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Beijing, Shanghai, Chongqing
FEV Consulting (China), FEV Group

2025 China automotive industry analysis report

FEV

2025 Annual industry report

AGENDA

MACRO BACKGROUND

AUTOMOTIVE MARKET PERFORMANCE

INDUSTRY INSIGHTS

SUMMARY

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MACRO BACKGROUND

- **MACROECONOMICS AND SITUATION**
- CHINESE POLICIES AND REGULATIONS

In 2025, facing complex changes in China's and global economic conditions, the national economy advanced under pressure, shifted toward innovation and quality, and achieved new progress in high-quality development, with all major economic and social targets fully met

According to annual data released by the National Bureau of Statistics, GDP for the year reached 1,401,879 CNY 100m, up 5.0% YoY

FEV · 2025

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Key figures 2025

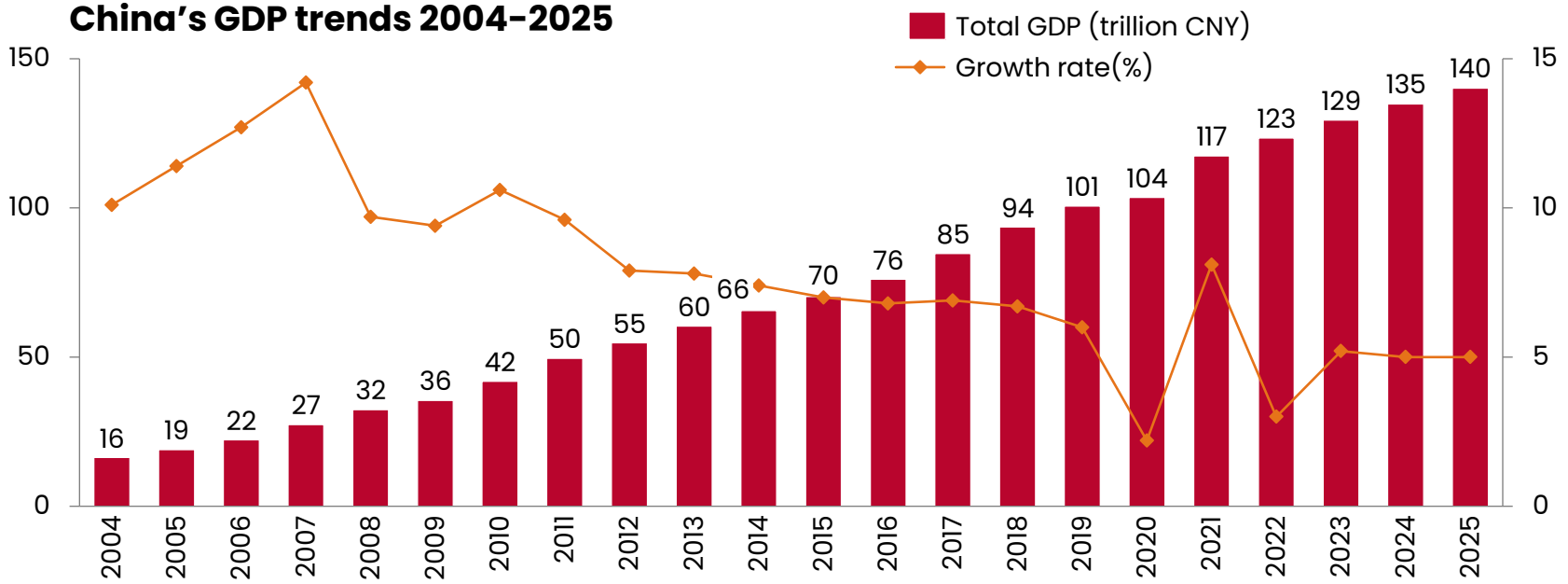
140 trillion CNY
2025 annual **GDP**

GDP up **5.0%**
at constant price[2] from 2024

Large-scale industries[1] grew by **5.9%** YOY,

Manufacturing value-add grew by **6.4%** YoY

China's GDP trends 2004-2025



1) Industrial enterprises with annual main business income over 20 million CNY; 2) Value of goods and services after removing the effects of inflation
Source: National Bureau of Statistics (NBS); FEV

In 2025, China's automotive industry was influenced by three main factors: the international situation, consumption, and energy demand

2025 KEY IMPACT FACTORS

International situation

- In 2025, weakening unipolarity and accelerating multipolarity kept geopolitical risks elevated amid sustained regional conflicts and cross-border frictions
- Globalization suffered major setbacks as tariff wars disrupted trade rules. U.S. export controls and sanctions on China shifted from high-pressure escalation to partial, phased easing.
- Geopolitical tensions exposed the vulnerability of petrochemical-energy supply chains, increasing the risk of sharp price swings and economic volatility, while further highlighting the strategic importance of new energy

Consumption

- In 2025, the "two-new" policies were extended and expanded, continuing to support automotive consumption. After the demand release in 2024, their marginal impact on 2025 sales moderated.
- Chinese brands continued gaining market share, driven by technology and value-for-money advantages. Their passenger-vehicle share reached 69.5% in 2025. BYD, Geely and others retained leadership through faster product iteration and stronger technical capability. JV-brand ICE sales declined, and the market kept shifting toward NEVs.

Energy demand

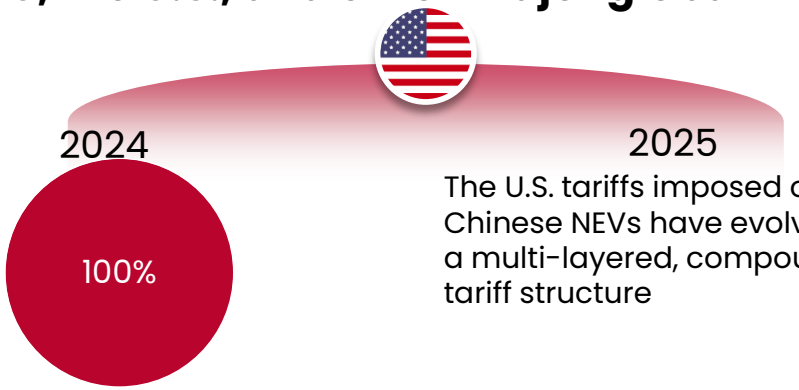
- *The Energy Law of the People's Republic of China* came into effect, establishing a framework for green and low-carbon energy transition, accelerating the restructuring of automotive energy supply and the diversification of technology pathways
- New-energy infrastructure continued to improve, and a "3-year doubling" target for charging point deployment was set to meet NEV usage requirements
- China further refined regulations for the battery-recycling industry and issued management measures clarifying responsibility scopes

Source: FEV

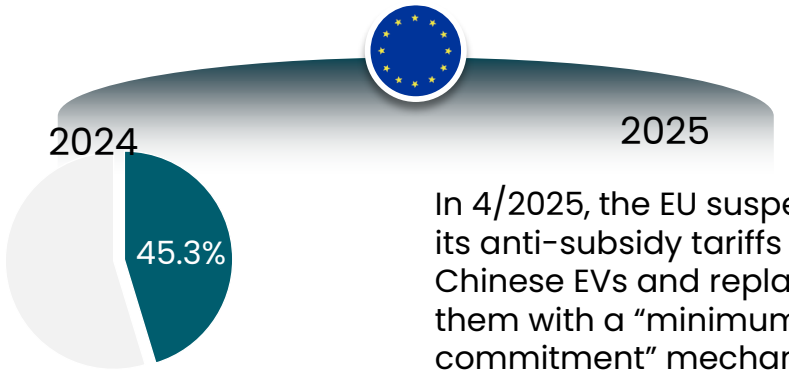
The EU eased tariffs on Chinese EVs while the U.S. raised tariffs, increasing pressure on China's exports

CHANGES IN WORLD TARIFF POLICY(1/2)

Changes in tariff policies on Chinese NEVs in the EU, the U.S., and other major global markets



The U.S. tariffs imposed on Chinese NEVs have evolved into a multi-layered, compounded tariff structure



In 4/2025, the EU suspended its anti-subsidy tariffs on Chinese EVs and replaced them with a "minimum-price commitment" mechanism

Details of changes in tariff policies

- Aside from the U.S. invoking Section 301 in Sep. 2024 to raise tariffs on Chinese NEVs to 100%, U.S. tariff policy has shown clear phased adjustments and legal uncertainty
  - In Mar. 2025, President Trump signed an executive order to impose a 25% tariff on all imported vehicles
  - In Feb. 2026, the U.S. Supreme Court ruled that the Trump administration's tariff actions based on the IEEPA exceeded statutory authority, rendering the 10% "fentanyl tariff" and the 10% "reciprocal tariff" invalid. Although tariff levels fell in the short term, the administration may still reimpose tariffs using other legal tools, leaving future actions highly uncertain
- In Jan. 2026, the EU formally introduced the *Minimum Import Price (MIP)* mechanism, allowing Chinese OEMs to submit price commitments by model and configuration to replace anti-subsidy tariffs of up to 45.3%
- In Jan. 2026, Canada removed its 100% tariff on Chinese EVs and granted China a quota of 49k EVs per year, which qualify for the 6.1% MFN[1)] tariff rate

1)MFN: Most-Favored-Nation Tariff
Source: FEV

Global trade frictions are showing signs of a phased easing, but uncertainties in U.S. trade and industrial policy remain significant

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CHANGES IN WORLD TARIFF POLICY(2/2)

- In 1/2026, the EU formally launched the **Minimum Import Price (MIP)** mechanism, allowing Chinese OEMs to submit price commitments at the model and configuration level as an alternative to anti-subsidy duties of up to 45.3%
- While the policy adjustment appears to ease trade tensions on the surface, it reflects Europe's clear industrial-protection logic. It not only places significant **constraints on the traditional 'high value-for-money' market-entry strategy of Chinese OEMs** but also accelerates the shift in China-EU automotive competition from a 'price war' to a 'technology war'. Within this new competitive cycle, **the price threshold provides European OEMs with a valuable buffer period, enabling them to speed up technology upgrades and strengthen product competitiveness.**

- The 100% Section 301 tariff is the most central and targeted U.S. trade barrier against Chinese NEVs. On top of this, the cumulative impact of existing tariffs and compliance costs makes exports of Chinese EVs to the U.S. economically unviable, **effectively blocking the possibility for Chinese brands to enter the mainstream U.S. market through direct exports**. At the same time, by imposing additional tariffs on Mexican products that do not meet USMCA[1)] rules of origin and tightening origin verification, the U.S. has **significantly reduced the feasibility for Chinese companies to enter the U.S. market via Mexico.**
- **U.S. policy remains inherently unstable**, as tariff decisions are **highly influenced by political factors** and may be further adjusted depending on the progress of China-U.S. negotiations or domestic industrial needs

- Among major global economies, **the EU, Canada, and others have gradually eased trade restrictions on China**. The EU's removal of punitive tariffs and shift to an MIP mechanism has also contributed to a mild easing of overall frictions.
- In contrast, the U.S. continues to intensify high-tariff pressure on China. However, against the backdrop of the global NEV supply-chain reshuffle, **China's NEV exports and overseas market expansion have continued to grow, with strengthening tailwinds.**

1)USMCA: United States–Mexico–Canada Agreement
Source: FEV

In 2025, China's NEV sales volume rose steadily, with YoY growth in most months and continued market expansion

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WEAK DOMESTIC DEMAND & POLICY SUPPORT

2025:

Vehicle sales volume in China **27.30 million**

Vehicle sales YoY growth **6.7%**

NEV sales volume in China **13.87 million**

NEV sales YoY growth **28.2%**

NEV penetration **50.8%**

- In 2025, China's NEV sales volume maintained a steady upward trend. Sales in Jan.-Feb. were seasonally weak, but growth became more evident in H2 with improving sentiment, concentrated new-model launches, and faster export momentum
- The 100k–200k CNY range remained the core volume segment, with rising demand for higher-end models. Brands stayed competitive in key price bands, and joint-venture and emerging players added higher-tech models above 200k CNY, improving the product mix. With broader supply and better value-for-money, demand is expected to keep expanding
- Price competition intensified but became more rational, shifting from low-price tactics to technology- and experience-driven differentiation. Domestic brands boosted value-for-money through technology iteration and platform-based cost reduction
- The government advanced trade-in incentives, consumption support, and export-related measures to stabilize expectations, while regulators strengthened oversight of pricing and quality to support orderly, healthy industry development
- NEV sales volume growth has also been supported by multiple stimulus policies, raising the risk of demand being pulled forward. Growth may therefore slow or stabilize in the next 1–2 years

Source: China Association of Automobile Manufacturers (CAAM), FEV

In 2025, carbon-market expansion and tighter rules accelerated global carbon-neutrality efforts

CARBON TRADING SYSTEM(1/2)

Carbon-neutral market developments across countries in 2025

- Article 6 of *the Paris Agreement* entered substantive operation, providing a formal channel for global carbon-credit cooperation
- The EU ETS[1)] continued to strengthen the carbon-price signal through structural allocation tightening and scope expansion (including maritime transport and phasing out free aviation allowances)
- Policy rollbacks in the U.S. weakened the effectiveness of the IRA[2)] and relaxed EPA[3)] regulatory authority, significantly reducing the likelihood of achieving its NDC[4)] targets
- India's draft national Carbon Credit Trading Scheme (CCTS) entered the pilot stage in 2025, marking a key step toward establishing a nationwide carbon market
- Brazil's national Emissions Trading System (ETS) advanced to the final legislative stage in 2025, laying the foundation for its carbon-pricing mechanism
- Global carbon-neutrality policies entered a new cycle in 2025, with most countries climate governance target levels and strengthening carbon-market mechanisms, while U.S. policy regression and widening financing gaps increased the divergence between global actions and targets

1) ETS: Emissions Trading System; 2) IRA: Inflation Reduction Act 3):EPA: Environmental Protection Agency 4) NDC: Nationally Determined Contribution
Source: FEV

China’s carbon market is now the world’s largest and expanded to heavy industry in 2025

CARBON TRADING SYSTEM(2/2)

2025

Cumulative quantity of carbon emission allowances in China’s carbon market **860 million tons**

Total trading value **58 billion CNY**

2025 allowance trading volume **235 million tons**

YoY decrease compared to 2024 **24%**

- The 2025 trading volume of emissions allowances reached the highest level since the national ETS[1)] launched in 2021, and the one-way auction mechanism was officially introduced on June 30, 2025, improving market liquidity and laying the groundwork for a more mature pricing system
- Sectoral expansion increased carbon-market coverage, as the system gradually incorporated high-energy-intensity industries such as steel, cement, and aluminum smelting, raising ETS coverage from 40% to above 60%

1) ETS: Emissions Trading System
Source: FEV

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- **CHINESE POLICIES AND REGULATIONS**

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- **CHINESE POLICIES AND REGULATIONS**
  - **Carbon emissions and management**
  - Dual credit
  - Mandatory national standard for EV energy consumption
  - Summary of other new policies

China’s green and low-carbon strategy drives energy conservation and emission reduction toward carbon peaking and neutrality

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CHINA – ENERGY-SAVING AND CARBON-REDUCTION POLICY FRAMEWORK

Carbon peaking and carbon neutrality

Implementation objectives

Implementation pathways

Carbon footprint management

- Product carbon footprint accounting
- Carbon footprint certification and labeling
- Carbon footprint database / emission factor system
- Corporate carbon footprint management framework
- Supply-chain carbon footprint management
- .....

Foundational conditions and prerequisites

Provide data support

Carbon emissions management

- Carbon emission targets
- Carbon emission allowances
- Monitoring, verification, and reporting

Target and institutional framework

Determine number of tradeable emission allowances

Emissions trading system

- National carbon emissions trading system (ETS)
- China certified emission reduction (CCER) market

Implementation and adjustment mechanisms

A detailed implementation plan has been formulated and is outlined in subsequent sections of this report

In Mar. 2025, China released its first unified framework for product carbon-footprint labeling and certification

GENERAL IMPLEMENTATION RULES FOR PRODUCT CARBON FOOTPRINT LABEL CERTIFICATION (TRIAL)

Key contents and requirements

1 Certification scope

- **Products included in the product carbon footprint label certification catalogue uniformly issued by the CNCA[1)]**
  - The list of the first batch of product carbon footprint label certification pilots includes 10 categories of products, such as lithium batteries, photovoltaic products, steel, textiles, electronic appliances, tires, cement, electrolytic aluminum, ammonium phosphate, and wood products

The batch of product carbon-footprint labeling pilots covers key automotive components and raw materials (e.g., tires, textiles, steel, and Li batteries) providing initial data support for OEM full-vehicle LCA[2)] carbon accounting

2 Certification mode

- **Initial inspection**
  - Focus on the enterprise's **quality assurance capabilities** and **product consistency** to ensure production compliance
- **Product carbon footprint verification**
  - **Cover the full chain** data from raw material acquisition, production, transportation, and use to the EOF stage to ensure that the **quantification of the carbon footprint is scientific and accurate**
- **Supervision after certification acquisition**
  - It overcomes the drawback of traditional carbon footprint accounting, verification, and evaluation businesses, which tend to focus on results while neglecting the process. Ensures enterprises continuously reduce carbon emissions.

3 Certification procedure

1. Certification commission
2. Acceptance
3. Certification planning
4. Document review
5. On-site review
6. Product carbon footprint verification
7. Evaluation and approval of certification results
8. Issuance of the certification certificate
9. Supervision after obtaining the certification
10. Re-certification

1) CNCA: Certification and Accreditation Administration of the People's Republic of China ;2) LCA: Life Cycle Assessment

In 2025, China's product carbon-footprint labeling moved from framework to pilot implementation

PILOT CATALOGUE FOR PRODUCT CARBON FOOTPRINT LABEL CERTIFICATION

- The notice on the selection results for pilot institutions for product carbon-footprint label certification confirmed 26 institutions eligible to conduct corresponding pilot certifications
- The pilot catalogue follows a "needs-first" approach, focusing on specific product segments and supported by upcoming product-specific certification rules, forming a full life-cycle carbon-footprint labeling framework
- The catalogue further refines product categories—for example, lithium batteries are divided into consumer, light-mobility, traction, and energy-storage types, aligned with EU Battery Regulation classifications, reflecting significant differences in material compositions (LCO, LMO, NCM/LFP, LFP)[1)]

New energy and clean technologies

- Lithium batteries
  - Consumer batteries
  - Small power batteries
  - Large power batteries
  - Energy-storage batteries
- Photovoltaic products

High-energy-consumption traditional industries

- Steel
  - Long-process steel products
  - Short-process steel products
  - Ferroalloys
- Electrolytic aluminum
- Cement

Consumer goods & light industry

- Textiles
  - Including cashmere products
- Wood products
  - Man-made boards and wooden flooring

Manufacturing and electro-mechanical industries

- Electronic and electrical appliances
  - Room air conditioners
  - Desktop computers and portable computers
  - Low-power electric motors
- Tires

1) LCO: Lithium Cobalt Oxide ;LMO: Lithium Manganese Oxide; NCM: Lithium Nickel Cobalt Manganese Oxide; LFP: Lithium Iron Phosphate

In late 2025, MIIT[1)] launched carbon footprint reporting for automotive traction batteries, with a pilot in 2026 and full rollout from 2027

CARBON FOOTPRINT REPORTING FOR AUTOMOTIVE TRACTION BATTERIES (1/2)

Key contents and requirements

1 Scope of reporting

- Traction battery products sold and used within China, with a rated energy > 2 kWh defined in accordance with the "traction battery" definition in GB/T 19596

3 Reporting process

1. Obtain an account for the Automotive Traction Battery Carbon Footprint Information Platform
2. Complete the Data Quality Control Measures Form
3. Report carbon footprint activity data
4. Conduct carbon footprint calculations
5. Upload the third-party verification report

2 Responsible entities

- Traction-battery carbon footprint certification covers 5 categories of entities

Traction battery manufacturer	Data reporting responsible entities include • Producers of traction battery packs • Importers of traction battery packs • Road-vehicle manufacturers that assemble traction battery packs in-house
Upstream and downstream supply-chain enterprises	Collaborative entities for carbon footprint reporting, provide relevant data to battery pack manufacturers and ensure the data is traceable and verifiable
Verification agency	Carbon footprint certification and assessment body, objectively and impartially verify the carbon footprint accounting process and data of traction battery companies, and issue a verification report
Emission factor data provider	Co-building entities for the industry background database
Industry experts	Support emission factor data review and management policy research

1) MIIT: Ministry of Industry and Information Technology of the People's Republic of China

Low-carbon competition is becoming standardized and enforceable, reshaping market access and financing

CARBON FOOTPRINT REPORTING FOR AUTOMOTIVE TRACTION BATTERIES (2/2)

Key tasks

Strengthen the data foundation

- Improve sector background databases and establish data-review and evaluation mechanisms
- Explore “pay-for-data” models to support data commercialization and sustainable updates
- Enhance data quality and promote international mutual recognition

Improve management mechanisms

- Establish a low-carbon product evaluation and verification system guided by product carbon footprints
- Incorporate product carbon footprints into automotive promotion policies, official vehicle procurement standards, and evaluation frameworks for zero-carbon factories and zero-carbon industrial parks

Strengthen capability building

- Encourage automakers and traction-battery companies to build digital carbon management platforms
- Support automakers and battery companies in leading green supply-chain management and integrating carbon footprint into supply-chain governance
- Foster professional service providers for traction-battery carbon footprint accounting, assessment, and verification

Enhance communication and guidance

- Conduct policy interpretation and public outreach to build a supportive public environment
- Leverage bilateral and multilateral cooperation mechanisms to deepen dialogue on power-battery carbon footprint topics and actively promote alignment with international rules

In Mar. 2025, China's ETS underwent its first expansion, adding steel, cement, and aluminum smelting

WORK PLAN FOR ETS

Key contents and requirements

1 Implementation phases

- **Initiation phase (2024–2026)**
  - Define sector boundaries and emission accounting methodologies
  - Carry out emissions data reporting, verification, and capacity building
  - Advance allowance allocation mechanisms and institutional alignment
- **Enhancement & maturity phase (from 2027 onward)**
  - Improve market trading rules
  - Enhance market liquidity and price-discovery functions
  - Promote the long-term, stable operation of the carbon market

2 Scope of control

- **Direct GHG[1] emissions from fossil-fuel combustion and industrial processes in the steel, cement, and aluminum-smelting sectors**
  - Controlled GHG for steel and cement: CO_2
  - Controlled GHG for aluminum-smelting: CO_2, CF_4, and C_2F_6
- **Key entities**
  - Enterprises with annual GHG emissions ≥ 26k tCO2e are designated as key emitters

3 Market size and coverage

- **New key emitters added:** ~1,500
- **Emissions covered:** ~3bn tCO_2

This is the substantive expansion of China's national ETS since its launch in 2021, marking a shift from a single-sector pilot to multi high-emission sector coverage and representing an important step toward market maturity. Steel, cement, and aluminum-smelting enterprises must establish robust carbon-emission data and verification systems, while tightening allowances will make carbon costs more explicit and drive technology upgrades and the green transition

1)GHG: Greenhouse gas

SUMMARY

With the expansion of China's national ETS and the rollout of product carbon-footprint labeling and certification, China's carbon-management system is shifting from pilot exploration to a structured and standardized phase

The inclusion of key sectors in the ETS, clearer carbon-footprint classifications, and traction-battery reporting will drive stronger data management and full life-cycle emission-reduction capabilities

General implementation rules for product carbon-footprint labeling and certification (trial)

- China's systematic document on product carbon-labeling certification, formally establishing a unified national framework
- It promotes full life-cycle carbon management, requiring end-to-end systems for data, production, and product consistency to support full-LCA[1)] emissions management

Pilot catalogue for product carbon-footprint labeling and certification

- Defines 17 specific product categories eligible for certification, marking the transition of the product carbon-labeling scheme from policy design to implementation

Carbon footprint reporting for automotive traction batteries

- Traction-battery carbon-footprint management is shifting from exploration to structured implementation, driven by unified accounting rules, data transparency, strengthened supervision, and alignment with international standards, enhancing the industry's green competitiveness and global compliance readiness

Work plan for including the steel, cement, and aluminum-smelting sectors in the national ETS

- These sectors are included in China's national ETS[2)], expanding coverage from ~40% to over 60%
- This is the substantive expansion since the 2021 ETS launch, extending coverage from a single-sector pilot to multiple high-emission industries and signaling market maturation

1) Life Cycle Assessment; 2)Emissions Trading System

AGENDA

MACRO BACKGROUND

- **CHINESE POLICIES AND REGULATIONS**
  - Carbon emissions and management
  - **Dual credit**
  - Mandatory national standard for EV energy consumption
  - Summary of other new policies

On November 10, 2025, the MIIT[1)] issued a notification on the Dual Credit Policy (2026–2027)

DUAL CREDIT POLICY

Overall, the notification continues and establishes the Dual Credit requirement management in the Draft for Comments

The requirement on the ratio of new energy vehicles in 2026-2027

The requirements for 2026 and 2027 are respectively **48%** and **58%**

The rule for calculating the credits of Fuel-Efficient Passenger Vehicles

When calculating the compliance value of NEV credits, the production or import volume of low-fuel-consumption passenger cars shall be counted at 0.1x their actual quantity

Adjustment to the calculation method for New Energy Passenger Car Credits

The standard model credits for new energy passenger cars have been reduced by approximately 50% on average compared to the previous phase

- EVs:
  - A new coefficient for low-temperature range degradation has been introduced; models with a low-temp. range degradation rate <35% will receive 1.2× the standard points as an incentive
  - Optimized Power Consumption Assessment - the target value for power consumption is set at 85% of the new National Standard Power Consumption Limit
- PHEVs
  - Stricter requirements: PHEVs must meet 65% of the fuel consumption limit and 135% of the power consumption limit
- FCVs 1x credit eligibility criteria:
  - The rated power of the fuel cell system shall be ≥50% of the rated power of the drive motor and shall be ≥50 kW
  - The start-up temperature shall ≤-30°C
  - The rated power density of the fuel cell stack shall ≥3.0kW/L, and the rated power density of the system shall ≥400W/kg

1) MIIT: Ministry of Industry and Information Technology of the People's Republic of China

- The Notice adjusts the requirements for fuel consumption limits and power consumption limits for PHEVs
  - The fuel consumption limit has been increased from **60% to 65%**
  - The full-charge power consumption limit has been raised from **130% to 135%**
- The 2026–2027 Dual Credit Notice sets out a clear policy direction, with the required share of new energy vehicles increasing in stages, credits per vehicle continuing to depreciate, and increasingly stringent technical thresholds. This shifts the focus of new energy vehicle development from scale expansion to high-quality development, using stricter policies to drive the industry toward steady progress in high-quality and high-tech directions.

The Dual Credit Policy has been tightened through iterative updates, increasing NEV compliance and efficiency requirements

EVOLUTION AND KEY ADJUSTMENTS OF THE DUAL CREDIT POLICY FROM 2017 TO 2027

2017.9.27

《Measures for the Parallel Administration of the Average Fuel Consumption and New Energy Vehicle Credits of Passenger Vehicle Enterprises》

- Established a parallel administration mechanism for dual credits
- Enabled the trading, carry-over, and offset of credits
- The ratio of the new energy credits in 2019-2020
  - In 2019: **10%**
  - In 2020: **12%**
- Non-compliant enterprises were restricted from declaring new models

2020.6.15

The decision on the modification of 《Measures for the Parallel Administration of the Average Fuel Consumption and New Energy Vehicle Credits of Passenger Vehicle Enterprises》

- Optimized the method for calculating new energy vehicle credits
- The ratio of the new energy credits in 2021-2023
  - In 2021: **14%**
  - In 2022: **16%**
  - In 2023: **18%**
- The production volume of low-fuel-consumption models were counted at 0.2 times
- Transfer of fuel consumption credits between affiliated enterprises was permitted

2023.6.29

The decision on the modification of 《Measures for the Parallel Administration of the Average Fuel Consumption and New Energy Vehicle Credits of Passenger Vehicle Enterprises》

- Significant reduction in new energy vehicle credits (average decrease of approximately 40%)
- A new credit pool system was established to stabilize credit price
- The calculation and disclosure of CO_2 emissions were added
- Negative new energy credits could now only be offset by positive NEV credits

2023.12.28

Notice on Matters Concerning the Management of Corporate Average Fuel Consumption and New Energy Vehicle Credits for Passenger Car Enterprises in 2024-2025

- The fuel consumption calculations of the models with energy-saving technologies could be reduced by corresponding cumulative amounts in accordance with regulations
- The ratio of the new energy credits in 2024-2025
  - In 2024: **28%**
  - In 2025: **38%**
- The production/import volume of low-fuel-consumption models were counted at 0.2 times
- Differentiated leniency policies for small-scale automakers enacted

2025.11.10

Notice on Matters Concerning the Management of Corporate Average Fuel Consumption and New Energy Vehicle Credits for Passenger Car Enterprises in 2026-2027

- Significant reduction in new energy vehicle credits again
- The ratio of the new energy credits in 2026-2027
  - In 2026: **48%**
  - In 2027: **58%**
- Significantly higher technical thresholds for range, power consumption, and fuel efficiency
- Preferential treatment for low-fuel-consumption vehicles was tightened to 0.1x
- Differentiated leniency policies for small-scale automakers continued

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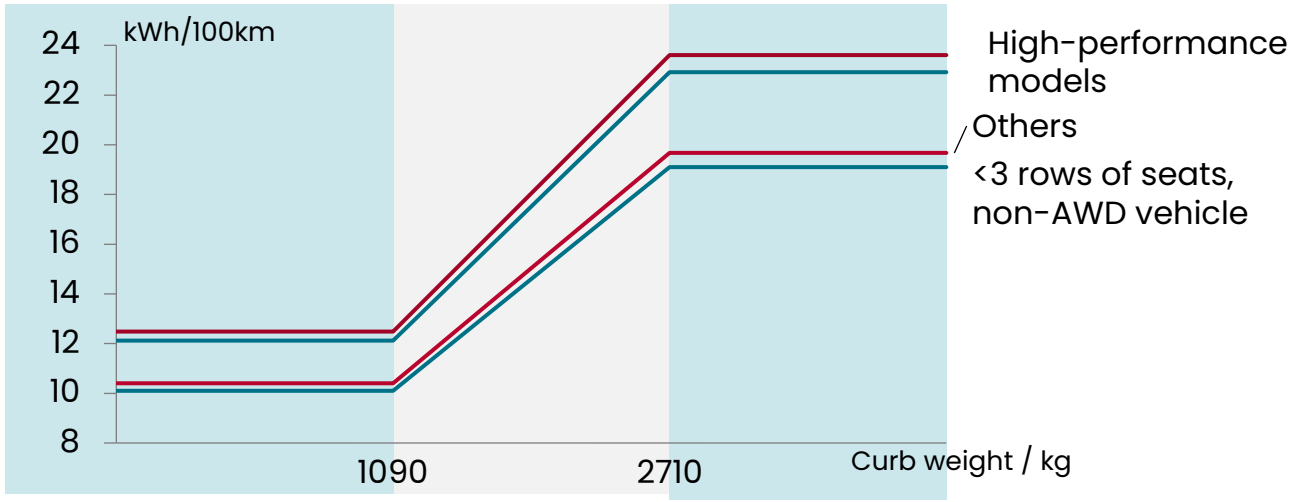
MACRO BACKGROUND

- **CHINESE POLICIES AND REGULATIONS**
  - Carbon emissions and management
  - Dual credit
  - **Mandatory national standard for EV energy consumption**
  - Summary of other new policies

Starting from 2026.01.01, the BEV energy consumption rate limit standard becomes mandatory; the limit is tightened by 11% vs. the previous standard

ENERGY CONSUMPTION LIMITS FOR ELECTRIC VEHICLES (GB 36980.1)

Calculation of energy consumption limits for electric vehicles



High performance models according to the standard definitions:

- Non-sport and off-road passenger vehicles with power-to-mass ratio (PMR) ≥250 kW/t and 0–100 km/h acceleration ≤3 s
- Sport passenger vehicles PMR ≥230 kW/t and 0–100 km/h acceleration ≤3.3 s
- Off-road passenger vehicles PMR ≥200 kW/t and torque-to-mass ratio (TMR) ≥6000 Nm/t, with maximum gradeability ≥100%

- To meet the new energy-consumption-limit requirements, high-consumption models will face accelerated market exit pressure, and OEMs will encounter pressure to restructure their product portfolios
  - OEMs will be forced to strengthen energy-consumption management systems, optimize e-powertrain efficiency and overall vehicle technology levels, and technologically outdated models built on legacy platforms will be phased out more rapidly under the new standard
  - Micro EVs will also face compliance pressure due to typical low battery energy densities, poor aerodynamics, and weak thermal-management capabilities, all of which contribute to higher energy consumption
  - The new standard constrains the strategy of “using large-capacity batteries to extend range,” because increasing battery capacity inevitably raises vehicle mass, while the resulting energy-consumption increase is strictly limited, driving OEMs back toward lightweighting and efficiency improvements

The industry expects the China National 7 emission standard to be released in 2027 and officially implemented in 2029

FUTURE OUTLOOK: CHINA 7 EMISSION STANDARDS

Six objectives

- Coordinated control of pollutants and greenhouse gases
- Stronger emphasis on real-world emissions control
- Synergistic promotion of NEV
- Intelligent and connected emissions supervision
- Continuous tightening of control over key pollutants
- Alignment with international regulatory trends and emerging global best practices

Key changes

1 Expanded regulatory scope

- BEVs and FCEVs will be newly included, filling regulatory gaps for new energy vehicles
- PHEVs and REEVs will be subject to dedicated type-approval test procedures

2 Comprehensive & stricter controls

- Tailpipe emissions: added requirements for controlling cold-start emissions under normal ambient temperatures
- Non-exhaust emissions: new testing requirements for brake-wear and tire-wear particulate emissions

3 Regulatory model transformation

- Introduction of a "vehicle model + vehicle fleet" management approach, with the proposed national 7 2030 targets as follows
  - Pollutants: 40 mg/km for passenger cars, 60 mg/km for LCVs[5)]
  - GHG[1)] : 95 CO_2e/km for passenger cars (reference mass 1,880 kg), 165 CO_2e/km for light commercial vehicles (reference mass 1,900 kg)

4 NEV-specific requirements

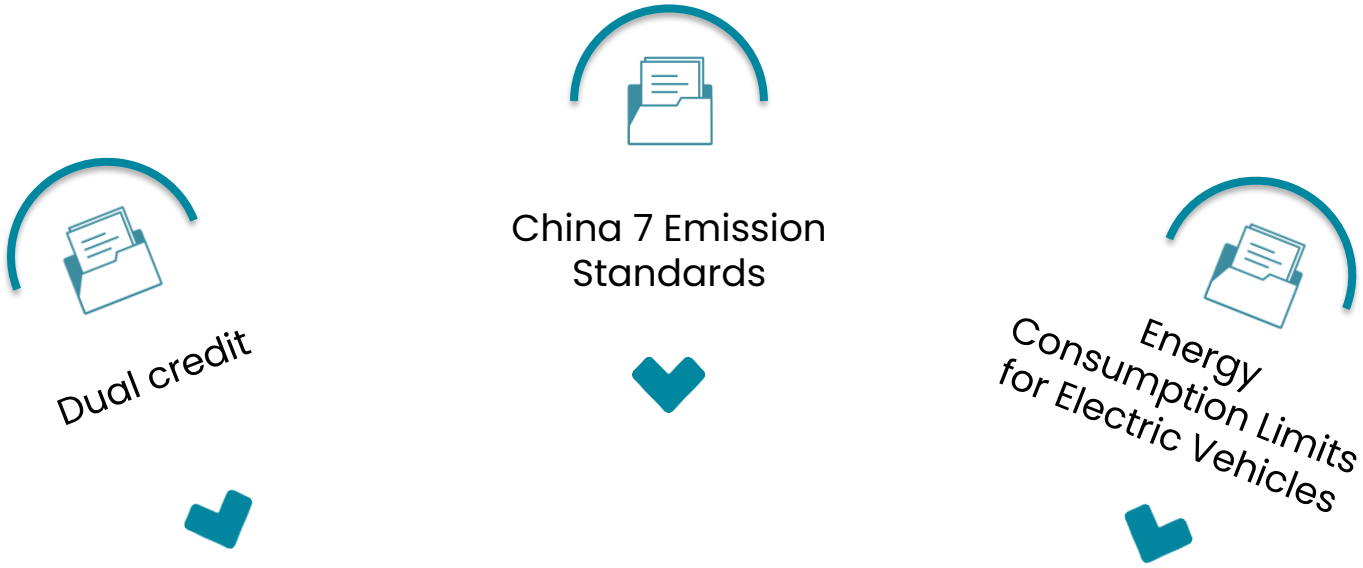
- New battery-durability testing: traction-battery degradation test with SOCEread[2)] < 98%
- V2X[3)] accuracy verification: discharge-accuracy validation for all V2X functions, including vehicle-to-grid (V2G)
- EV inclusion in OBD[4)] regulation: unified diagnostic interface and data stream required

1)GHG: Greenhouse gas; 2) A value calculated from the measured State of Certified Energy to assess battery aging; 3) Vehicle to Everything ; 4) On-Board Diagnostics; 5) Light commercial vehicles

SUMMARY

The tightening of the Dual-Credit policy and emission standards will jointly drive industry restructuring across product, technology, and cost dimensions

Mandatory implementation of EV energy-consumption limits will compel OEMs to refocus on lightweighting, e-powertrain efficiency improvement, and full-vehicle system optimization



The continued increase in NEV penetration helps OEMs cope with tightening policies and also drives ongoing improvements in key NEV technologies

AGENDA

MACRO BACKGROUND

- **CHINESE POLICIES AND REGULATIONS**
  - Carbon emissions and management
  - Dual credit
  - Mandatory national standard for EV energy consumption
  - **Summary of other new policies**

National subsidies for new energy vehicles remain in place, but technical requirements are becoming increasingly stringent

CHINA NEV POLICY DEVELOPMENTS 2025–2026

Adjustment of NEV purchase tax incentives (2026–2027)

- NEV Purchase Tax Policy (Sep. 2025)
  - Full tax exemption → 50% reduction; max. tax benefit per vehicle: CNY 15,000
  - Technical requirements
    - BEV: energy consumption must meet new national standard
    - PHEV: pure electric range ≥ 100 km; fuel & electricity consumption calculated under new standard

Trade-in and scrappage subsidy enhancements

- Scrappage replacement
  - NEV: 12% of vehicle price, max. CNY 20,000
  - ICE: 10%, max. CNY 15,000
- Trade-in replacement
  - NEV: 8%, max. CNY 15,000
  - ICE: 6%, max. CNY 13,000

Optimization of vehicle and vessel tax preferences

- Announcement on Adjusting Technical Requirements for Energy-Saving and New Energy Vehicles Eligible for Vehicle and Vessel Tax Incentives, effective January 1, 2026
  - BEV: energy consumption follows new national standard
  - PHEV: pure electric range ≥ 100 km; fuel & electricity limits both tightened

Charging infrastructure support policies

- A central government incentive + local matching funding mechanism is adopted
- 75 counties are selected as pilot regions, with maximum central subsidies of up to RMB 45 million per county
- Local governments provide additional subsidies for charging equipment:
  - AC chargers: up to RMB 300/kW
  - DC chargers: up to RMB 600/kW
- Operating subsidies reach RMB 0.35/kWh, depending on regional policies

On December 31, 2025, China issued the Interim Measures on Recycling and Comprehensive Utilization of End-of-Life NEV Power Batteries

BATTERY POLICY – TRACTION BATTERY RECYCLING

Key Policy Highlights

Battery production & identification

Each power battery must be assigned a unique electronic ID, enabling full life-cycle digital tracking covering production, use, maintenance, replacement, recycling, and utilization

Recycling responsibility

Power battery manufacturers bear recycling responsibility for batteries produced or imported and sold/used domestically. If batteries are sold to NEV OEMs, the vehicle manufacturers assume recycling responsibility.

Comprehensive utilization of end-of-life batteries

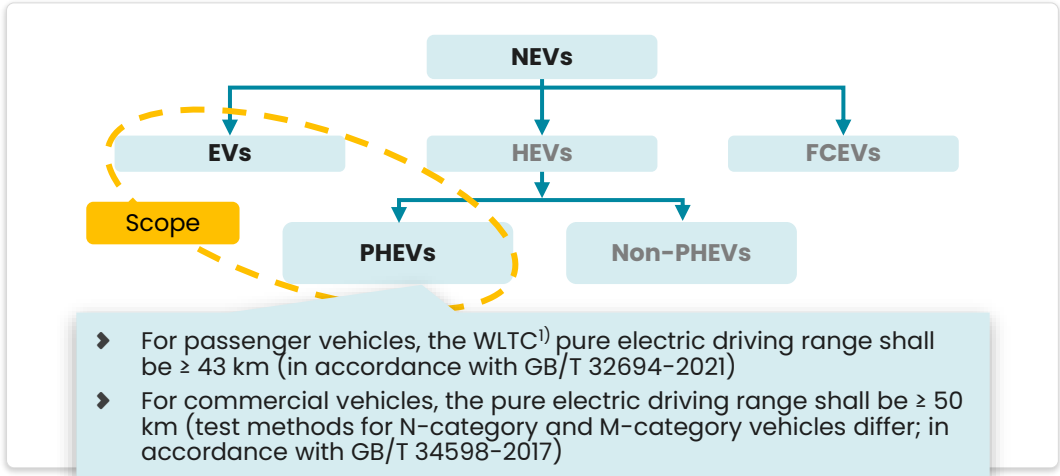
Recycling and utilization enterprises must hold qualified licenses and battery flow must follow a closed-loop management system.
Strictly prohibited to reuse end-of-life power batteries in e-bikes or other applications banned by laws, regulations, or mandatory standards.

Information management & legal liability

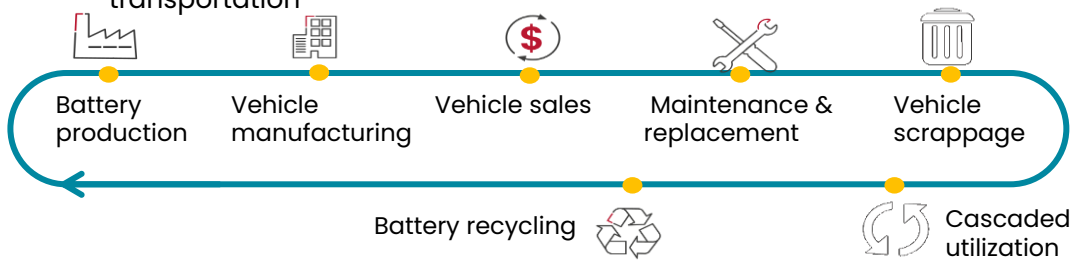
The national traceability information platform will be upgraded to establish a "digital battery ID" system. Clear penalty mechanisms are defined, with substantially increased enforcement strength to ensure compliance.

Implementation Date: **April 1, 2026**

- Scope of application
  - Applies to end-of-life power batteries used in NEVs sold and operated within China (including imported vehicles; export vehicles excluded)



  - R&D → production → vehicle integration → use → maintenance & replacement → scrapping → recycling → utilization → storage & transportation



1) WLTC: Worldwide Harmonized Light Vehicles Test Cycle

China is systematically tightening battery safety and technical standards while initiating solid-state battery specifications

BATTERY POLICY – SOLID-STATE BATTERY STANDARDS & BATTERY SAFETY REGULATIONS

National standards for solid-state batteries

The Technical Specification for All-Solid-State Electrolytes for Electric Vehicles entered the draft-for-comments stage in **December 2025**, marking the world's first dedicated standard for automotive solid-state electrolytes.

Terminology& classification Defines core concepts and unifies industry terminology, such as "semi-solid state," establishing a common technical language

Performance specifications Sets requirements for conductivity, electrochemical stability, and low-temperature performance, along with corresponding test methods

Safety specifications Establishes strict criteria for thermal stability and mechanical stability to ensure safety under various operating conditions

Lifecycle specifications Defines cycle life and calendar life metrics, introduces accelerated testing methods, and supports long-term performance evaluation

- The establishment of a solid-state battery standard system is expected to guide industry development, accelerate technology iteration, enhance industrial efficiency and product consistency, and support the sustainable commercialization of solid-state batteries

Battery safety regulations

The updated Safety Requirements for Traction Batteries of Electric Vehicles will come into effect in **2026**, indicating a stricter national tolerance for battery safety risks and promoting the standardization

- **Updated thermal propagation test**
  - Evaluates the battery's ability to prevent hazards after thermal runaway triggered by internal short circuits

	2020	2025
Test method	External heating or needling as trigger methods	External heating, needling, or internal heating as trigger methods
	The revision specifies battery temperature, power state, observation time, and vehicle-level test conditions	
Technical Requirement	Fire or explosion allowed, with an alarm signal required within 5 minutes	No fire and no explosion (alarm allowed); no hazardous smoke to occupants

- **New underbody impact test**
  - Assesses battery protection after bottom impact
  - Tested with a 30 mm steel impactor, 150 J energy, three impacts, with no electrolyte leakage, enclosure rupture, fire, or explosion, while maintaining electrical insulation

New post-fast-charging safety test

- Evaluates safety after long-term fast charging
- After 300 fast-charge cycles, including a 20%–80% SOC charge within 15 minutes, the battery must pass internal short-circuit testing with no fire or explosion

Starting in 2025, China has begun opening access to L3 automated driving, with pilot programs launched in selected cities

POLICY DEVELOPMENTS IN AUTOMATED DRIVING (2025–2026)

Clear allocation of responsibilities

- On May 8, 2025, MIIT[1)] and the Ministry of Justice jointly issued the Guidelines on the Handling of Intelligent Connected Vehicle Accidents.
- Tiered liability framework: for the first time, accidents involving L3-level and above automated driving systems are clarified to place primary responsibility on the vehicle manufacturer
- Manufacturer burden of proof: manufacturers are required to fully retain at least 90 seconds of pre-accident data (including video and system logs). Failure to do so may result in adverse liability presumptions.

Pilot expansion accelerated

- Mar 29, 2025: Vice Minister of MIIT, stated that China will accelerate the development of autonomous driving, promote smart connected vehicle access and on-road pilot programs, improve standards, and advance conditional L3 autonomous driving
- Apr 1, 2025: Beijing Regulations on Autonomous Driving Vehicles officially took effect
- Dec 15, 2025: MIIT announced the first batch of approvals for L3 conditional autonomous vehicles. Two models were authorized to conduct on-road pilot operations in designated areas of Chongqing and Beijing, marking the transition of L3 from closed testing toward limited commercial deployment.

Progress in standards development

- Sep 5, 2025: MIIT issued the mandatory national standard Safety Requirements for Combined Driving Assistance Systems of Intelligent Connected Vehicles, filling gaps in safety requirements for such systems in China and providing technical support for testing, certification, quality supervision, and post-market regulation
- Dec 31, 2025: MIIT issued the mandatory national standard Safety Requirements for Autonomous Driving Systems of Intelligent Connected Vehicles, replacing the previous general requirements and extending applicable to vehicles equipped with L3 or L4 autonomous driving systems

1) MIIT: Ministry of Industry and Information Technology of the People's Republic of China
Source: FEV

AGENDA

MACRO BACKGROUND

AUTOMOTIVE MARKET PERFORMANCE

INDUSTRY INSIGHTS

SUMMARY

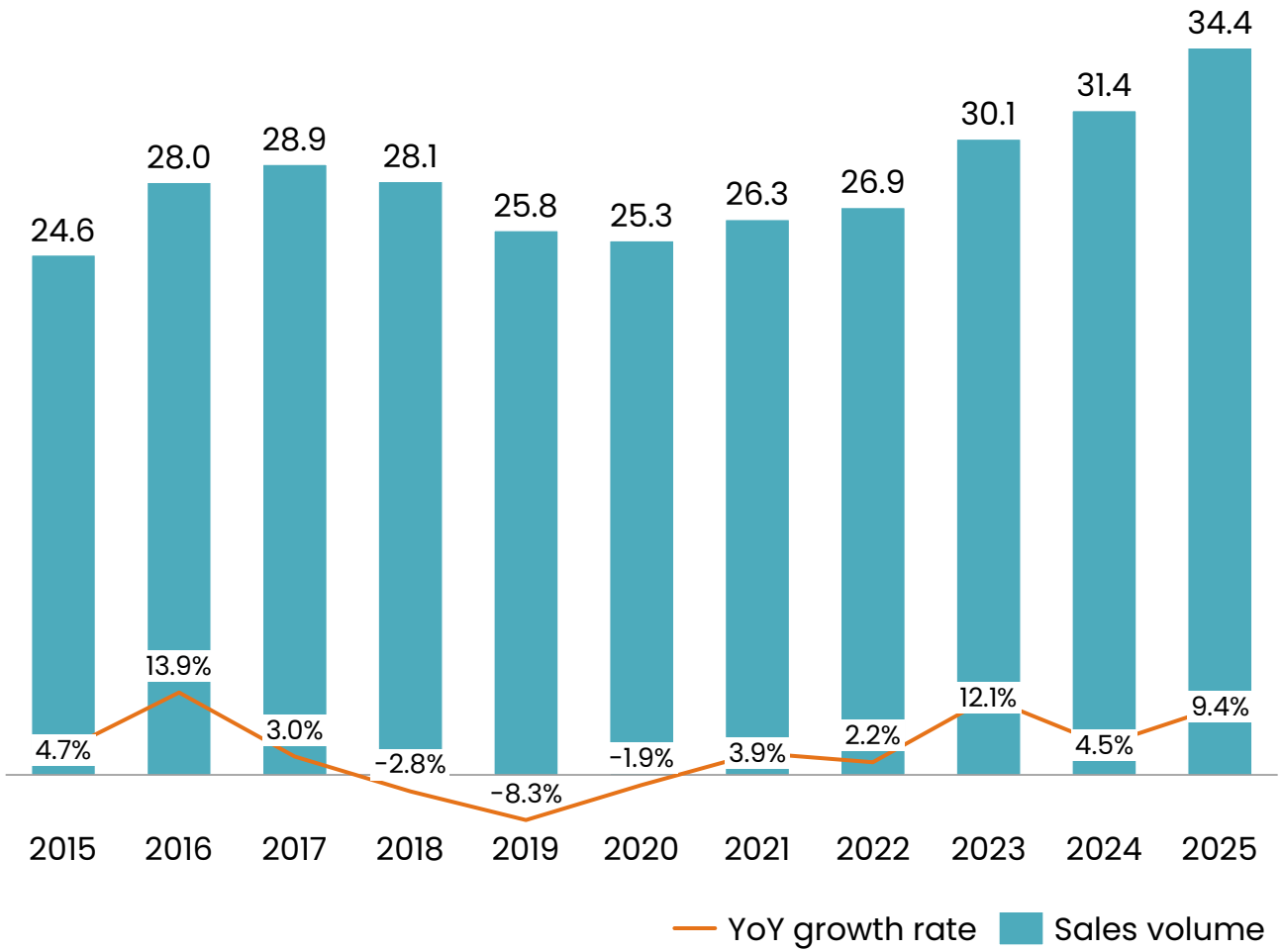
AGENDA

AUTOMOTIVE MARKET PERFORMANCE

- **CHINA’S OVERALL AUTOMOTIVE MARKET**
- CHINA'S ENERGY STRUCTURE AND NEW ENERGY TRENDS IN TRANSPORTATION
- PASSENGER VEHICLE MARKET
- COMMERCIAL VEHICLE MARKET
- CHINA'S AUTO EXPORT MARKET

2015-2025 China's annual vehicle sales volume and growth rates (incl. domestic and exports)

UNIT: MILLIONS OF VEHICLES

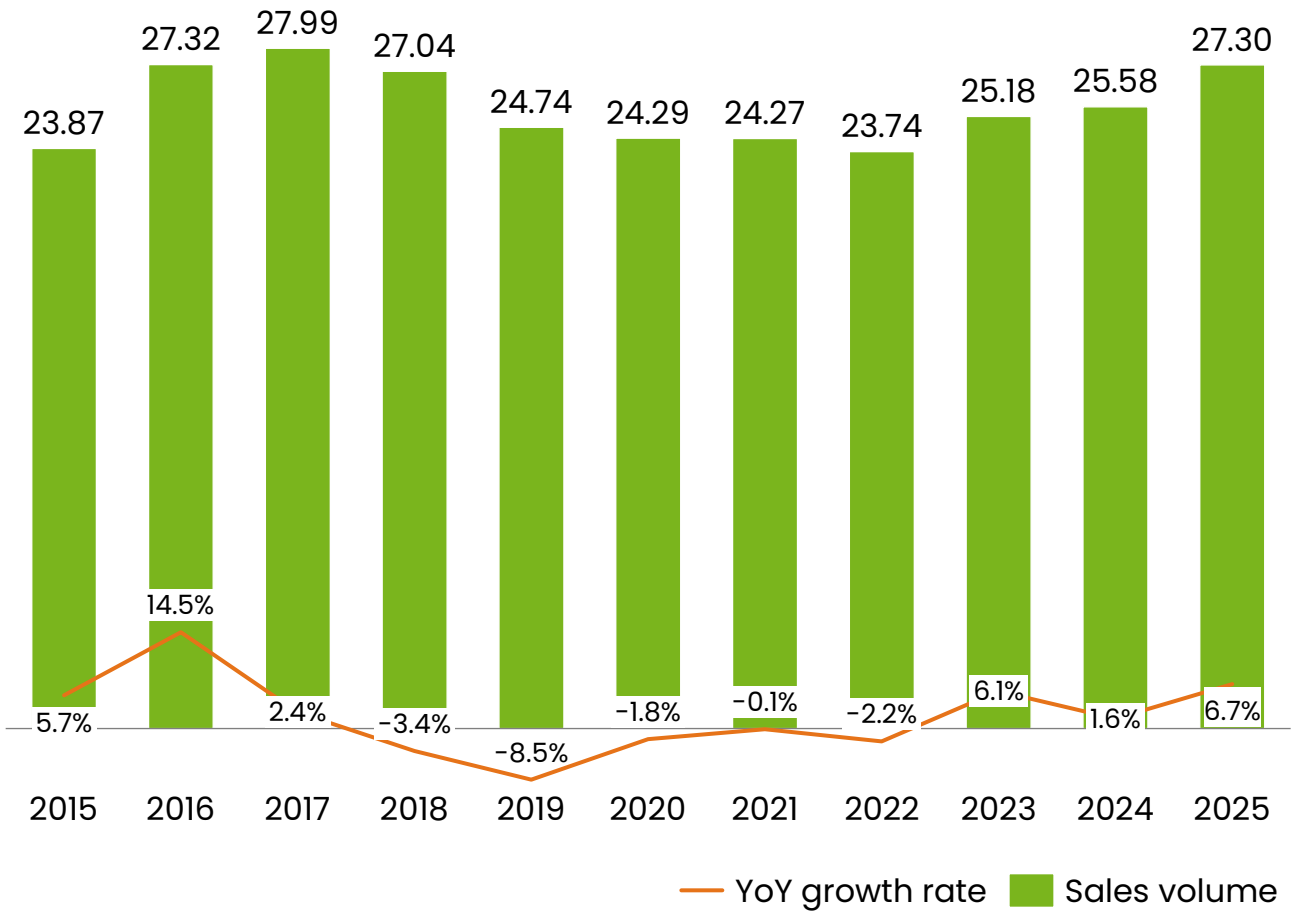


Source: CAAM, FEV
Note: The sales counted by the CAAM are the wholesale volume of the enterprise

- In 2025, China's auto market exceeded 34M units, reaching **34.4 million units**, a YoY increase of **9.4%**
- In recent years, China's auto market has maintained overall growth, primarily driven by NEVs. As NEV penetration continues to rise, NEVs have become the core engine of industry-scale expansion.
- With strong national policy support, consumer acceptance of NEVs has steadily increased. Combined with rapid NEV technology evolutions, China's NEV sales volumes have achieved high-speed growth. Looking ahead, as breakthroughs in core technologies continue and China further consolidates its competitive advantages across the global NEV value chain, the domestic auto market is expected to maintain stable growth under NEV momentum.

2015-2025 China's annual domestic vehicle sales volume & growth rates

UNIT: MILLIONS OF VEHICLES

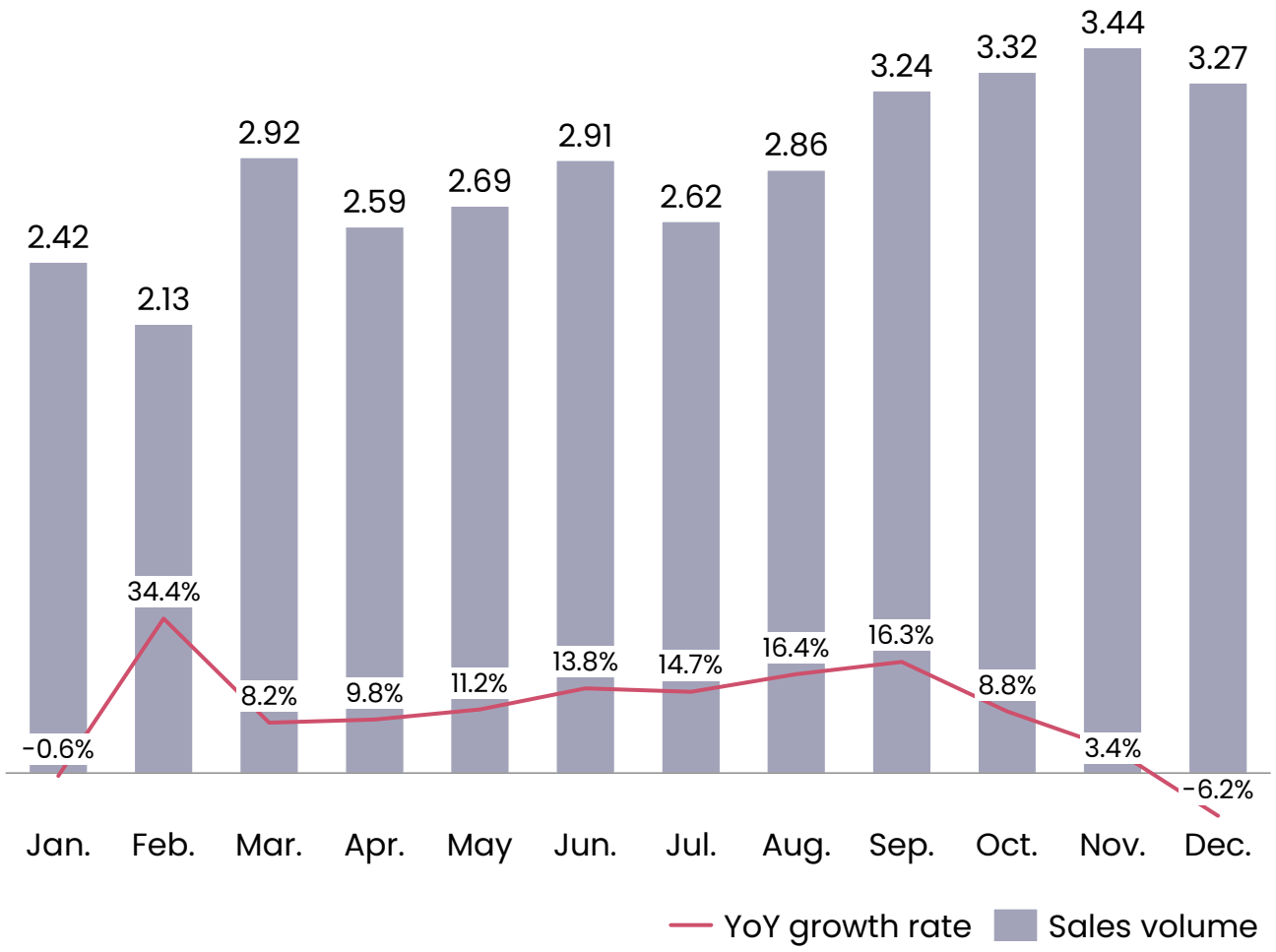


Source: CAAM, FEV
Note: The sales counted by the CAAM are the wholesale volume of the enterprise

- In 2025, China's domestic automotive market sales volume reached **27.3 million** units, a YoY increase of 6.7%
- In 2025, the passenger-vehicle market achieved steady growth, effectively driving overall automotive market expansion as the core component of automotive consumption; domestic NEV sales volume exceeded a 50% share, making NEVs the dominant force in China's auto market
- In 2025, strengthened "Two Renewals" (equipment renewal + consumer-goods trade-in) policies, together with intensive new-model launches and continuously released end-market demand, enabled the full-year sales volume to outperform expectations

2025 China’s monthly vehicle sales volume and growth rates (incl. domestic and exports)

UNIT: MILLIONS OF VEHICLES

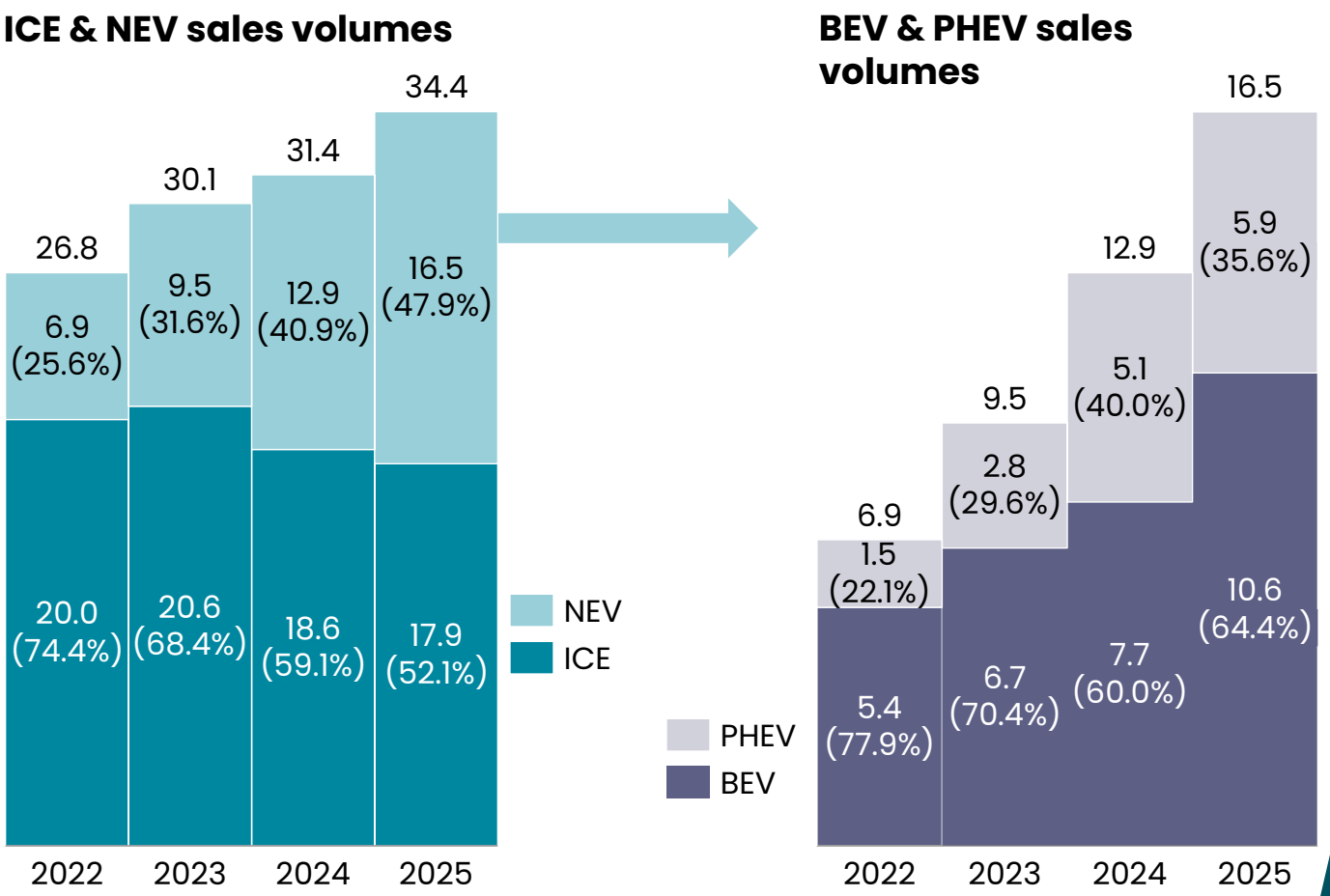


Source: CAAM, FEV
Note: The sales counted by the CAAM are the wholesale volume of the enterprise

- In 2025, China’s automotive market sales volume reached **34.4 million** units. Monthly trends generally followed the long-established seasonal pattern of the Chinese automotive market; however, as regional trade-in subsidies were gradually exhausted and frequent policy adjustments caused consumers to wait-and-see, combined with the offsetting effects of promotional incentives, auto sales volume in Dec. did not continue the typical year-end surge and showed a clear slowdown. This suggests that demand overdraft driven by policy stimulus began to emerge in Dec.
- In 2025, the automotive market exhibited a structural trend of “post-holiday recovery in H1, policy-driven rise then easing in H2:” strong growth in Q3 under multiple policy tailwinds, followed by weaker performance in Q4 as subsidies were phased out and policy adjustments led to consumer hesitation, causing Dec. sales volumes to fall short of the usual year-end peak

2022-2025 China's vehicle sales volume by energy type (incl. domestic and exports)

UNIT: MILLIONS OF VEHICLES



1) PHEV includes REEV; 2) FCEV sales were 3,397 units in 2022; 5,843 units in 2023; and 5,106 units in 2024, 8000 units in 2025, with the FCEV sales share ignored in the chart
Source: FEV, CAAM (The sales counted by the CAAM are the wholesale volume of the enterprise)

- NEV sales volume exceeded 16M units, reaching **16.5 million** units, with an NEV penetration rate of **47.9%**
- In terms of NEV volume growth, BEVs contributed the majority, increasing by 2.9M units; PHEVs increased by 720k units, resulting in a renewed rise in the BEV share. The main reasons are:
  - Under the carbon-peaking and carbon-neutrality targets, BEVs generate higher carbon-credit revenue and enjoy advantages in purchase-tax incentives and urban-access policies
  - Continuous improvements in battery technology, faster fast-charging speeds, and better infrastructure have increased BEV user convenience and acceptance
- FCEVs are largely policy-driven and have not yet formed a large-scale market; their sales remain primarily stimulated by government support

AGENDA

AUTOMOTIVE MARKET PERFORMANCE

- CHINA’S OVERALL AUTOMOTIVE MARKET
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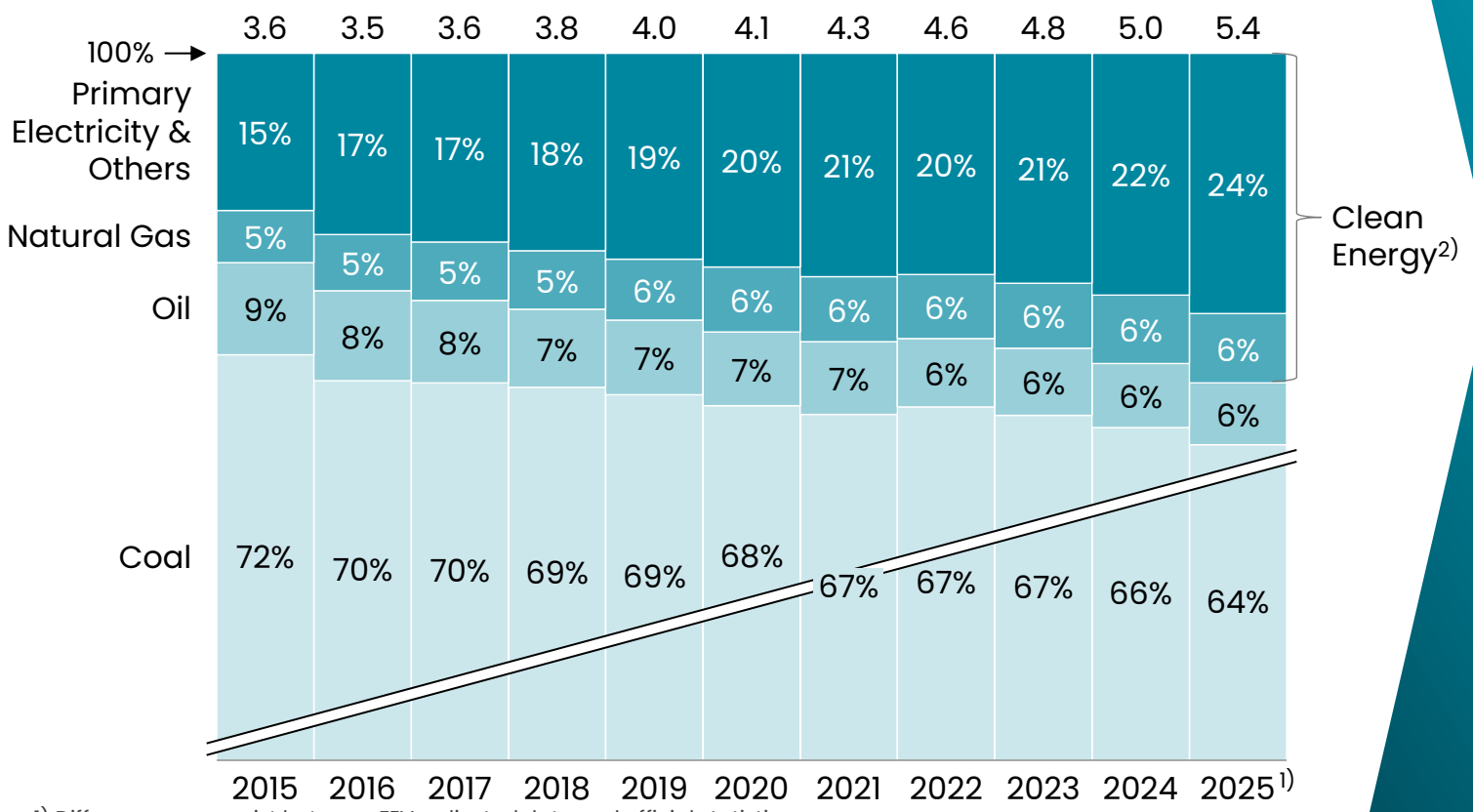
China’s energy production mix (2015-2025)[1)]

UNIT: 1 BILLION TONNES OF STANDARD COAL

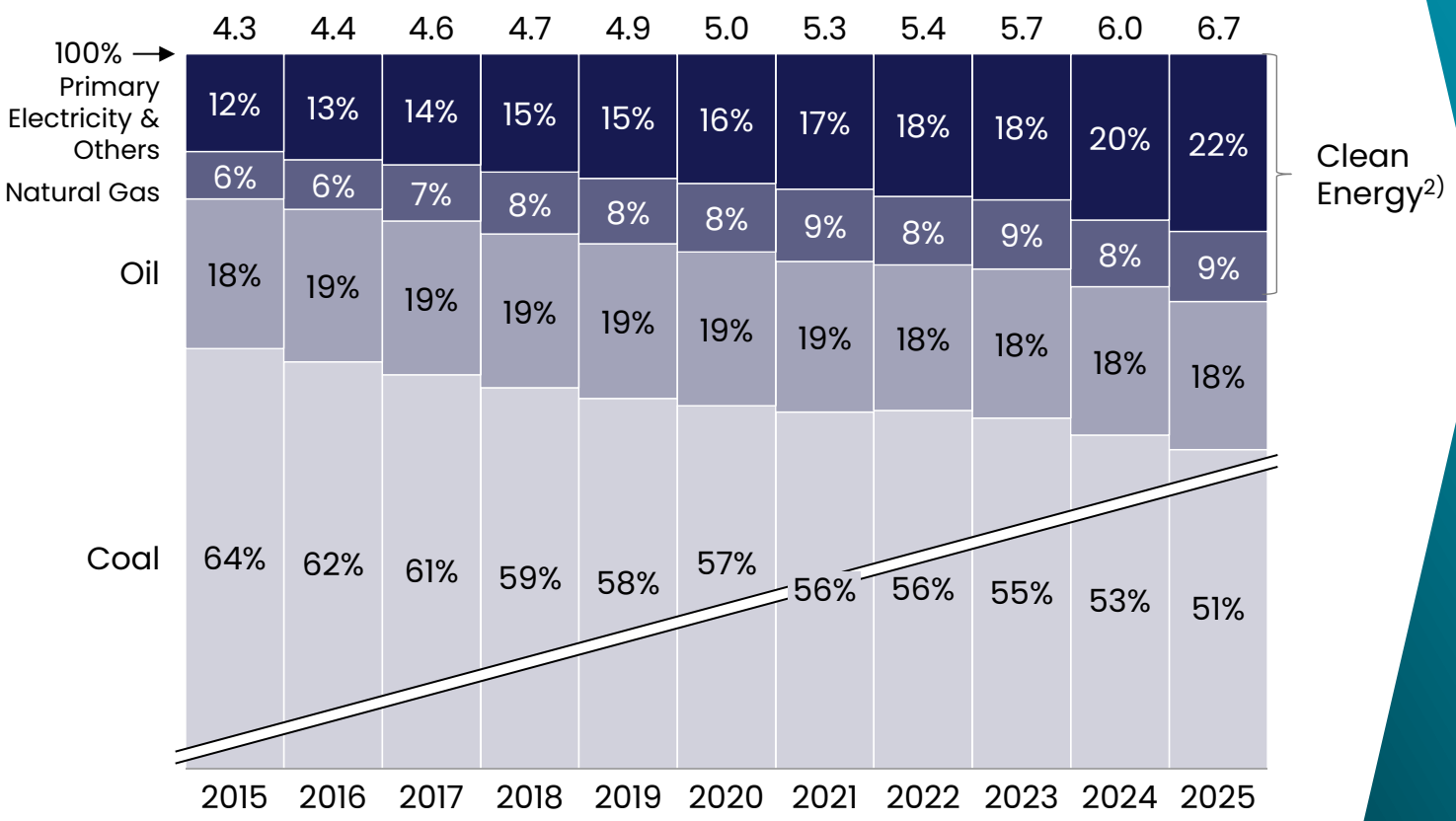


1) Differences may exist between FEV-adjusted data and official statistics;
2) Clean energy includes natural gas and primary electricity, as well as other non-fossil energy sources
3) NDRC: National Development and Reform Commission
Source: National Bureau of Statistics (NBS), FEV

- Coal remains dominant in China’s energy production mix, but its share has declined steadily, reaching **64%** in 2025. On Dec. 17, 2025, the NDRC[3)] issued a notice on benchmark and baseline levels for clean and efficient coal use, promoting phased upgrading aligned with domestic and global best practices, phasing out non-compliant projects, and accelerating the shift toward a cleaner, low-carbon, safe, and efficient coal sector.
- **Oil and natural gas** still show a high import dependence. Oil’s share continues a gradual decline, while natural gas rises only slightly and remains manageable overall. Given geopolitical and price volatility risks, transport electrification, low-carbon policies, and green energy development, their combined share is unlikely to grow significantly.
- **Clean energy** production rose to **30%** in 2025, with an average annual growth of ~1%

China’s energy consumption mix (2015–2025)[1)]

UNIT: 1 BILLION TONNES OF STANDARD COAL

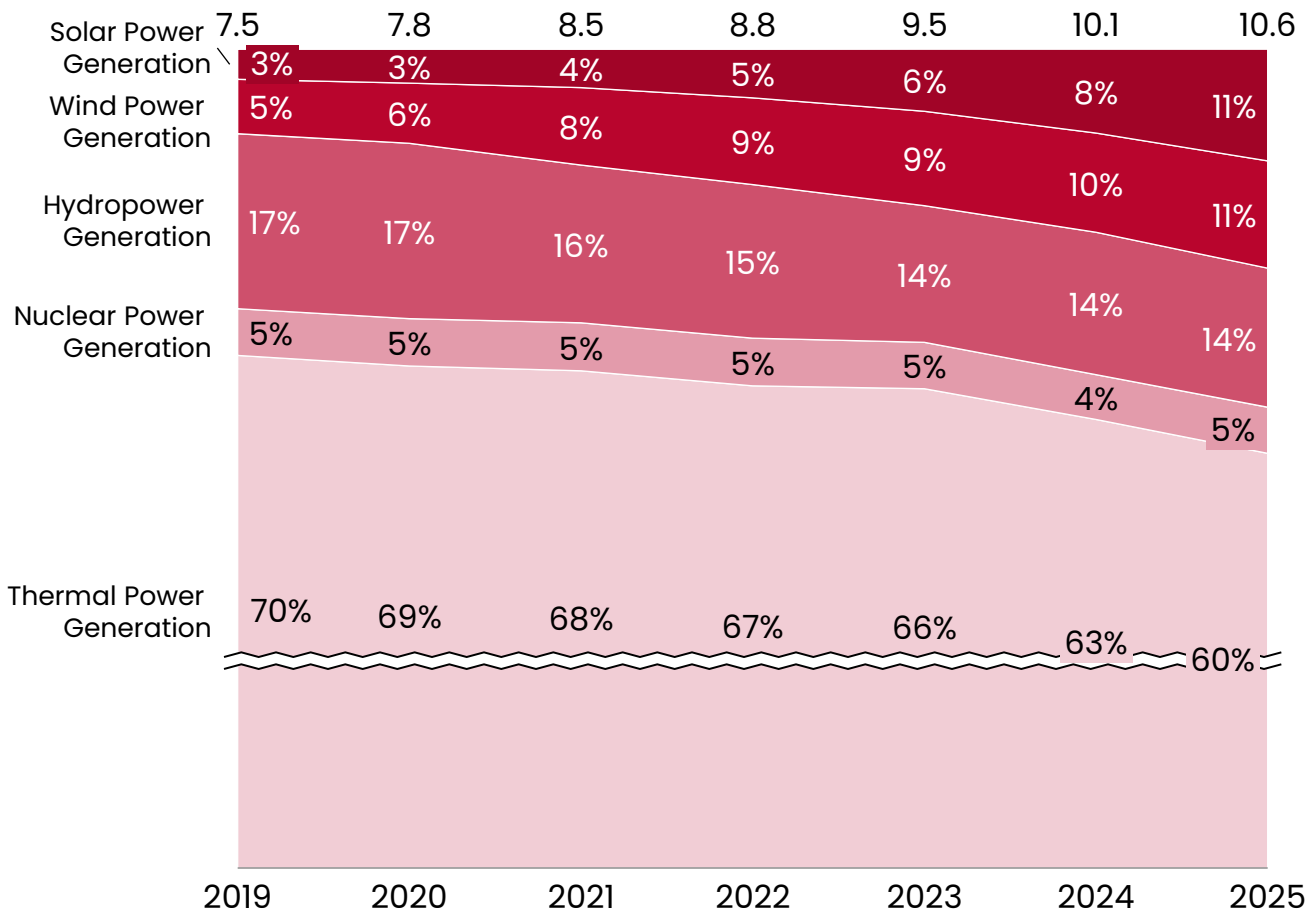


- In 2025, China’s energy consumption mix continued to shift toward cleaner energy, with the **clean energy share rising steadily** and the **coal share further declining**. Within clean energy, primary electricity and others exceeded **21%**
- **China’s energy system is entering an accelerated decarbonization phase**. Building on the sharp increase in the previous year, non-fossil energy consumption rose further in 2025, outpacing the targets set in the 14th Five-Year Plan, and is expected to continue increasing steadily, supporting a higher non-fossil share toward around 2030.

1) Differences may exist between FEV-adjusted data and official statistics;
2) Clean energy includes natural gas and primary electricity, as well as other non-fossil energy sources
Source: National Bureau of Statistics (NBS), FEV

China’s power generation mix (2019–2025)

UNIT: 100 BILLION KWH

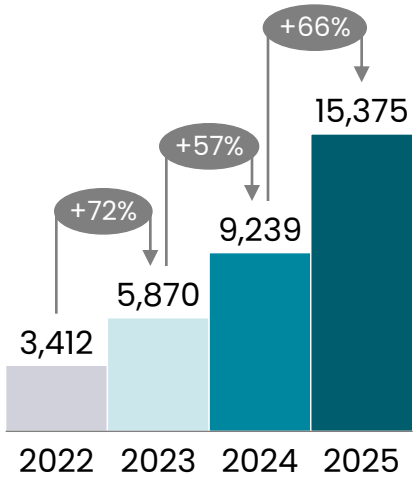


Source: National Bureau of Statistics (NBS), FEV

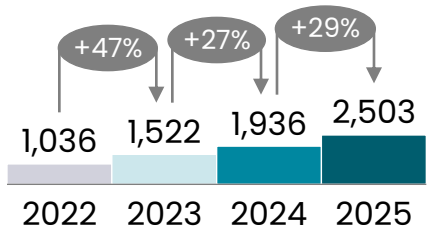
- **Thermal power** fell from 70% in 2019 to **60%** in 2025. Its share continues to decline and is shifting toward a **flexible balancing role,** but it remains the backbone of power supply security.
- **Wind and solar power** have seen a sustained rise in installed-capacity share—from under 10% to over 20% in five years. With **fast deployment** and **distributed land use**, they are set to become the mainstay of new energy as China advances its low-carbon transition
- **Hydropower** is highly **climate-sensitive**, capital-intensive, and requires specific water conditions with long construction cycles; as total power generation grows, its share has gradually declined
- **By 2025**, China shifted from **regional disparities** to **coordinated advantages**: green power capacity is concentrated in the west with limited local absorption, while demand is concentrated in the east with tight land resources—necessitating coordinated **regional matching of resources, technology, and load**

EV charging infrastructure stock (2022–2025)

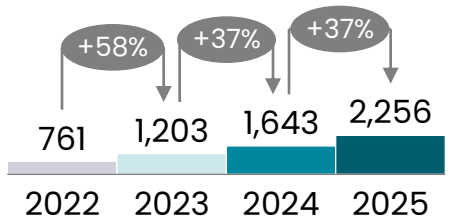
UNIT: 1,000 UNITS



Private residential chargers



Public AC chargers



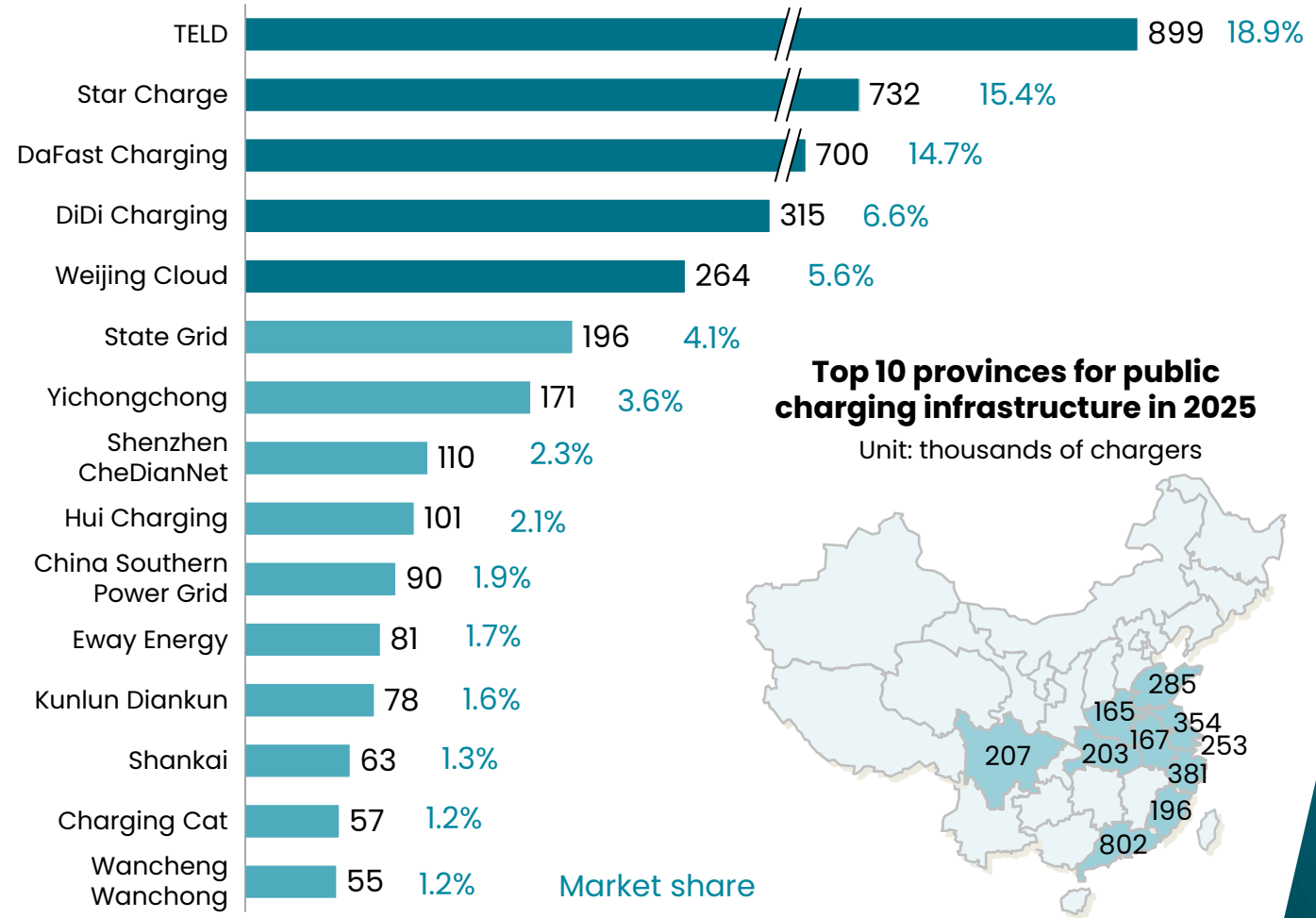
Public DC chargers

- **As of December 2025**, China had **20 million charging points**, up **50% YoY**. Private chargers totaled **15.4 million**, while public chargers reached **4.7 million**, including **2.5 million AC** and **2.3 million DC units**
- **By the end of 2025**, NEV stock reached **44 million vehicles**. The charger-to-vehicle ratio was **1:2.2**, slightly higher than last year, while the incremental ratio was 1:1.7, indicating vehicle growth is still outpacing charger expansion.
- **To ease charging anxiety**, efforts should proceed in parallel by **scaling up charger deployment** and **increasing charging power** to reduce charging time

Source: EVCIPA, FEV

Number of public chargers and market shares of the top 15 operators in 2025

UNIT: THOUSANDS OF CHARGERS



Top 10 provinces for public charging infrastructure in 2025

Unit: thousands of chargers

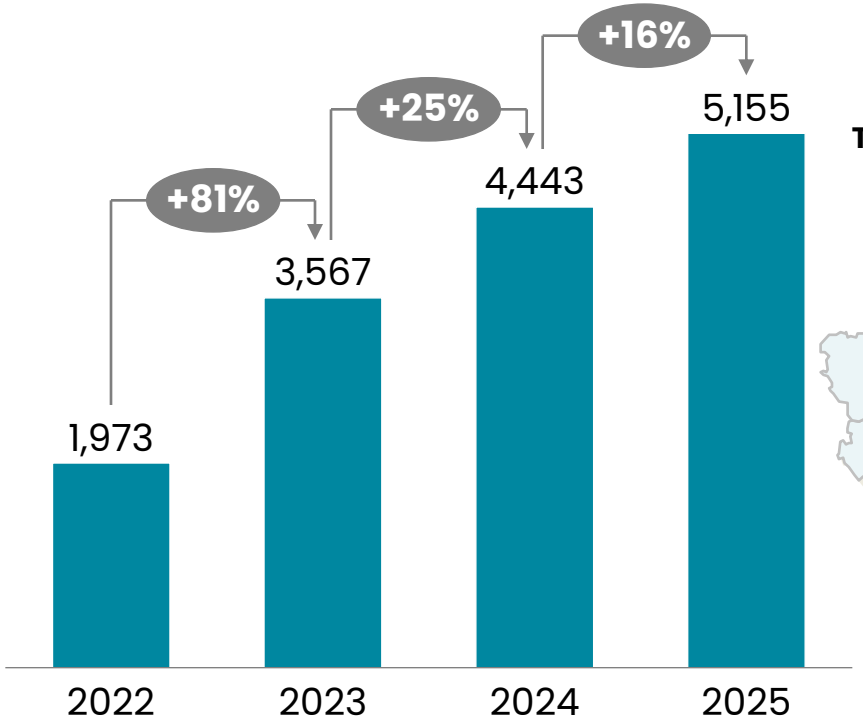
1) CR3 refers to the combined market share of the top three companies in the market;
2) CR5 refers to the combined market share of the top five companies in the market

Source: EVCIPA, FEV

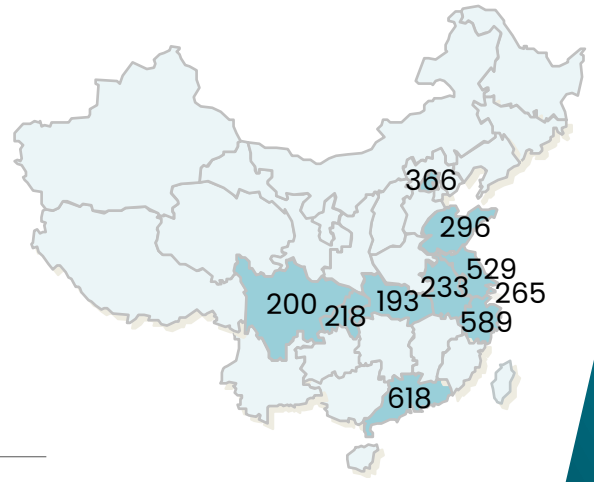
- **China's public charging infrastructure operators** show a relatively high level of market concentration, with CR3[1] at **49%** and CR5[2] at **61%**
- The **top five operators by number of public chargers** are TELD, Star Charge, Yunkuai Charging, DiDi Charging, and Weijing Cloud, all of which are third-party service providers
- Public charging infrastructure deployment is geographically concentrated: the top 10 regions account for **66%** of total public chargers
- The top regions are Guangdong, Zhejiang, Jiangsu, Shandong, Shanghai, Henan, Anhui, Sichuan, Hubei, and Fujian
- In China's more economically developed regions, convenient nationwide use of electric vehicles is generally well ensured

Number of battery swap stations (2022–2025)

UNIT: STATIONS



Top 10 regions by number of battery swap stations (2025)



- By the end of 2025, China had **5,155** battery swap stations, up 16% year-on-year
- While battery swap stations are expanding rapidly, they remain small-scale compared with charging infrastructure. To ease range anxiety, a parallel approach of battery swapping and fast charging is recommended. Given key challenges—low profitability, lack of unified standards, and heavy asset requirements, 2026–2030 will be a critical period for scaling and standardization.
- Key participants in China's battery swap market fall into four categories:
  - Automakers: e.g., NIO (3,691 stations, 72% share), Geely
  - Third-party operators: e.g., Aulton
  - Energy companies: e.g., Sinopec Group
  - Battery manufacturers: e.g., CATL

1) Excluding heavy-duty truck battery swap stations
Source: EVCIPA, FEV

AGENDA

AUTOMOTIVE MARKET PERFORMANCE

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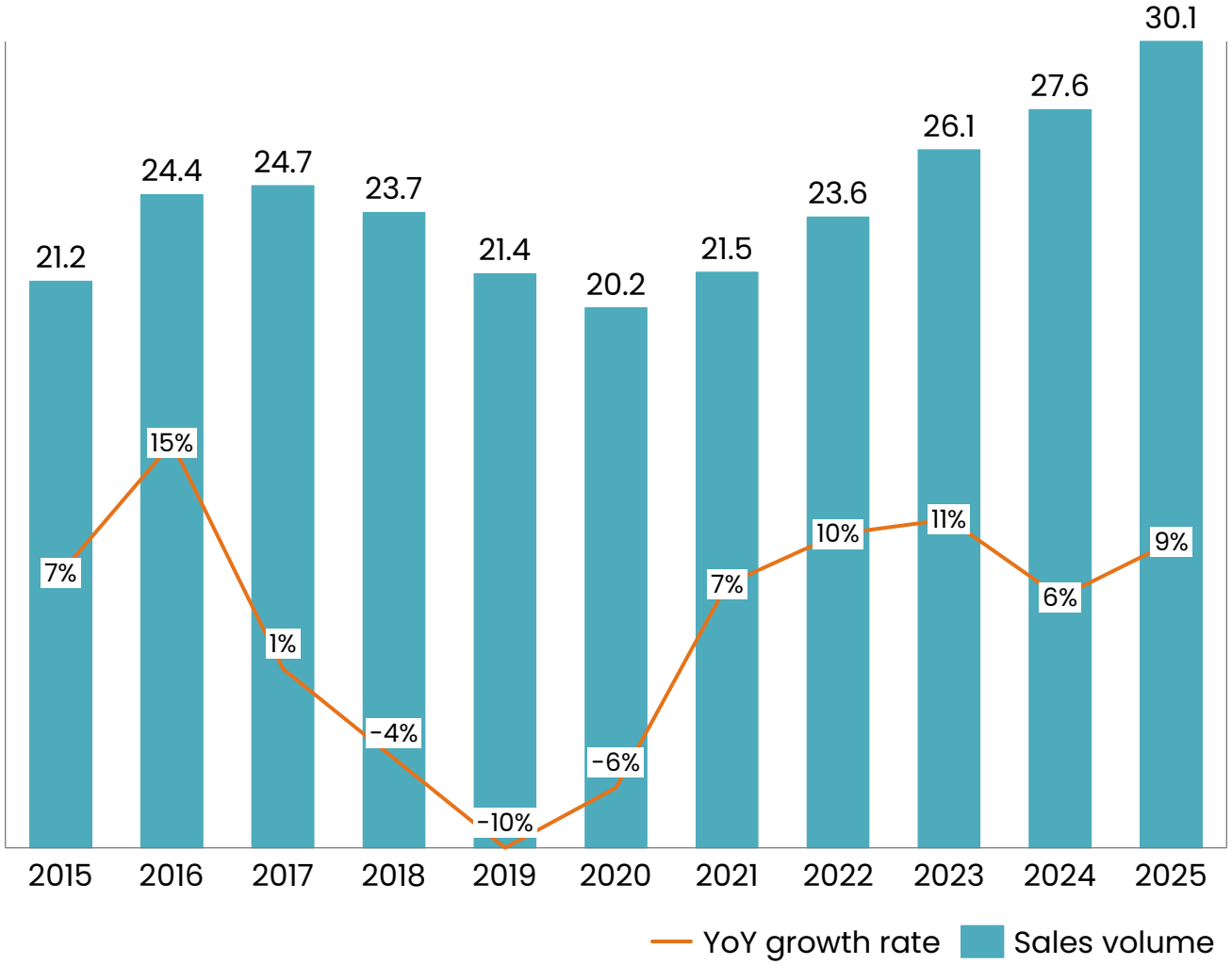
2015-2025 China's PV annual sales volume and growth rates (incl. domestic and exports)

UNIT: MILLIONS OF VEHICLES

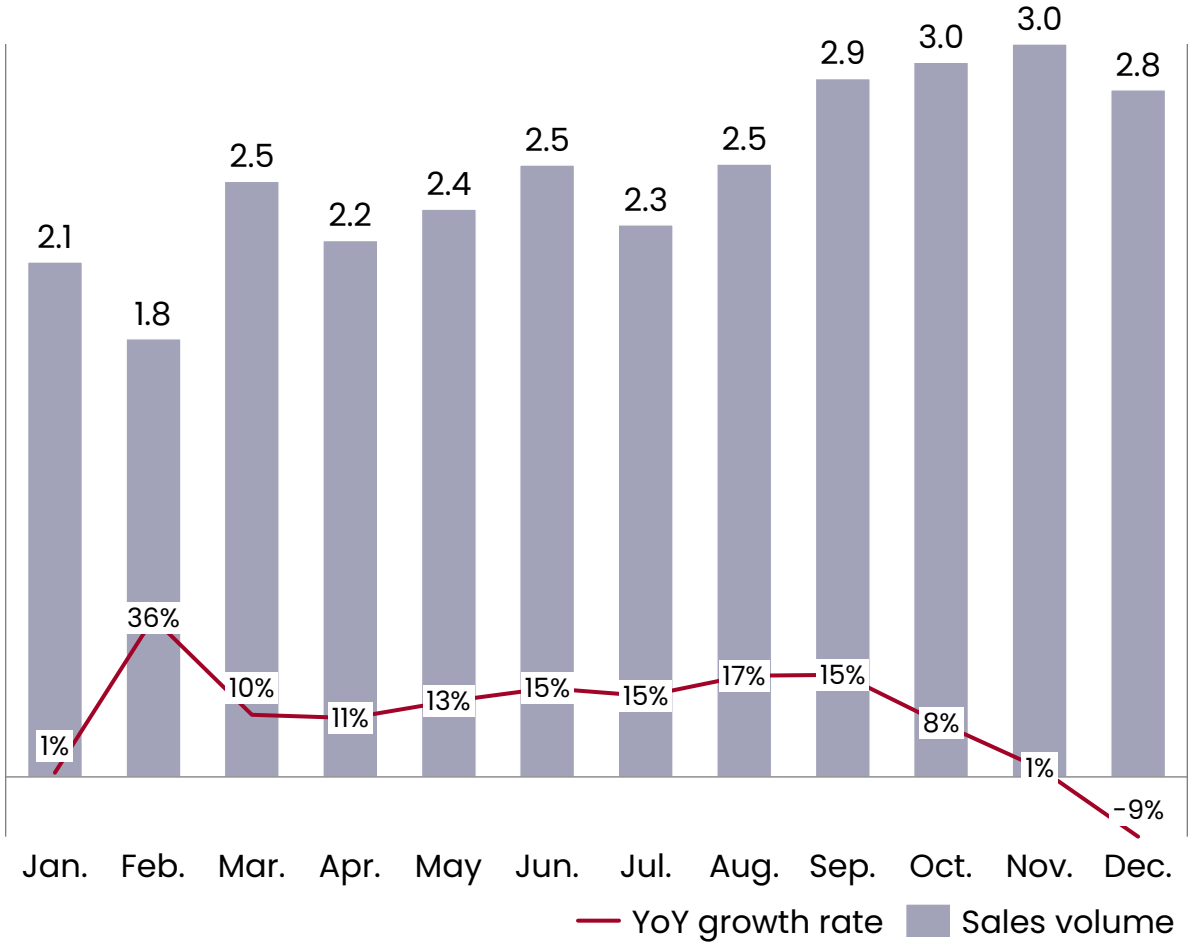


Source: CAAM, FEV
Note: The sales counted by the CAAM are the wholesale volume of the enterprise

- The passenger vehicle (PV) market trend is consistent with the overall automotive market, with the PV sales volume surpassing 30 million units in 2025 and reaching **30.1 million** units, representing a YOY increase of **9%**
- Among the incremental volumes, PV exports increased by approximately 1.1 million units, while domestic sales volume increased by around 1.5 million units
- The growth in PV sales volume in 2025 resulted from the combined effects of policy stimulus, improvements in product performance, and consumption upgrading
  - The national "Two New" policies, the vehicle trade-in program, and purchase-tax incentives provided direct demand pull
  - Technological progress in NEV models is shifting consumer preference from low-cost and sufficient to models offering higher quality, more advanced technology, and better user experience, thereby driving replacement-vehicle demand

2025 China’s monthly PV sales volume and growth rates (incl. domestic and exports)

UNIT: MILLIONS OF VEHICLES

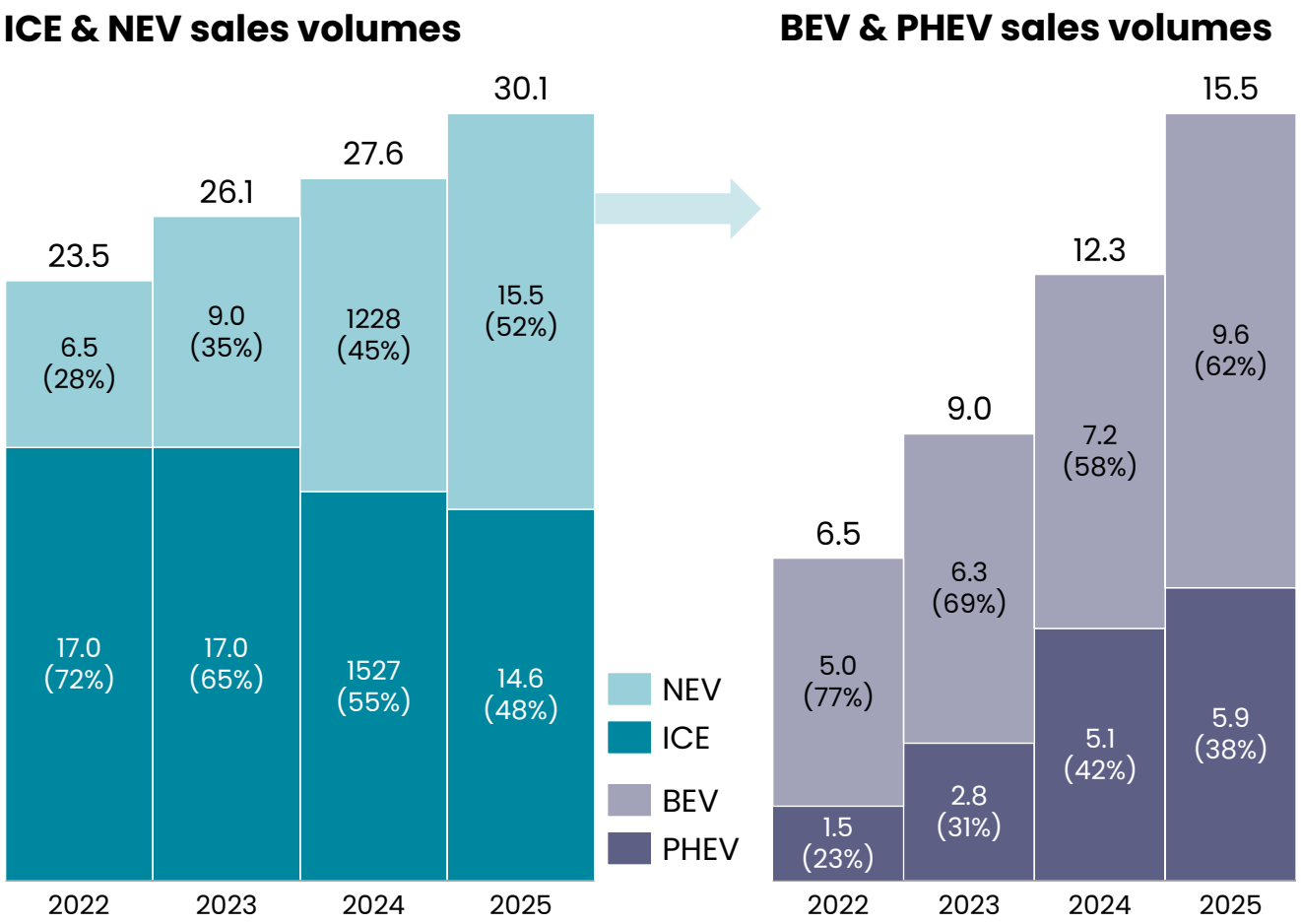


Source: CAAM, FEV
Note: The sales counted by the CAAM are the wholesale volume of the enterprise

- Excluding Spring Festival effects, PV monthly sales in 2025 remained stable in H1, rose steadily in H2, and declined toward year-end
- Consumers tend to purchase vehicles before the Spring Festival, pulling demand forward into Jan., while purchase intention declines in Feb. (Spring Festival period). After the Spring Festival, PV sales volumes in H1 gradually recover, and the market shows steady growth
- In Q3, the trade-in program and scrappage-replacement subsidies continued to deliver visible effects, supporting stable sales volume growth; in Q4, the phased withdrawal of subsidies combined with adjustments to the vehicle trade-in policy triggered a wait-and-see attitude, preventing PV sales volume in Dec. from achieving the typical year-end peak

2022-2025 China's PV sales volume by energy type (incl. domestic and exports)

UNIT: MILLION

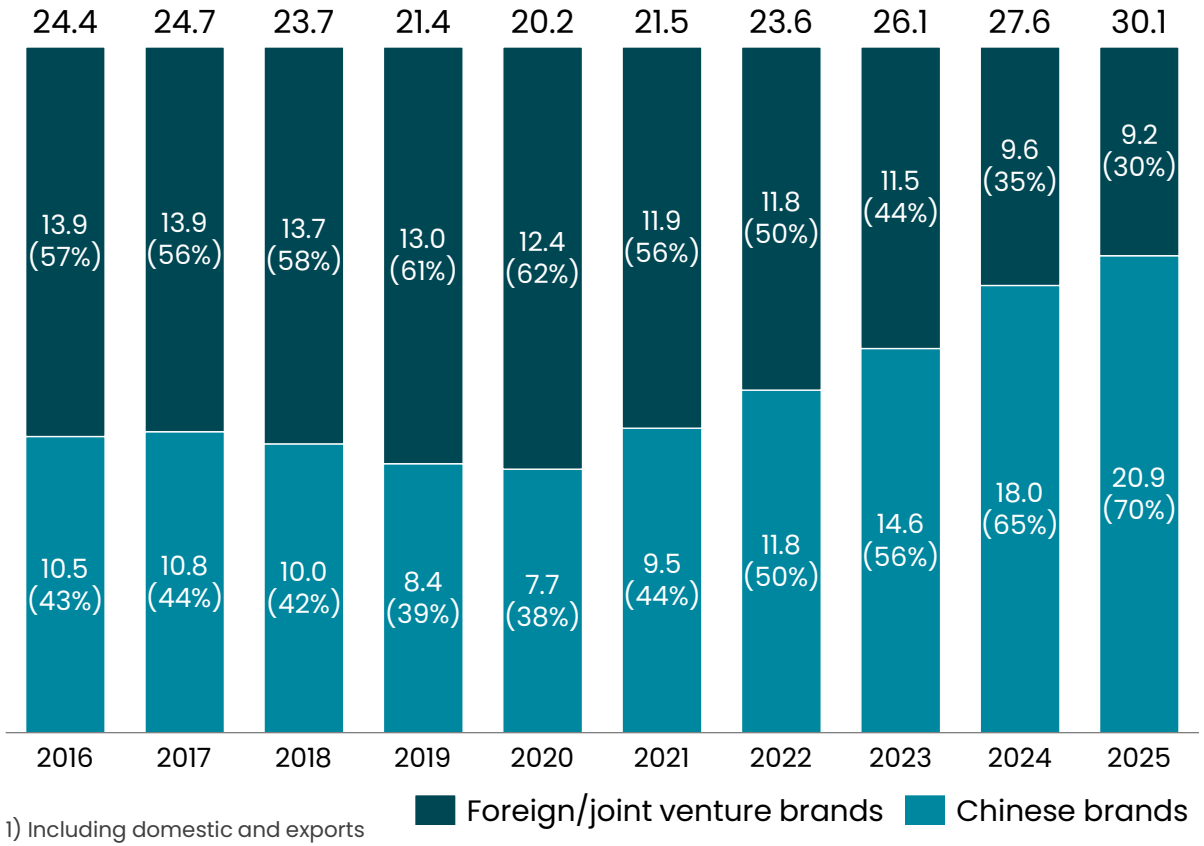


Source: CAAM, FEV
Note: The sales counted by the CAAM are the wholesale volume of the enterprise

- In 2025, NEVs achieved strong penetration in the passenger vehicle (PV) sector, surpassing traditional ICE PVs. NEV penetration reached **52%**, with the NEV PV sales volume totaling **15.5 million** units
- Battery electric vehicles (BEVs) grew at a faster pace, with the BEV-to-PHEV mix at approximately **6:4**
- Supported by advantages in cost, product availability, and charging-infrastructure improvement, BEVs maintained a larger base and stronger economies of scale, consistently leading in overall market structure
- Entering 2025, as the charging network continued to expand, fast-charging experience improved, and policy orientation increasingly favored BEVs, BEV incremental volume regained its dominant position

Sales volume & market share of Chinese domestic brand passenger cars from 2016 to 2025[1)]

UNIT: MILLIONS OF VEHICLES



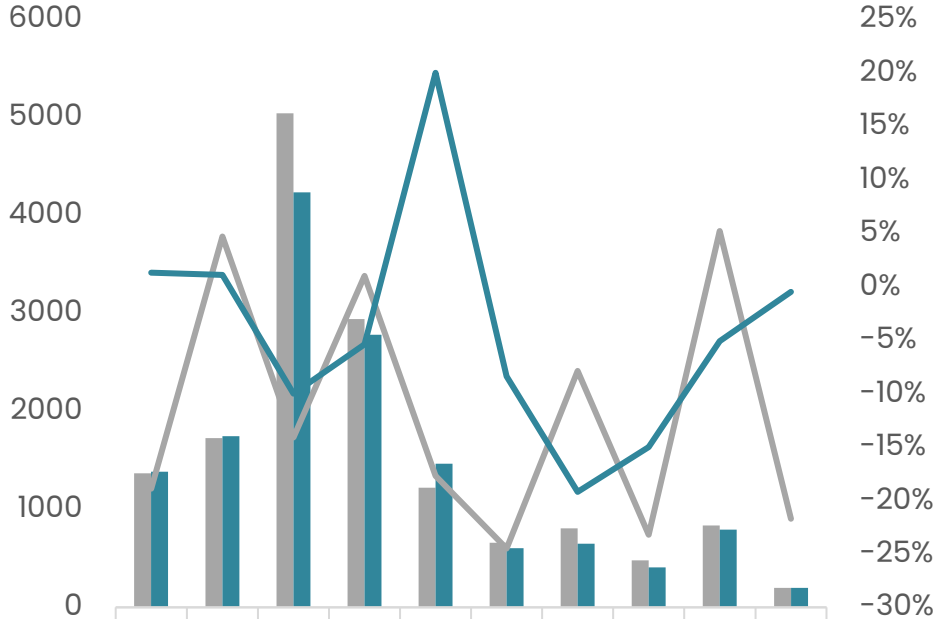
1) Including domestic and exports
Source: CAAM, FEV
Note: The sales counted by the CAAM are the wholesale volume of the enterprise

- The market share of Chinese domestic passenger vehicle brands has accelerated since 2020, reaching nearly 70% in 2025
- As the industry enters the era where electrification and intelligence become the core competitive advantages, Chinese domestic brands benefit from first-mover and breakthrough advantages in NEV technologies. Faster product iteration and more intensive technology upgrades rapidly erode the long-standing advantages of foreign brands that rely heavily on ICE technologies.
- China's highly concentrated and mature domestic supply chain, covering batteries, electric drive systems, power electronics, and vehicle manufacturing, provides strong scaling effects. This enables domestic brands to offer higher specifications and better user experiences at the same price level, further strengthening their competitiveness.

The main consumer price band for passenger vehicles is 100k–200k CNY; the 80k–100k CNY NEV PV segment shows the fastest YoY growth

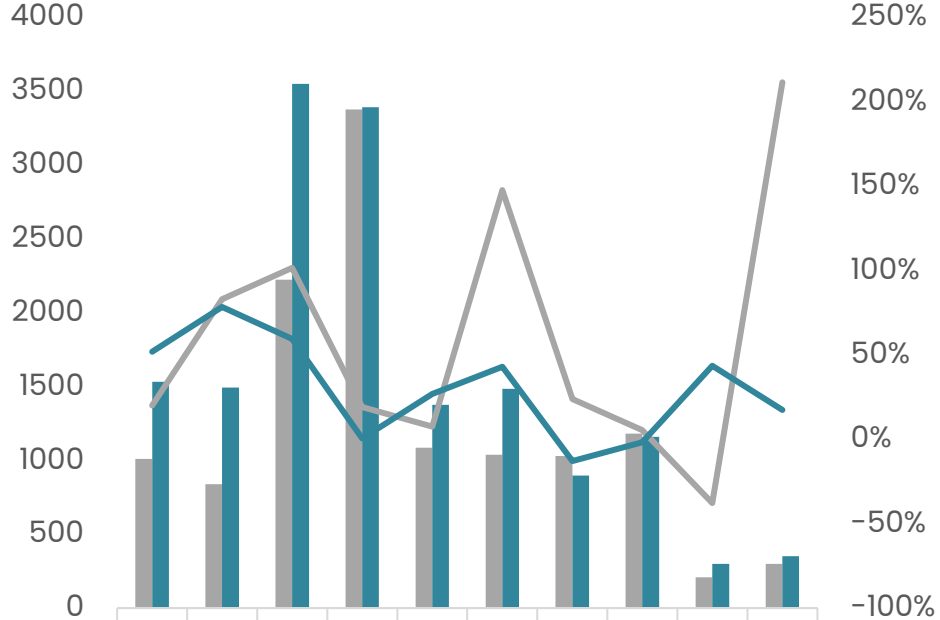
PASSENGER VEHICLE SALES BY PRICE SEGMENT (UNIT: THOUSAND)

SALES AND GROWTH RATES OF TRADITIONAL ENERGY PV[1] BY PRICE RANGE



Unit: k CNY	<80	80-100	100-150	150-200	200-250	250-300	300-350	350-400	400-500	>500
2024 sales	1366	1728	5040	2941	1222	659	805	479	834	198
2025 sales	1384	1747	4235	2782	1467	604	650	407	792	197
2024 YoY growth rate	-18.9%	4.7%	-14.1%	1.0%	-17.7%	-24.5%	-7.9%	-23.2%	5.2%	-21.7%
2025 YoY growth rate	1.3%	1.1%	-10.0%	-5.4%	20.0%	-8.4%	-19.2%	-15.0%	-5.1%	-0.5%

SALES AND GROWTH RATES OF NEW ENERGY PV[1] BY PRICE RANGE



Unit: k CNY	<80	80-100	100-150	150-200	200-250	250-300	300-350	350-400	400-500	>500
2024 sales	1010	838	2224	3375	1085	1038	1030	1181	209	299
2025 sales	1533	1494	3549	3392	1377	1484	897	1159	300	352
2024 YoY growth rate	20.0%	83.0%	101.6%	19.1%	7.5%	147.7%	23.9%	5.4%	-37.8%	211.5%
2025 YoY growth rate	51.8%	78.4%	59.5%	0.5%	26.9%	42.9%	-12.9%	-1.8%	43.6%	17.4%

1) Passenger vehicle
Source: FEV, CAAM(The sales counted by the CAAM are the wholesale volume of the enterprise)

In 2025, Leapmotor rose to the top, XPeng and Xiaomi surged, and Fangchengbao advanced rapidly

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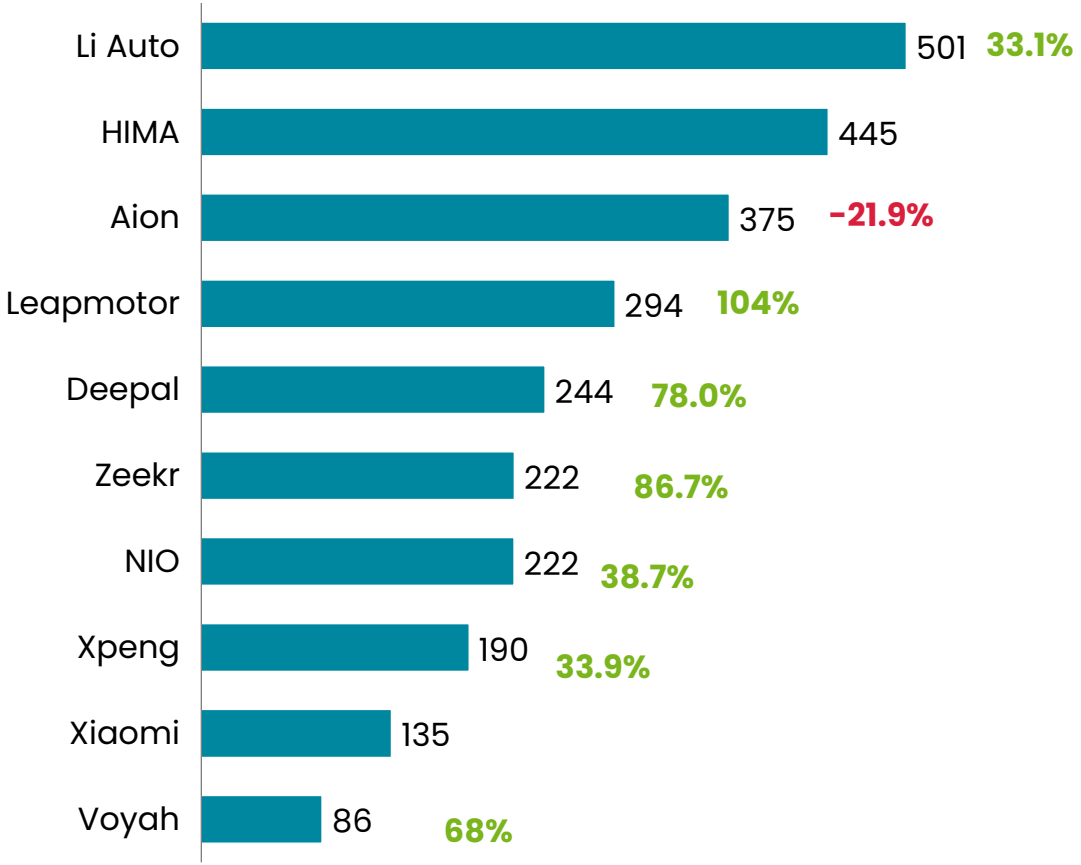
TOP TEN STARTUPS BY PASSENGER VEHICLE SALES VOLUME

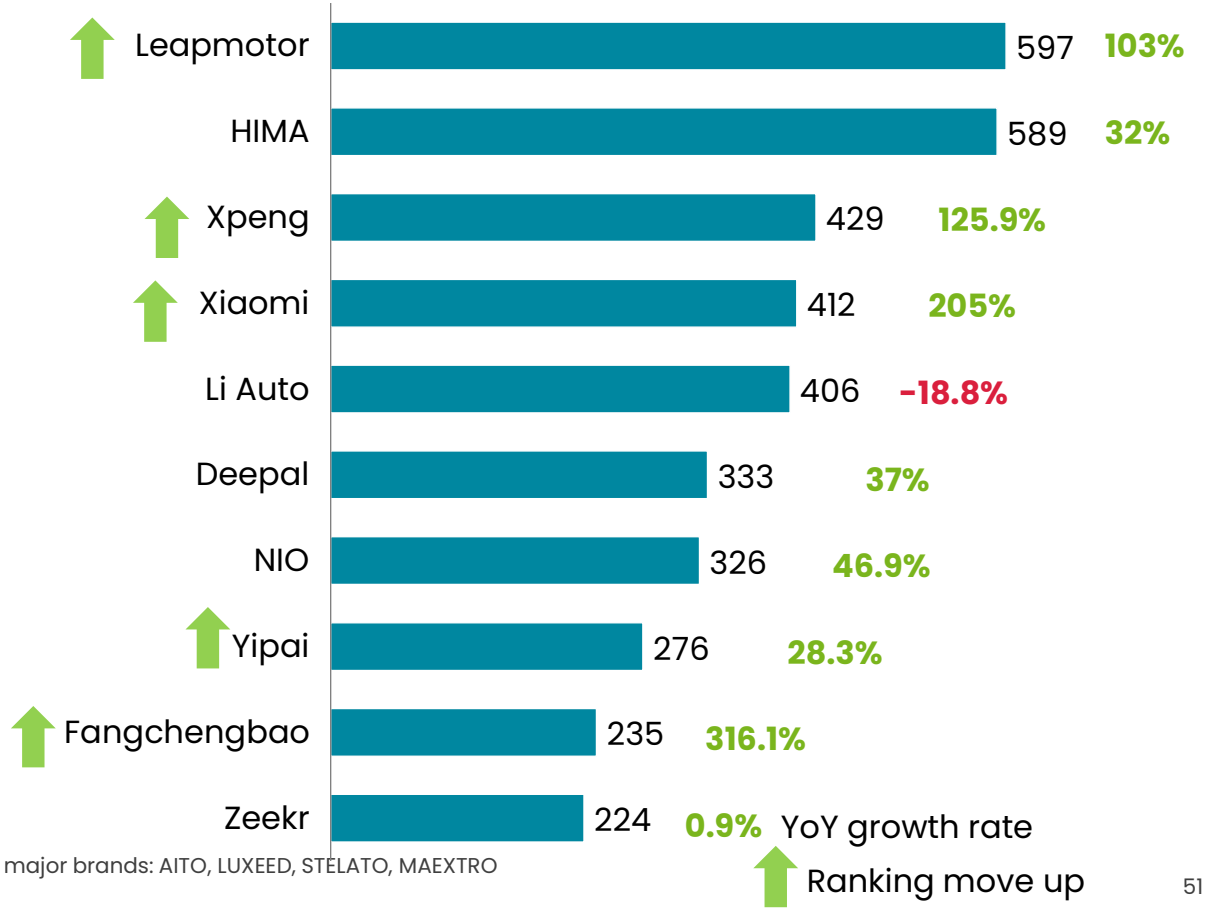
Top 10 startups' sales volume and growth rates in **2024**

Unit: k



Top 10 startups' sales volume and growth rates in **2025**

Unit: k

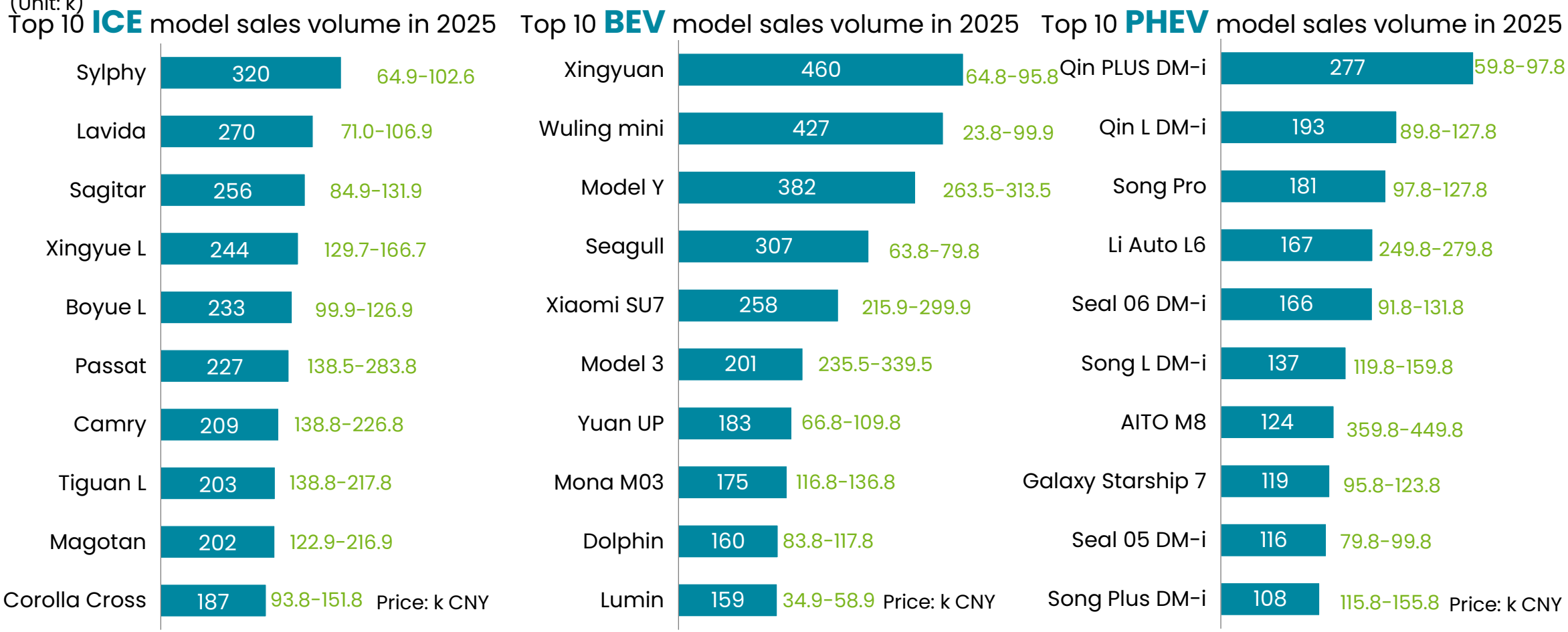


1) HIMA = Harmony Intelligent Mobility Alliance, Huawei has collaborated with multiple OEMs to launch four major brands: AITO, LUXEED, STELATO, MAEXTRO
2) Xiaomi's first car launched in March 2024
Source: FEV, CPCA (The sales counted by the CAAM are the wholesale volume of the enterprise)

Consumers prefer joint venture brands for fuel cars; BYD lead PHEVs, AITO and Li Auto ranked top ten with range-extender technology

PASSENGER VEHICLE SALES VOLUME RANKINGS BY POWERTRAIN TYPE

(Unit: k)



Source: CPCA, FEV
Note: The sales counted by CPCA are retail sales

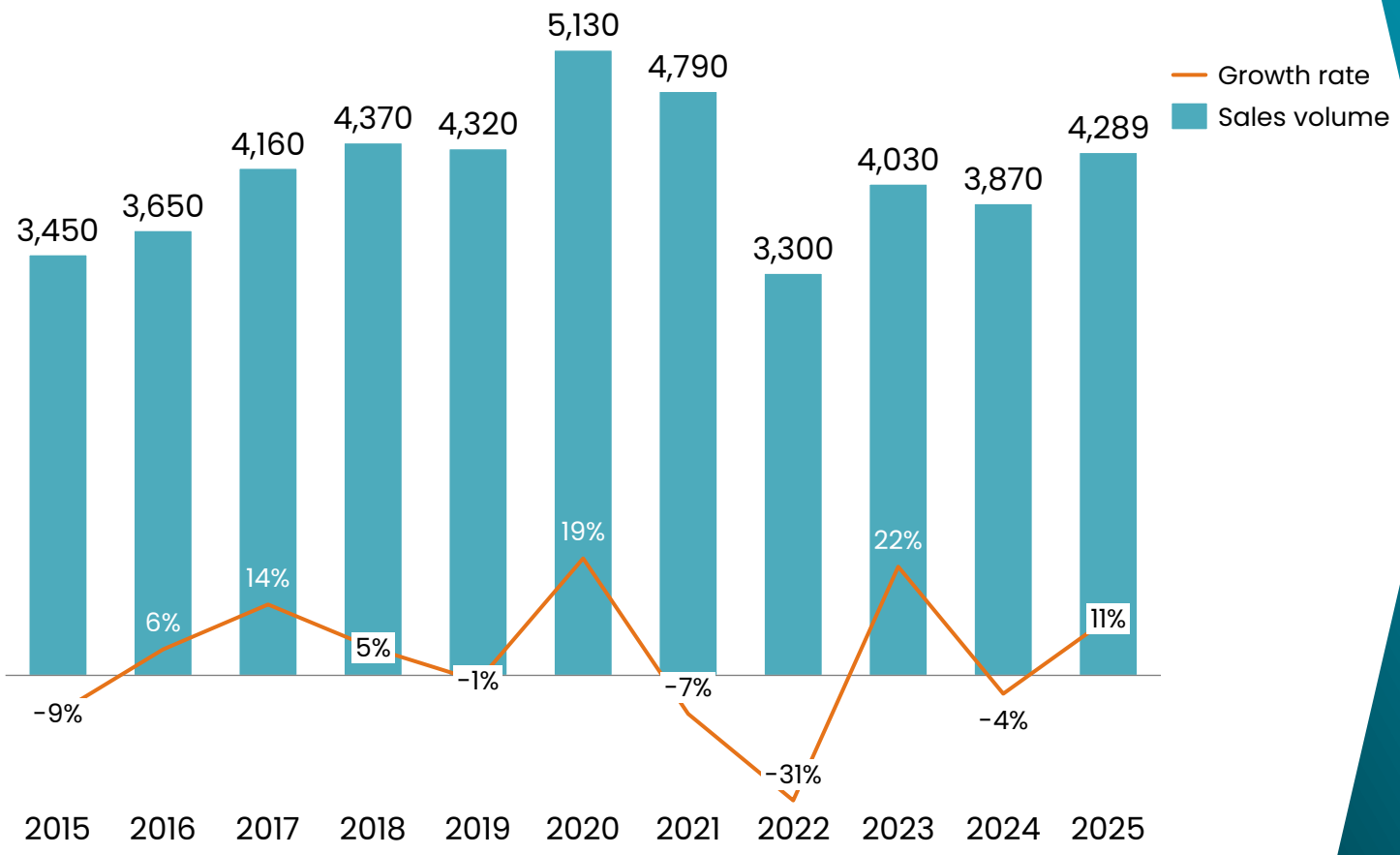
AGENDA

AUTOMOTIVE MARKET PERFORMANCE

- CHINA’S OVERALL AUTOMOTIVE MARKET
- CHINA'S ENERGY STRUCTURE AND NEW ENERGY TRENDS IN TRANSPORTATION
- PASSENGER VEHICLE MARKET
- **COMMERCIAL VEHICLE MARKET**
- CHINA'S AUTO EXPORT MARKET

Annual commercial vehicle sales volume & growth rate (2015–2025)[1)]

UNIT: THOUSANDS OF VEHICLES



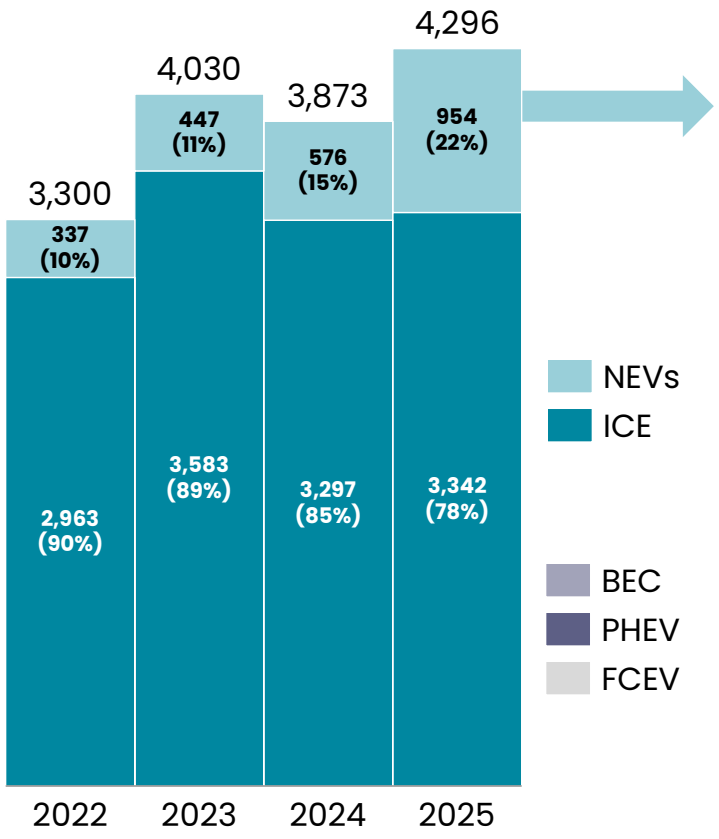
1) Including domestic & exports
Source: CAAM, FEV
Note: CAAM data are compiled based on automaker-level wholesale sales

- In 2025, the commercial vehicle sales volume reached **4.3 million** units, up **11%** year on year
  - **Domestic sales volume** totaled 3.2 million units (+9% YoY).
  - **Exports** rose more strongly to 1.1 million units, up 17% YoY, becoming a key growth driver
- Accelerated scrappage of China III/IV legacy vehicles, combined with policies on large-scale equipment upgrades and trade-ins, released pent-up replacement demand and boosted full-year sales
- Supported by macroeconomic recovery, industrial value-added +6%, manufacturing value-added +6%, and RMB 800 billion allocated to major national projects, the market rebounded further. Heavy-duty truck sales volumes reached 1.1 million units (+27% YoY), accounting for the largest incremental growth within commercial vehicles.

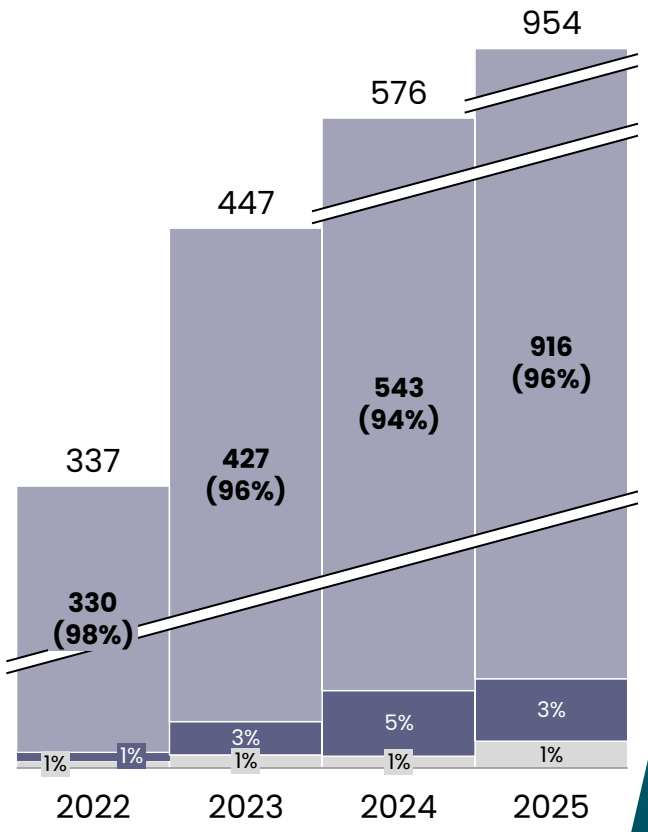
Commercial vehicle sales volume by energy type (2022–2025, incl. domestic and exports)

UNIT: THOUSANDS OF VEHICLES

Total sales of conventional fuel and new energy commercial vehicles



Sales of new energy commercial vehicles by type

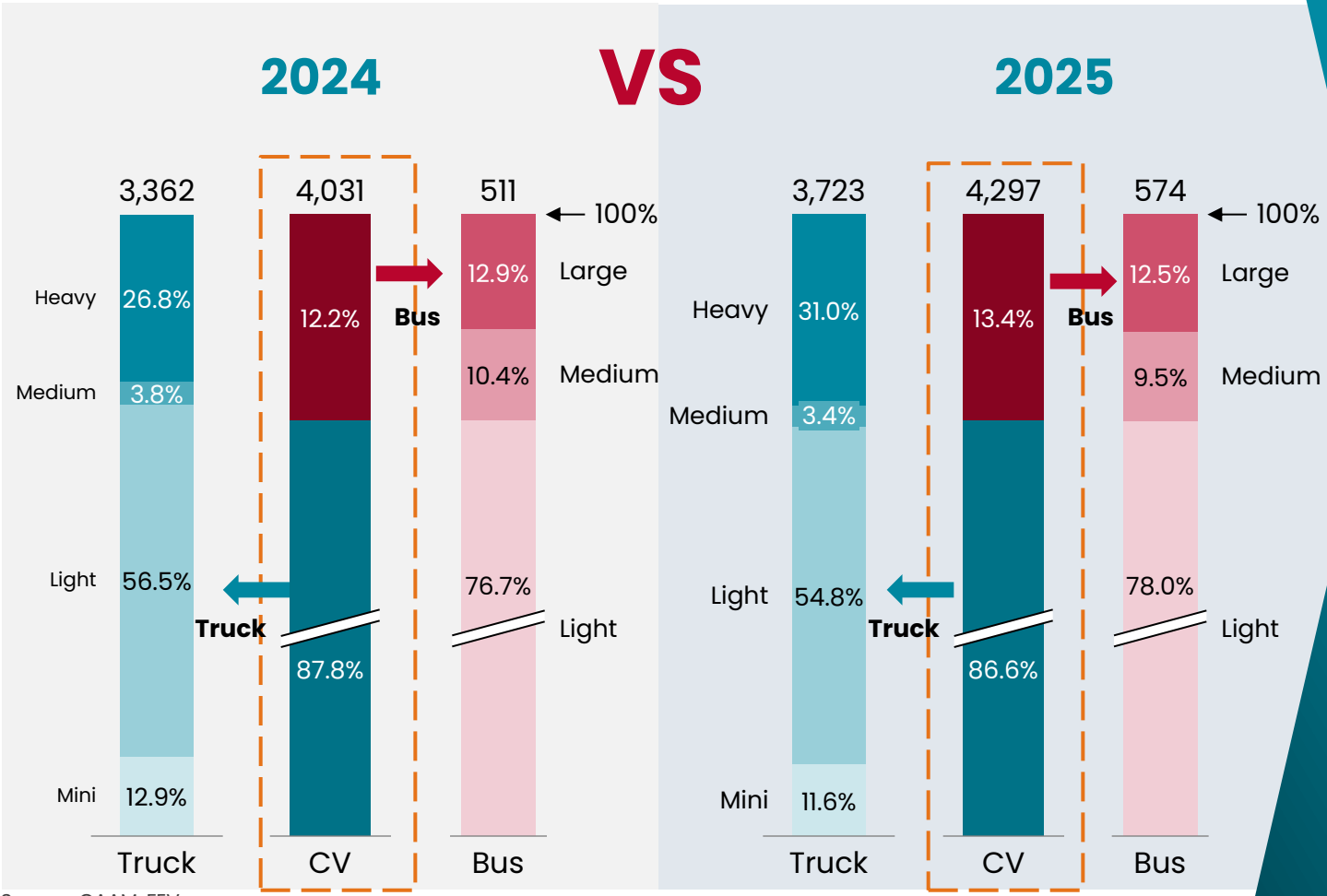


Source: CAAM, FEV
Note: CAAM data are compiled based on automaker-level wholesale sales

- In 2025, new energy commercial vehicle sales volume reached **954,000 units**, up **66%** YoY. The NEV penetration rate in the commercial vehicle market was about 22%, with a steady year-on-year increase.
- Battery electric commercial vehicles drove most of the growth, with 373,000 incremental units (+68% YoY), establishing a clearly dominant position. Supported by nationwide electrification momentum, policy subsidies, and the accelerated phase-out of China III/IV vehicles, heavy trucks, light trucks, and buses are undergoing broad-based electrification.
- Plug-in hybrid commercial vehicles are dominated by light trucks, accounting for over 90%, mainly serving urban distribution and peri-urban logistics
- Fuel cell commercial vehicles remain in pilot deployment, primarily in ports and industrial parks, with a small base and limited market share

Commercial vehicle market share by segment (incl. domestic and exports)

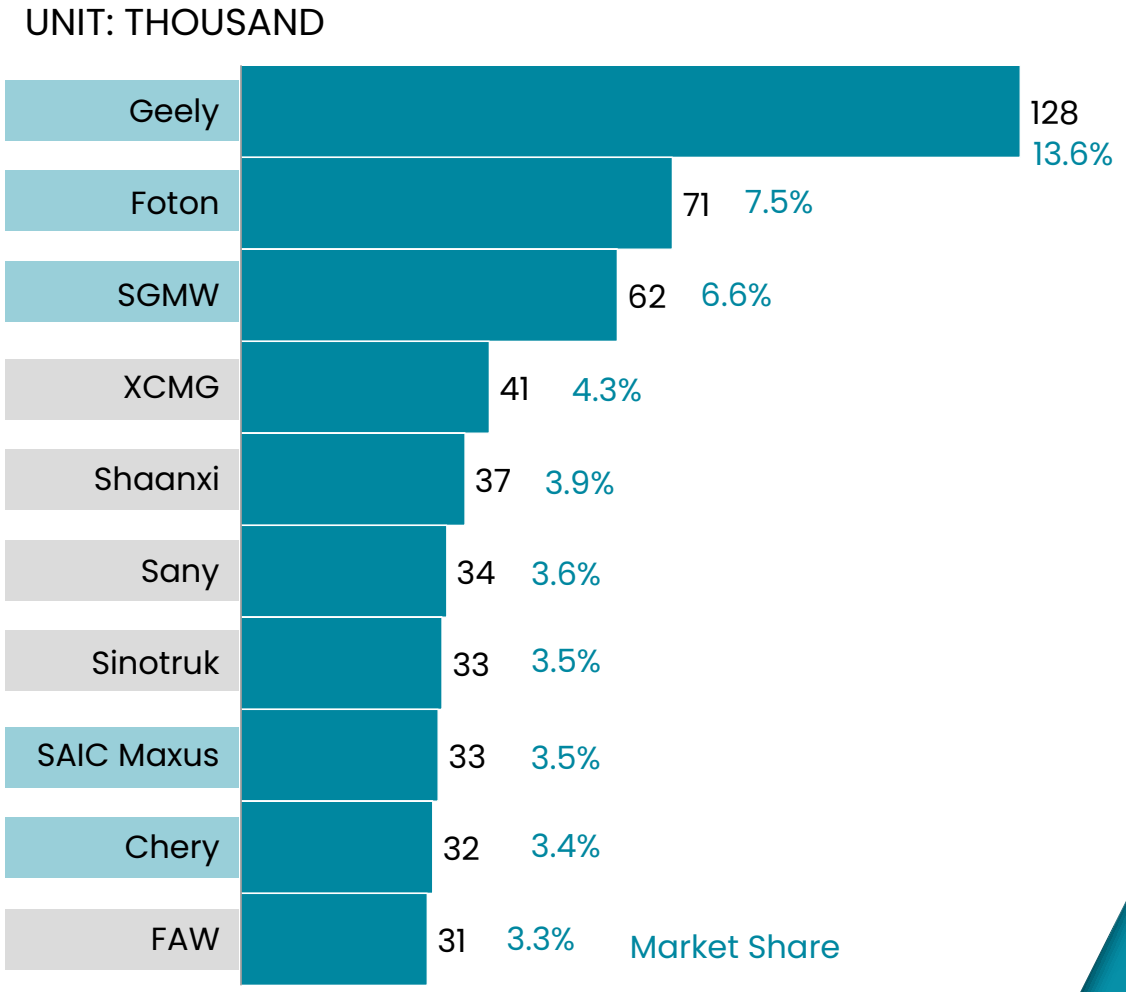
UNIT: THOUSANDS OF VEHICLES



Source: CAAM, FEV
Note: CAAM data are compiled based on automaker-level wholesale sales

- In 2025, truck sales reached **3.7 million units** (+11% YoY), while bus sales totaled **574,000 units** (+12% YoY)
- **Truck demand** was boosted by the trade-in policy for China IV and below operating trucks, macroeconomic recovery, strong infrastructure and logistics demand, and easing road-access restrictions
- **Bus demand** expanded across multiple use cases.
  - Strong growth in urban distribution, fresh food cold-chain logistics, and business commuting highlights the versatility of light buses. Policy support for passenger–cargo–postal integration and rural public transport upgrades has further positioned light buses as a key link between urban and rural transport.
  - With robust domestic tourism in 2025, light buses are increasingly used for urban sightseeing, partly replacing traditional large coaches. In addition, vehicle modification has diversified applications, giving rise to segments such as RVs and camping vans.

Top 10 NEV commercial vehicle OEMs by sales and market share (2025)



Source: CAAM, FE

Majority are light-duty commercial vehicles

Majority are heavy-duty commercial vehicles

- In 2025, the TOP10 new energy commercial vehicle manufacturers accounted for **53%** of total sales
  - Light trucks and mini vans made up over 60% of total NEV commercial vehicle sales. Light truck sales surged 229% YoY, while mini vans increased 169% YoY
- Geely Farizon, Geely Group's commercial vehicle brand, leverages PV technology (e.g., EV platforms and intelligent systems) to cover trucks and buses. With strong competitiveness in mid-to-long-haul transport and urban logistics, it led the market with 128,000 units sold and 37% YoY growth.
- SANY Auto and FAW Jiefang, both heavily focused on heavy-duty trucks, experienced negative YoY growth, highlighting the need for technology pathway adjustments in their NEV transition.

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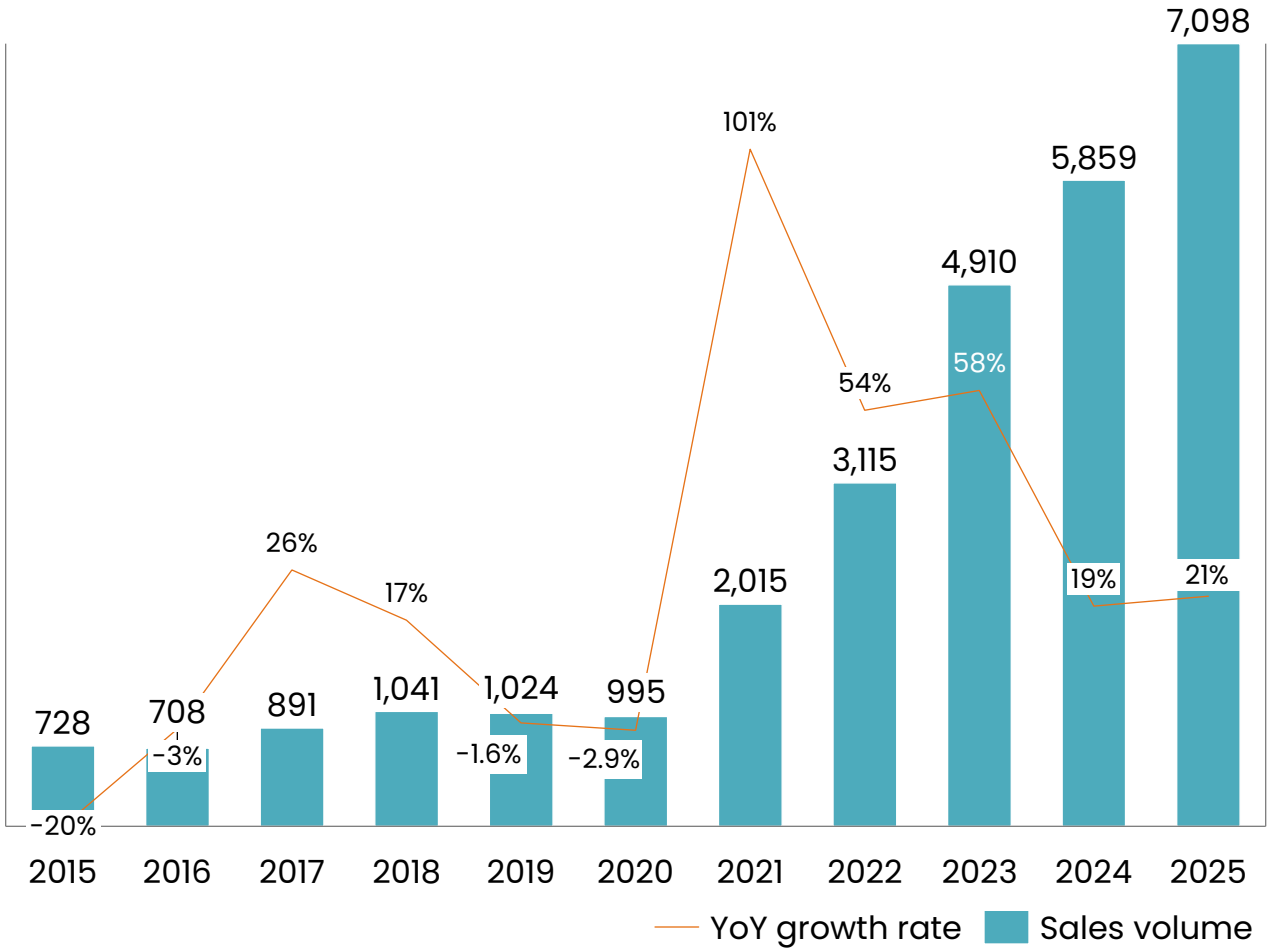
2015-2025 China's annual vehicle export sales volume and growth rates

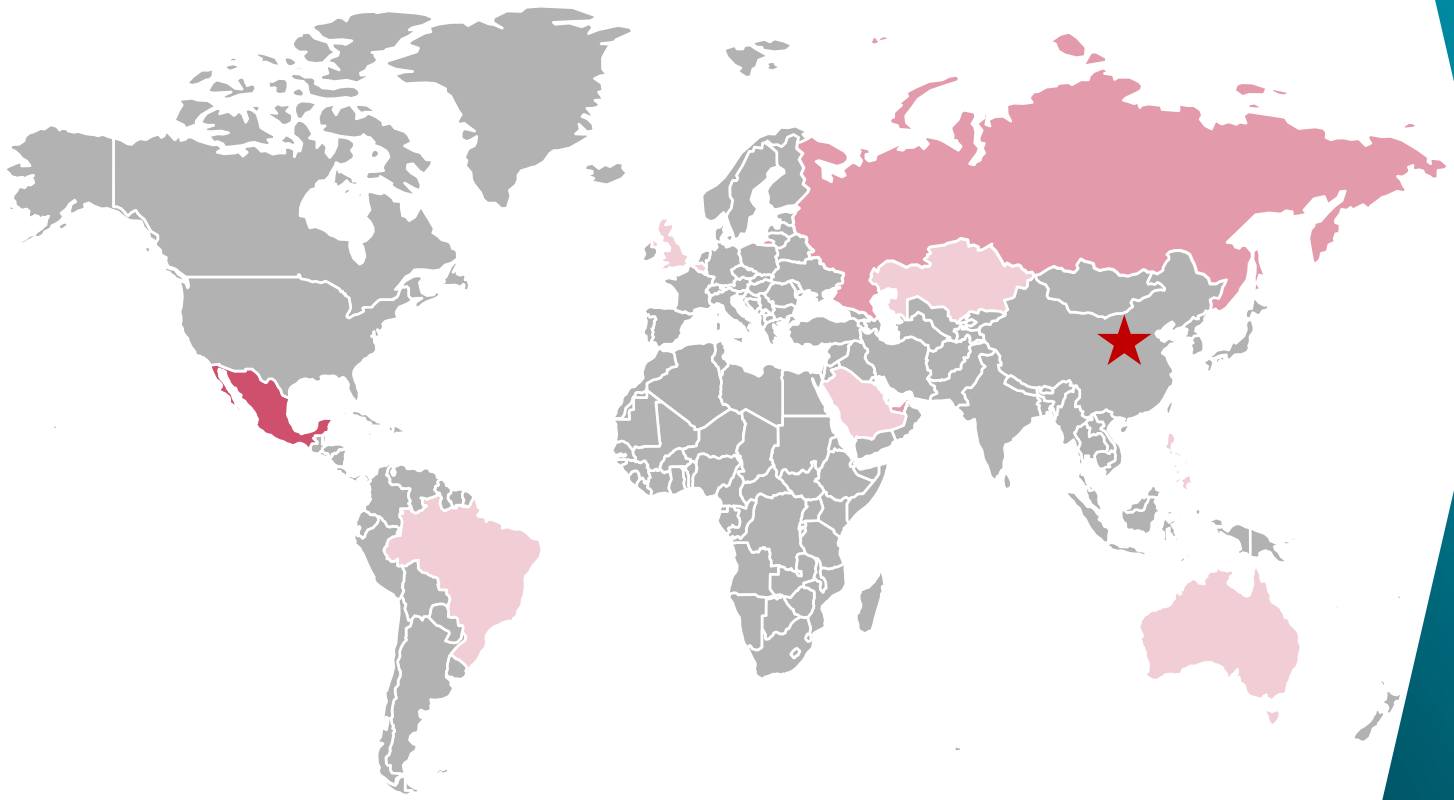
UNIT: THOUSANDS OF VEHICLES



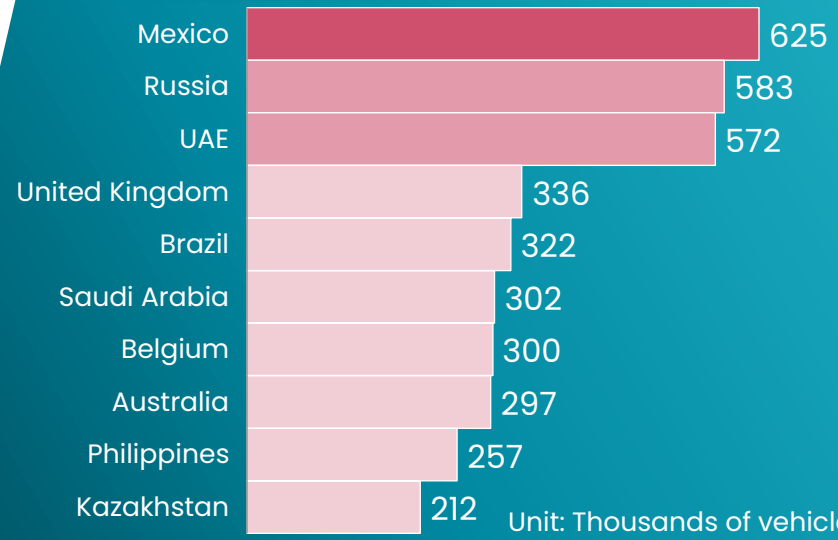
Source: CAAM, FEV
Note: The sales counted by the CAAM are the wholesale volume of the enterprise

- China's automotive exports reach **7.1 million** units in 2025, representing a year-on-year increase of 21%
- The export growth in 2025 is primarily driven by the rapid volume expansion of NEV models, improved product competitiveness, diversified market expansion, and strong momentum from leading OEMs, while China's complete and mature supply chain underpins its international competitive advantage

Main countries who imported China's vehicle exports in 2025



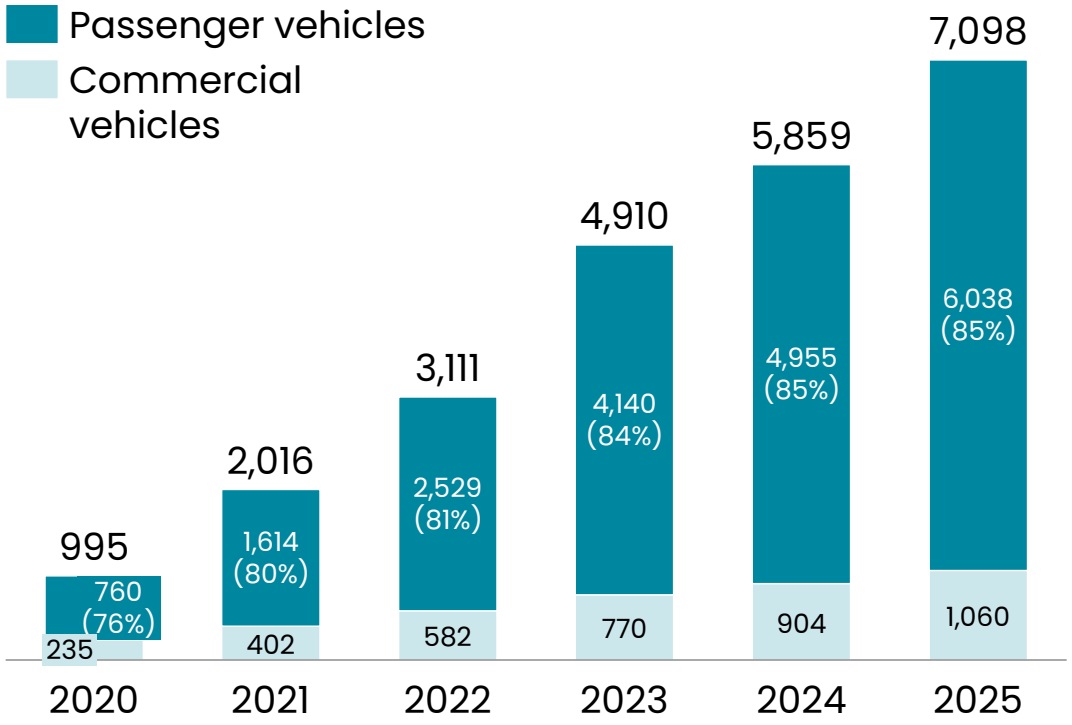
- Mexico became China's No.1 vehicle-export destination in 2025, surpassing Russia, with exports reaching **625k units** and a YoY increase of 41%
- Exports to Russia dropped sharply vs. 2024 due to taxation and weaker consumer purchasing power
- Other major export markets remained concentrated in South America, the Middle East, and Australia



Source: FEV, China Automobile Dealers Association

2020-2025 China's passenger and commercial vehicles export sales volumes

UNIT: THOUSANDS OF VEHICLES

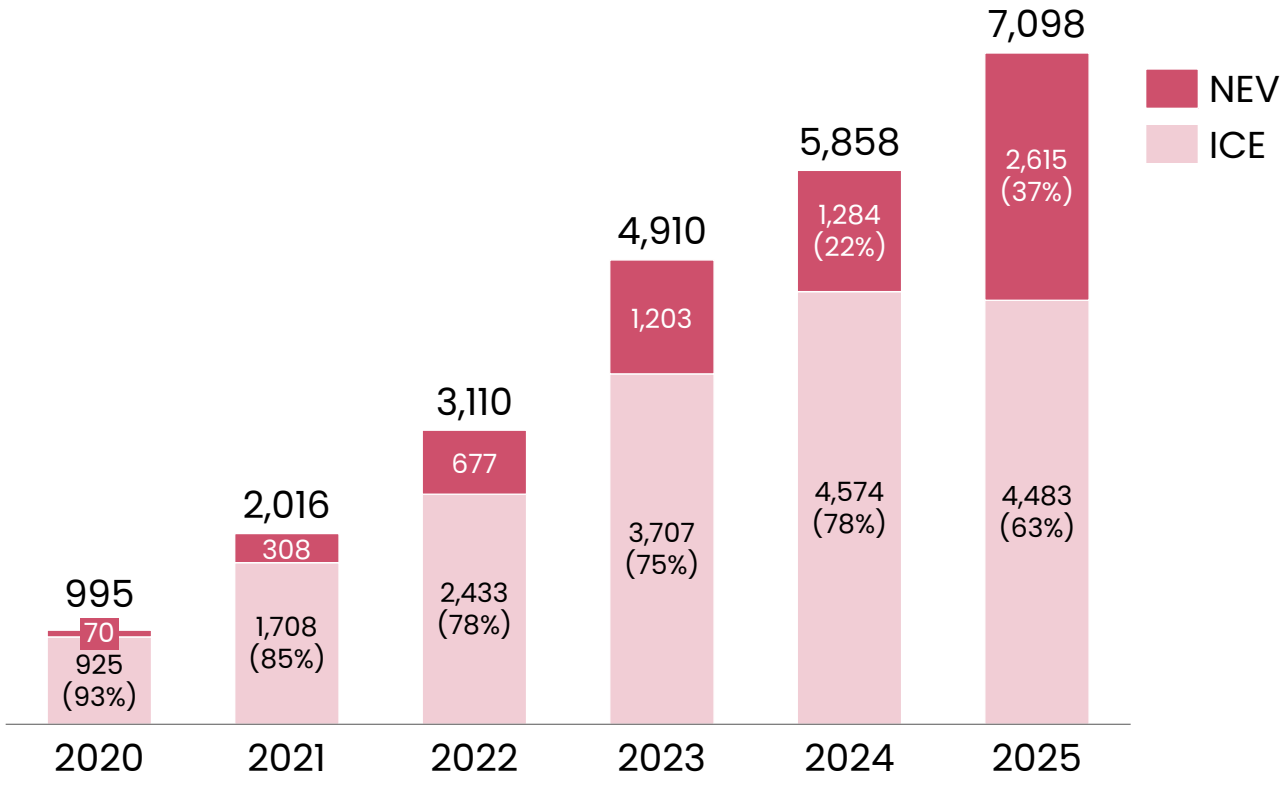


Source: CAAM, FEV
Note: The sales counted by the CAAM are the wholesale volume of the enterprise

- From the perspective of export models, the export structure remains stable. Passenger vehicles are the core export category, accounting for over 80% in the past 5 years and continuing to rise, with PV exports reaching **6.0 million** units in 2025
- Commercial vehicle exports grew 17% YoY, reaching the **1 million-unit** level in 2025
- The PV–CV export mix shows that China's automotive exports are not only expanding in scale but also developing a "full-category, full-structure" pattern like the domestic market, shifting from selective breakthroughs to broader and more balanced growth

2020-2025 China's vehicle export sales volumes by energy type

UNIT: THOUSANDS OF VEHICLES

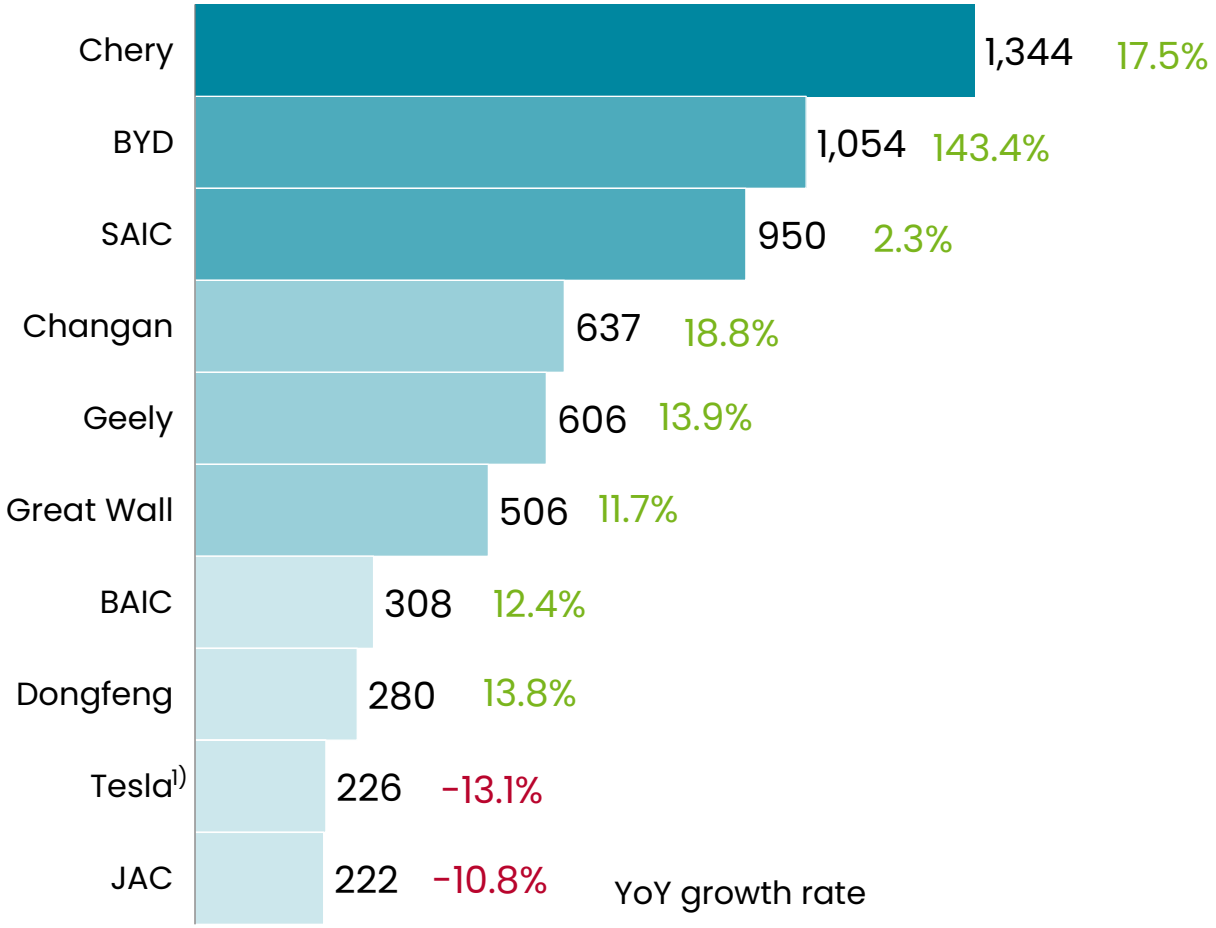


Source: CAAM, FEV
Note: The sales counted by the CAAM are the wholesale volume of the enterprise

- In 2025, China exported **4.5 million** ICE vehicles (-2% YoY) and **2.6 million** NEVs (+104% YoY). NEVs contributed all of the export growth in 2025.
- Europe's NEV demand accelerates under Euro 7 and carbon-emission pressure, while the Middle East and Latin America continue strong volume expansion driven by energy-transition needs and supportive policies
- Chinese NEVs have become the core "global calling card" for China's automotive industry, with clear recognition for both brands and technology in overseas NEV markets

Top 10 OEMs by export sales volumes in 2025

UNIT: THOUSANDS OF VEHICLES



1) TESLA is not local brand, but here is the export data of Shanghai factory, which is made locally and classified as the export data of domestic cars
Source: FEV, CAAM (The sales counted by the CAAM are the wholesale volume of the enterprise)

- In 2025, the Top 10 OEMs exported a combined 6.1 million vehicles, representing an 86% market share
- Chery ranked No.1 with 1.3 million units
- BYD recorded the fastest growth (+143% YoY), rapidly expanding in Europe, Southeast Asia, and Latin America with models such as the Song Plus, Seagull, and Sea Lion
- Tesla faced a noticeable export decline from its China plant due to continued U.S. tariff escalations on Chinese NEVs in 2025
- JAC saw export contraction amid rising geopolitical complexity and intensifying competition in overseas markets

AGENDA

MACRO BACKGROUND

AUTOMOTIVE MARKET PERFORMANCE

INDUSTRY INSIGHTS

SUMMARY

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INDUSTRY INSIGHTS

- **AUTO INDUSTRY EVENTS**
- NEV TECHNOLOGIES HIGHLIGHTS

Auto industry events in 2025

Price competition shifts toward value competition

In 2025, the price war moved from disorderly discounting to value-based competition. Automakers increasingly rolled out intelligent-driving and fast-charging technologies across lower segments, making advanced features more accessible. Regulators reinforced market-order rules and compliance standards, steering competition from “price-for-volume” toward technology, experience, and service.

With higher requirements on battery safety, energy consumption, and vehicle consistency, OEMs must increase R&D investment to meet rising entry thresholds. Key ministries and industry bodies call for anti-involution, aiming to curb low-price dumping, prevent “bad money driving out good”, and redirect resources toward product strength and innovation, advancing the industry toward safer, higher-quality, more intelligent, and more original-technology-driven development.

Exportation

In 2025, China’s automotive exports continue to grow at a double-digit pace. According to CAAM, exports reached 7.1 million units, up 21% YoY. All incremental export volume came from NEVs.

Strategic reorganization

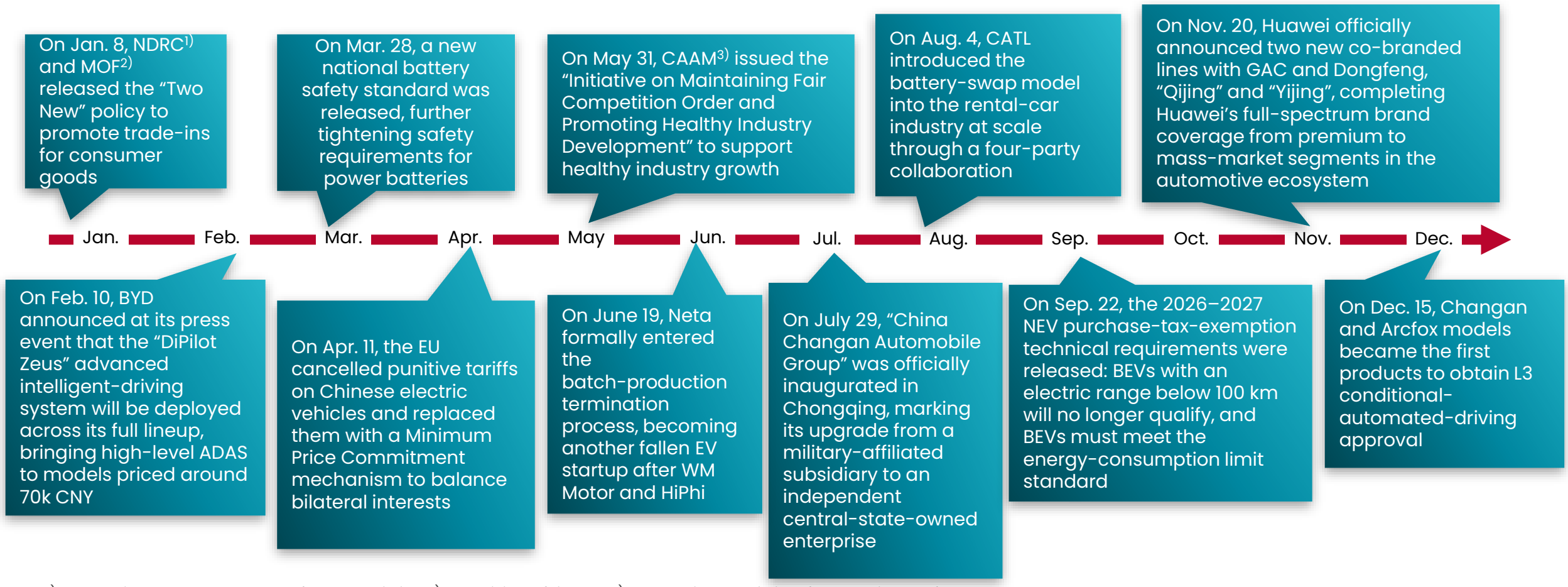
Facing intensified market competition, traditional automakers begin consolidating brands and optimizing resource allocation. Among emerging players, differentiation accelerates: Neta exited the market after bankruptcy; NIO launched ONVO and Firefly; XPeng introduced Mona to strengthen its volume-driven product matrix.

High Performance

High-performance capability became a new competitive direction, with high-power & high-speed electric motors emerging as key technologies. 20,000 rpm motors became standard. BYD brought 30,000 rpm motors into mass production, & 10C fast-charging enabled “EV-ICE parity”, bringing new tech competition.

Source: FEV

Timeline of automotive industry events in 2025



1)NDRC: National Development and Reform Commission; 2) MOF: Ministry of Finance; 3) CAAM: China Association of Automobile Manufacturers
Source: FEV

AGENDA

INDUSTRY INSIGHTS

- AUTO INDUSTRY EVENTS
- **NEV TECHNOLOGIES HIGHLIGHTS**

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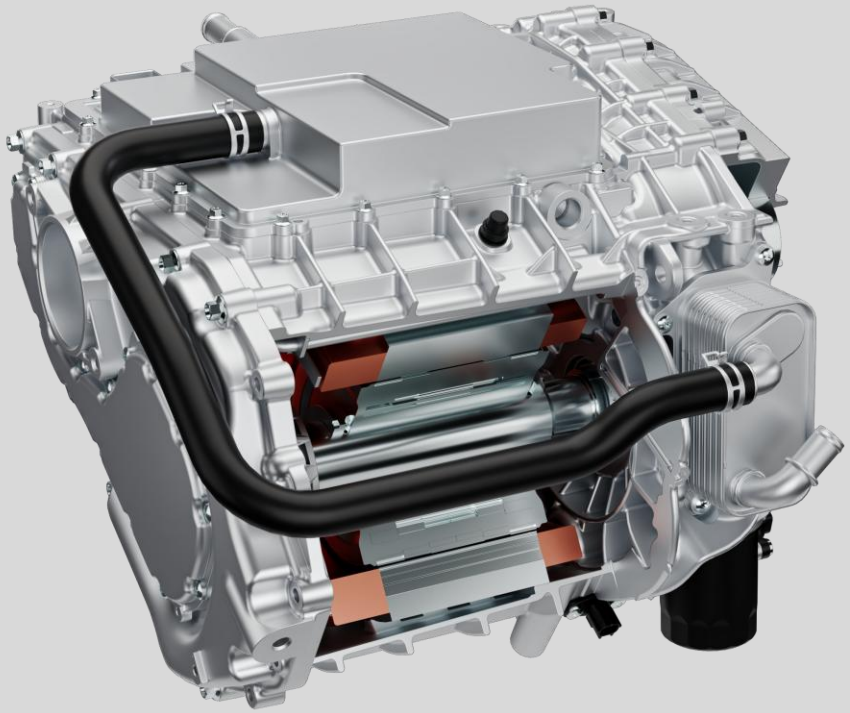
SECTION 1

EDU TECHNOLOGY



In recent years, the development of new energy vehicles has shown four major trends in electric drive systems

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ELECTRIC DRIVE SYSTEM TRENDS

Clear division in EDU supply

- The EDU[1] supply landscape has stabilized into a long-term mix of in-house development and third-party sourcing, segmented by OEM scale, product positioning, and, in some cases, full-stack self-development
- Leading OEMs typically use **in-house EDUs on high-end platforms and outsourced standard solutions for entry or volume models**, or adopt a rear in-house + front outsourced strategy to balance technology leadership and cost efficiency
- New OEMs with limited technical depth tend to rely on fully outsourced or co-development models to meet vehicle program needs

Multi-in-one EDUs

- Highly integrated multi-in-one e-drive systems offer advantages in compactness and cost efficiency and are evolving toward full-domain integration
- By 2025, **multi-in-one EDUs** accounted for **33%** of total system assemblies**, up 92%** YoY, and are becoming mainstream in passenger vehicles
- Previously constrained by tight integration of BMS[2]/VCU[3] with vehicle platforms, Tier-1 suppliers focused on six-in-one systems; from 2025 onward, multiple Tier-1s have moved toward deeper multi-in-one integrations to serve diverse OEM needs

Distributed EDUs

- Distributed EDU systems independently drive left and right wheels via wheel-hub motors, eliminating the traditional differential and enabling steering through independent motor speed control
- In 2025, distributed EDUs entered a rapid growth phase, with installations exceeding 80,000 units **(+233% YoY)**. Prices fell to mainstream levels (down to models such as the Galaxy M9), while the model lineup expanded from 4 in 2024 to 11 in 2025, positioning it as a standard feature for high-end performance vehicles and set to penetrate mainstream cars

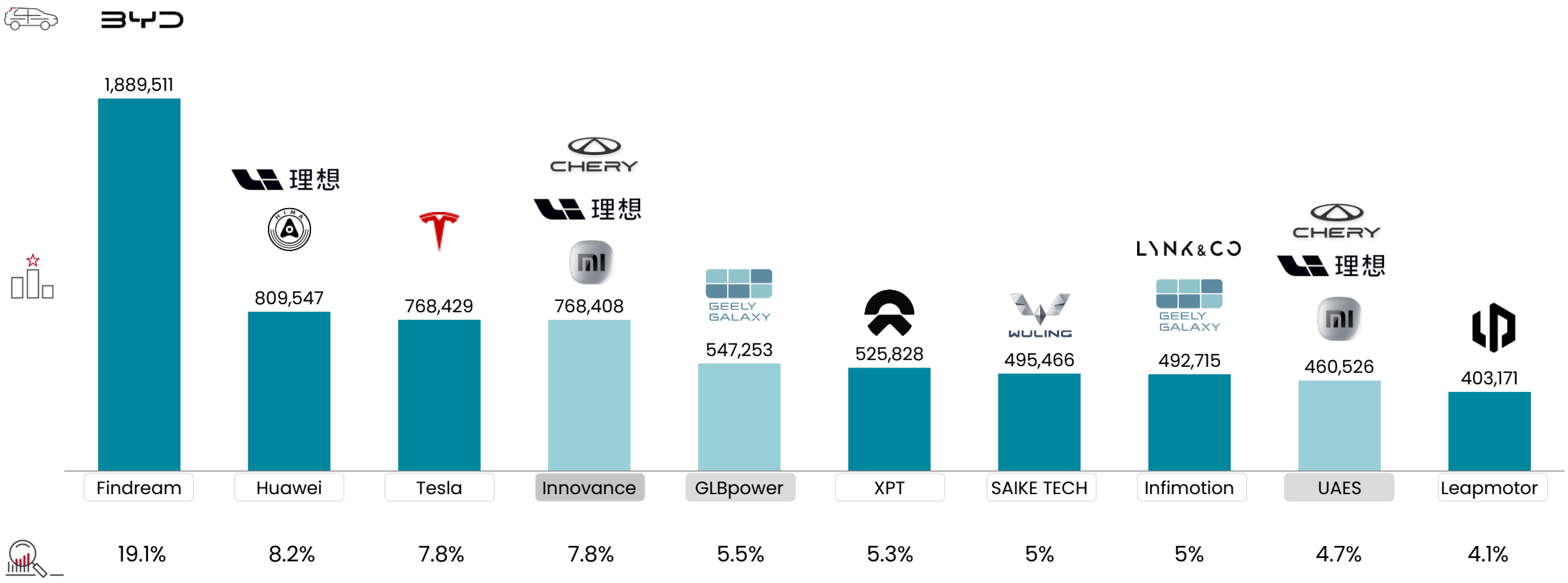
Advanced semiconductor applications

- As vehicle voltage platforms continue to rise, traditional Si can no longer meet next-generation EV requirements in efficiency, power density, and thermal performance at high voltages
- SiC with strong high-temperature and high-voltage tolerances, now almost fully covers 800 V platforms. As costs decline, SiC is rapidly moving from premium models **into the RMB 100k–250k mainstream segment**.
- SiC+Si hybrid semiconductors achieve near-SiC efficiency with much lower costs by using limited SiC content, emerging as a cost-effective mainstream solution for both 400 V and 800 V e-drive systems

1) EDU: electric drive unit; 2) BMS: Battery management system; 3) VCU: Vehicle control unit
Source: FEV

Among the top 10 e-drive system suppliers by installation volume in 2025, only three are pure third-party suppliers

TOP 10 EDU SUPPLIERS: INSTALLATION VOLUME AND KEY CUSTOMERS



In 2025, multi-in-one EDUs surged over 90% YoY, reaching a 33% share; they are now widely adopted in mainstream models

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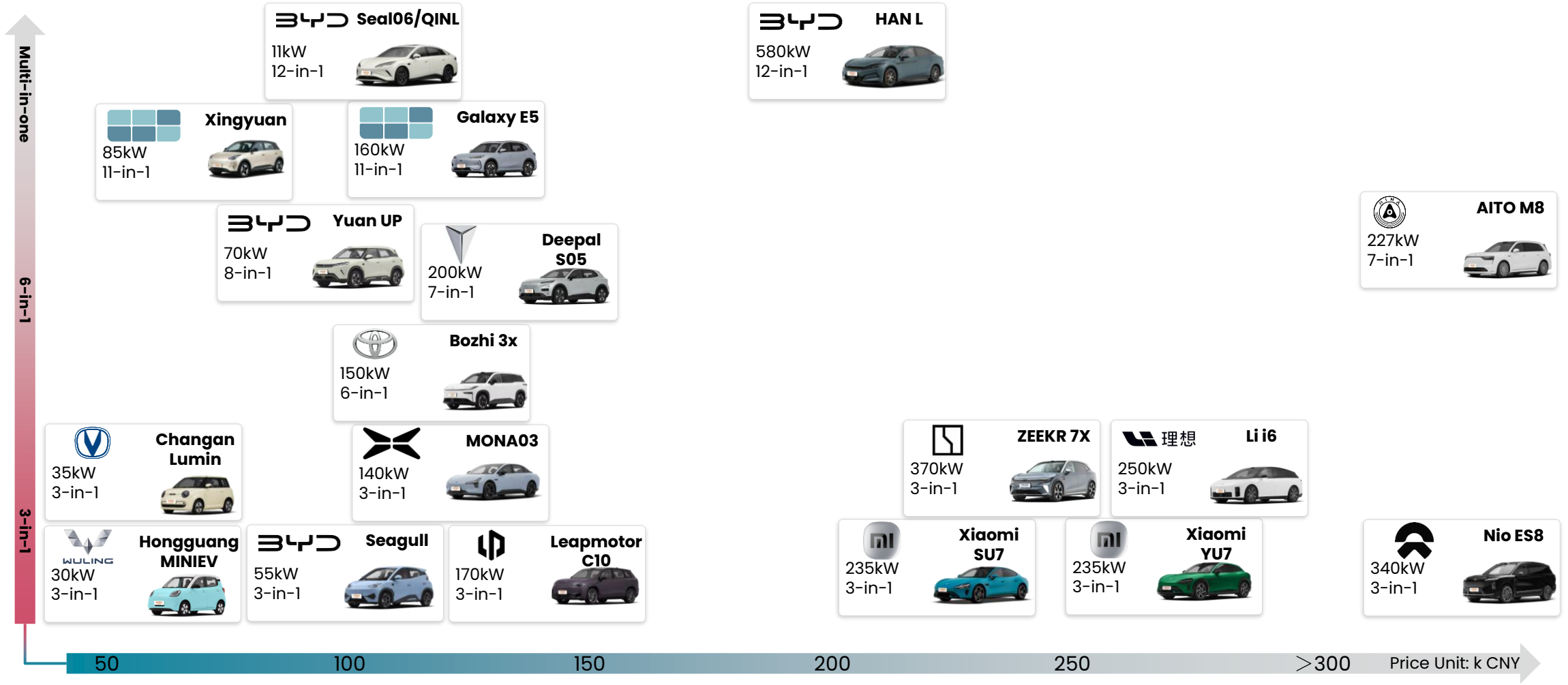
OVERVIEW OF POPULAR ELECTRIC VEHICLE E-DRIVE SYSTEMS IN CHINA'S DOMESTIC MARKET



The surge in SiC[1)] penetration and installations is fundamentally driven by falling technology costs combined with market demand and competition

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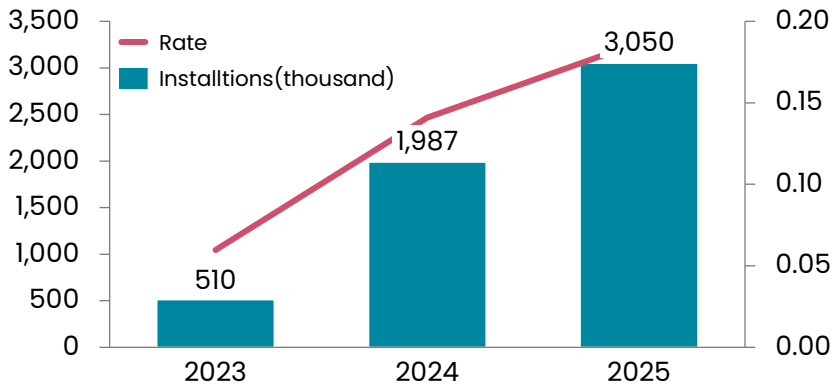
EDU SIC DEVELOPMENT TREND

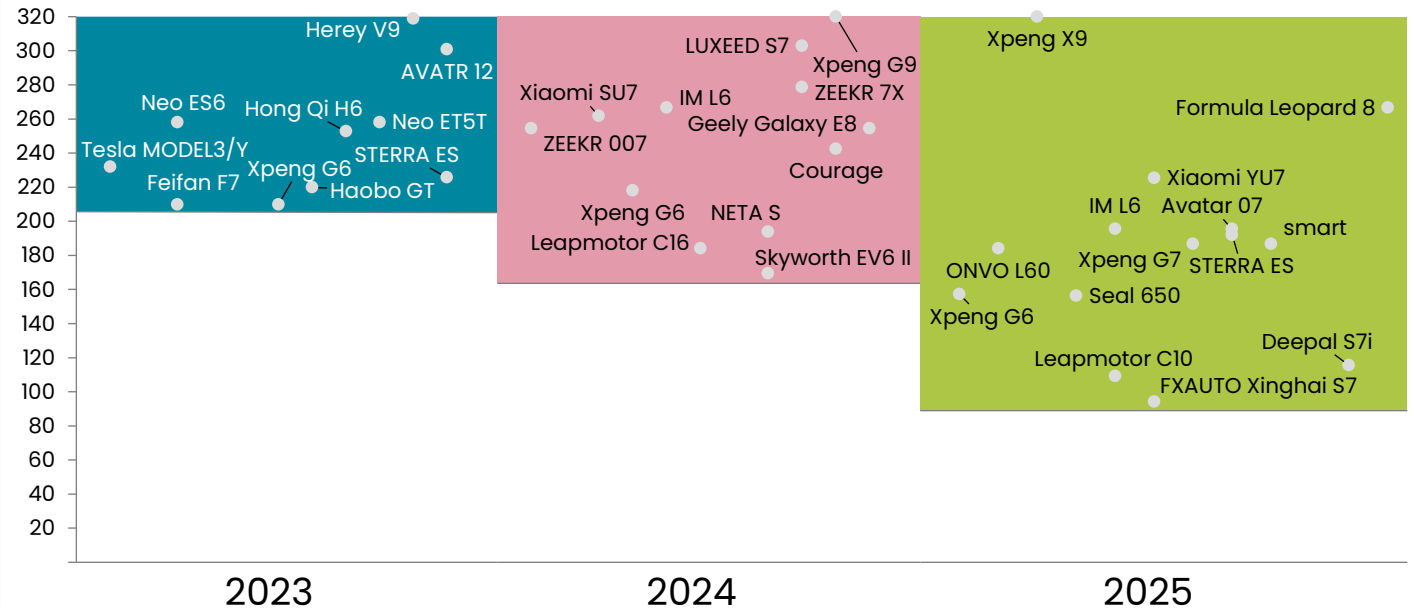
Recent SiC power module installations



- **Mainstream adoption**: as SiC penetration continues to rise, SiC electric drives have evolved from a niche high-end technology to a mainstream standard in NEVs, forming a tiered SiC–Si market structure
- **Performance-driven demand**: SiC devices deliver 30–50% lower losses than IGBTs[2)], with superior high-temperature and high-voltage capability, better suited for 800 V fast charging and long-range applications
- **Cost decline and supply-chain maturity**: in 2025, domestic SiC power modules surpassed foreign suppliers in installations for the first time, while module costs fell over 40% vs. 2020, accelerating SiC adoption in e-drive systems

- **From premium option to mass standard**: SiC technology has moved from high-end optional to mass-market standard, with price points dropping from RMB 300k+ in 2021–2022 to the RMB 100k segment by 2025, breaking the cost barrier
- **Intensifying competition**: Fierce price competition between new entrants and traditional OEMs has made SiC a key differentiator, pushing it into mainstream models to attract consumers

Changes in the price range of mainstream vehicle with SiC



1) SiC: Silicon carbide; 2) IGBTs: Insulated-gate bipolar tranisitor
Source: FEV

Si has been the standard for automotive inverter power modules; SiC is expected to gain traction in the future

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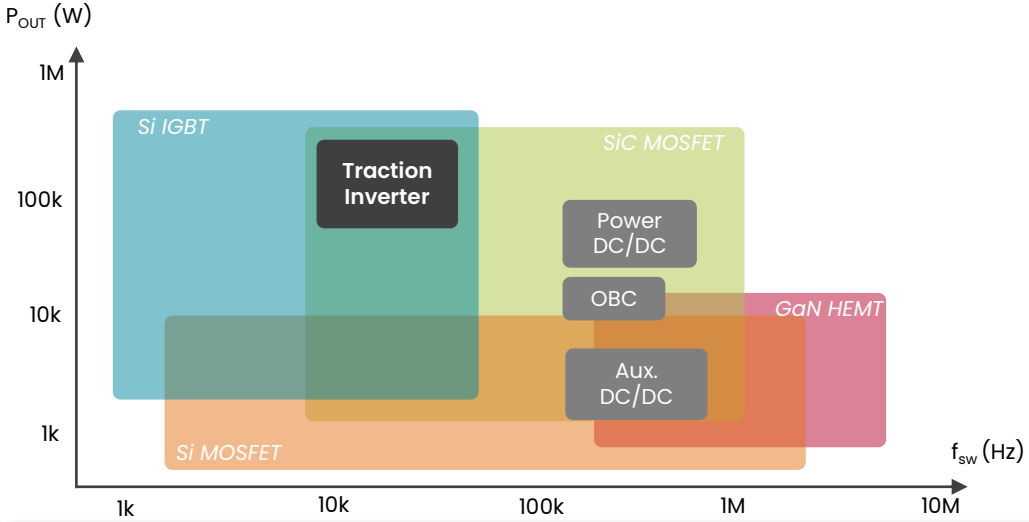
POWER SEMICONDUCTOR APPLICATIONS

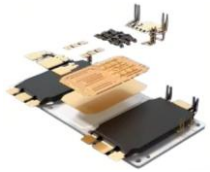
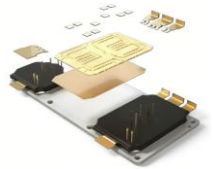
› Illustrative



- **Si IGBT**[1] is the established technology with wide application in power electronics (PE)
- **SiC MOSFETs**[2] are particularly advantageous for high switching frequency & high-power applications
  - **Perfect fit with traction inverter features**
  - Potential for further applications in other power electronics components
- **GaN HEMT**[3] offers even higher efficiency, power density, and switching frequency, however, it is only suitable for lower voltage components
  - Smaller than Si & SiC
  - Good fit with less powerful power electronic components (e.g., OBC, DC/DC converters)
- Although Si currently leads the market, SiC and GaN are expected to gain traction

At present, SiC still costs more than twice as much as traditional Si IGBTs. To further reduce costs while achieving comparable performance, more manufacturers are adopting hybrid SiC + Si inverter solutions

- In August 2025, XPeng announced that its jointly developed hybrid SiC product with CR Microelectronics, the first of its kind in China, had entered mass production, enhancing the competitiveness of XPeng's future vehicle portfolio

GEN 1	**GEN 2**	**GEN 3 Hybrid SiC**
800 V / 460 A	800 V / 460 A	800 V / 480 A
SiC	**SiC ↓ 17%**	**SiC ↓ 60%**
		
		
Xpeng G6 2023.6	Xpeng G7 2025	Xpeng X9 Super REEV 2026

1) IGBT: Insulated-gate bipolar transistor; 2) MOSFET: Metal-Oxide-Semiconductor Field-Effect Transistor; 3) HEMT: High Electron Mobility Transistors
Source: FEV

Distributed tri-motor systems, balancing performance and cost, are increasing with their prices becoming more acceptable

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OVERVIEW OF DISTRIBUTED ELECTRIC DRIVE VEHICLES

Newly launched distributed electric drive vehicles are predominantly equipped with tri-motor setups, while some models adopt quad-motor configurations in their BEV versions, such as the M-Hero 917

MAEXTRO S800	Xiaomi SU7 Ultra	Leapmotor D19	Lynk&co 900	Geely galaxy M9	Zeekr 9X	M-Hero 917
						
Launch date 2025.03.30	Launch date 2025.02.27	Launch date 2026.04	Launch date 2025.04.28	Launch date 2025.09.17	Launch date 2025.09.29	Launch date 2026.03.05
1 x F EM 2 x R EM	1 x F EM 2 x R EM	1 x F EM 2 x R EM	1 x F EM 2 x R EM	1 x F EM 2 x R EM	1 x F EM 2 x R EM	2 x F EM 2 x R EM
635 kW (1x160+2x238)	1,138 kW (1x288+2x425)	540 kW	630 kW (1x123+2x170)	520 kW (1x180+2x170)	1,030 kW	640 kW (1x200+2x220)
CNY 1,018,000	CNY 529,900	CNY 309,800	CNY 386,900	CNY 238,800	CNY 559,000	CNY 309,800

Distributed electric drive models launched before 2025, such as Yangwang, Denza, and the Zeekr 001 FR

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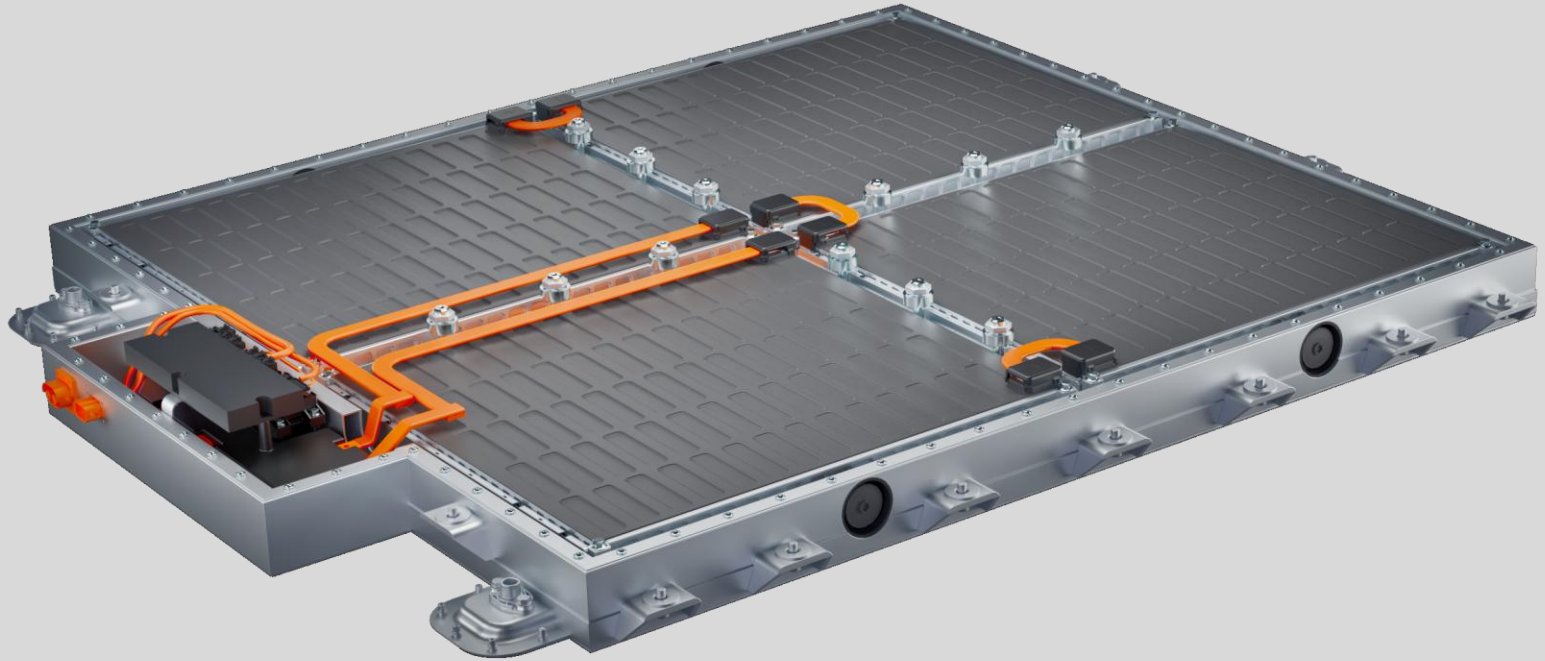

SECTION 2

BATTERY TECHNOLOGY

In recent years, the development of new energy vehicles has seen the following trends in the high-voltage battery domain

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HIGH-VOLTAGE BATTERY TRENDS

Charging & driving range

- Leading battery makers have achieved peak charging rates of 5C and above through materials and system-level optimization, with **up to 12C already realized**. 10C is now common in high-end models, while 6C–8C has become standard for mid-to-high-end vehicles. These advances are based on 800V+ high-voltage platforms, enabling charging speeds close to ICE refueling; BYD's second-generation Blade Battery (LFP) supports 10C ultra-fast charging, delivering near fuel-speed refueling.
- At the same time, **larger battery packs are becoming mainstream**: from 2026, some models are adopting >100 kWh batteries, driven by market demand and further improvements in material power density

Materials technology

- LFP[1] batteries **dominate the mid- to low-end and mass-market segments** thanks to high safety, long cycle life, and low cost, while NMC[2] batteries are mainly used in high-performance and long-range flagship models
- LFMP[3] is narrowing the gap with NMC batteries in fast-charging capability and low-temperature range, while reducing reliance on cobalt and nickel, offering inherent advantages in supply-chain security and cost control
- The world's first mass-produced sodium-ion battery passenger car has been officially unveiled. Developed by Changan Auto and equipped with CATL's sodium-ion battery, it began winter testing in Yakeshi, Inner Mongolia, in February 2026.
- Large cylindrical batteries reduce cost and increase energy density through form-factor innovation. 2025 marked a key year for global scale-up.

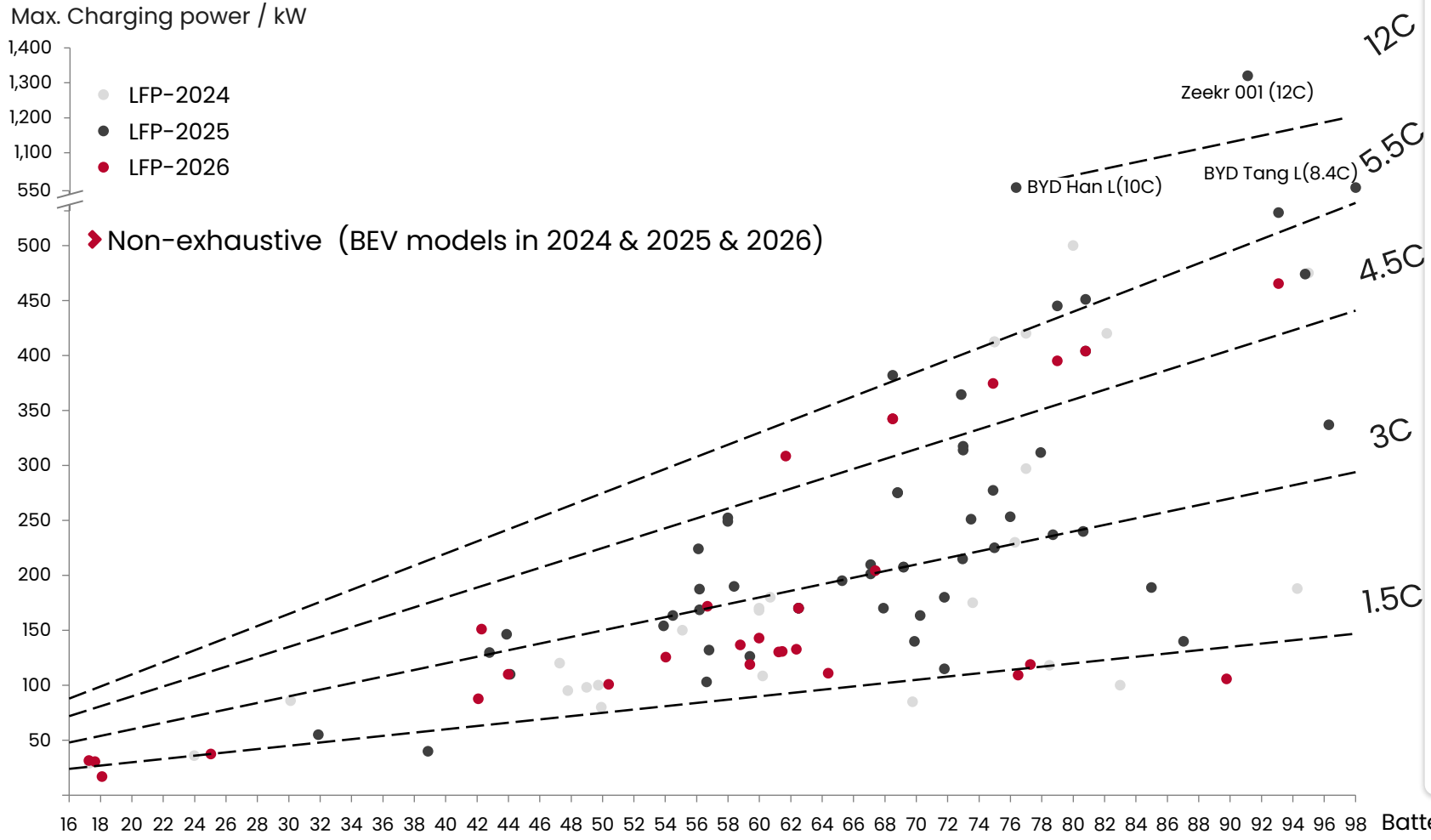
Industry developments

- The automotive power battery industry is entering a new phase of deep in-house cell development by OEMs. Both traditional automakers (BYD, Geely, GWM, Chery, Dongfeng) and new entrants (NIO, XPeng, Li Auto) have moved **into self-developed** and self-manufactured cells
- **Prices of LFP and NCM cells have stabilized but rebounded within the year**, mainly driven by rising lithium phosphate prices in 2025, which directly increased cell costs. Broad-based increases in materials, including electrolyte, copper foil, aluminum foil, and separators, have further pushed up overall cell BOM costs
- Semi-solid batteries entered mass production in 2025, with companies such as NIO, SAIC, Dongfeng, and BYD beginning volume supply
- For all-solid-state batteries, leading suppliers including CATL and Gotion High-Tech have built pilot lines to validate processes and improve yields, laying the groundwork for mass production around 2027

1) LFP: Lithium Iron Phosphate; 2)NMC: Nickel Manganese Cobalt; 3) LFMP: Lithium manganese iron phosphate
Source: FEV

Distribution of fast-charging power for battery electric vehicles (1/2)

AS OF NOW, MOST 2026 MODEL-YEAR UPDATES ARE MID-CYCLE REVISIONS OF 2025 MODELS



Conditions & assumptions

- Power consumption: battery charging C-rate and fast-charging power are not explicitly specified:
  - Charging C-rate = 1 / fast-charging time;
  - Charging power = C-rate × battery capacity

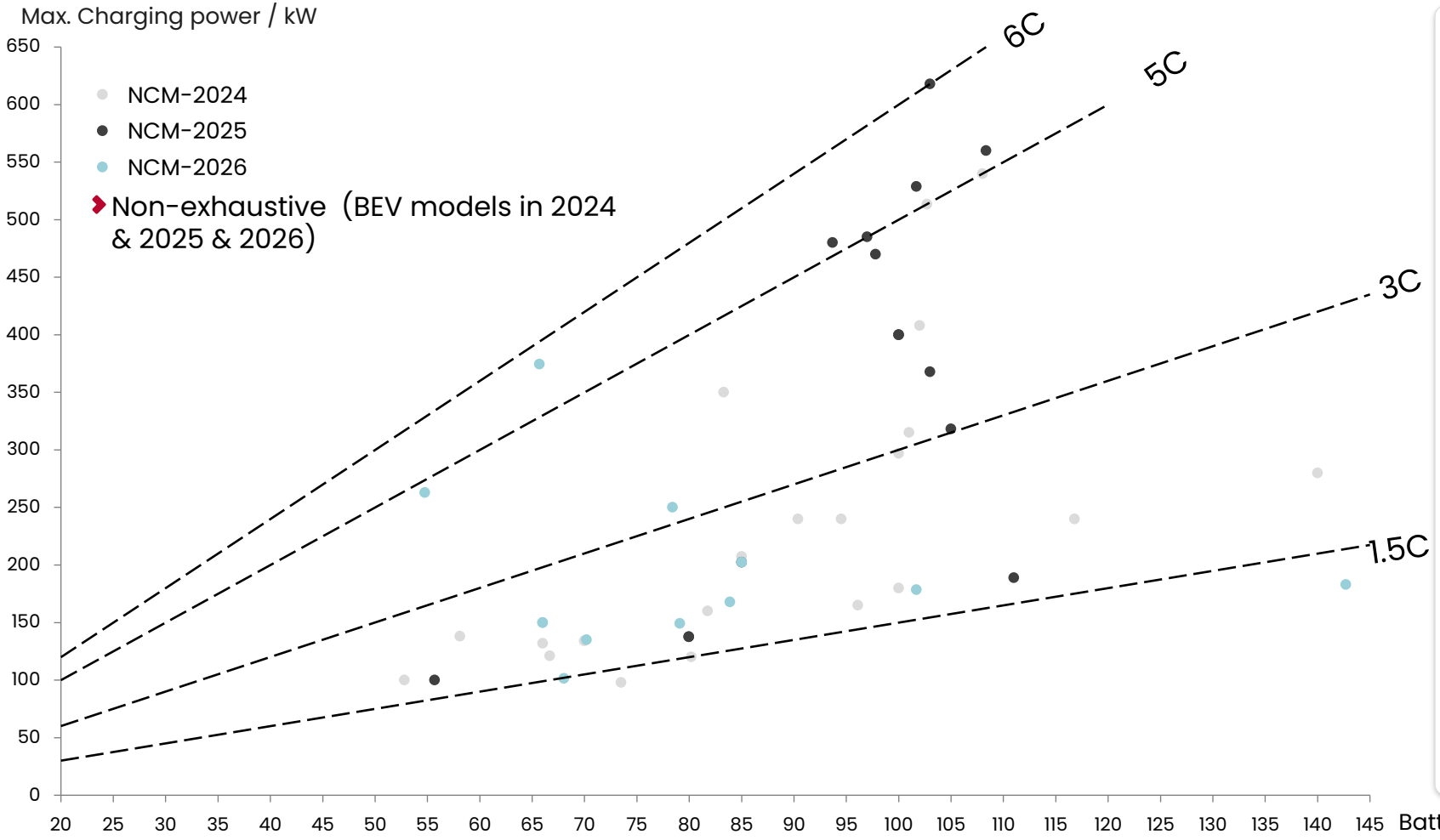
Key takeaways

- LFP battery charging power has further increased, and the peak charging rate of the Zeekr 001 battery has reached 12C
- As battery capacity increases, DC fast-charging C-rates tend to rise, although most models still remain below 5.5C

Note: Based on publicly available information

Distribution of fast-charging power for battery electric vehicles (2/2)

CURRENTLY, PURE BEVS EQUIPPED WITH NMC BATTERIES SUPPORT FAST CHARGING UP TO 6C AT MOST



Condition & assumptions

- Power consumption: battery charging C-rate and fast-charging power are not explicitly specified:
  - Charging C-rate = 1 / fast-charging time;
  - Charging power = C-rate × battery capacity

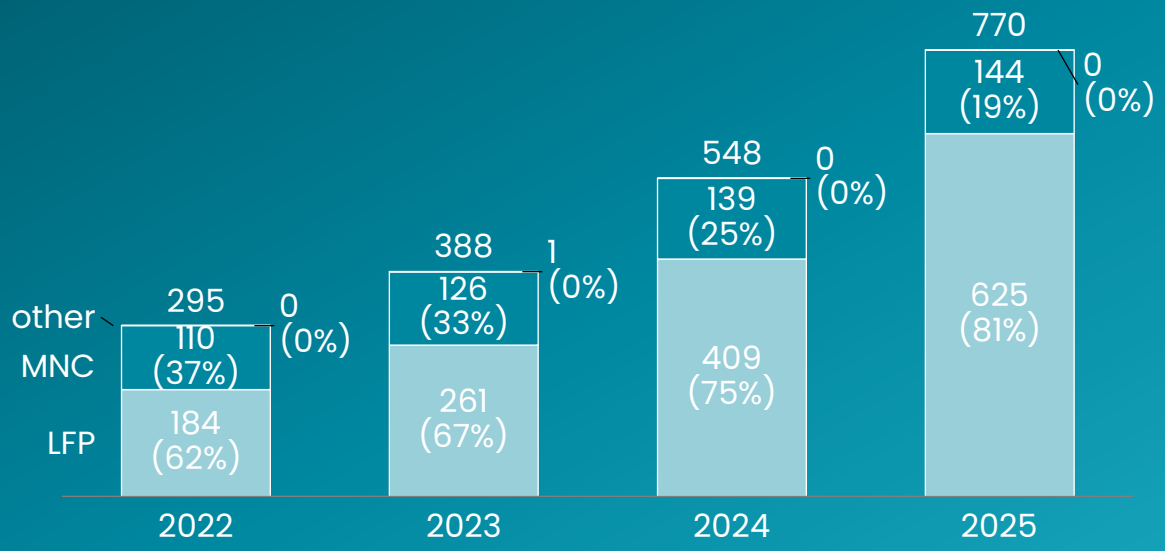
Key takeaways

- The charging rate of NCM batteries has been further enhanced, with the Zeekr 001 NCM battery version achieving a peak charging power of 6C. Multiple models now offer a charging rate of 5C.

Note: Based on publicly available information

Overall installations continue to rise, with LFP strengthening its dominance

Battery installations by material type, 2022–2025 (unit: GWh)



- LFP[1] remains the mainstream in China due to its high safety and low cost, with its installation share exceeding 80%
- In addition, LFMP[2] has begun limited commercial deployment, offering higher energy density

1) LFP: Lithium Iron Phosphate; 2) LFMP: Lithium manganese iron phosphate
Source: FEV

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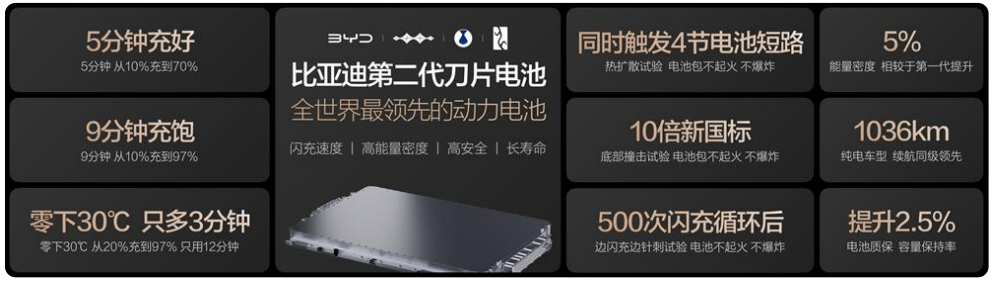
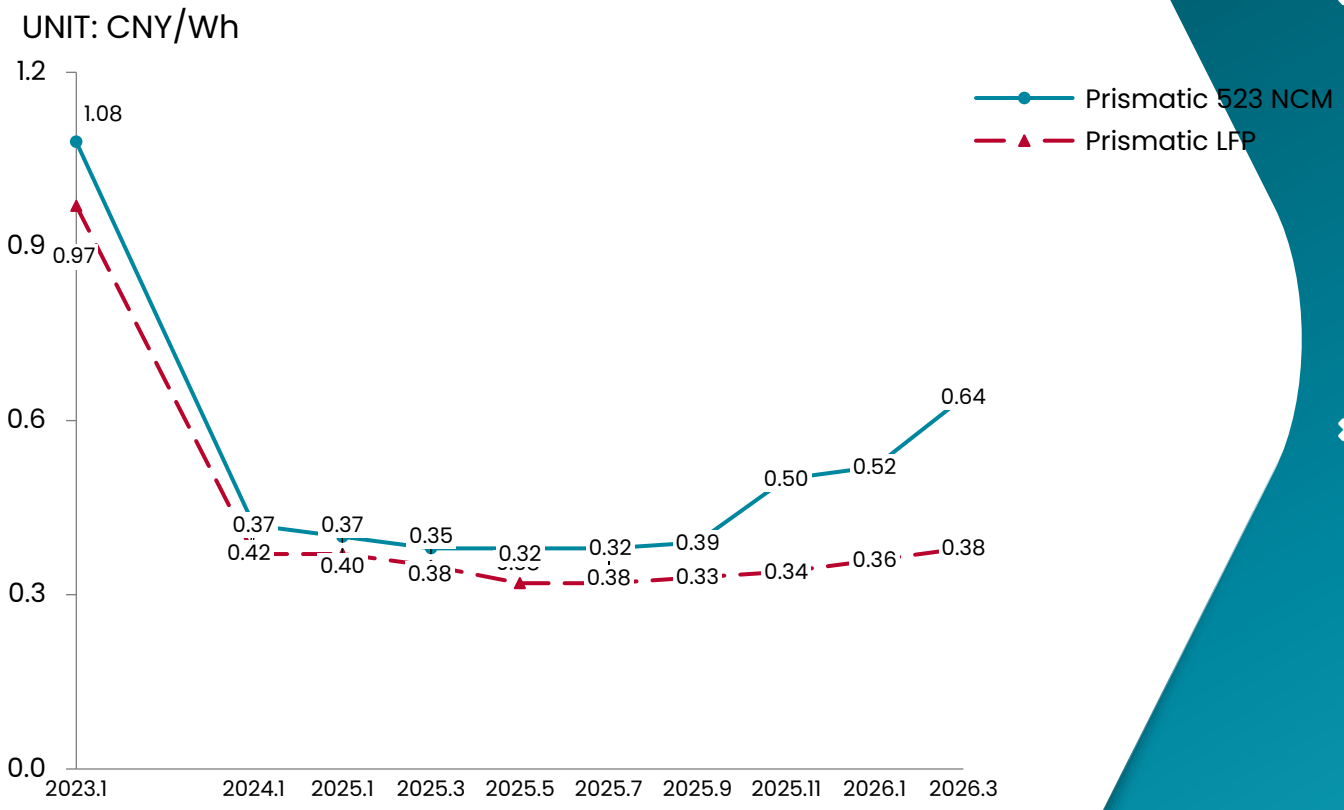
BYD Blade Battery 2.0



Under normal conditions, the battery can charge **from 10% to 70% in ~5 minutes** and from 10**% to 97% in ~9 minutes**. In low-temperature conditions (~–30 °C), it charges from 20% to 97% in ~12 minutes. The industry speculates it adopts a new material system featuring LFMP + LFP composite cathodes and a silicon-carbon composite anode

BYD Song Ultra EV/SEALION 06EV	Denza Z9GT 2026	FANGCHEN GBAO Ti 3	Yangwang U7 PHEV/EV	Yangwang U8/U8L
800 V	N/A	800 V	N/A	800 V
69.07 / 82.7 kWh	63.8 / 102.3 / 122.5 kWh	75.6 kWh	52.4 / 150.01 kWh	56.58 kWh
605 / 710 km	401 / 880 / 1,036 km	565 / 630 km	300 / 1,006 km	230 km

In 2025, LFP prices fell initially before rebounding, driven mainly by demand and cost support



Price trend of automotive power battery cell prices (2023–Feb. 2026)

- Since 2025, LFP[1)] prices have shown a pattern of continued decline in H1 followed by a bottoming-out and rebound in H2
  - In H1 2025, severe capacity oversupply, high inventory digestion pressure at OEMs and battery makers, and falling raw material prices pushed LFP prices down into a low-price competition phase
  - In H2 2025, demand recovered as NEV sales stabilized, energy storage demand surged, and exports continued to grow, while upstream prices bottomed out and rebounded. Improved supply–demand dynamics helped prices stabilize from Q3 and enter an upward trend in Q4.
- Meanwhile, amid the market turnaround, companies across the value chain sought to secure advantages through long-term offtake agreements and capacity expansion
  - Leading battery makers, mainly CATL and BYD, signed large, long-term supply contracts with key LFP suppliers. Notably, Wanrun New Energy signed a five-year LFP supply agreement with CATL from May 2025 to 2030, with total volumes reaching 1.32 million tonnes.
  - Other suppliers, including Lopal, Fulin Precision, Fengyuan and Anda Technology, have also announced long-term orders with downstream customers alongside capacity expansion plans

1) LFP: Lithium Iron Phosphate
Source: TrendForce, FEV, SMM, ebfcn

2026 will be a surge year for solid-state battery pilots, with OEMs and suppliers moving from concepts to real-world testing

SOLID-STATE BATTERY INDUSTRY NEWS

OEMS

- **BYD**: 60 Ah pilot production line commissioned
- **Geely**: Material process scale-up validation line under construction
- **Weichai**: Pilot production line under construction
- **GAC**: Experimental product line has entered operation

Suppliers

- **CATL:** Plans to build a 5 GWh solid-state battery pilot line in Hefei
- **CALB**: Pilot line construction completed
- **Gotion High-Tech**: 0.2 GWh production line completed
- **Farasis**: 0.2 GWh production line planned
- **Sunwoda**: Plans to build a 0.2 GWh production line
- **EVE Energy**: MWh-level pilot line completed
- **Anwa Technology**: 0.15 GWh solid-state production line delivered (engineering case)
- **Saike Power**: 30 MWh all-solid-state battery capacity; 10-ton sulfide solid electrolyte line in operation
- **YiLi Technology**: 0.5 GWh sulfide-based all-solid-state battery line and 30-ton electrolyte mass-production line completed
- **Dega Energy**: 1 GWh production line completed in Huzhou
- **CAS DeepBlue Huizhe**: Plans to build a 0.5 GWh production line
- **QingTao Energy**: 0.2 GWh pilot line in Anting, Shanghai

- Solid-state batteries are moving from concept development into validation and deployment, with 2026 marking a critical surge in pilot production. OEMs and suppliers are accelerating pilot line construction and on-vehicle validation, indicating that the technology has entered the feasibility-validation stage; however, large-scale mass production still requires further breakthroughs in materials systems, yields, and cost
- Mass-production readiness is expected to improve after 2027, shifting the industry from "validation" to "production." The next 2–3 years will be a critical window for materials breakthroughs, process standardization, and supply-chain stabilization. Players that achieve early process lock-in and scalable manufacturing will gain first-mover advantages, though risks and uncertainties remain
- In scaling up, marginal-effect issues during real-world use must also be taken into account

Third-party suppliers continue to dominate the battery cell market, with CATL alone accounting for nearly 45%; overall market remains stable

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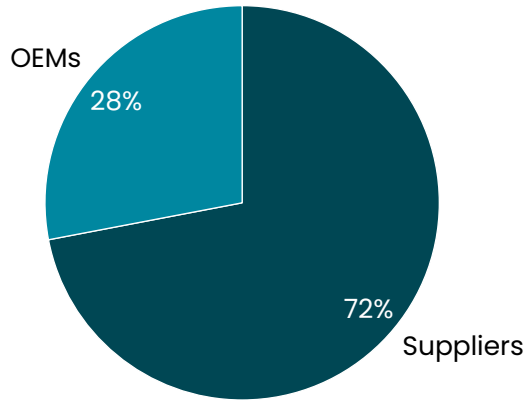
OEM BATTERY DEVELOPMENTS

Cell market share of OEMs and suppliers (2025)



- Among OEM-affiliated players, BYD overwhelmingly dominates with nearly an 80% share
- In addition, OEM-affiliated cells are almost exclusively used in passenger vehicles, while third-party suppliers, such as CATL, EVE Energy, and Gotion High-Tech, hold a much higher share in the commercial vehicle segment

2003

- **2003**: Established its first large-scale automotive battery plant, marking a key transition from consumer batteries to EV batteries
- **2026**: Launched the second-generation Blade Battery and fast-charging technology and a 20 GWh sulfide-based solid-state battery pilot line commenced operation

2008

- **2008–2009**: Chery established a power battery R&D team (2008) and built a battery production line (2009); Qida Power was founded in 2015, followed by Deyi Energy in 2022
- **March 2026**: Launched the Rhino Battery and solid-state battery and completed China's first 0.5 GWh all-solid-state battery pilot line

2018

- **2018**: SVOLT Energy was spun off from Great Wall Motor, entering cell manufacturing with in-house development of short-blade, disk-type, NCM / LFP, semi-solid, and all-solid-state batteries
- **2026**: Mass production of a 415 Wh/kg semi-solid battery is expected, to be deployed by the WEY brand; a 1 GWh solid-state battery pilot line is under commissioning

2018

- **2018**: Dongfeng officially launched solid-state battery R&D, marking its entry into core cell technologies
- **2022–2023**: Formed a JV with Sunwoda (Dongyu Xinsheng) to enter liquid battery cell mass production; the first cell rolled off the line in 2023
- **Sep 2026**: A 350 Wh/kg semi-solid battery is expected to enter mass production

2020

- **2020**: Yaoning Technology was established, developing in-house battery cells; in Jan 2025, Yaoning, Jidian, and Yaoneng were integrated under the unified "Shendun Jinbrick" battery brand
- **2026**: Completed its first in-house all-solid-state battery pack and initiated vehicle-level validation

2021

- **2021**: Introduced hybrid NCM + LFP battery cells; **2022**: built a cell R&D lab and pilot line and established NIO Battery Technology Co., Ltd.
- **Jan 2026**: The all-solid-state battery co-developed with WeLion New Energy completed compatibility deployment across NIO's nationwide battery-swap station network

2022

- **2022**: Pengyue Power was established, formally forming an in-house battery R&D team
- **Feb 16, 2026**: XPeng officially announced the completion of full-scenario road testing for its solid-state battery, with market launch expected in H2 2026

2025

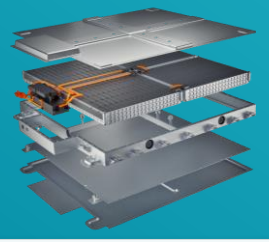
- **2025**: Formed a joint venture with Sunwoda to develop power batteries
- **Feb 2026**: Li Auto officially launched preliminary R&D on solid-state battery technology, while simultaneously planning adaptation solutions for range-extended models

Hybrid powertrains are currently evolving toward higher performance, higher efficiency, longer electric range, greater integration, and lower system cost

HYBRID VEHICLES TRENDS

2.0T DHE

- Most high-volume hybrid models currently use small-displacement engines, but many OEMs are deploying 2.0T high-displacement DHE solutions in the premium segment
- Chery's new-generation 2.0L hybrid engine "Kunpeng Tianqing," with thermal efficiency exceeding 48%, will debut on the Jetour D01 off-road model and enter mass production by late June 2025
- The new 2.0T hybrid-dedicated engine WE20TG-AA, co-developed by Changan Auto and Dongan Power, rolled off the line as its first prototype; Dongan Power's 3rd-generation hybrid-dedicated engine platform DAN20TDM achieved ignition success in November 2025



Large-battery range-extender

- Range-extender models are showing a clear "large-battery" trend. Battery-pack capacity has increased from the mainstream 40–50 kWh in 2023 to 60–80 kWh in 2025, with some models exceeding 80 kWh.
- Nearly half of all range-extender models now achieve more than 200 km of pure-electric range, and some premium models, such as the Maextro S800 range-extender version, have reached 400 km
- The Leapmotor D19 range-extender model launching in April 2026 will carry an 80.3 kWh battery pack, enabling a pure-electric range of over 500 km
- Brands such as Xiaomi Auto and XPeng plan to launch range-extender models next year equipped with large batteries of around 80 kWh

Hybrid powertrains are currently evolving toward higher performance, higher efficiency, longer electric range, greater integration, and lower system cost

HYBRID VEHICLES TRENDS

Single-speed DHT

- Due to cost and reliability considerations, mainstream DHT[1)] design philosophy in the industry is shifting toward simpler and more efficient low-gear architectures, with OEMs such as Geely and Chery replacing multi-gear hybrid systems with single-speed DHT solutions
- Geely's EM-i Raytheon hybrid technology adopts a single-speed DHT + dual-motor configuration, and all models launched in 2025 have transitioned from multi-gear to single-speed architectures
- BYD's 5th-generation DM-i technology continues to use a single-speed base structure while raising engine thermal efficiency to above 46%
- Chery's entry-level models have fully adopted its in-house developed stepless Super Hybrid DHT system

Integrated range extender module

- An integrated range-extender module combines the drive motor and generator within a highly integrated unit. Through coaxial designs or shared stator / rotor configurations, the system achieves high integration and multi-functionality, enabling the module to handle both drive and generation roles within an EREV architecture.
- In late October 2025, Leapmotor announced that its D-platform will adopt the eRE PLUS four-in-one range-extender system co-developed with ZF. The solution offers greater cost advantages and enables smooth mode transitions—generation, driving, and front-axle decoupling, using a single motor and a dedicated shift mechanism.

1) DHT: Dedicated Hybrid Transmission
Source: FEV

Multiple automakers are expanding into in-house development of chips, AI, robotics, and related fields

CHIP, AUTONOMOUS-DRIVING, AI, AND ROBOTICS DEPLOYMENT

In-house chip R&D trend

- Several domestic OEMs are preparing to launch models equipped with 100% in-house chips. NIO's Shenji NX9031 intelligent-driving chip entered mass-production on April 23, 2025 with the ET9, reaching 550k cumulative units by March 2026, and NIO expects a 35%–40% localization rate for vehicle semiconductors by 2027
- XPeng's Turing AI chip entered mass-production in Q2 2025 and supports L3-level intelligent driving
- SAIC, Changan, Great Wall, BYD, Li Auto, and Geely are also preparing 100% in-house-chip models

Autonomous-driving development status

- In Dec. 2025, Changan received China's first L3 conditional-autonomous-driving license plates, and nationwide legal on-road operation of L3 conditional autonomous driving begins in 2026
- NVIDIA will deepen collaboration with leading global OEMs including BYD and Geely, leveraging the NVIDIA DRIVE Hyperion platform to advance R&D and mass-deployment of L4 autonomous-driving technology
- China's automotive industry has fully entered the large-scale adoption stage of NOA[1] high-level assisted driving. From Jan. to Nov. 2025, cumulative sales of passenger vehicles equipped with urban NOA reached 3.1 million units, representing a 15% penetration rate of insured PVs

1) NOA: Navigate on Autopilot
Source: FEV

OEMs are expanding to related fields to secure core competitiveness in the intelligent-vehicle era and capture future market opportunities

CHIP, AUTONOMOUS-DRIVING, AI, AND ROBOTICS DEPLOYMENT

In-vehicle large-model applications

- GWM's in-house-developed VLA[1] autonomous-driving large model will soon be deployed on new Wey-brand vehicles, together with the new CP Master ADAS system
- In Feb. 2025, Geely announced that its self-developed Xingrui large model had completed deep integration with DeepSeek
- Volcengine is collaborating with numerous OEMs, including Mercedes-Benz, SAIC Audi, SAIC Roewe, Changan Mazda, and Dongfeng ет, to build more intelligent in-vehicle cockpit experiences powered by the Doubao large model
- On March 18, 2026, IM Motors released the industry's first "super intelligent agent", IM Ultra Agent, becoming the world's first in-vehicle intelligent system powered by the Qwen large model

Mainstream automakers accelerate their shift toward the robotics track

- On Nov. 5 2025, XPeng released the new-generation Iron humanoid robot, equipped with three Turing AI chips, with mass production targeted for late 2026
- Chery's AiMOGA robot is the world's first humanoid robot to obtain three core EU certifications (CE-MD[2], CE-RED[3], EN 18031[4]), and has been deployed in 30+ countries including Malaysia, Indonesia, the UAE, and South Africa
- Globally, more than 20 mainstream automakers have entered the humanoid-robotics track, including international giants such as Tesla, BMW, and Hyundai, as well as leading Chinese OEMs such as BYD, XPeng, Changan, and Chery

1) VLA: Vehicle Large-model applications; 2) Machinery Safety; 3) Radio Equipment; 4) Cybersecurity and Data Protection
Source: FEV

AGENDA

MACRO BACKGROUND

AUTOMOTIVE MARKET PERFORMANCE

INDUSTRY INSIGHTS

SUMMARY

Industry trends

- NEV penetration continues to rise. With the extension and expansion of the “Two New” policy supporting structural renewal, alongside the phase-out of purchase-tax incentives and tightening technical thresholds, NEV development is shifting from “policy-driven” to “capability-driven”. Automakers must keep advancing core metrics such as energy consumption, range, and efficiency.
- A new wave of credit policies, emission / energy-consumption rules, and carbon-emission regulations is progressing steadily. Regulatory focus is moving from stimulating volume to emphasizing energy efficiency, compliance, and technological sophistication, increasing the importance of comprehensive compliance and technology-iteration capabilities.
- A stable and flexible supply-chain system becomes critical for OEMs to handle price competition, requiring simultaneous enhancement of quality control, bargaining power, and risk-resilience capabilities. “Strong supply chain + strong system integration” becomes a key competitive moat
- L2 functions are rapidly cascading down to models priced around 70k CNY, while L3 automated driving has entered the pilot and regulatory-clarification stage. However, large-scale commercialization of L3/L3+ still requires suitable timing windows and use-case conditions
- More OEMs are adopting range-extender solutions, and PHEV / REEV models continue to increase battery capacity, strengthening their “BEV-like” characteristics. Hybrid solutions are becoming a more likely complement to BEVs.
- Semi-solid-state batteries have entered mass production, and multiple companies have moved semi-solid / solid-state batteries into pilot production, bringing the technology closer to large-scale application
- Adjustments to punitive tariffs on Chinese vehicles in overseas markets are improving the export environment. Combined with intensifying domestic competition, global expansion is becoming a key path for OEMs to scale and build brand presence. However, higher requirements are emerging around localized R&D, supply chain, and after-sales capabilities.
- The 2025 sales peak carries some degree of demand pull-forward due to consumption incentives. From a long-term perspective, China will continue to be the world’s largest single automotive market, but annual sales will remain relatively stable. Large, sudden surges are unlikely, and competition will remain a stock-market battle.

Source: FEV

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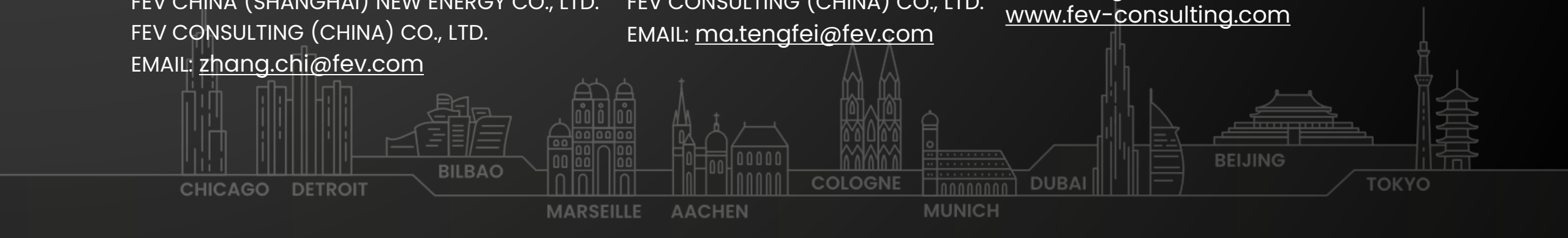

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