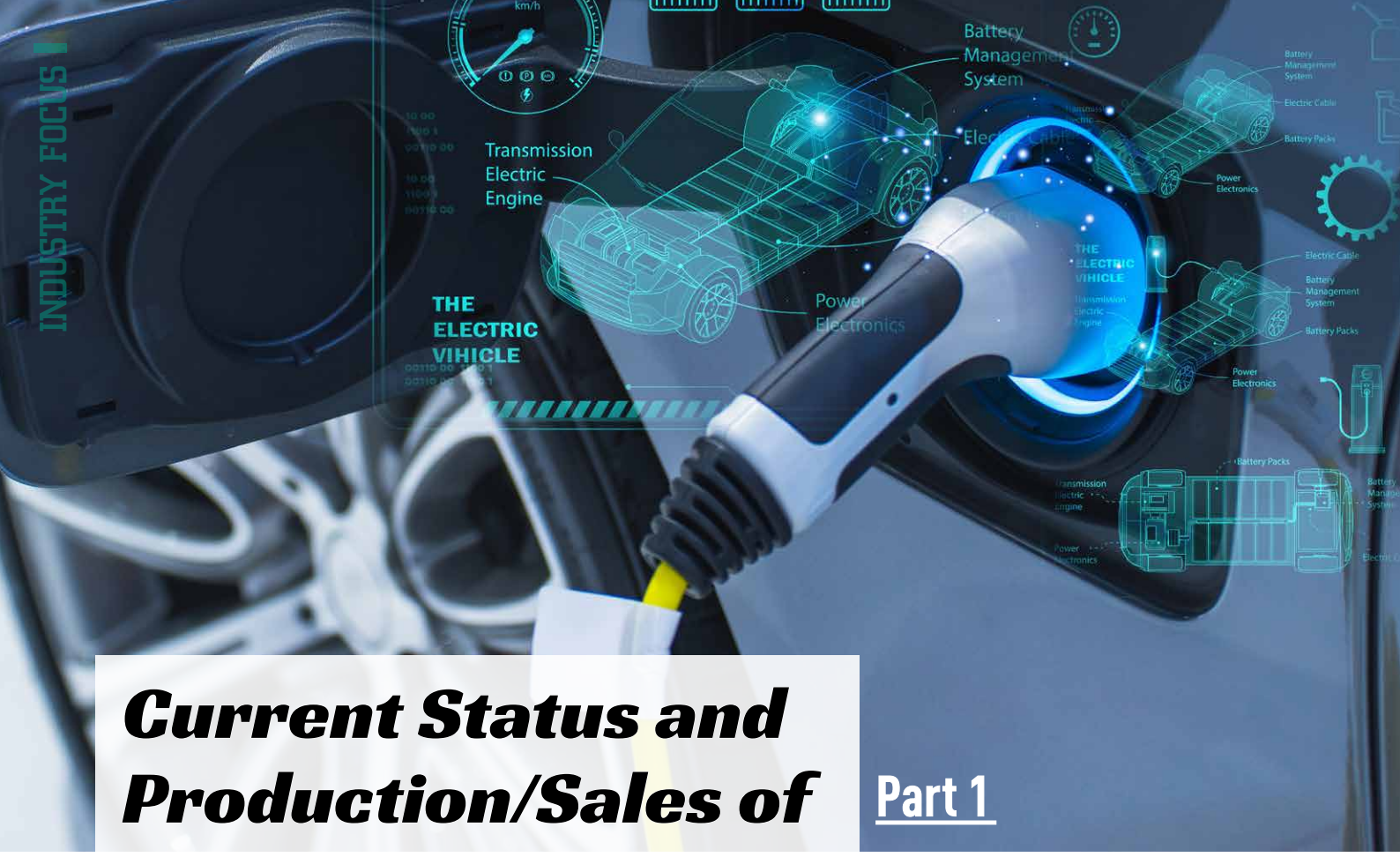


Current Status and Production/Sales of China's EV Industry

Part 1

中國電動車產業現況與產銷（上）

Development of China's Electric Vehicle Industry

New Energy Vehicles (NEVs), including electric vehicles (EVs), have gained widespread attention and rapid development globally in recent years as a crucial alternative to gasoline vehicles. NEVs include battery electric vehicles (BEVs), plug-in hybrid electric vehicles (PHEVs), and hydrogen fuel cell electric vehicles (FCEVs). With technological advancements and policymaking, NEVs in the Chinese market have demonstrated significant progress in market share, technological innovation, and development in supply chains. The rapid growth of the NEV market benefits from multiple factors. To address environmental pollution and energy crises, governments worldwide have formulated a series of policies supporting NEV development, such as providing purchase subsidies, tax incentives, and building charging infrastructure, actively promoting the adoption of NEVs. In addition, increased consumer environmental awareness and the demand for energy conservation have further boosted the expansion of the NEV market.

Technological innovation is the core driving force behind NEV development. Continuous breakthroughs in battery technology, such as increased lithium-ion battery energy density, reduced costs, and faster charging speed, provide a solid guarantee for the performance improvement and market acceptance of NEVs. Advancements in electric motors and their control systems, lightweight materials, and intelligent driving technology have also significantly improved the overall performance and user experience of NEVs. For example, some high-end vehicles widely use autonomous driving technology and have gradually gained an important position in the electric vehicle market.

The improvement of the supply chain is an important support for the sustainable development of NEVs. With the growth of market demand, the integration of upstream and downstream manufacturers in the NEV supply chain has become a trend. This integration extends from the mining and supply of key raw materials such as lithium and cobalt in the upstream, to the manufacturing of core components such as power batteries and electric motors in the midstream, and then to the production and sales of whole vehicles in the downstream, forming a complete and efficient industrial ecosystem. As the world's largest NEV (including EV) market, China has a

complete supply chain layout, attracting a large amount of capital and manufacturer investment, which has driven the rapid development of the industry and the market. Despite the significant progress of NEVs, their development still faces many challenges. For example, the recycling and environmental protection of power batteries, the imperfect construction of charging infrastructure, and range anxiety are important issues that need to be addressed. In addition, global economic uncertainties and supply chain risks also have a potential impact on the NEV industry. With the further release of market demand and the continuous improvement of the supply chain, NEVs will usher in a more brilliant stage of development. The 2010s were the heyday for the rapid development of China's NEV industry. In 2012, China issued the "Energy Saving and New Energy Vehicle Industry Development Plan (2012-2020)", which clearly proposed that the cumulative production and sales of NEVs should reach 5 million vehicles by 2020. To achieve this goal, the government expanded its support for NEVs, including providing purchase subsidies, reducing purchase taxes, and accelerating the construction of charging infrastructures. Meanwhile, leading Chinese manufacturers such as BYD, BAIC BJEV, and NIO actively invested in R&D, launching a series of competitive NEVs. With the growth of market demand and the improvement of technological level, China's NEV industry occupies an important position in the global market. As of 2024, China's NEV ownership has exceeded 6.5 million vehicles, making it the world's largest NEV market. Concurrently, China's NEV supply chain has been formed. From the supply of power battery materials in the upstream to the manufacturing, assembly, and sales of whole vehicles in the downstream, a large number of manufacturers are involved in all aspects and demonstrate competitiveness in the international market.

In recent years, with the proposal of the dual carbon goals (carbon peaking and carbon neutrality), China's NEV industry has ushered in new development opportunities. The government continues to expand its policy support for NEVs, promoting connectivity of NEVs and making them smart. Meanwhile, the construction of charging infrastructure has been further expanded, and the convenience of using NEVs has been significantly improved. In 2024, China's NEV sales at home and abroad reached a new high of 4.75 million vehicles, accounting for 55.2% of the global market. Led by government policies, China's NEV industry has experienced a process from initial start-up to rapid development. Leading manufacturers are actively expanding their domestic and international deployment and building factories. In the future, with continuous technological breakthroughs and further market maturity, China's NEV industry will continue to develop.

China's Electric Vehicle Production and Sales

China's electric vehicle industry is currently experiencing significant growth and consolidating its global leadership position. Electric vehicles achieved a significant milestone in August 2024, with sales exceeding 1 million vehicles, marking a major increase in the electrification of the automotive market. This represents 30.6% of all vehicle sales in that month, highlighting the continued upward trend of electric vehicles. Sales of new energy vehicles have exceeded those of internal combustion engine vehicles for the first time. This shift marks a major milestone in China's transition to automotive electrification, driven by increased consumer acceptance and manufacturers' aggressive marketing strategies. S&P Global Mobility predicted that NEVs would account for 46% of the passenger car market in 2024, up from 36% in 2023. In 2024, BYD has sold more than 1 million new energy vehicles, strengthening its dominant market position. Other automotive brands such as Xpeng, Zeekr, and GAC Aion are also beginning to emerge.

Comparing Sales Volume of New Energy Vehicles (Including Pure Electric Vehicles) by Car Manufacturer

The cumulative sales volume of China's auto market in 2024 reached 22.892 million vehicles, an increase of 5.5% compared to the previous year.

According to the retail sales data released by the China Passenger Car Association, the cumulative sales volume of China's auto market in 2024 reached 22.892 million vehicles, an increase of 5.5% compared to the previous year. The cumulative sales volume of new energy vehicles was 10.749 million vehicles, an increase of 47.5% compared to the previous year, with a cumulative penetration rate of 45.8%. Among them, the sales volume of pure electric vehicles was 6.281 million vehicles, accounting for 58.5% of the market. The Chinese auto market in 2024 was highly competitive. BYD led sales volume with 4.25 million vehicles, while Tesla's sales volume declined to 910,000 vehicles. Independent brands such as Geely and Chang'an were growing rapidly, narrowing the gap with the leading group. In 2025, BYD will accelerate the sales of smart vehicles, and Tesla will usher in for the next generation of Model Y.

Table 1. China's New Energy Vehicle Sales Ranking in 2024

Rank	Car Manufacturer	2024 Sales Volume (Vehicles)	2023 Sales Volume (Vehicles)	Growth Rate (%)
1	BYD	4,250,370	3,012,906	41.1
2	Tesla	916,660	947,742	-3.3
3	Geely	888,235	487,461	82.2
4	Chang'an	685,076	422,492	62.2
5	Wuling	679,578	431,096	57.6
6	Chery	583,569	175,400	232.7
7	Li Auto	500,506	376,030	33.1
8	Seres	416,663	106,703	290.5
9	Aion	412,891	482,003	-14.4
10	Great Wall	320,846	261,546	22.7
11	Leapmotor	293,724	144,155	103.8
12	Dongfeng	234,240	218,706	7.1
13	NIO	221,970	160,038	38.7
14	Xpeng	190,068	141,601	34.2
15	SAIC	150,689	358,000	-57.9

Source: China Association of Automobile Manufacturers; Industrial Technology Research Institute (ISTI), March 2025

China's NEV market has made significant progress in recent years, with sales continuing to reach new highs. According to data from the China Association of Automobile Manufacturers, China's NEV production in 2023 was 9.587 million vehicles, and sales were 9.495 million vehicles, an increase of 35.8% and 37.9% respectively compared to the previous year. **From January to May 2024, the cumulative sales volume of new energy vehicles was 3.89 million vehicles, an increase of 32.5% compared to the previous year.**

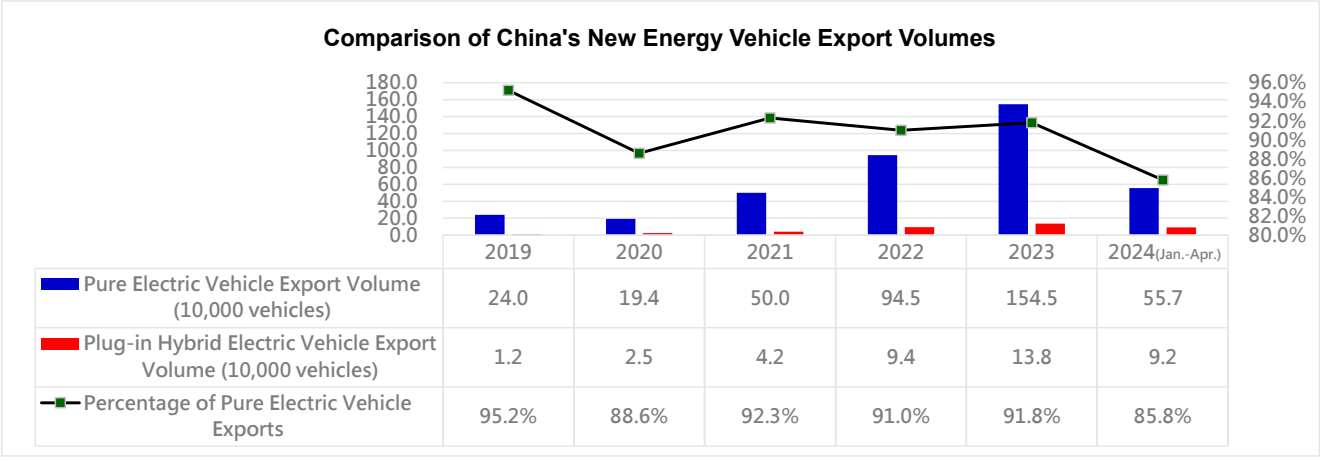
China's NEV market is dominated by pure electric vehicles (BEVs), and the proportion of plug-in hybrid vehicles is increasing year by year.

From the perspective of power sources, China's NEV market is dominated by pure electric vehicles (BEVs), and the proportion of plug-in hybrid vehicles is increasing year by year. From January to May 2024, the sales volume of pure electric vehicles was 2.407 million vehicles, accounting for 62%; the sales volume of plug-in hybrid vehicles was 1.486 million vehicles, accounting for 38%. In terms of price, the sales volume of new energy vehicles is mainly concentrated in the price range of RMB 150,000 to 200,000. From January to May 2024, the cumulative sales volume was 1.028 million vehicles, accounting for 27.8%. In terms of sales by vehicle models, in May 2024, the models with the highest sales volume falling within RMB 80,000, RMB 80,000 to 150,000, RMB 150,000 to 200,000, RMB 200,000 to 300,000, and above RMB 300,000, were Seagull (34,000 vehicles), Qin PLUS (49,000 vehicles), Song PLUS New Energy (33,000 vehicles), Model Y (40,000 vehicles), and AITO M9 (16,000 vehicles), respectively.

Regarding power battery technology, lithium iron phosphate (LFP) power batteries account for nearly 70% of the installed capacity in China. Low-end models mainly use LFP batteries, while high-end models mostly use ternary lithium batteries. In terms of new cars, pure electric vehicles such as Xiaomi SU7 and Zeekr 001 have shown strong market competitiveness with their excellent performance. BYD has further consolidated its leading position in the field of LFP batteries through multiple plug-in hybrid extended-range new cars. In addition, the level of autonomous driving technology for new energy vehicles continues to improve. From January to February 2024, L2 and above-level autonomous driving new energy vehicles accounted for 62.5%, an increase of 7.2% compared to the same period last year. The installation rate of intelligent driver assistance systems is also increasing year by year. The market penetration rate of new energy vehicles is increasing year by year. According to data from the China Association of Automobile Manufacturers, the penetration rate of new energy vehicles in China reached 31.6% in 2023, an increase of 5.9% compared to 2022. From January to May 2024, the penetration rate of new energy vehicles reached 33.9%, and the penetration rate further increased to 39.5% in May.

In terms of exports, from January to April 2024, China's exports of new energy vehicles were 663,000 vehicles, an increase of 27% compared to the previous year. Among them, passenger car exports were 649,000 vehicles, an increase of 30% compared to the previous year. Among passenger car exports, BEV exports were 557,000 vehicles, an increase of 20% compared to the previous year, accounting for 86%; PHEV exports were 92,000 vehicles, an increase of 144% compared to the previous year, accounting for 14%. In April 2024, China's exports of new energy vehicles were 207,000 vehicles, of which passenger car exports were 203,000 vehicles, an increase of 59% compared to the previous year. The average price of China's new energy vehicle exports has also been increasing year by year. From January to April 2024, the average export price of new energy vehicles in China was US$23,000, a significant increase compared to 2019. The price increase reflects the increasing competitiveness of China's new energy vehicles in the international market and also demonstrates the progress in new energy vehicle technology and manufacturing. **Figure 1** shows the export volume of new energy vehicles (including pure electric vehicles) in China from January to April 2024.

Figure 1. Export Volumes of New Energy Vehicles (Including Pure Electric Vehicles) in China from January to April 2024



	2019	2020	2021	2022	2023	2024(Jan.-Apr.)
Pure Electric Vehicle Export Volume (10,000 vehicles)	24.0	19.4	50.0	94.5	154.5	55.7
Plug-in Hybrid Electric Vehicle Export Volume (10,000 vehicles)	1.2	2.5	4.2	9.4	13.8	9.2
Percentage of Pure Electric Vehicle Exports	95.2%	88.6%	92.3%	91.0%	91.8%	85.8%

Source: China Association of Automobile Manufacturers; Industrial Technology Research Institute (ISTI), March 2025

Table 2. China's Pure Electric Vehicle (by Vehicle Model) Sales Ranking in 2024

Rank	Car Manufacturer and Model	Sales Volume (Vehicles)	Rank	Car Manufacturer and Model	Sales Volume (Vehicles)
1	Tesla Model Y	480,309	11	Changan Lumin	145,142
2	BYD Seagull	453,593	12	AION S	139,821
3	BYD Yuan PLUS	275,223	13	Xiaomi SU7	139,487
4	Hongguang Mini EV	261,141	14	BYD Yuan UP	134,839
5	Wuling Bingo	210,374	15	Geely Panda	131,599
6	Tesla Model 3	176,793	16	ZEEKR 001	99,984
7	BYD Qin PLUS New Energy	175,637	17	Volkswagen ID.3	93,816
8	BYD Dolphin	160,594	18	BYD Han	87,429
9	AION Y	156,503	19	Hongqi E-QM5	81,506
10	BYD Song PLUS New Energy	152,285	20	Geely Galaxy E5	76,774

Source: Industrial Technology Research Institute (ISTI), March 2025

Conclusion

The rapid growth of China's electric vehicle market benefits from many factors. To deal with environmental pollution and energy crises, the government has formulated a series of supporting policies such as providing car purchase subsidies, tax reductions and exemptions, and charging infrastructure, which promotes the popularity of pure electric vehicles. Consumers' increasing environmental awareness and demand for energy conservation will also promote the development of the pure electric vehicle market. Led by policies, China's pure electric vehicle industry has experienced a process from initial start-up to rapid development. Leading manufacturers such as BYD are not only actively expanding their domestic deployment but also expanding their factories and markets in Eastern Europe, Mexico, and Central and South America, which will trigger the booming development opportunities of the electric vehicle supply chain.