	36,920	27,971	8,950	10,049	10,421	7,045	8,608	7,290	3,448	2,725	2,059	2,506	2,547	2,481
SAIC	14,775	22,189	10,821	7,858	3,201	5,050	3,761	3,085	2,098	1,100	512	378	1,208	886	991
Others															
Geely-Volvo Car Group	115,380	89,298	87,042	18,129	14,913	29,843	23,538	27,017	21,608	9,975	9,019	5,422	7,167	6,699	8,180
TOTAL PHEV	1,057,414	1,026,864	909,423	240,863	215,034	332,415	231,298	254,332	242,945	100,213	81,864	68,719	92,362	89,825	91,023
Market Share															
EU OEMs															
VW Group	22.6%	18.1%	19.0%	17.0%	19.6%	19.2%	15.6%	16.8%	19.8%	18.6%	19.5%	19.0%	20.6%	26.1%	24.9%
BMW Group	14.5%	13.9%	13.4%	15.0%	13.1%	12.9%	13.2%	13.7%	13.4%	12.5%	12.8%	14.9%	12.9%	11.7%	14.3%
Mercedes-Benz Group	14.1%	13.1%	12.6%	10.5%	14.5%	12.9%	12.6%	11.9%	12.6%	11.5%	11.9%	12.6%	13.2%	13.4%	14.0%
Stellantis	11.7%	14.4%	14.9%	16.9%	11.6%	14.1%	15.8%	16.3%	14.3%	17.3%	13.7%	14.0%	15.0%	14.0%	11.6%
Tata-JLR	2.7%	2.5%	4.6%	2.2%	2.6%	2.0%	5.7%	3.9%	4.6%	3.9%	5.1%	4.2%	4.5%	3.8%	4.0%
Renault	3.6%	1.6%	1.1%	2.1%	1.6%	0.9%	1.4%	0.7%	1.2%	1.0%	1.1%	1.3%	1.2%	1.1%	1.1%
US OEMs															
Ford	5.2%	5.7%	5.6%	5.1%	4.7%	7.5%	5.6%	5.6%	6.1%	5.2%	6.1%	6.4%	5.9%	4.8%	4.6%
Asian OEMs															
Kia	5.2%	6.5%	5.9%	7.4%	8.8%	5.6%	5.4%	5.8%	6.3%	5.5%	6.0%	6.7%	6.1%	6.3%	5.9%
Toyota Motor Corp.	2.3%	2.6%	3.1%	2.9%	2.7%	2.1%	2.2%	3.2%	3.8%	3.7%	3.4%	4.1%	4.0%	3.2%	3.0%
Hyundai Motor	2.6%	3.6%	3.1%	3.7%	4.7%	3.1%	3.0%	3.4%	3.0%	3.4%	3.3%	3.0%	2.7%	2.8%	2.7%
SAIC	1.4%	2.2%	1.2%	3.3%	1.5%	1.5%	1.6%	1.2%	0.9%	1.1%	0.6%	0.6%	1.3%	1.0%	1.1%
Others															
Geely-Volvo Car Group	10.9%	8.7%	9.6%	7.5%	6.9%	9.0%	10.2%	10.6%	8.9%	10.0%	11.0%	7.9%	7.8%	7.5%	9.0%

Source: EV-volumes, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 23: Europe xEV unit sales (sorted by highest sales in the latest month)

VW group remains the xEV market leader in Europe, but Stellantis slumps behind Tesla and BMW

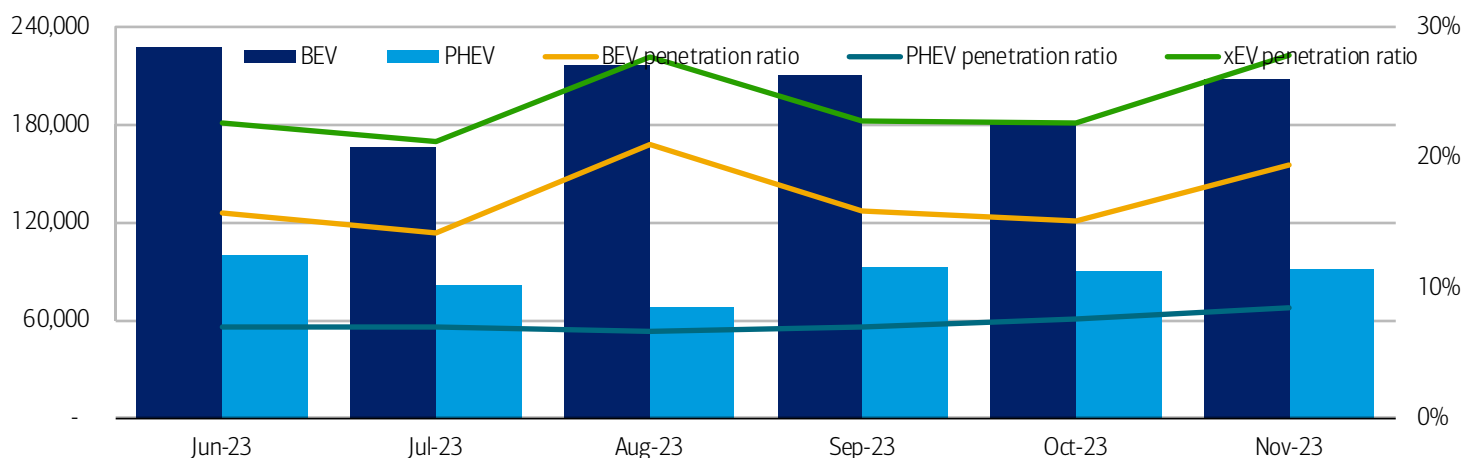
EUROPE xEV	2021	2022	2023	2022	3Q22	4Q22	1Q23	2Q23	3Q23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23
VW Group	548,935	544,116	590,618	112,256	125,071	207,202	130,610	161,234	170,690	64,978	55,461	58,264	56,965	62,962	65,122
Tesla Inc.	170,115	233,059	339,336	26,207	53,549	93,743	94,609	93,249	94,948	48,928	18,953	36,918	39,077	19,127	37,403
BMW Group	229,914	274,280	279,101	63,184	57,883	90,459	60,843	76,574	78,476	28,657	24,365	26,972	27,139	29,233	33,975
Stellantis	318,272	432,833	432,929	117,241	89,776	130,861	108,518	131,516	123,993	53,168	35,341	41,162	47,490	35,751	33,151
Mercedes-Benz Group	238,623	246,206	247,059	50,392	54,346	81,851	58,444	64,212	72,430	23,869	21,518	21,798	29,114	24,515	27,458
Geely-Volvo Car Group	151,160	169,603	187,348	30,528	27,198	71,211	50,855	56,470	45,935	19,064	16,206	13,273	16,456	16,015	18,073
Renault	177,082	173,023	153,166	41,334	40,372	57,768	40,786	39,126	42,158	16,435	13,857	15,034	13,267	16,067	15,029
Kia	117,480	139,904	126,540	36,255	34,472	34,404	28,061	34,049	39,283	13,189	11,997	13,620	13,666	12,492	12,655
Hyundai Motor	101,560	123,557	104,201	28,495	29,914	35,360	26,231	29,239	30,834	10,965	10,244	11,998	8,592	8,771	9,126
Ford	78,533	88,082	79,128	18,426	17,354	34,655	18,744	22,287	24,052	9,070	7,275	7,387	9,390	7,176	6,869
Europe xEV	2,340,736	2,711,787	2,915,440	587,964	593,982	942,533	703,173	806,024	836,198	327,714	247,681	285,497	303,020	270,656	299,389
Market Share															
VW Group	23.5%	20.1%	20.3%	19.1%	21.1%	22.0%	18.6%	20.0%	20.4%	19.8%	22.4%	20.4%	18.8%	23.3%	21.8%
Tesla Inc.	7.3%	8.6%	11.6%	4.5%	9.0%	9.9%	13.5%	11.6%	11.4%	14.9%	7.7%	12.9%	12.9%	7.1%	12.5%
BMW Group	9.8%	10.1%	9.6%	10.7%	9.7%	9.6%	8.7%	9.5%	9.4%	8.7%	9.8%	9.4%	9.0%	10.8%	11.3%
Stellantis	13.6%	16.0%	14.8%	19.9%	15.1%	13.9%	15.4%	16.3%	14.8%	16.2%	14.3%	14.4%	15.7%	13.2%	11.1%
Mercedes-Benz Group	10.2%	9.1%	8.5%	8.6%	9.1%	8.7%	8.3%	8.0%	8.7%	7.3%	8.7%	7.6%	9.6%	9.1%	9.2%
Geely-Volvo Car Group	6.5%	6.3%	6.4%	5.2%	4.6%	7.6%	7.2%	7.0%	5.5%	5.8%	6.5%	4.6%	5.4%	5.9%	6.0%
Renault	7.6%	6.4%	5.3%	7.0%	6.8%	6.1%	5.8%	4.9%	5.0%	5.0%	5.6%	5.3%	4.4%	5.9%	5.0%
Kia	5.0%	5.2%	4.3%	6.2%	5.8%	3.7%	4.0%	4.2%	4.7%	4.0%	4.8%	4.8%	4.5%	4.6%	4.2%
Hyundai Motor	4.3%	4.6%	3.6%	4.8%	5.0%	3.8%	3.7%	3.6%	3.7%	3.3%	4.1%	4.2%	2.8%	3.2%	3.0%
Ford	3.4%	3.2%	2.7%	3.1%	2.9%	3.7%	2.7%	2.8%	2.9%	2.8%	2.9%	2.6%	3.1%	2.7%	2.3%
Penetration rate															
VW Group	18.6%	9.3%	19.4%	16.1%	18.3%	27.2%	15.9%	18.3%	21.2%	20.0%	19.8%	24.2%	20.1%	24.4%	23.4%
BMW Group	26.8%	16.7%	34.0%	31.0%	31.4%	39.6%	29.1%	32.6%	36.7%	34.2%	33.9%	41.9%	34.9%	38.5%	39.2%
Stellantis	13.4%	10.7%	21.7%	20.8%	18.8%	26.8%	18.9%	23.1%	24.5%	25.3%	22.1%	28.3%	23.6%	19.8%	20.7%
Mercedes-Benz Group	35.1%	19.1%	39.2%	30.8%	36.0%	46.0%	34.0%	37.7%	42.9%	37.7%	42.0%	45.2%	41.8%	43.5%	44.1%
Geely-Volvo Car Group	52.2%	33.8%	73.5%	57.2%	59.1%	86.8%	72.8%	76.8%	76.0%	74.3%	76.8%	87.4%	68.1%	64.7%	68.4%
Renault	16.2%	7.8%	13.3%	14.7%	16.3%	19.6%	12.8%	11.5%	15.0%	12.3%	14.5%	18.1%	12.9%	15.6%	14.7%
Kia	23.4%	12.9%	23.5%	24.5%	26.0%	29.5%	18.9%	21.8%	27.4%	24.2%	24.4%	36.7%	24.0%	27.0%	28.9%
Hyundai Motor	19.7%	12.2%	21.2%	20.5%	22.6%	28.7%	19.6%	21.3%	23.3%	21.1%	21.5%	30.4%	18.9%	20.3%	20.2%
Ford	15.0%	8.8%	16.4%	14.7%	14.1%	25.7%	13.5%	16.3%	19.0%	17.7%	17.5%	21.3%	18.5%	17.4%	17.6%

Source: EV-volumes, BoFA Global Research

BoFA GLOBAL RESEARCH

Exhibit 24: Europe BEV vs PHEV volumes (units) and penetration rate (rhs)

BEV penetration rates reached new YTD highs in Nov, driven by a sequential mix improvement of both BEV and PHEVs



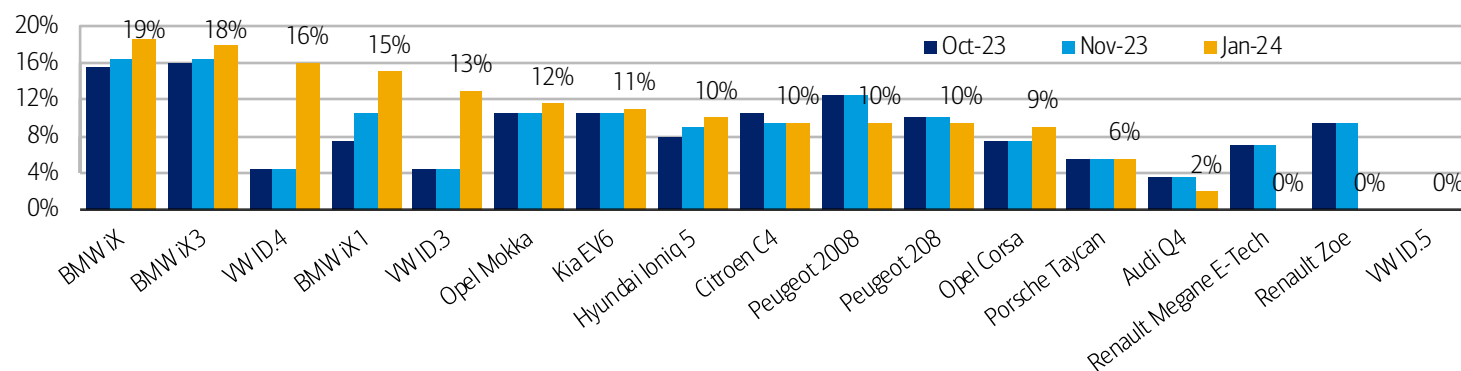
Source: EV-volumes, BoFA Global Research

BoFA GLOBAL RESEARCH

EV pricing in Europe

Exhibit 25: Average incentives on BEVs in Europe (sorted by Jan-24)

Incentives are generally trending higher, especially for BMW and VW but lower for Peugeot and Audi; Renault lowered BEV list prices in Jan 24

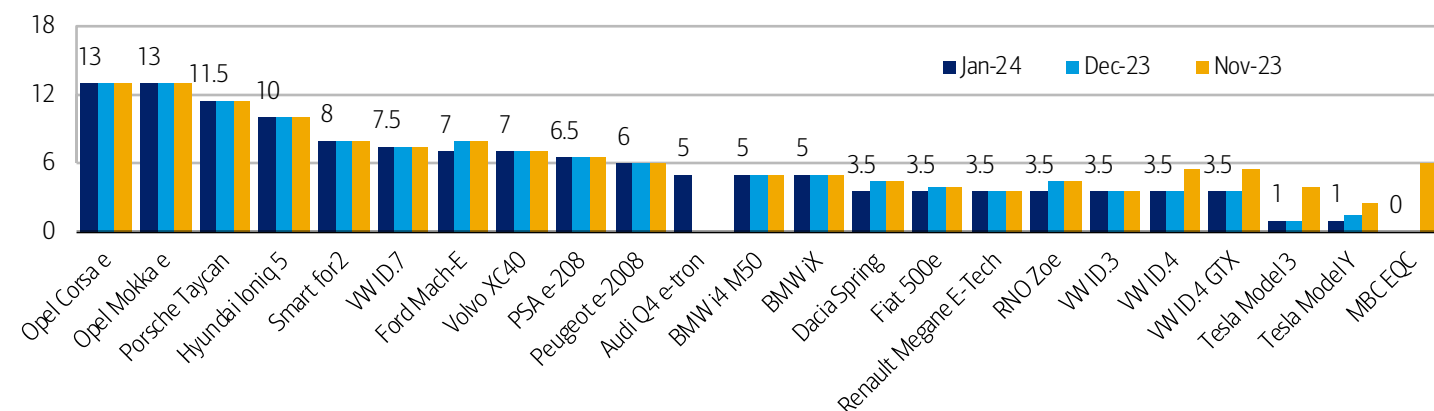


Source: BofA Global Research, MeinAuto.de. Note: 0% = 'Not available', MBC = Mercedes Benz Cars, *Models added in Aug so no historical

BofA GLOBAL RESEARCH

Exhibit 26: Germany: Waiting period for new EV (months); sorted by Jan-24

Waiting periods for new EVs are trending slightly lower, including for the Ford Mach-E, RNO Zoe, Fiat 500e and Tesla Models

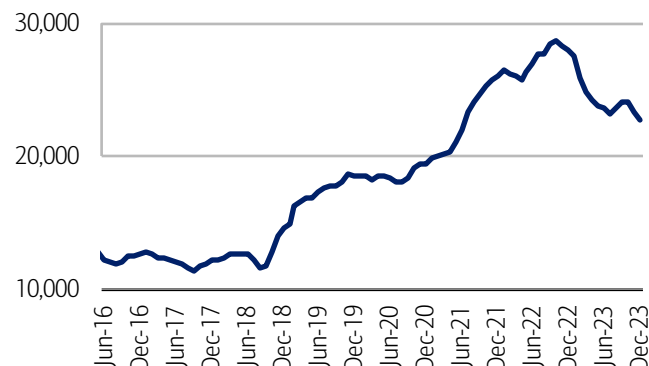


Source: BofA Global Research, carwow.de. Note: 0 = Temporary order stop

BofA GLOBAL RESEARCH

Exhibit 27: Auto Trader Used Car Price Index for BEV (mass)

Volume BEV prices continue to drop in Dec, -2.6% m/m

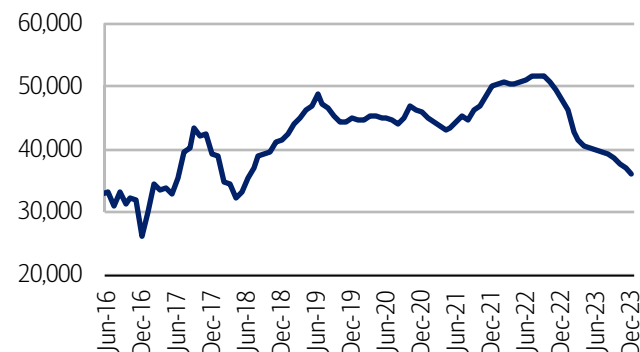


Source: BofA Global Research, Auto Trader. BEV brands included: Citroen, Dacia, Fiat, Ford, Honda, Hyundai, Jeep, Kia, MG, Mazda, Mitsubishi, Nissan, Peugeot, Renault, Seat, Skoda, Smart, Subaru, Suzuki, Toyota, Vauxhall and Volkswagen

BofA GLOBAL RESEARCH

Exhibit 28: Auto Trader Used Car Price Index for BEV (premium)

Premium BEV prices fell for the 16th straight month in Dec (-1.5% m/m)



Source: BofA Global Research, Auto Trader. BEV brands included: Abarth, Alfa Romeo, Audi, BMW, DS Automobiles, Jaguar, Land Rover, Lexus, Mercedes-Benz, Mini, Tesla and Volvo

BofA GLOBAL RESEARCH



EU EV model launch calendar

Exhibit 29: Expected start of production of new European EVs

New EVs' production in Europe is expected to accelerate from Q1 24e. If you need launch calendar by OEM, feel free to reach out, we have the data!

Quarter/Year	2023				2024				2025				2026			
Q1	Fiat	Ducato	HVAN	Van	Ford	Transit Custom	D	Van	Ford	Puma	B	SUV	Aston Martin	DB13	F	SPORT
	Jeep	Avenger	B	SUV	Renault	Master	HVAN	Van	Ford	Transit Connect	C	Van	Volvo	ES60	D	Car
	Opel	Astra	C	Car	DS	DS4	C	Car	Kia	EV4	C	Car	Mercedes-Benz	EQC	D	Car
					Maserati	GranCabrio	E	SPORT	Maserati	Quattroporte	E	Car	Alfa Romeo	Giulia	D	Car
					Maserati	GranTurismo	E	SPORT	Land Rover	Range Rover Velar	D	SUV	Audi	R8	E	SPORT
					Maserati	Grecale	D	SUV					Cupra	Raval	B	Car
					Opel	Movano	E	Van								
					Peugeot	3008	C	SUV								
					Audi	Q6 e-tron	D	SUV								
					Porsche	Macan	D	SUV								
Q2	BYD	Han	E	Car	Mini	Countrymen	C	SUV	Ferrari	E-Coupe EV	F	SPORT	Hyundai	B-Hatch EV	B	Car
	Kia	EV6	D	SUV	Ford	Explorer	C	SUV	Nissan	C-CUV EV	C	SUV	Hyundai	Ioniq 4	C	Car
					Mercedes-Benz	EQG	E	SUV	Renault	4	B	SUV	Nissan	B-CUV EV	B	SUV
					Renault	5	B	Car	Citroen	C5 Aircross	C	SUV	DS	DS7	C	SUV
					Citroen	C3	B	Car	Jaguar	XJ	E	Car	Ram	ProMaster City	D	Van
					Citroen	Jumper	E	Van					Volkswagen	ID.2	B	Car
					Fiat	Panda	B	Car								
					Lancia	Ypsilon	B	Car								
					Peugeot	5008	C	SUV								
					Peugeot	Boxer	E	Van								
					Audi	A6 e-tron	E	Car								
					Audi	Q6 Sportback e-tron	D	SUV								
Q3	BMW	i5	E	Car	Ford	Capri	C	SUV	Alpine	A390	C	SUV	BMW	i8	E	Car
	Rolls-Royce	Spectre	F	Car	Nissan	Interstar	E	Van	Nissan	Micra	B	Car	LEVC	TX	D	Car
	Renault	Trafic	D	Van	Nissan	Interstar	HVAN	Van	Alfa Romeo	Stelvio	D	SUV	Lotus	Exige	D	SPORT
	Fiat	600	B	SUV	Alfa Romeo	B-CUV	B	SUV	Jeep	Compass	C	SUV	Mercedes-Benz	EQA SUV	C	SUV
	Peugeot	308	C	Car	Citroen	C3 Aircross	B	SUV	Land Rover	Defender Sport	C	SUV	Nissan	Primastar	D	Van
	Volkswagen	ID.7	D	Car	DS	DS9	D	SUV					Lancia	Gamma	C	SUV
					Maserati	MC20	F	SPORT					Maserati	Levante	E	SUV
					Opel	Crossland	B	SUV					Opel	Manta	D	SUV
					Opel	Grandland	C	SUV					Suzuki	A-MPV EV	A	MPV
					Toyota	E-Van	E	Van					Skoda	7S	D	SUV
					Toyota	E-Van	HVAN	Van					Skoda	B-CUV EV	B	SUV
					Volkswagen	Transporter	D	Van					Volkswagen	ID.2 X	B	SUV
Q4	BMW	ix2	C	SUV	Ford	Transit Courier	B	Van	BMW	ix3	D	SUV	BMW	i3	D	Car
	Mercedes-Benz	Sprinter	HVAN	Van	Mercedes-Benz	EQA	C	Car	Volvo	EX30	B	SUV	BMW	ix4	D	SUV
	Renault	Scenic	C	SUV	Alpine	A290	B	Car	Volvo	EX60	D	SUV	Mini	Cooper	B	Car
					Peugeot	408	C	Car	Kia	EV2	B	SUV	BYD	Dolphin	B	Car
					Land Rover	Range Rover	E	SUV	Mercedes-Benz	AMG GT-4	E	SPORT	Volvo	EX40	C	SUV
					Land Rover	Range Rover Sport	E	SUV	Mercedes-Benz	EQB SUV	C	SUV	Jaguar	E-CUV EV	E	SUV
					Skoda	Elroq	C	SUV	Mercedes-Benz	EQC SUV	D	SUV	Tesla	C-CUV EV	C	SUV
					Volkswagen	Caddy	C	Van	Mitsubishi	C-CUV EV	C	SUV	Audi	Q2 e-tron	C	SUV
									Porsche	718	D	SPORT	Bentley	Bentayga	E	SUV
									Porsche	Cayenne	E	SUV	Volkswagen	ID.3 X	C	SUV
									Porsche	Cayenne Coupe	E	SUV				

Source: BofA Global Research, S&P

BofA GLOBAL RESEARCH

China BEV sales at a glance

Exhibit 30: China BEV unit sales (sorted by highest sales in the latest month)

Tesla gains back share but only sold half the vehicles that BYD did – all other OEMs lost share, excluding SAIC, BMW, Hozon and BAIC

China BEV unit sales	2021	2022	2023	2Q 22	3Q 22	4Q 22	1Q 23	2Q 23	3Q 23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23
BYD	323,267	896,199	1,290,379	180,196	255,385	317,135	245,557	330,501	403,995	119,353	130,189	133,356	140,450	155,649	154,677
Tesla Inc.	320,863	440,968	532,778	90,016	121,712	121,619	137,900	159,480	141,223	75,971	31,741	65,328	44,154	28,735	65,440
Wuling	439,462	447,746	365,612	112,683	112,372	116,438	77,083	96,331	99,512	27,361	31,420	31,308	36,784	45,014	47,672
Geely Auto Group	76,298	268,455	359,001	43,744	84,859	100,229	71,457	95,551	106,040	34,545	35,515	35,549	34,976	41,807	44,146
GAC	124,714	287,931	454,887	57,012	87,190	96,852	82,869	138,660	152,011	47,280	46,371	53,784	51,856	41,931	39,416
VW Group	96,307	157,163	163,840	35,238	51,425	43,004	21,606	40,739	54,857	12,699	18,591	14,837	21,429	23,372	23,266
Changan Automobile Group	103,400	201,380	191,239	34,583	49,950	80,442	46,031	44,438	55,903	17,370	19,587	16,744	19,572	23,043	21,824
Xiaopeng	98,166	122,080	120,613	35,766	29,579	22,204	18,230	23,205	39,994	8,620	11,008	13,690	15,296	19,710	19,474
SAIC	125,460	133,847	109,536	33,184	30,934	37,091	24,624	26,809	29,672	9,443	8,656	9,967	11,049	11,740	16,691
NIO Inc.	93,402	123,500	142,324	25,375	32,111	40,055	31,044	24,993	54,664	12,189	19,330	20,057	15,277	15,664	15,959
Chery Automobile	105,622	256,242	102,998	65,584	77,812	58,509	18,599	27,217	29,950	11,231	8,472	9,329	12,149	11,793	15,439
Leap Motor	44,945	110,381	95,342	30,415	35,608	23,506	10,509	23,244	33,989	9,852	9,025	11,787	13,177	14,692	12,908
GM	34,028	64,412	77,637	13,805	19,627	16,290	7,849	16,643	29,005	7,878	10,495	6,449	12,061	12,371	11,769
Hozon Auto	70,228	148,760	97,100	32,979	46,683	38,946	20,570	29,295	27,143	9,434	6,388	10,752	10,003	9,131	10,961
BMW Group	23,671	47,359	90,282	7,320	9,173	24,706	20,328	25,643	23,799	9,503	5,493	9,334	8,972	9,729	10,783
FAW	41,652	60,578	93,110	12,750	23,865	21,519	12,859	27,312	30,897	13,178	11,381	8,527	10,989	11,523	10,519
Great Wall Motors	136,610	99,915	82,429	25,796	24,457	15,778	11,980	27,138	23,537	10,020	7,027	7,214	9,296	9,396	10,378
BAIC	53,283	71,299	80,151	10,156	20,718	29,460	16,912	22,249	22,781	12,029	4,613	8,777	9,391	8,007	10,202
Dongfeng Motor	94,208	221,476	99,941	49,000	68,513	66,343	20,595	30,093	31,860	10,312	9,455	10,098	12,307	9,155	8,238
Toyota Motor Corp.	8,621	7,028	44,218	1,017	849	3,620	8,310	15,483	12,918	5,698	1,877	6,178	4,863	3,667	3,840
Mercedes-Benz	7,214	15,877	24,825	4,445	6,098	2,001	3,390	8,283	7,073	3,025	2,739	1,767	2,567	2,538	3,541
Market share															
BYD	11.7%	19.0%	25.8%	17.7%	18.8%	22.2%	25.3%	24.7%	26.2%	24.0%	27.6%	25.1%	26.2%	27.9%	25.8%
Tesla Inc.	11.6%	9.3%	10.6%	8.8%	9.0%	8.5%	14.2%	11.9%	9.2%	15.3%	6.7%	12.3%	8.2%	5.1%	10.9%
Wuling	15.9%	9.5%	7.3%	11.1%	8.3%	8.2%	7.9%	7.2%	6.5%	5.5%	6.7%	5.9%	6.9%	8.1%	7.9%
Geely Auto Group	2.8%	5.7%	7.2%	4.3%	6.2%	7.0%	7.3%	7.1%	6.9%	6.9%	7.5%	6.7%	6.5%	7.5%	7.4%
GAC	4.5%	6.1%	9.1%	5.6%	6.4%	6.8%	8.5%	10.4%	9.9%	9.5%	9.8%	10.1%	9.7%	7.5%	6.6%
VW Group	3.5%	3.3%	3.3%	3.5%	3.8%	3.0%	2.2%	3.0%	3.6%	2.6%	3.9%	2.8%	4.0%	4.2%	3.9%
Changan Automobile Group	3.7%	4.3%	3.8%	3.4%	3.7%	5.6%	4.7%	3.3%	3.6%	3.5%	4.2%	3.1%	3.6%	4.1%	3.6%
Xiaopeng	3.5%	2.6%	2.4%	3.5%	2.2%	1.6%	1.9%	1.7%	2.6%	1.7%	2.3%	2.6%	2.9%	3.5%	3.2%
SAIC	4.5%	2.8%	2.2%	3.3%	2.3%	2.6%	2.5%	2.0%	1.9%	1.9%	1.8%	1.9%	2.1%	2.1%	2.8%
NIO Inc.	3.4%	2.6%	2.8%	2.5%	2.4%	2.8%	3.2%	1.9%	3.6%	2.4%	4.1%	3.8%	2.8%	2.8%	2.7%
Chery Automobile	3.8%	5.4%	2.1%	6.4%	5.7%	4.1%	1.9%	2.0%	1.9%	2.3%	1.8%	1.8%	2.3%	2.1%	2.6%
Leap Motor	1.6%	2.3%	1.9%	3.0%	2.6%	1.6%	1.1%	1.7%	2.2%	2.0%	1.9%	2.2%	2.5%	2.6%	2.2%
GM	1.2%	1.4%	1.5%	1.4%	1.4%	1.1%	0.8%	1.2%	1.9%	1.6%	2.2%	1.2%	2.2%	2.2%	2.0%
Hozon Auto	2.5%	3.1%	1.9%	3.2%	3.4%	2.7%	2.1%	2.2%	1.8%	1.9%	1.4%	2.0%	1.9%	1.6%	1.8%
BMW Group	0.9%	1.0%	1.8%	0.7%	0.7%	1.7%	2.1%	1.9%	1.5%	1.9%	1.2%	1.8%	1.7%	1.7%	1.8%
FAW	1.5%	1.3%	1.9%	1.3%	1.8%	1.5%	1.3%	2.0%	2.0%	2.6%	2.4%	1.6%	2.0%	2.1%	1.8%
Great Wall Motors	4.9%	2.1%	1.6%	2.5%	1.8%	1.1%	1.2%	2.0%	1.5%	2.0%	1.5%	1.4%	1.7%	1.7%	1.7%
BAIC	1.9%	1.5%	1.6%	1.0%	1.5%	2.1%	1.7%	1.7%	1.5%	2.4%	1.0%	1.7%	1.8%	1.4%	1.7%
Dongfeng Motor	3.4%	4.7%	2.0%	4.8%	5.0%	4.6%	2.1%	2.2%	2.1%	2.1%	2.0%	1.9%	2.3%	1.6%	1.4%

Source: EV-volumes, BofA Global Research

BofA GLOBAL RESEARCH

Exhibit 31: China Top BEV sales by model (sorted by highest sales in the latest month)

Tesla is the only international OEM that has a models within the top10 best-selling BEVs in China

China unit sales	Q3 22	Q4 22	Q1 23	Q2 23	Q3 23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Nov-23	2022	2023
Tesla Model Y	86,130	96,202	94,647	109,285	116,177	31,054	51,471	23,632	51,117	41,428	49,920	241,317	396,382
BYD Seagull	0	0	0	32,360	97,853	14,300	16,560	28,001	34,841	35,011	44,603	0	212,652
BYD Dolphin	68,817	77,343	70,048	87,311	87,028	30,441	26,408	31,650	31,096	24,282	35,246	175,006	307,986
BYD Yuan Plus / Atto-3	60,314	74,893	77,083	88,425	76,403	26,042	29,972	23,564	24,192	28,647	25,761	173,511	307,691
Wuling HongGuang Mini	108,410	107,760	69,842	52,195	47,489	20,346	13,763	15,485	15,858	16,146	24,027	323,637	213,890
Wuling Bingo	0	0	3,312	41,178	48,048	13,999	12,408	14,550	13,892	19,606	22,772	0	139,054
Aion Y	36,950	38,486	31,055	60,954	71,543	19,306	20,583	17,861	26,713	26,969	22,640	100,787	213,324
Tesla Model 3	35,582	25,417	42,782	47,391	23,447	11,454	22,741	7,791	13,577	2,079	15,399	92,030	131,292
Geely Panda Mini	0	19	18,050	25,068	25,744	7,215	7,238	6,691	8,832	10,221	15,188	19	97,102
Changan Lumin	21,620	36,786	24,033	28,890	41,538	8,491	12,640	15,262	11,788	14,488	14,943	60,273	124,937

Source: EV-volumes, BofA Global Research

BofA GLOBAL RESEARCH

US BEV sales at a glance

Exhibit 32: US BEV sales units (sorted by latest month)

Tesla's sales in the US are much more stable than they are in China and EU. Ford, Rivian and BMW gained the most share over GM, Hyundai and Nissan

US BEV unit sales	2021	2022	2023	2022	3Q22	4Q22	1Q23	2Q23	3Q23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23
Tesla Inc.	349,400	511,429	582,613	116,782	129,078	151,518	154,143	167,040	156,580	62,871	52,900	51,450	52,230	52,250	52,600
Ford	27,216	61,575	62,460	15,273	18,257	20,339	10,866	14,843	20,962	5,900	6,280	6,940	7,742	6,831	8,958
VW Group	36,571	44,111	59,684	8,891	11,966	15,052	15,715	14,066	17,035	5,229	5,523	6,756	4,756	6,491	6,377
GM	24,828	39,242	69,622	7,299	15,156	16,266	20,670	15,852	20,094	5,847	6,100	7,016	6,978	7,080	5,926
Rivian Automotive	938	20,342	46,009	4,467	6,814	7,834	8,466	10,542	15,680	5,071	4,819	4,969	5,892	5,569	5,752
BMW Group	3,299	18,075	41,283	2,866	5,262	8,728	7,534	11,678	13,963	3,957	3,776	5,129	5,058	3,534	4,574
Hyundai Motor	10,855	29,320	56,067	8,775	6,743	6,902	8,623	15,970	21,638	6,285	7,308	7,197	7,133	5,333	4,503
Mercedes-Benz Group	443	12,421	36,959	1,959	2,715	5,656	7,341	11,749	11,041	4,335	3,921	3,595	3,525	3,317	3,511
Kia	8,735	28,708	28,623	10,019	5,834	4,031	6,080	7,784	10,016	2,550	3,077	4,070	2,869	2,328	2,415
Toyota Motor Corp.	0	1,220	13,088	232	2	986	1,883	2,885	4,229	913	1,217	1,387	1,625	2,076	2,015
Geely-Volvo Car Group	8,794	16,472	24,738	4,234	4,558	4,532	6,258	7,622	6,681	3,299	2,389	2,114	2,178	2,212	1,965
Nissan	14,239	12,226	18,792	3,251	1,276	3,328	5,214	4,215	6,074	1,323	1,585	1,571	2,918	1,934	1,355
Lucid Motors	125	4,477	5,988	906	1,375	1,841	1,462	1,778	1,712	692	500	626	586	509	527
Market share															
Tesla Inc.	71.8%	63.8%	55.3%	63.0%	61.7%	61.1%	60.3%	58.0%	50.7%	57.7%	52.7%	49.6%	49.9%	51.9%	51.8%
Ford	5.6%	7.7%	5.9%	8.2%	8.7%	8.2%	4.3%	5.2%	6.8%	5.4%	6.3%	6.7%	7.4%	6.8%	8.8%
VW Group	7.5%	5.5%	5.7%	4.8%	5.7%	6.1%	6.1%	4.9%	5.5%	4.8%	5.5%	6.5%	4.5%	6.4%	6.3%
GM	5.1%	4.9%	6.6%	3.9%	7.2%	6.6%	8.1%	5.5%	6.5%	5.4%	6.1%	6.8%	6.7%	7.0%	5.8%
Rivian Automotive	0.2%	2.5%	4.4%	2.4%	3.3%	3.2%	3.3%	3.7%	5.1%	4.7%	4.8%	4.8%	5.6%	5.5%	5.7%
BMW Group	0.7%	2.3%	3.9%	1.5%	2.5%	3.5%	2.9%	4.1%	4.5%	3.6%	3.8%	4.9%	4.8%	3.5%	4.5%
Hyundai Motor	2.2%	3.7%	5.3%	4.7%	3.2%	2.8%	3.4%	5.5%	7.0%	5.8%	7.3%	6.9%	6.8%	5.3%	4.4%
Mercedes-Benz Group	0.1%	1.6%	3.5%	1.1%	1.3%	2.3%	2.9%	4.1%	3.6%	4.0%	3.9%	3.5%	3.4%	3.3%	3.5%
Kia	1.8%	3.6%	2.7%	5.4%	2.8%	1.6%	2.4%	2.7%	3.2%	2.3%	3.1%	3.9%	2.7%	2.3%	2.4%
Toyota Motor Corp.	0.0%	0.2%	1.2%	0.1%	0.0%	0.4%	0.7%	1.0%	1.4%	0.8%	1.2%	1.3%	1.6%	2.1%	2.0%
Geely-Volvo Car Group	1.8%	2.1%	2.3%	2.3%	2.2%	1.8%	2.4%	2.6%	2.2%	3.0%	2.4%	2.0%	2.1%	2.2%	1.9%
Nissan	2.9%	1.5%	1.8%	1.8%	0.6%	1.3%	2.0%	1.5%	2.0%	1.2%	1.6%	1.5%	2.8%	1.9%	1.3%
Lucid Motors	0.0%	0.6%	0.6%	0.5%	0.7%	0.7%	0.6%	0.6%	0.6%	0.6%	0.5%	0.6%	0.6%	0.5%	0.5%

Source: EV-volumes, BofA Global Research

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Exhibit 33: US Top BEV sales by model (sorted by highest sales in the latest month)

Tesla dominates the market, but Ford F150 Lightning reached record sales YTD

US unit sales	Q3 22	Q4 22	Q1 23	Q2 23	Q3 23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Nov-23	2022	2023
Tesla Model Y	60,655	73,647	92,663	94,360	96,330	30,507	33,053	32,900	32,000	31,430	32,500	194,732	346,853
Tesla Model 3	50,543	64,921	54,320	63,190	49,950	18,542	25,828	16,900	16,000	17,050	16,500	156,504	201,460
Ford F-150 Lightning	6,464	6,857	4,291	4,466	3,503	1,707	1,424	1,552	1,018	933	4,393	15,363	20,365
Ford Mustang Mach-E	10,414	11,369	5,407	8,633	14,842	2,917	4,110	3,937	5,033	5,872	4,294	32,724	35,908
VW ID.4	6,657	9,439	9,758	6,690	7,502	2,360	2,836	3,151	3,471	880	3,099	17,756	30,513
Chevrolet Bolt EUV	11,057	11,242	13,029	9,018	8,793	2,683	3,318	2,452	2,933	3,408	2,840	26,633	35,409
Rivian R1S	1,000	550	3,080	4,050	6,664	1,000	2,100	2,000	2,300	2,364	2,800	1,900	19,294
Tesla Model X	9,400	6,800	4,260	6,200	6,700	2,100	2,600	2,100	2,200	2,400	2,500	22,152	22,260
Hyundai Ioniq 5	4,800	4,490	5,736	7,905	11,665	2,446	3,136	4,135	3,572	3,958	2,372	16,738	30,657
BMW i4	2,610	4,688	4,037	6,687	7,090	2,530	2,131	2,208	2,309	2,573	2,107	8,319	20,977

Source: EV-volumes, BofA Global Research

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Premium vs Mass market

Exhibit 34: Global sales split between premium and mass market

Europe's EV premium market is much more important in terms of volume and market share than in the US and China

Global BEV sales	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	3Q22	4Q22	1Q23	2Q23	3Q23	2021	2022	YTD 2023
Premium	132,744	119,457	134,833	138,677	137,866	152,195	224,235	344,804	265,964	344,378	392,967	493,505	934,960	1,293,370
y/y growth	83.9%	85.4%	88.5%	57.1%	51.9%	36.2%	83.8%	86.0%	51.3%	81.1%	75.2%	75.8%	89.5%	90.0%
% total EV sales	14.4%	14.8%	14.6%	14.9%	15.0%	15.2%	10.7%	14.0%	14.1%	14.3%	14.8%	10.1%	12.1%	14.6%
Mass	788,727	685,736	788,633	792,779	781,261	846,957	1,877,874	2,113,870	1,616,842	2,056,414	2,267,148	4,390,580	6,812,807	7,568,622
y/y growth	19.7%	26.0%	31.4%	8.1%	27.1%	21.7%	59.6%	34.9%	19.8%	39.7%	20.7%	118.1%	55.2%	42.4%
% total EV sales	85.6%	85.2%	85.4%	85.1%	85.0%	84.8%	89.3%	86.0%	85.9%	85.7%	85.2%	89.9%	87.9%	85.4%
EU BEV sales	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Oct-23	3Q22	4Q22	1Q23	2Q23	3Q23	2021	2022	YTD 2023
Premium	50,706	42,393	47,338	54,267	53,851	58,890	85,353	164,045	115,584	136,476	143,998	252,070	418,473	508,799
y/y growth	88.2%	95.7%	87.6%	41.1%	36.1%	18.1%	41.9%	67.2%	34.5%	64.1%	68.7%	66.1%	66.0%	73.1%
% total EV sales	22.3%	25.6%	21.8%	25.8%	29.8%	28.3%	22.5%	26.9%	24.5%	24.7%	24.3%	19.6%	24.8%	25.4%
Mass	176,795	123,424	169,440	156,391	126,980	149,476	293,595	446,073	356,291	415,216	449,255	1,031,252	1,266,450	1,497,218
y/y growth	49.7%	62.7%	113.3%	13.1%	36.8%	8.7%	13.2%	29.1%	35.5%	57.3%	53.0%	64.3%	22.8%	64.0%
China BEV sales	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Oct-23	3Q22	4Q22	1Q23	2Q23	3Q23	2021	2022	YTD 2023
Premium	46,565	48,260	55,860	49,918	53,363	60,074	78,833	112,869	85,968	117,988	154,038	159,092	295,469	471,431
y/y growth	81.9%	93.7%	101.5%	90.6%	75.3%	50.1%	98.6%	103.3%	72.7%	118.6%	95.4%	127.2%	85.7%	121.3%
% total EV sales	9.4%	10.2%	10.5%	9.3%	9.6%	10.0%	5.8%	7.9%	8.8%	8.8%	10.0%	5.8%	6.3%	9.4%
Mass	451,357	423,290	475,715	486,643	504,789	539,919	1,279,389	1,313,942	886,308	1,221,046	1,385,648	2,607,604	4,430,100	4,537,710
y/y growth	0.9%	11.5%	13.0%	1.7%	21.8%	20.8%	80.2%	30.9%	1.6%	26.6%	8.3%	155.0%	69.9%	28.5%
US BEV sales	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Oct-23	3Q22	4Q22	1Q23	2Q23	3Q23	2021	2022	YTD 2023
Premium	19,899	18,638	20,113	20,671	18,653	20,321	38,028	40,035	37,799	53,547	59,422	56,174	137,305	189,742
y/y growth	62.6%	71.6%	65.1%	37.9%	60.8%	59.0%	144.0%	95.0%	43.2%	63.1%	56.3%	23.3%	144.4%	74.3%
% total EV sales	18.3%	18.6%	19.4%	19.8%	18.5%	20.0%	18.2%	16.1%	14.8%	18.6%	19.2%	11.5%	17.1%	18.0%
Mass	89,123	81,763	83,605	83,943	81,987	81,210	171,048	207,867	217,757	234,353	249,311	430,633	663,880	864,618
y/y growth	51.3%	51.1%	51.9%	35.6%	26.7%	36.5%	54.1%	69.1%	64.2%	53.8%	45.8%	104.5%	54.2%	66.0%

Source: BofA Global Research, EV volumes. Note: Premium include Acura, Alfa Romeo, Audi, Bentley, BMW, Cadillac, Denza, Ferrari, Genesis, HiPhi, IM, Jaguar, Land Rover Lexus, Li Xiang, Lincoln, Lotus, Lucid, McLaren, Mercedes-Benz, Mini, NIO, Polestar, Porsche, Range Rover, Rolls-Royce, Tesla (Model X and Model S), Volvo, Voyah, Zeekr

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Exhibit 35: Premium OEM sales and M/S (sorted by latest month total sales)

BMW continues to top the premium OEM sales ranking, as Zeekr exceeds sales of sister brand Volvo Cars

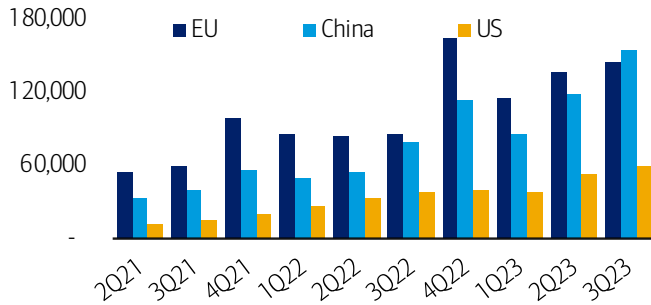
Global Premium EV	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	3Q22	4Q22	1Q23	2Q23	3Q23	2021	2022	YTD 2023
BMW	29,892	22,811	30,583	29,827	30,933	35,824	40,319	75,363	56,527	78,915	83,221	71,120	175,157	285,420
Mercedes-Benz	21,037	19,506	19,554	24,596	20,049	23,457	33,536	46,243	40,587	56,043	63,656	64,292	132,455	203,792
Audi	15,200	13,280	14,993	17,815	17,245	17,054	26,903	41,117	33,886	41,227	46,088	81,132	118,570	155,500
NIO	12,440	19,430	20,580	15,457	16,077	16,167	32,342	40,515	31,379	25,499	55,467	93,482	124,704	144,589
Zeekr	10,620	11,707	12,445	12,053	13,078	13,124	20,464	32,471	15,428	27,399	36,205	6,033	71,945	105,234
Volvo	9,732	5,942	7,108	9,265	10,090	10,547	12,298	33,514	29,406	32,384	22,315	25,725	68,691	104,742
IM (Zhiji Motor)	2,007	1,334	2,191	1,805	4,068	8,792	2,842	1,928	3,765	6,025	5,330	3	5,293	27,980
Tesla	9,966	4,164	5,163	6,694	4,730	5,055	18,670	17,180	10,705	19,294	16,021	24,942	66,703	55,805
Mini	4,016	3,269	3,958	3,541	4,741	4,481	10,407	13,609	9,033	10,499	10,768	33,595	43,734	39,522
Polestar	5,646	5,752	5,572	4,874	3,775	4,180	9,250	19,416	11,939	14,967	16,198	28,723	49,282	51,059
Porsche	4,122	3,488	2,914	3,242	3,340	3,842	6,281	9,844	9,358	9,283	9,644	40,610	35,035	35,467
Lexus	1,858	1,634	1,664	1,901	1,877	2,148	1,044	1,062	1,682	4,994	5,199	5,801	4,783	15,900
Global Premium M/S	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	3Q22	4Q22	1Q23	2Q23	3Q23	2021	2022	YTD 2023
BMW	22.5%	19.1%	22.7%	21.5%	22.4%	23.5%	18.0%	21.9%	21.3%	22.9%	21.2%	14.4%	18.7%	22.1%
Mercedes-Benz	15.8%	16.3%	14.5%	17.7%	14.5%	15.4%	15.0%	13.4%	15.3%	16.3%	16.2%	13.0%	14.2%	15.8%
Audi	11.5%	11.1%	11.1%	12.8%	12.5%	11.2%	12.0%	11.9%	12.7%	12.0%	11.7%	16.4%	12.7%	12.0%
NIO	9.4%	16.3%	15.3%	11.1%	11.7%	10.6%	14.4%	11.8%	11.8%	7.4%	14.1%	18.9%	13.3%	11.2%
Zeekr	8.0%	9.8%	9.2%	8.7%	9.5%	8.6%	9.1%	9.4%	5.8%	8.0%	9.2%	1.2%	7.7%	8.1%
Volvo	7.3%	5.0%	5.3%	6.7%	7.3%	6.9%	5.5%	9.7%	11.1%	9.4%	5.7%	5.2%	7.3%	8.1%
IM (Zhiji Motor)	1.5%	1.1%	1.6%	1.3%	3.0%	5.8%	1.3%	0.6%	1.4%	1.7%	1.4%	0.0%	0.6%	2.2%
Tesla	7.5%	3.5%	3.8%	4.8%	3.4%	3.3%	8.3%	5.0%	4.0%	5.6%	4.1%	5.1%	7.1%	4.3%
Mini	3.0%	2.7%	2.9%	2.6%	3.4%	2.9%	4.6%	3.9%	3.4%	3.0%	2.7%	6.8%	4.7%	3.1%
Polestar	4.3%	4.8%	4.1%	3.5%	2.7%	2.7%	4.1%	5.6%	4.5%	4.3%	4.1%	5.8%	5.3%	3.9%
Porsche	3.1%	2.9%	2.2%	2.3%	2.4%	2.5%	2.8%	2.9%	3.5%	2.7%	2.5%	8.2%	3.7%	2.7%
Lexus	1.4%	1.4%	1.2%	1.4%	1.4%	1.4%	0.5%	0.3%	0.6%	1.5%	1.3%	1.2%	0.5%	1.2%

Source: BofA Global Research, EV volumes

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Exhibit 36: Premium EV sales by region

The EU EV market is the largest premium market in terms of volume

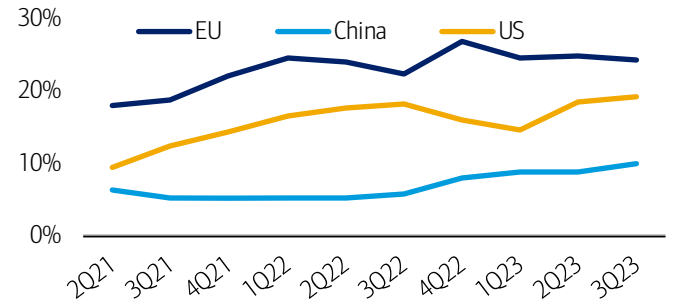


Source: BofA Global Research, EV volumes

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Exhibit 37: Premium EV sales as a % of region total EV sales

Premium EV market is much more developed in the EU than China & US

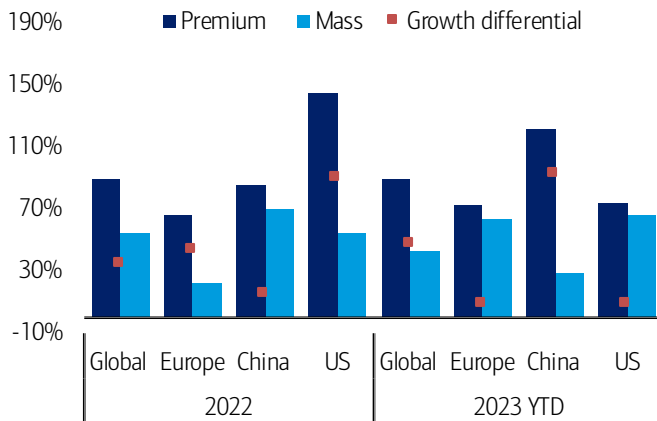


Source: BofA Global Research, EV volumes

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Exhibit 38: Premium EV y/y sales growth by region

The premium market is growing faster than mass YTD, except in EU

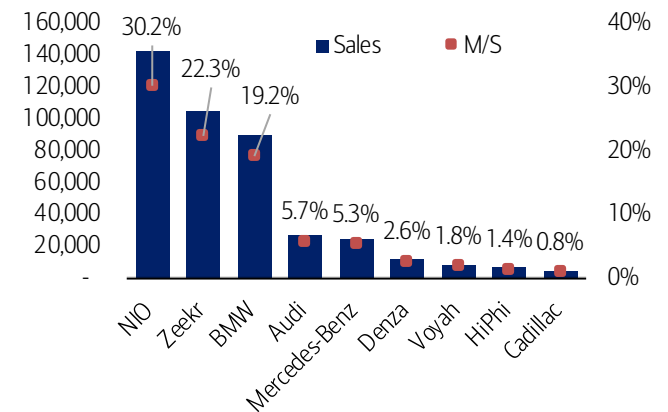


Source: BofA Global Research, EV volumes

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Exhibit 39: China premium EV market by OEM (YTD23)

New Chinese entrants are disrupting legacy OEMs premium share

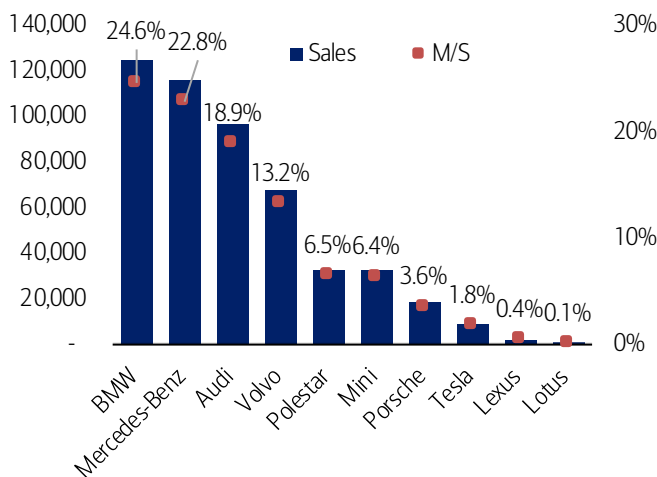


Source: BofA Global Research, EV volumes

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Exhibit 40: European premium EV market by OEM (YTD23)

Legacy OEM premium share in Europe remains high with less disruption

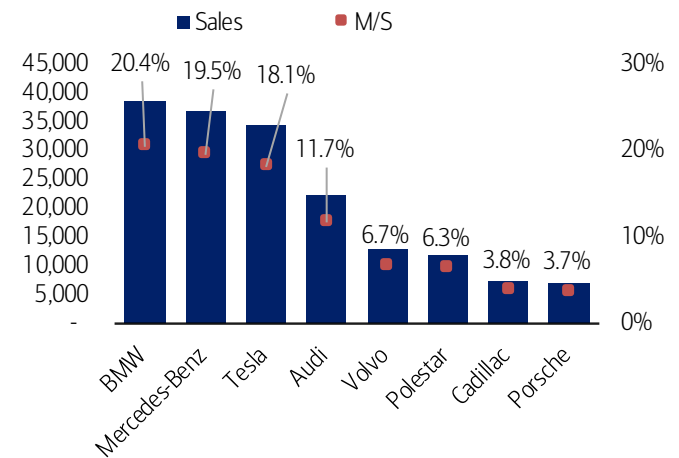


Source: BofA Global Research, EV volumes

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Exhibit 41: US premium EV market by OEM (YTD23)

Legacy OEM dominate the market but Polestar and Lucid are stealing share



Source: BofA Global Research, EV volumes

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BofA global BEV sales forecasts by region

Exhibit 42: Global BEV penetration

We reflect the US team's new BEV forecast and reduce our North American BEV penetration forecast in accordance with our more conservative outlook, reducing our 2024e BEV penetration ratio by 0.5ppts to 13.7%

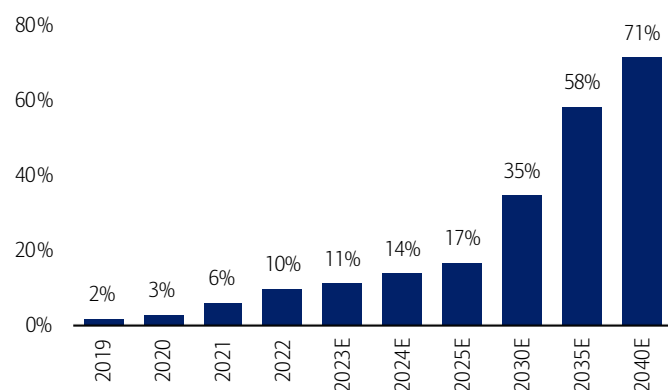
BEV Sales by Region	2019	2020	2021	2022	2023E	2024E	2025E	2030E	2035E	2040E
Europe	389,491	783,557	1,297,298	1,683,639	2,198,599	2,694,770	3,513,762	9,372,766	14,084,230	15,828,274
West & Central Europe	388,119	781,043	1,291,586	1,675,077	2,147,142	2,618,804	3,420,634	9,023,946	13,200,176	14,763,020
Eastern Europe	1,372	2,514	5,712	8,562	51,457	75,966	93,128	348,820	884,054	1,065,254
North America	266,292	290,949	542,470	888,501	1,328,429	1,893,737	2,472,202	6,862,866	14,057,134	16,036,281
Greater China	973,245	1,103,507	2,790,046	4,698,871	5,591,656	6,582,200	7,806,258	12,112,755	16,756,681	22,776,477
Japan	23,648	16,418	20,248	56,432	78,952	145,578	321,298	1,049,247	2,465,195	3,080,614
Korea	32,659	45,501	96,395	159,129	190,771	244,675	329,806	692,361	883,294	1,085,929
Total	1,698,349	2,257,259	4,789,373	7,684,401	9,590,865	11,970,573	15,076,326	33,208,280	55,583,379	68,857,727
BEV as % of LV sales	2019	2020	2021	2022	2023E	2024E	2025E	2030E	2035E	2040E
Europe	1.9%	4.7%	7.7%	11.3%	12.5%	15.4%	19.8%	53.7%	74.5%	83.4%
North America	1.4%	1.6%	3.1%	5.4%	7.2%	9.8%	12.2%	32.8%	72.2%	82.2%
Greater China	3.9%	4.6%	11.4%	19.1%	21.5%	25.0%	28.6%	40.9%	68.7%	88.8%
Japan	0.4%	0.4%	1.4%	1.4%	1.7%	3.1%	6.7%	24.3%	59.1%	73.7%
Korea	1.9%	2.4%	5.7%	9.6%	11.1%	14.4%	20.0%	45.1%	59.2%	72.7%
Total	1.9%	2.9%	6.0%	9.7%	11.2%	13.7%	16.7%	34.6%	58.3%	71.2%

Source: BofA Global Research estimates, S&P

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Exhibit 43: Penetration rate of BEV

Penetration rate growth to accelerate after 2025e

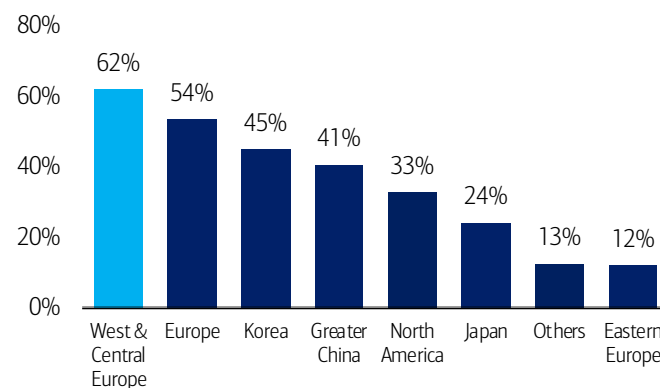


Source: BofA Global Research estimates, S&P

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Exhibit 44: Penetration rate by region for 2030e

West Europe to have highest penetration rate in 2030



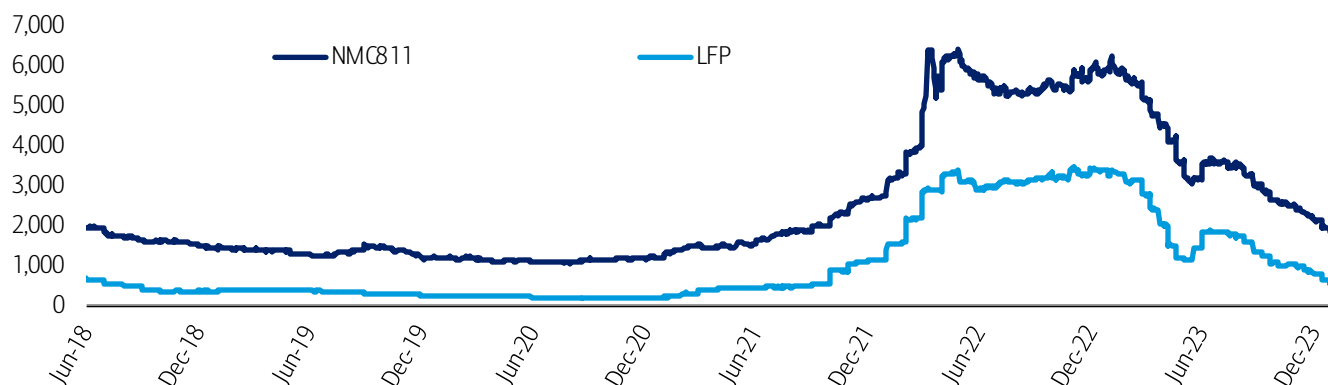
Source: BofA Global Research estimates, S&P

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Raw material price tracker for batteries

Exhibit 45: NMC811 vs Lithium Iron Phosphate (LFP) battery price

Nickel and Lithium come down sharply in 2023, and we have recently seen prices fall further after a spike in Q2

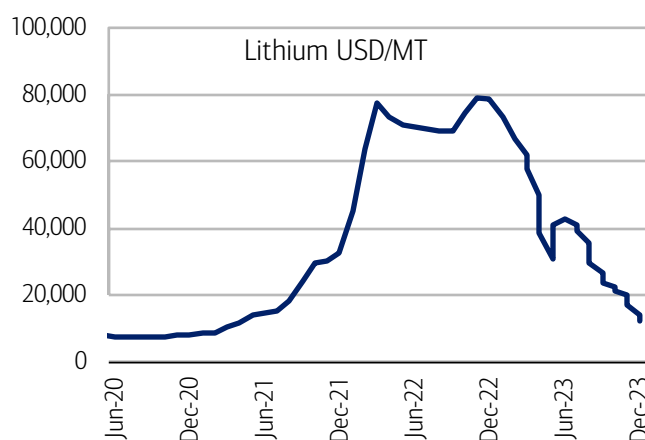


Source: Bloomberg, BofA Global Research

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Exhibit 46: Lithium price Index

Lithium price spiked in May/June but downwards trend resumed

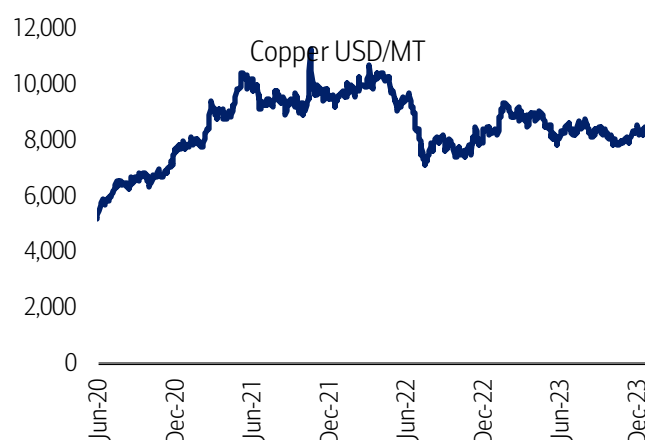


Source: Bloomberg, BofA Global Research

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Exhibit 47: Copper price

Copper price has been range bound in last couple of months

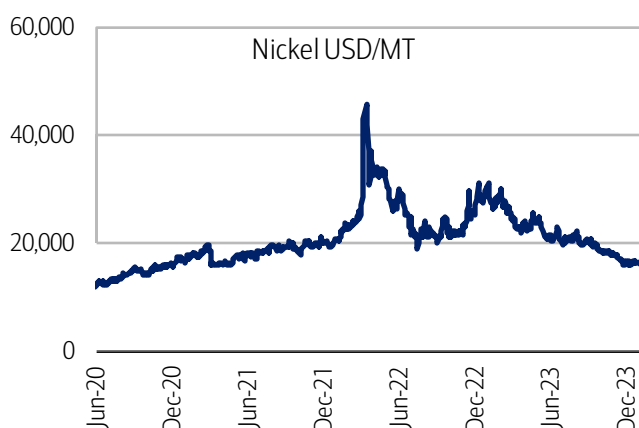


Source: Bloomberg, BofA Global Research

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Exhibit 48: Nickel price

Nickel prices continue their downwards trend well below 20k per MT again

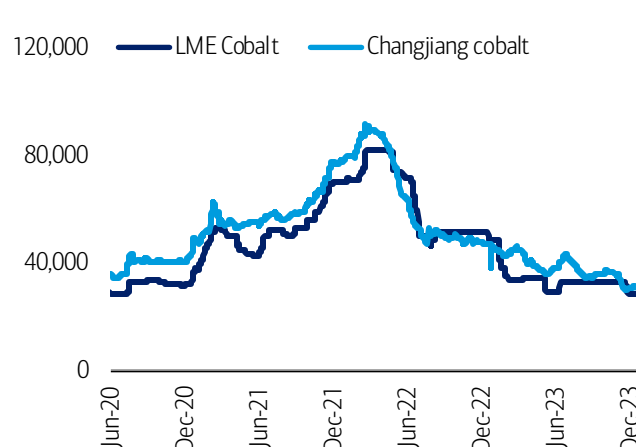


Source: Bloomberg, BofA Global Research

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Exhibit 49: Changing cobalt and LME cobalt prices (USD/MT)

Changjiang cobalt and LME cobalt prices continue to decline



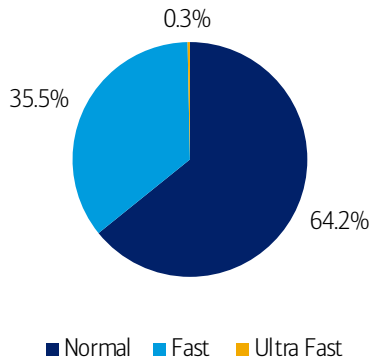
Source: Bloomberg, BofA Global Research

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Development of public charging point

Exhibit 50: Global - Split of charging points by charging speed

Around a third of global charging points are fast chargers (led by China)

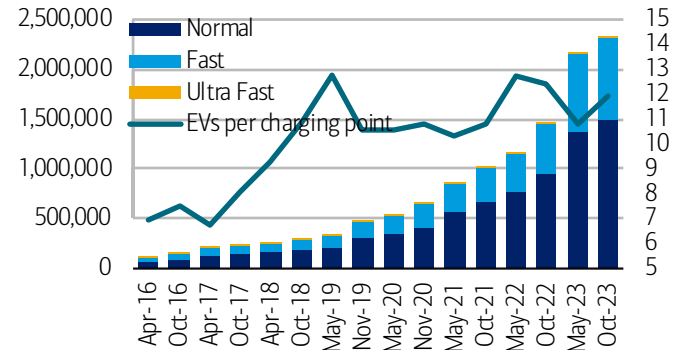


Source: BofA Global Research, EV Volumes

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Exhibit 51: Global development of charging points (lhs) vs EVs per charging point (rhs)

Charging point density worsened by c1x globally to c12 EVs/charging point

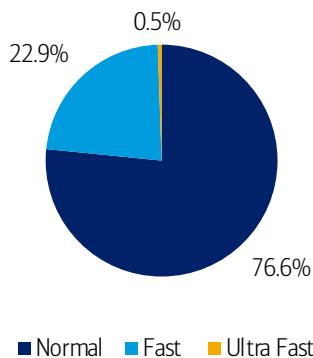


Source: BofA Global Research, EV Volumes

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Exhibit 52: Europe - Split of charging points by charging speed

Fast charging points just at c23% of EU total currently

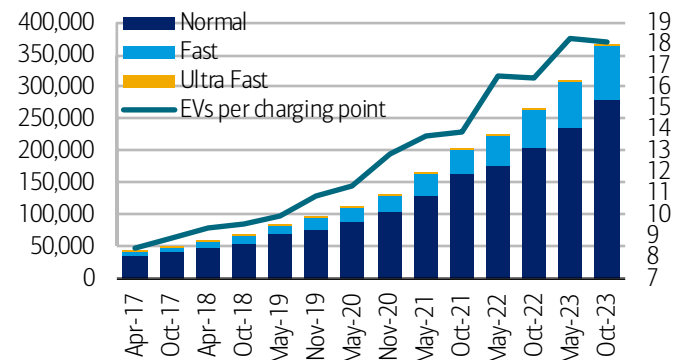


Source: BofA Global Research, EV Volumes

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Exhibit 53: Europe: Development of charging points (lhs) vs EVs per charging point (rhs)

Charging point growth slightly improved in the EU but still lags vs APAC

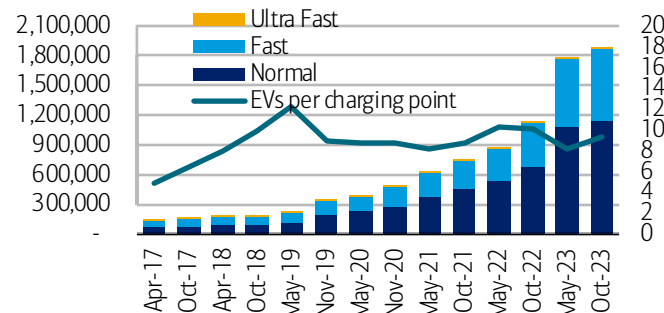


Source: BofA Global Research, EV Volumes

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Exhibit 54: APAC: Development of charging points (lhs) vs EVs per charging point (rhs)

After a year of improvement, charging density worsened in APAC

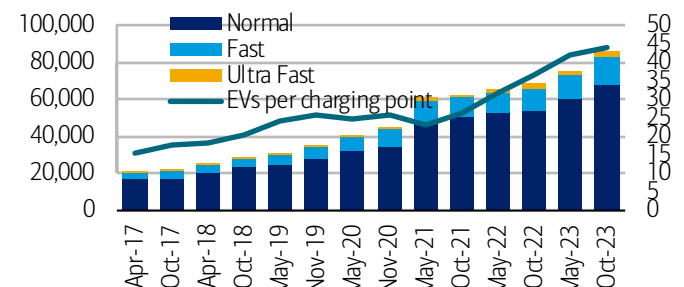


Source: BofA Global Research, EV Volumes

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Exhibit 55: Americas: Development of charging points (lhs) vs EVs per charging point (rhs)

Charging point density continue to deteriorate in the US and is much worse than in other regions



Source: BofA Global Research, EV Volumes

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Global EV production by OEM

Exhibit 56: Global EV production by OEM

VW will be the largest EV producer amongst traditional OEMs in 2024 but followed by Chinese Geely. Chinese legacy OEMs will also hold much higher penetration rates in 2023-25e, led by GAC, Dongfeng, SAIC and Geely

Region	2021	2022	2023	2024e	2025e	2026e	2027e	2028e	2029e	2030e
Number of vehicles (units); Traditional OEMs										
Volkswagen	460,691	617,892	816,590	1,136,013	1,610,353	2,377,240	2,975,723	3,467,760	4,177,717	4,796,409
Stellantis	235,554	287,580	446,362	751,114	1,328,906	1,511,699	2,026,092	2,598,790	3,099,645	3,445,290
Hyundai	258,776	381,455	535,016	716,058	1,196,965	1,618,387	2,094,511	2,396,056	2,711,272	2,854,024
Toyota	20,101	48,686	138,489	220,105	386,507	704,714	964,820	1,438,377	2,001,129	2,396,430
Mercedes-Benz	116,615	206,702	384,819	473,222	637,230	981,964	1,314,324	1,617,780	1,826,512	2,108,451
Geely	129,414	437,102	600,056	930,682	1,221,722	1,498,760	1,663,382	1,798,545	1,919,191	2,054,598
General Motors	47,174	103,356	214,982	437,079	655,557	942,744	1,305,893	1,583,558	1,754,101	2,112,534
BMW	111,796	251,703	392,590	595,519	673,262	806,807	1,049,140	1,322,406	1,581,556	1,796,549
Ford	68,020	126,418	180,708	338,345	591,321	711,931	924,381	1,340,084	1,606,533	1,806,038
Nissan	77,916	164,529	174,632	179,171	283,084	433,361	699,652	868,367	1,047,247	1,219,202
Honda	13,497	26,060	29,726	124,120	221,663	367,473	533,641	676,235	835,566	974,733
Renault	147,714	181,367	168,429	225,181	382,499	480,323	544,224	617,781	797,536	872,765
Great Wall	135,206	108,019	112,296	187,575	240,175	228,165	252,591	297,986	324,490	349,627
Changan	111,243	226,050	236,276	341,633	477,228	548,122	608,716	637,385	707,867	742,703
SAIC	107,666	245,184	403,744	383,949	516,524	564,143	652,419	702,896	789,203	826,455
Tata	18,904	48,331	93,420	138,668	198,624	349,650	454,755	559,391	616,380	680,476
SAIC-General Motors-Wuling	462,563	618,697	304,653	370,634	500,738	550,497	554,426	541,867	566,013	577,733
BAIC	41,485	85,454	129,941	147,127	174,967	181,915	210,966	233,820	244,490	271,492
Dongfeng	92,833	239,488	167,759	280,057	310,891	331,554	378,325	411,824	436,425	487,682
Suzuki	0	0	0	4,368	75,144	148,929	208,664	217,707	257,786	359,380
Chery	101,509	233,356	152,942	247,773	277,869	317,541	349,632	364,292	392,458	458,513
GAC	131,217	294,523	554,393	581,626	604,181	633,654	639,616	666,925	661,505	671,225
Mazda	8,517	6,431	6,150	7,526	25,356	46,464	64,111	90,561	121,609	246,045
FAW	42,253	59,020	110,558	141,838	197,924	220,728	249,919	274,159	282,449	301,326
Subaru	0	6,576	18,633	29,035	29,715	67,593	81,139	198,739	234,014	251,161
Ferrari	0	0	0	0	726	1,840	1,934	2,236	5,668	6,314
Aston Martin	0	0	0	0	0	854	1,086	1,597	3,258	6,103
BEV penetration ratio as % of total production										
Volkswagen	5.7%	7.3%	9.2%	13.2%	18.8%	27.6%	33.9%	39.0%	45.6%	52.8%
Stellantis	3.9%	4.7%	6.9%	11.9%	20.4%	22.5%	29.5%	38.4%	46.7%	52.6%
Hyundai	3.9%	5.4%	7.3%	10.1%	16.9%	23.0%	29.2%	33.7%	37.6%	39.2%
Toyota	0.2%	0.5%	1.2%	2.0%	3.6%	6.6%	9.0%	13.3%	18.2%	21.9%
Mercedes-Benz	5.0%	8.2%	14.6%	17.6%	23.8%	34.9%	44.9%	53.9%	60.2%	71.0%
Geely	6.3%	19.4%	22.8%	34.9%	42.1%	49.8%	53.6%	57.1%	61.4%	65.7%
General Motors	1.1%	2.1%	4.4%	8.7%	13.4%	20.1%	28.7%	34.2%	37.7%	45.6%
BMW	4.6%	10.6%	14.9%	23.5%	25.8%	30.3%	38.6%	47.7%	56.3%	63.8%
Ford	1.9%	3.1%	4.3%	8.3%	14.6%	18.3%	24.2%	35.4%	43.5%	51.8%
Nissan	2.4%	5.4%	5.1%	5.9%	9.6%	15.2%	22.7%	28.2%	34.3%	40.1%
Honda	0.3%	0.7%	0.7%	3.0%	5.5%	9.1%	13.9%	16.5%	20.0%	23.0%
Renault	9.9%	12.8%	11.3%	15.3%	22.9%	27.7%	30.8%	33.9%	41.8%	46.0%
Great Wall	10.3%	9.3%	8.5%	14.8%	18.2%	17.5%	20.6%	23.2%	25.5%	27.6%
Changan	7.4%	13.4%	11.7%	17.7%	25.0%	29.1%	33.4%	35.2%	39.0%	41.5%
SAIC	9.6%	21.4%	31.2%	30.3%	40.4%	42.2%	47.2%	52.6%	57.0%	56.4%
Tata	2.1%	4.4%	7.9%	11.9%	18.1%	30.0%	37.2%	45.8%	50.2%	53.3%
SAIC-General Motors-Wuling	27.3%	38.7%	26.5%	34.0%	44.7%	49.3%	51.3%	50.2%	52.6%	53.0%
BAIC	7.1%	17.3%	19.0%	22.2%	25.9%	26.3%	28.7%	34.1%	36.0%	40.5%
Dongfeng	12.0%	32.4%	27.8%	38.3%	42.5%	43.1%	46.2%	47.1%	49.0%	53.1%
Suzuki	0.0%	0.0%	0.0%	0.1%	2.3%	4.5%	6.2%	6.4%	7.4%	10.1%
Chery	10.2%	20.1%	9.3%	15.6%	18.1%	21.5%	23.2%	24.2%	26.4%	29.5%
GAC	28.9%	44.1%	57.0%	54.6%	53.1%	63.3%	63.6%	65.3%	66.8%	69.3%
Mazda	0.7%	0.5%	0.5%	0.6%	2.3%	4.1%	6.1%	9.3%	14.4%	26.0%
FAW	9.3%	14.2%	21.3%	27.9%	38.2%	44.6%	46.6%	48.6%	49.9%	52.3%
Subaru	0.0%	0.8%	1.9%	2.9%	3.0%	7.3%	9.4%	23.0%	28.1%	33.5%
Ferrari	0.0%	0.0%	0.0%	0.0%	4.6%	11.1%	11.6%	14.8%	35.6%	42.9%
Aston Martin	0.0%	0.0%	0.0%	0.0%	0.0%	15.2%	20.2%	29.0%	55.1%	89.5%

Source: BofA Global Research, S&P

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Global top 50 BEV models produced

Sorted by total BEVs to be produced in 2024e

Exhibit 57: Global top models in terms of total production volume in 2024

Tesla should continue to comfortably dominate the market with the Model Y and 3; VW ID.4 is the most produce EV from an EU OEM:

OEM Group	Sales brand	Global Nameplate	2023 (total)	2023 y-o-y	2024e (total)	2024 y-o-y	2025e (total)	2025 y-o-y
Tesla	Tesla	Model Y	1,206,774	389,640	1,290,836	84,062	1,420,964	130,128
Tesla	Tesla	Model 3	536,144	54,844	704,486	168,342	755,450	50,964
BYD	BYD	Yuan Plus	408,921	203,846	403,888	-5,033	417,038	13,150
BYD	BYD	Dolphin	372,061	165,615	358,113	-13,948	319,094	-39,019
GAC	Aion	Aion S	260,550	143,603	290,096	29,546	224,365	-65,731
BYD	BYD	F0	271,909	271,909	263,592	-8,317	306,661	43,069
GAC	Aion	Aion Y	229,685	109,849	205,633	-24,052	206,123	490
Volkswagen	Volkswagen	ID.4	200,855	16,522	197,218	-3,637	220,580	23,362
SAIC-General Motors-Wuling	Wuling	Bingo	186,023	186,023	189,714	3,691	204,443	14,729
Volkswagen	Volkswagen	ID.3	132,209	48,797	150,149	17,940	164,005	13,856
SAIC	MG	4	145,710	107,384	146,374	664	147,512	1,138
Hyundai	Hyundai	Ioniq 5	119,601	17,560	127,879	8,278	165,074	37,195
Lixiang Auto	LI	L7	128,430	128,430	119,440	-8,990	105,707	-13,733
Geely	Volvo	XC40	74,631	24,306	116,451	41,820	100,708	-15,743
Hyundai	Kia	EV6	98,277	13,559	113,556	15,279	144,084	30,528
Renault-Nissan-Mitsubishi	Nissan	Qashqai	68,136	52,037	112,095	43,959	104,949	-7,146
Lixiang Auto	LI	L8	113,720	96,153	111,342	-2,378	111,804	462
BMW	BMW	i4	85,131	34,960	108,515	23,384	105,377	-3,138
Changan	Changan	BenBen	150,597	-18,096	101,081	-49,516	95,694	-5,387
BYD	BYD	Han	115,141	-28,628	99,607	-15,534	79,494	-20,113
Lixiang Auto	LI	L9	116,648	75,740	99,196	-17,452	89,444	-9,752
Hyundai	Hyundai	Kona	66,690	9,590	98,979	32,289	107,025	8,046
Volkswagen	Audi	Q4 e-tron	91,613	48,350	98,100	6,487	108,627	10,527
Changan	Deepal	S7	67,320	67,320	96,972	29,652	103,967	6,995
Geely	Geely	Geome Panda Mini	100,836	100,836	94,280	-6,556	76,860	-17,420
Stellantis	Fiat	500	77,449	10,334	90,770	13,321	109,520	18,750
Renault-Nissan-Mitsubishi	Nissan	X-Trail	105,994	76,426	90,688	-15,306	82,642	-8,046
BYD	BYD	Song Plus	83,013	13,353	88,493	5,480	91,998	3,505
BMW	BMW	i5	18,889	18,889	88,055	69,166	101,063	13,008
Huawei	Aito	Wenjie M7	50,455	27,630	86,760	36,305	77,875	-8,885
BYD	BYD	Seal	82,255	30,176	85,532	3,277	90,841	5,309
NIO	NIO	ES6	67,200	21,710	83,290	16,090	77,440	-5,850
Great Wall	ORA	Haomao	97,642	26,121	81,312	-16,330	75,504	-5,808
Xpeng EV	Xpeng	G6	48,806	48,806	80,976	32,170	74,341	-6,635
Geely	Zeekr	001	78,615	6,553	77,120	-1,495	85,572	8,452
BMW	BMW	iX1	63,133	59,753	76,257	13,124	89,323	13,066
Leapmotor	Leapmotor	C11	81,433	36,130	75,192	-6,241	76,667	1,475
BMW	BMW	iX3	70,237	6,696	75,192	4,955	74,849	-343
Renault-Nissan-Mitsubishi	Nissan	Ariya	44,841	20,771	74,913	30,072	78,597	3,684
General Motors	Chevrolet	Equinox EV	745	745	74,695	73,950	96,495	21,800
BYD	BYD	Qin	30,441	-4,340	73,822	43,381	120,730	46,908
Hyundai	Kia	Niro	86,426	32,569	73,112	-13,314	64,338	-8,774
Hyundai	Hyundai	Ioniq 6	59,794	41,908	71,231	11,437	90,310	19,079
Renault-Nissan-Mitsubishi	Dacia	Spring	62,416	68	70,950	8,534	75,892	4,942
Geely	Polestar	Polestar 2	58,882	8,761	69,408	10,526	65,514	-3,894
Toyota	Toyota	bZ4X	55,578	27,920	68,899	13,321	88,704	19,805
Renault-Nissan-Mitsubishi	Nissan	Note	105,388	-16,477	68,515	-36,873	64,416	-4,099
BYD	BYD	Qin Plus	124,022	4,548	67,991	-56,031	91,126	23,135
Mercedes-Benz	Mercedes-Benz	EQE	37,605	5,278	65,943	28,338	81,226	15,283
Mercedes-Benz	Smart	#1	64,580	55,551	64,782	202	64,798	16

Source: BofA Global Research, S&P

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Global top 50 BEV models

Sorted by y-o-y increase of BEVs produced in 2024e

Exhibit 58: Global top models in terms of total production volume changes sorted by y/y increase in vehicles produced in 2024e

High volume launches for 2024e include the Chevy Equinox EV, BMW i5 and Volvo EX30

OEM Group	Sales brand	Global Nameplate	2023 (total)	2023 y-o-y	2024e (total)	2024 y-o-y	2025e (total)	2025 y-o-y
Tesla	Tesla	Model 3	536,144	54,844	704,486	168,342	755,450	50,964
Tesla	Tesla	Model Y	1,206,774	389,640	1,290,836	84,062	1,420,964	130,128
General Motors	Chevrolet	Equinox EV	745	745	74,695	73,950	96,495	21,800
BMW	BMW	i5	18,889	18,889	88,055	69,166	101,063	13,008
Geely	Volvo	EX30	1,920	1,920	63,624	61,704	101,109	37,485
Volkswagen	Volkswagen	ID.7	1,262	1,262	62,723	61,461	92,893	30,170
Renault-Nissan-Mitsubishi	Renault	Scenic	326	326	55,927	55,601	54,798	-1,129
BYD	BYD	C-CUV EV	0	0	46,847	46,847	79,280	32,433
Renault-Nissan-Mitsubishi	Nissan	Qashqai	68,136	52,037	112,095	43,959	104,949	-7,146
Hyundai	Kia	EV3	0	0	43,394	43,394	138,668	95,274
BYD	BYD	Qin	30,441	-4,340	73,822	43,381	120,730	46,908
Stellantis	Peugeot	3008	0	0	42,651	42,651	62,170	19,519
Geely	Volvo	XC40	74,631	24,306	116,451	41,820	100,708	-15,743
BMW	Mini	Cooper	0	0	40,599	40,599	62,725	22,126
Geely	Volvo	EX90	0	0	40,500	40,500	77,308	36,808
Tesla	Tesla	Cybertruck	78	78	40,370	40,292	161,824	121,454
Volkswagen	Porsche	Macan	0	0	40,154	40,154	61,005	20,851
Honda	Honda	Prologue	0	0	37,213	37,213	33,569	-3,644
Geely	Geely	E6	0	0	36,312	36,312	92,928	56,616
Huawei	Aito	Wenjie M7	50,455	27,630	86,760	36,305	77,875	-8,885
Ford	Ford	Explorer	0	0	35,253	35,253	79,872	44,619
Ford	Ford	Transit Custom	1,648	-130	36,462	34,814	44,839	8,377
Volkswagen	Volkswagen	ID.7 Vizzion	3,763	3,763	37,018	33,255	55,756	18,738
Hyundai	Hyundai	Kona	66,690	9,590	98,979	32,289	107,025	8,046
Xpeng EV	Xpeng	G6	48,806	48,806	80,976	32,170	74,341	-6,635
Changan	Deepal	D-SUV	0	0	31,460	31,460	42,592	11,132
General Motors	Chevrolet	Blazer EV	16,296	16,296	47,493	31,197	52,003	4,510
Stellantis	Citroen	C3	2,038	1,814	33,151	31,113	69,984	36,833
FAW	Hongqi	EH7	3,609	3,609	34,704	31,095	34,848	144
Renault-Nissan-Mitsubishi	Nissan	Ariya	44,841	20,771	74,913	30,072	78,597	3,684
Lixiang Auto	Li	L6	0	0	29,970	29,970	32,524	2,554
Changan	Deepal	S7	67,320	67,320	96,972	29,652	103,967	6,995
GAC	Aion	Aion S	260,550	143,603	290,096	29,546	224,365	-65,731
Hyundai	Kia	EV9	25,967	25,967	54,991	29,024	68,073	13,082
General Motors	Chevrolet	Silverado EV	808	808	29,456	28,648	58,287	28,831
BMW	Mini	Countryman	0	0	28,630	28,630	41,650	13,020
Mercedes-Benz	Mercedes-Benz	EQE	37,605	5,278	65,943	28,338	81,226	15,283
Chery	Exeed	Sterra ES	4,791	4,791	32,390	27,599	32,524	134
Chery	Exeed	Sterra ET	2,557	2,557	30,078	27,521	32,524	2,446
Renault-Nissan-Mitsubishi	Renault	5	0	0	26,553	26,553	88,569	62,016
Geely	Lynk&Co	D-Hatch EV	0	0	26,368	26,368	30,976	4,608
Tata	Tata	Punch	1,978	1,978	28,192	26,214	27,241	-951
Changan	Changan	B-Hatch EV	0	0	25,649	25,649	39,493	13,844
BMW	Mini	Aceman	0	0	25,481	25,481	46,464	20,983
Chery	Luxeed	S7	0	0	25,450	25,450	25,556	106
BYD	BYD	D-Sedan EV	0	0	25,185	25,185	39,641	14,456
GAC	Hyper	HT	6,514	6,514	30,934	24,420	36,589	5,655
Great Wall	ORA	C-SUV EV	0	0	23,760	23,760	34,848	11,088
MI Auto	MI	SU7	0	0	23,730	23,730	27,877	4,147
Stellantis	Dodge	Daytona	0	0	23,667	23,667	25,482	1,815

Source: BofA Global Research, S&P

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Top 25 BEV models in Europe

Sorted by total produced vehicles in 2024e

Exhibit 59: Europe Top 25 models in terms of total production volumes

Tesla Model Y should continue to be the top produced model in EU followed by the XC40 – most important EU based launches include the Renault Scenic, VW ID.7, Peugeot 3008 and Porsche Macan

Sales brand	Global Nameplate	Sub-segment	2023 (total)	2023 y-o-y	2024e (total)	2024e y-o-y	2025e (total)	2025e y-o-y
Tesla	Model Y	SUV	207,485	155,855	299,289	91,804	333,437	34,148
Volvo	XC40	SUV	72,077	24,205	113,194	41,117	97,270	-15,924
Nissan	Qashqai	SUV	68,136	52,037	112,095	43,959	104,949	-7,146
BMW	i4	Car	85,131	34,960	108,515	23,384	105,377	-3,138
Fiat	500	Car	77,449	10,334	90,770	13,321	109,520	18,750
Audi	Q4 e-tron	SUV	68,932	32,869	78,434	9,502	84,700	6,266
Volkswagen	ID.4	SUV	91,296	3,201	74,676	-16,620	92,054	17,378
Volkswagen	ID.3	Car	64,312	9,152	69,173	4,861	73,401	4,228
Hyundai	Kona	SUV	44,339	14,511	63,281	18,942	55,632	-7,649
Skoda	Enyaq	SUV	77,346	24,586	62,911	-14,435	46,494	-16,417
BMW	ix1	SUV	58,834	55,454	59,597	763	69,576	9,979
Peugeot	208	Car	54,877	2,695	55,941	1,064	47,536	-8,405
Renault	Scenic	SUV	326	326	55,927	55,601	54,798	-1,129
Volkswagen	ID Buzz	MPV	32,347	21,334	55,789	23,442	97,338	41,549
BMW	i5	Car	18,889	18,889	50,459	31,570	55,762	5,303
Volkswagen	ID.7	Car	1,262	1,262	49,938	48,676	67,647	17,709
BMW	ix	SUV	50,750	1,069	49,834	-916	48,301	-1,533
Mercedes-Benz	EQA	SUV	50,061	20,462	49,629	-432	49,742	113
Mercedes-Benz	EQB	SUV	50,595	23,477	46,895	-3,700	46,368	-527
Peugeot	3008	SUV	0	0	42,651	42,651	61,843	19,192
Porsche	Taycan	Car	41,381	4,289	41,982	601	39,551	-2,431
Mercedes-Benz	EQE	Car	31,806	10,773	41,033	9,227	46,651	5,618
Porsche	Macan	SUV	0	0	40,154	40,154	61,005	20,851
Opel	Corsa	Car	33,705	2,449	39,637	5,932	40,927	1,290
Volvo	C40	SUV	34,827	7,660	38,031	3,204	34,178	-3,853

Source: BofA Global Research, S&P

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Global top 50 PHEV models

Sorted by tot vehicle production in 2024e

Exhibit 60: Global top models in terms of total production volumes (PHEV = plug-in hybrid electric vehicles)

BYD is the undisputed PHEV leader, with 7 models in the top 10; Stellantis, through its Jeep brand, is the closest competitor

OEM Group	Sales brand	Global Nameplate	2023 (total)	2023 y-o-y	2024e (total)	2024e y-o-y	2025e (total)	2025e y-o-y
BYD	BYD	Song Plus	354,317	15,006	371,303	16,986	380,575	9,272
BYD	BYD	Qin Plus	337,228	140,196	271,963	-65,265	364,507	92,544
BYD	BYD	Song Pro	198,944	125,388	176,389	-22,555	165,963	-10,426
Stellantis	Jeep	Grand Cherokee	65,951	44,145	168,898	102,947	123,838	-45,060
BYD	BYD	Han	127,313	-5,160	145,364	18,051	118,042	-27,322
BYD	BYD	Tang	129,410	4,904	124,157	-5,253	131,727	7,570
Stellantis	Jeep	Wrangler	84,631	17,681	111,180	26,549	111,540	360
BYD	Denza	D9	113,528	103,698	108,953	-4,575	112,518	3,565
BYD	BYD	Destroyer 05	101,081	38,576	91,098	-9,983	91,476	378
Changan	Changan	Qiyuan A05	29,884	29,884	80,590	50,706	83,053	2,463
BYD	BYD	Frigate 07	73,538	71,238	79,818	6,280	80,149	331
Geely	Geely	L7	69,958	69,958	79,711	9,753	68,609	-11,102
Geely	Volvo	XC60	81,026	28,504	76,553	-4,473	66,268	-10,285
BYD	BYD	Seal	40,390	40,390	69,408	29,018	83,986	14,578
Ford	Ford	Escape	73,479	-20,314	68,949	-4,530	60,178	-8,771
Great Wall	HAVAL	Xiaolong Max	38,219	38,219	67,094	28,875	79,453	12,359
Changan	Changan	CS75	6,335	6,335	60,575	54,240	136,665	76,090
BMW	BMW	X5	47,780	666	55,303	7,523	53,504	-1,799
Stellantis	Chrysler	Pacifica/Voyager	42,181	24,083	54,759	12,578	44,444	-10,315
Geely	Lynk&Co	08	30,343	30,343	53,984	23,641	42,592	-11,392
Mercedes-Benz	Mercedes-Benz	C-Class	33,149	15,161	47,372	14,223	48,423	1,051
Mercedes-Benz	Mercedes-Benz	E-Class	16,344	-22,681	47,305	30,961	58,969	11,664
Great Wall	HAVAL	Menglong	14,129	14,129	46,272	32,143	46,464	192
Changan	Changan	Qiyuan Q05	2,954	2,954	46,272	43,318	60,984	14,712
Geely	Volvo	XC90	50,453	15,999	45,552	-4,901	38,951	-6,601
Hyundai	Kia	Sportage	45,669	27,571	43,379	-2,290	45,009	1,630
Toyota	Toyota	RAV4	42,153	-12,237	42,407	254	27,466	-14,941
Hyundai	Hyundai	Tucson	39,683	12,653	41,076	1,393	39,311	-1,765
Toyota	Toyota	Prius	27,716	11,290	41,072	13,356	31,321	-9,751
Changan	Changan	Qiyuan A06	13,850	13,850	39,236	25,386	39,399	163
Geely	Lynk&Co	07	0	0	38,480	38,480	46,464	7,984
Hyundai	Kia	Niro	17,943	-6,265	37,141	19,198	34,517	-2,624
Volkswagen	Volkswagen	Tiguan	30,570	3,889	37,043	6,473	34,757	-2,286
Mercedes-Benz	Mercedes-Benz	GLC	27,134	8,972	36,720	9,586	40,461	3,741
Volkswagen	Cupra	Formentor	23,986	1,755	34,860	10,874	35,737	877
Geely	Geely	L6	30,149	30,149	34,704	4,555	48,400	13,696
Stellantis	Peugeot	3008	36,546	10,489	33,092	-3,454	23,400	-9,692
BYD	BYD	Song L	0	0	33,032	33,032	51,438	18,406
BMW	BMW	3-Series	34,609	-12,662	32,941	-1,668	37,388	4,447
Great Wall	WEY	Blue Mountain	32,070	32,070	31,465	-605	30,666	-799
Geely	Geely	L5	0	0	31,213	31,213	45,301	14,088
BYD	BYD	Sealion 07	0	0	29,102	29,102	42,943	13,841
BMW	BMW	X1	29,515	14,963	29,065	-450	31,722	2,657
Renault-Nissan-Mitsubishi	Mitsubishi	Outlander	36,180	13,058	28,812	-7,368	29,176	364
Volkswagen	Volkswagen	Passat	26,813	-18,046	28,052	1,239	31,320	3,268
Mazda	Mazda	CX-9	18,844	18,844	25,834	6,990	25,567	-267
Volkswagen	Porsche	Cayenne	25,997	7,306	25,027	-970	23,928	-1,099
Mazda	Mazda	CX-5	20,061	-2,337	24,597	4,536	22,737	-1,860
Great Wall	HAVAL	H-Dog	25,726	25,726	24,445	-1,281	32,314	7,869
BYD	Denza	N8	5,664	5,664	24,294	18,630	27,442	3,148

Source: BofA Global Research, S&P

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