Introduction to China Automotive Industry and Standardization Progress

The 16th Public and Private Joint Forum in Asian Region | 2025

China Automotive Standardization Research Institute (CASRI), CATARC

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01

Latest Development of China Automotive Industry

Current Market Landscape

Size of the market (2025 January to October): Overview

Production

27.692 M units

13.2% YoY

Sales

27.687 M units

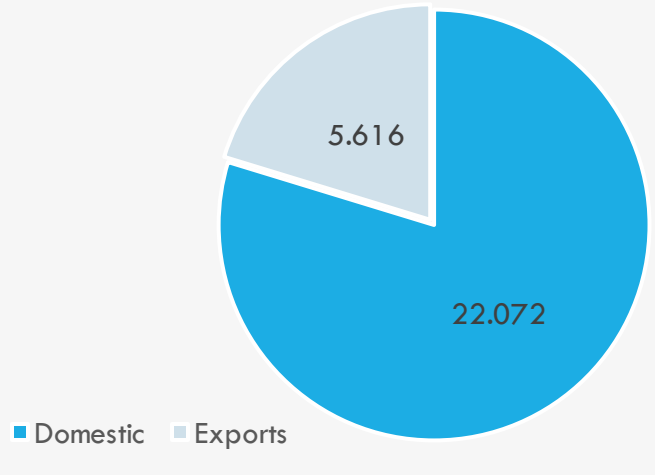
12.4% YoY

Exports

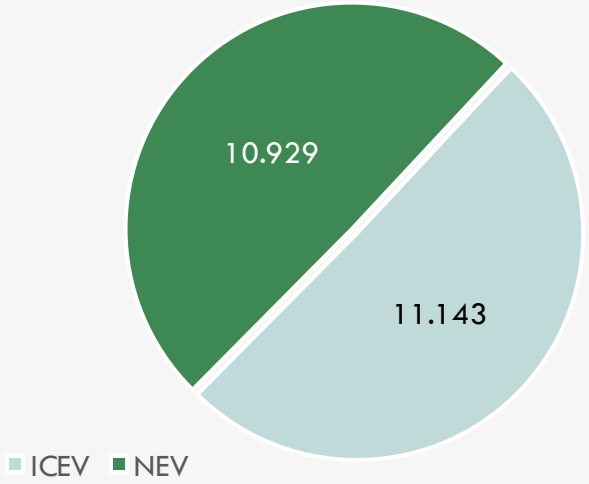
5.616 M units

15.7% YoY

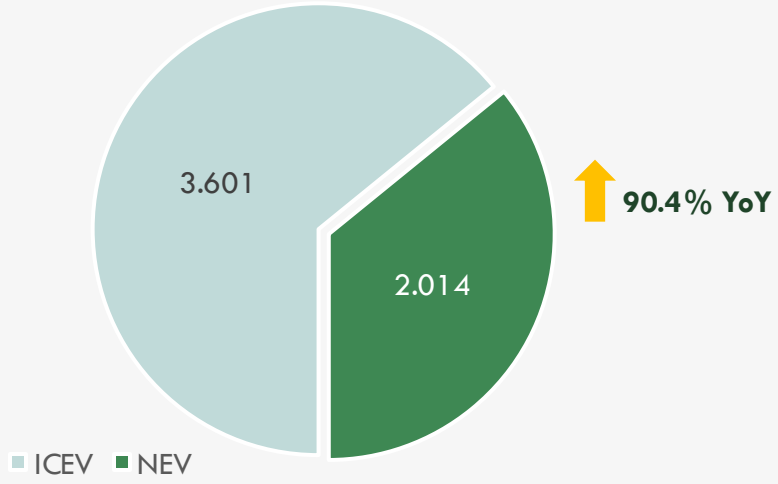
Sales Breakdown: Domestic vs. Exports (M units)



Domestic Sales breakdown: ICEV vs. NEV (M units)



Exports breakdown: ICEV vs. NEV (M units)



Source: China Association of Automobile Manufacturers

Current Market Landscape

Size of the market (2025 January to October): New Energy Vehicle

Production

13.015 M units

33.1% YoY

Sales

12.942 M units

32.7% YoY

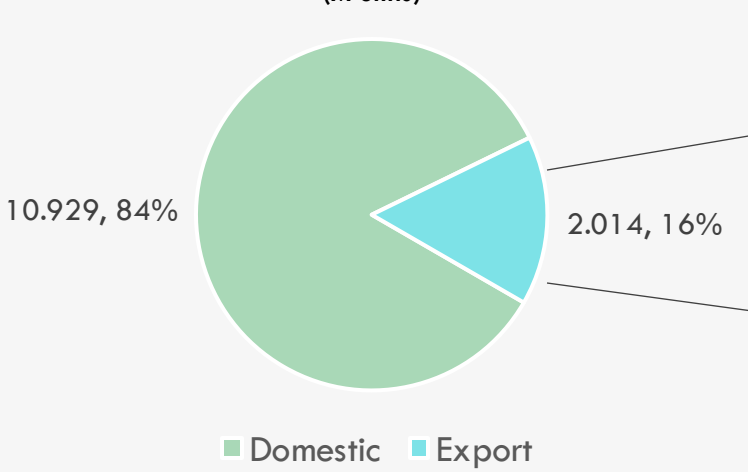
46.7% of total new vehicle sales

Unit: Million, %

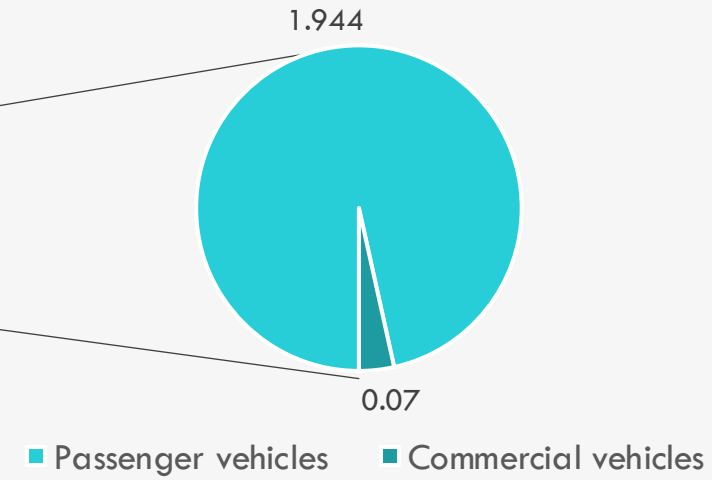
Product Type	Production	YoY (Production)	Sales	YoY (Sales)
BEV	8.41	43.4	8.33	42.9
PHEV	4.602	17.7	4.61	17.8
FCEV	3,151*	-32.7	3,164*	-32.6

NEV Sales breakdown: Domestic vs. Exports

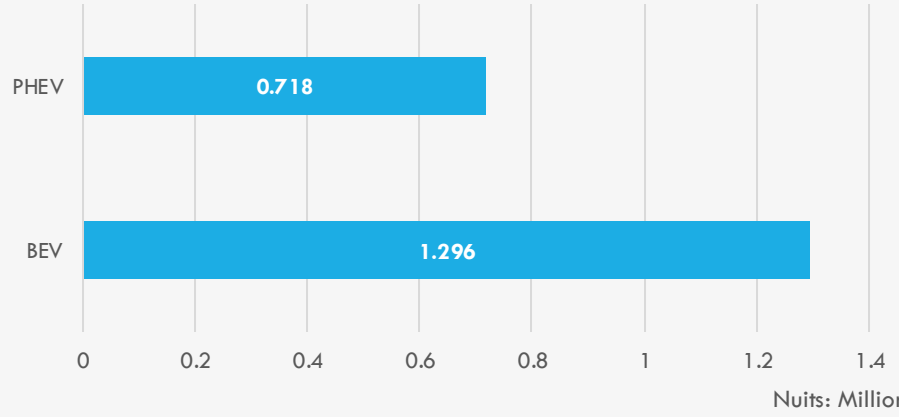
(M units)



NEV Export breakdown (M units)



Export Passenger vehicles breakdown



Source: China Association of Automobile Manufacturers

Current Market Landscape

Entering a new stage of large-scale application of intelligent and connected vehicles

- **A Rapidly Evolving and Complete Industrial Ecosystem**

•China has built a comprehensive ICV ecosystem covering **smart cockpits, automated driving**, and **vehicle–road–cloud integration.**

•National "vehicle–road–cloud integration" pilot programs are accelerating cross-scenario deployment.

•A series of key standards have been issued, with strengthened coordination with international standards and regulations, **creating favorable conditions for technology innovation and application.**

Source: China EV100 Forum

- **Demonstration First, Commercialization Next**

• Demonstration application is the necessary path toward large-scale commercial deployment.

• ICVs are transitioning from closed test fields → highways → open urban roads → scaled industrial operation.

• Due to complex multi-technology integration, diverse road scenarios, varied safety risks, and multi-party responsibilities, demonstration pilots remain essential before mass commercialization.

- **Strong Momentum and Significant Application Achievements**

•China's ICV industry is booming nationwide.

- ✓ **>60%** of new passenger cars are equipped with combined driving assistance functions.
- ✓ **17** national-level ICV test and demonstration zones established across China.
- ✓ Over **10,300** test and demonstration licenses issued nationwide.
- ✓ Total accumulated ICV test mileage exceeds **200 million km.**

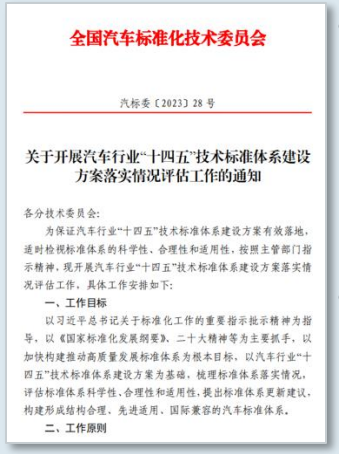
Source: MIIT, ChinaEVHome.

02

Latest Development of China Automotive Standardization

AUTOMOBILE STANDARD SYSTEM CONSTRUCTION

● Periodic Standard System Planning


全国汽车标准化技术委员会

汽标委〔2023〕28号

关于开展汽车行业"十四五"技术标准体系建设方案落实情况评估工作的通知

各分技术委员会：

为保证汽车行业"十四五"技术标准体系建设方案有效落地，适时检视标准体系的科学性、合理性和适用性，按照主管部门指示精神，现开展汽车行业"十四五"技术标准体系建设方案落实情况评估工作，具体工作安排如下：

一、工作目标

以习近平总书记关于标准化工作的重要指示批示精神为指导，以《国家标准化发展纲要》、二十大精神等为主要抓手，以加快构建推动高质量发展标准体系为根本目标，以汽车行业"十四五"技术标准体系建设方案为基础，梳理标准体系落实情况，评估标准体系科学性、合理性和适用性，提出标准体系更新建议，构建形成结构合理、先进适用、国际兼容的汽车标准体系。

二、工作原则

- Complete the *14th Five-Year Plan* standard system construction plan and evaluation.
- Start preparing for the *15th Five-Year Plan* standard system.

● Guidelines for the Construction of National Internet of Vehicles Industry Standard System (Intelligent Connected Vehicles) 2023


中华人民共和国工业和信息化部

两部门关于印发《国家车联网产业标准体系建设指南（智能网联汽车）》的通知

工信部联科〔2017〕332号

*This document was jointly issued by MIIT and SAC in July 2023.

● Guidelines for construction of national automotive chip standard system


中华人民共和国工业和信息化部

工业和信息化部办公厅关于印发国家汽车芯片标准体系建设指南的通知

工信厅科〔2023〕80号

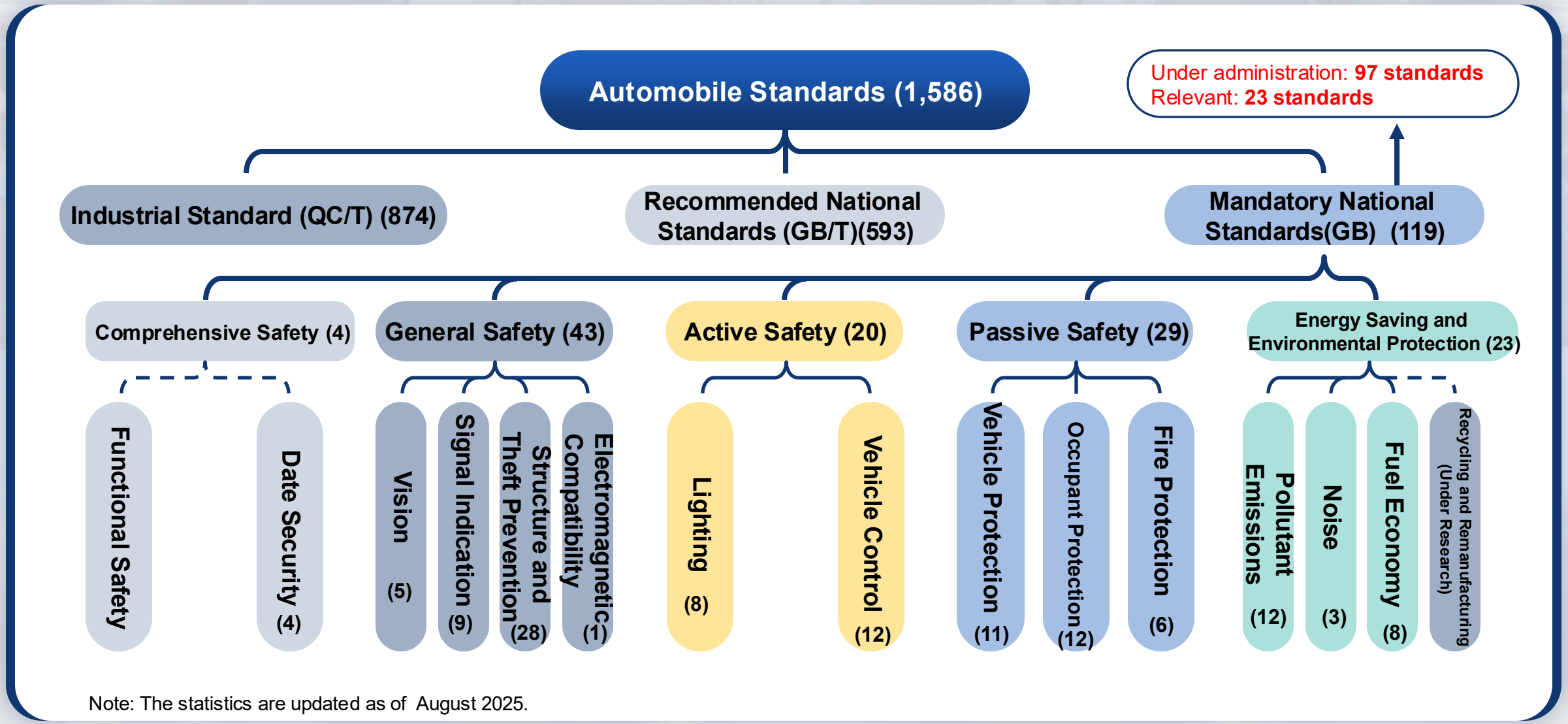
*This document was issued by MIIT in January 2024.

■ Roadmap of Guobiao (GB)

■ Roadmap of China's EV standardization work (2021-2030)

■ Roadmap of the China Automotive Industry's Low-Carbon Development

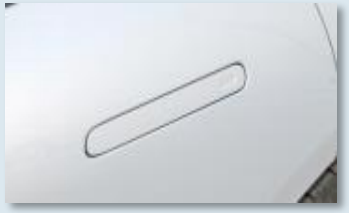
AUTOMOBILE STANDARD SYSTEM



Note: The statistics are updated as of August 2025.

Coordinate User Experience Standards: Mandate & Guide New Tech/Function Application

User experience-oriented innovative technologies are a key driver for car purchases. New tech/function applications must **FIRST** uphold safety, then adapt to market changes and embrace innovation.



Retractable door handle

Asymmetric steering wheel

Gullwing door

Zero-gravity seat

Intelligent headlight projection

One-pedal control

RISKS

Ice prevents retractable door handles from popping out properly.

Zero-gravity seats fail to protect occupants in vehicle collisions.

Glare from intelligent headlight projection and inconsistent projected symbols

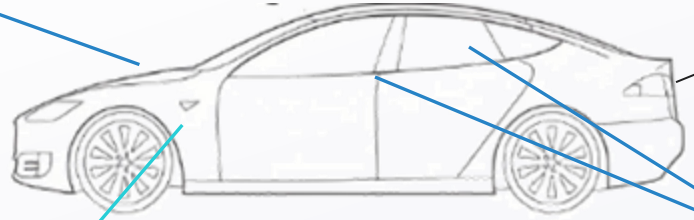
Advance passive safety mandatory standards revision

Adapt to new industrial trends, continuously enhance vehicle safety performance (body structure, restraint systems, pedestrian protection, crash safety, etc.), and improve the passive safety standards system.

GB 26134-2024 Roof crush resistance

GB 17354-2024
Front and rear protection

GB 20071-2024
Safety requirements for passenger car rear-end collisions



Effective July 1, 2025

Effective Jan 1, 2026

Effective July 1, 2026

GB 11566-2024 Passenger car external projections
GB 20182-2024 Commercial vehicle external projections

GB 14166-2024 Seat belt
GB 14167-2024 Seat belt anchorages
GB 27887-2024 Child restraint system

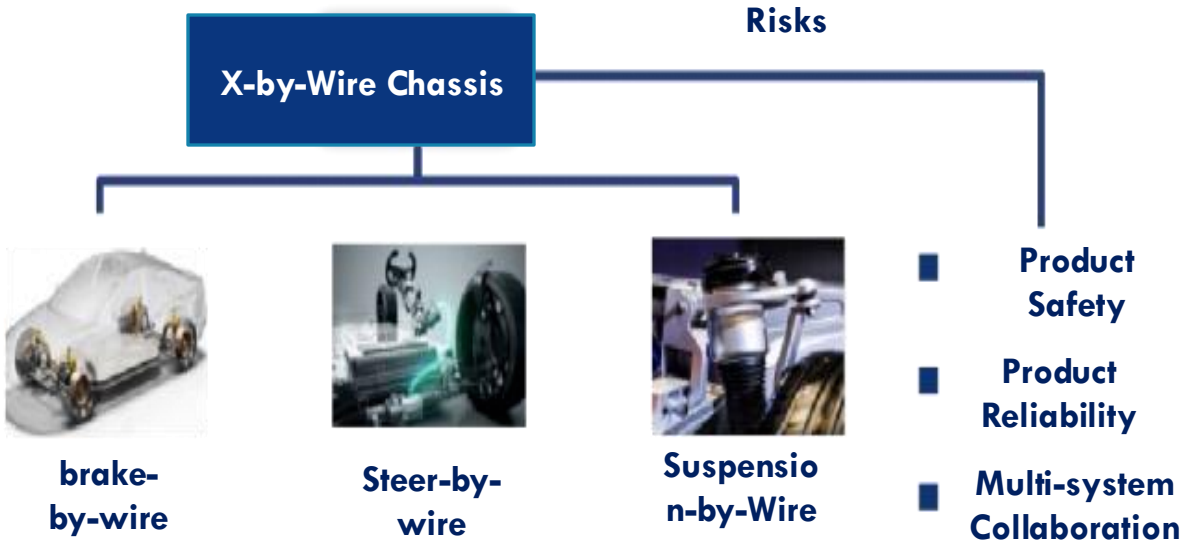
PRINCIPLES

- Further upgrade **safety redundancy** design and requirements.
- Adapt to the new industrial development stage, encourage new technological innovation.

Accelerate active safety standards (X-by-Wire Chassis)

X-by-Wire Chassis achieves "mechanical decoupling" via electrical signals, simplifying structure with faster response and precise control. It poses challenges in **safety redundancy, reliability, and multi-system collaboration**, relevant standardization advances steadily to support its development and application.

Oppotunities & Risks



Wire-by-Wire Chassis Series Standards Plan

Steer	GB 17675 Steering system of motor vehicles	GB/T Steer-by-wire Systems Performance
Break	GB 21670 passenger car braking systems	GB/T passenger carEMB systems requirements
	GB 12676 commercial vehicle and trailer braking systems	GB/T commercial vehicleEMB systems requirements
Suspension	Air Spring	Shock Absorber / Air Supply Unit

Carbon Emission Management

Carbon emission management standard system

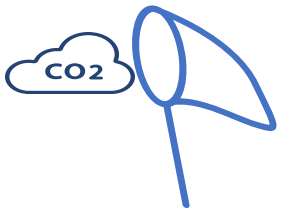
Carbon management for enterprise

Carbon footprint of automotive product

Carbon reduction at project level

General | Metering | Accounting | Verification | Disclosure | Assessment | Threshold

Carbon management system/management technology/management assessment in automotive industry



Carbon reduction technology standard system

Carbon reduction technology of auto enterprise (Scope1、Scope2)

Carbon reduction technology of auto product (Cradle-Grave)

supplychain

Low carbon material

Recycled material

biological material

……

manufacturing

Using clean energy

energy-saving equipment

CCUS

……

transportation

Reduce travelling

reused/remanufactured part

New energy vehicle

energy-saving vehicle

End-of-life

Using clean energy

energy-saving equipment

reuse/remanufacturing

recycling/recovery

……

Carbon Emission Management

Carbon management

1 General standard

2 Metering and monitoring

3 enterprise accounting

4 product carbon footprint

5 reduction at project level

6 carbon report verification

7 carbon info disclosure

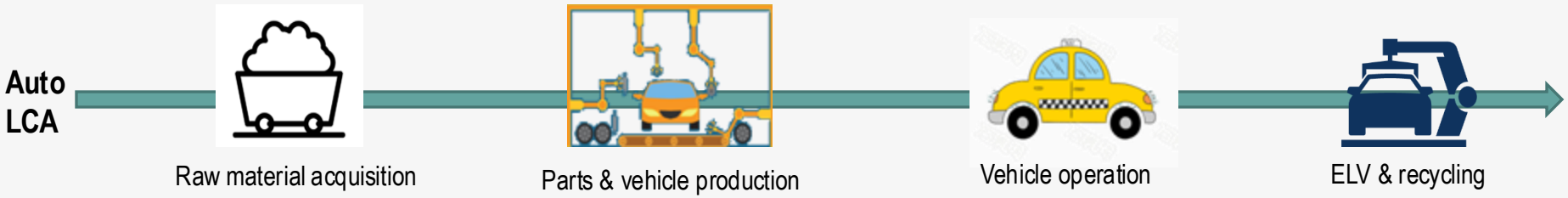
8 low-carbon assessment

9 carbon threshold

10 carbon management sys

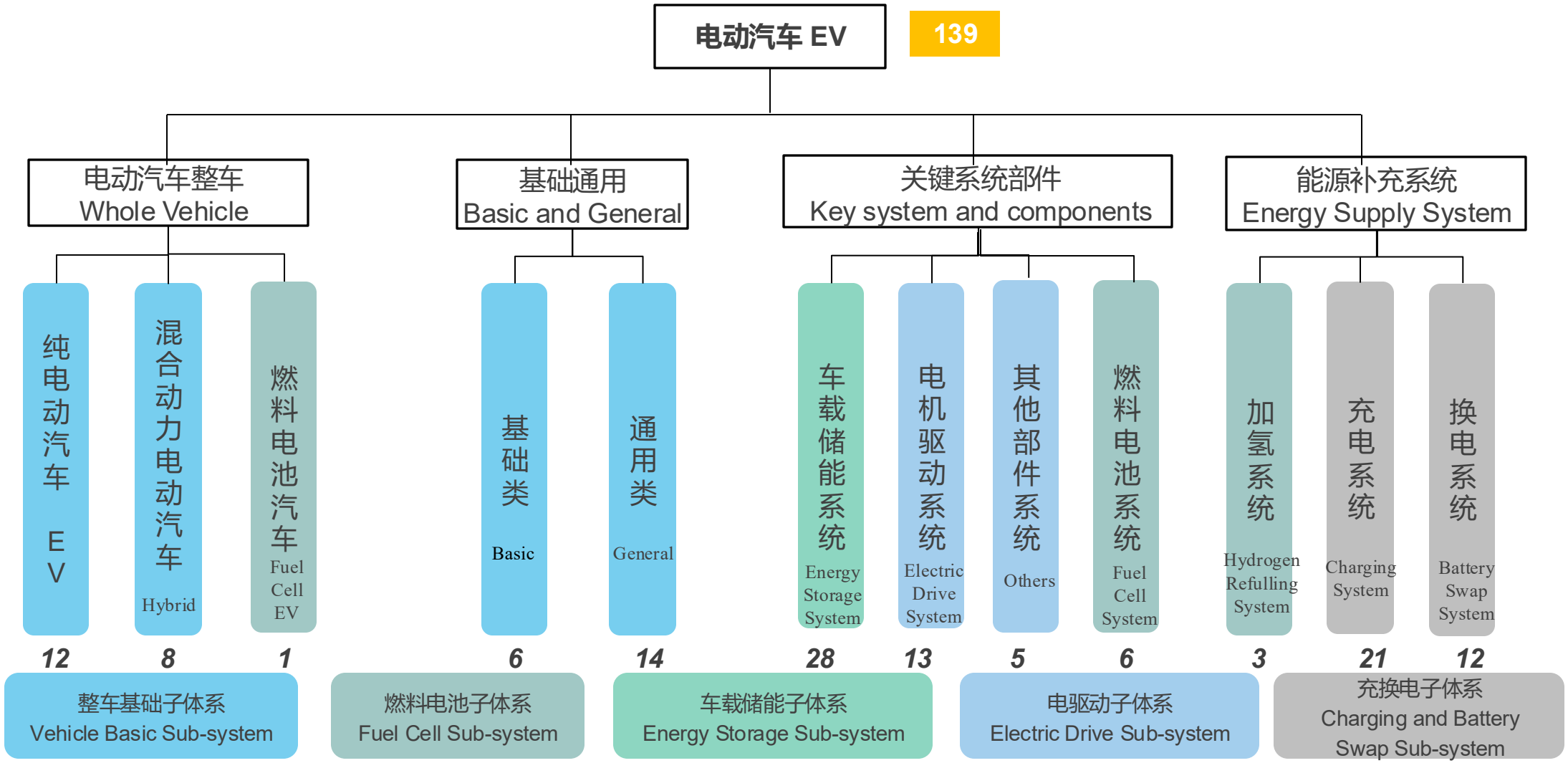
11 .....

Drafting GB/T



China New Energy Vehicle Standard System

The standard system includes 5 sub-system: Vehicle Basic, Fuel Cell, Energy Storage, Electric Drive and Charging and Battery Swap.



Note: The statistics are updated as of August 2025.

Key NEV standards in for 2025

Safety

Published

GB 38031-2025

Traction battery safety requirements

Under development

GB 18384

Electric vehicle requirements

Published

GB/T 32960-2025 (1.2.3.4)

Remote service and management system for EV

Published

GB/T 40032.2-2025

Safety requirements of battery swap

Green and low-carbon

Published

GB 36980.1-2025

Energy consumption limits for electric vehicles—Part 1: Passenger cars

Published

GB/T 34015.5—2025

Recovery of traction battery used in EV—Echelon use

Performance

Published

GB/T 46481-2025

Test method for powertrain system power of hybrid electric vehicles and pure electric vehicles having more than one propulsion electric machine

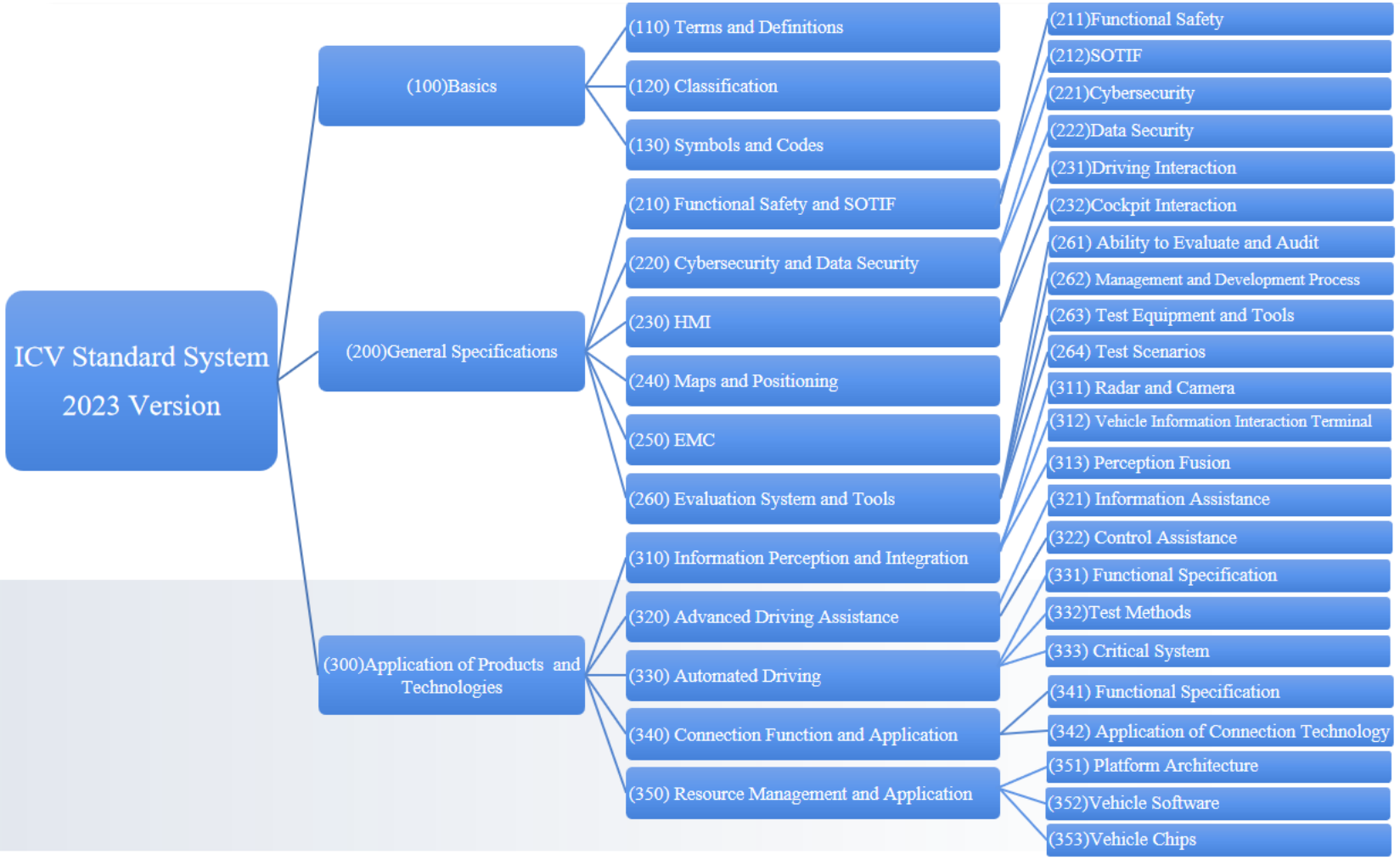
Under development

GB/T

In-vehicle traction battery durability requirements and test methods for electric vehicles

Intelligent and Connected Vehicles (ICV): the standard system continues to be optimized

The established standard system has effectively guided the development of relevant standards



Progress in the development of standards for intelligent and connected vehicles:

Issued: 69

Submitted for approval: 13

Initiated projects: 31

Applied for projects: 32

Intelligent and Connected Vehicles (ICV): standards in the field of driving automation

Establish a product security baseline to ensure compliant development

Fully covers **Level 0 to Level 2** driving assistance function standards: **Issued 16 standards, drafted and pre-researched 16 items**

Level 2	Combined driving assistance functions
Level 1	Some driving assistance functions Emergency auxiliary function
Level 0	Emergency auxiliary function

Standard for autonomous driving functions **above L3: Released 7 standards, drafted and pre-researched 13 items**

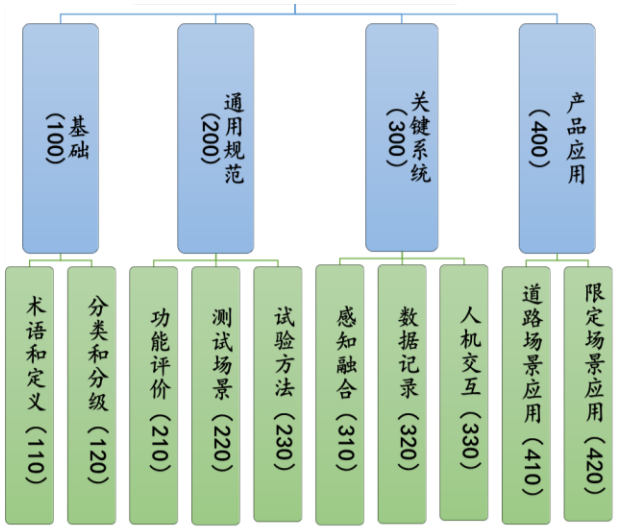
Level 5	Fundamentals: classification of driving automation, definition of ICV terminology, etc
Level 4	Product applications: automatic parking, port autonomous driving, etc General specifications: AD safety, site, roads, simulation tests, etc
Level 3	Key systems: data recording, integrated positioning, etc

Intelligent and Connected Vehicles (ICV): standards in the field of driving automation

- **31 standards** have been initiated for **revision,** including:
4 mandatory national standards,27 recommended national standards.
- **16 items** have been **published and submitted for approval.**

A complete **standard system in the ADAS field,** covering Level 0 to Level 2 driving automation functions, has been established.

Automated driving standard system



- 20 **national** and **industry standards** have been initiated:
- 2 mandatory national standards
- 17 recommended national standards
- 1 automotive industry standard.
- 12 items have been published or submitted for approval.

A standard system capable of supporting the management of automated driving product access has been established

2025:Accelerate the drafting of mandatory standards(The review of the light AEB will be completed in July 2025)

2026:Promote the drafting and implementation of mandatory standards(Promote the formulation of mandatory standards for driving and parking)

2027:Focus on the implementation, application, and effectiveness evaluation of driving automation standards

Intelligent and Connected Vehicles (ICV): standards in the field of safety

Automotive information security standards

The preliminary framework for the automotive information security standard system has been established, encompassing **20 standards**, including 3 mandatory standards and 17 recommended standards. **10 standards** having been published or submitted for approval.

Access support standards	
GB44495—2024 Technical Requirements for Vehicle Information Security	Implemented on January 1, 2026
GB 44496—2024 General Technical Requirements for Automotive Software Upgrade	Implemented on January 1, 2026
GB XXX Technical Specification for Automotive Cryptographic Application	Completed in 2026

Automotive data security standards

1. **Set baseline (completed)** — Clarify the baseline requirements for data security of automotive products
2. **System establishment (in progress)** — Industries establish a data security management system to ensure the security of the production process
3. **Heavy application (in development)** — Addressing key scenarios such as data cross-border, circulation, and governance

Key standards		
GB/T 44464—2024 General Requirements for Automotive Data	Implemented on January 1, 2026	Direct support for access
GB/T XXX Technical Specification for Vehicle Important Data Recognition	Completed in 2026	Support government management

Functional safety & expected functional safety standards

- Based on China's national conditions, we have established a standard system for automotive **functional safety and expected functional safety, issued 20 standards,** and have **14 standards** under research and planning. We have taken the lead in drafting the first international standard for component-level functional safety.
- Establish the first automotive functional safety standardization promotion center in China, systematically study the lateral, longitudinal, and vertical motion functions of vehicles, and define safety quantification indicators for typical hazards of complete vehicles.

The Electric Vehicle Standardization Capability Building Seminar

In March 3-7 2025, CATARC to host the **Electric Vehicle Standardization Capability Building Seminar in Guangzhou, China.**

PARTICIPANTS

- **45** delegates from 9 ASEAN Member States and ASEAN Secretariat.

HIGHLIGHTS

- Keynote speech: Experts from diverse sectors share insights on EV industry development, standards, testing and certification.
- Project release: : ITC and CASRI jointly released report on *Standard connectivity, facilitating ASEAN's integration into the global automotive industry supply chain*.
- Training Lectures: 9 sessions covering key topics in EV standards, regulations and practical applications
- On-site Field Visit: 4 visits to relevant facilities and sites.

Global Young Engineer Exchange Program (Go-YEEP)

Understanding, Cooperation and Development

Go-YEEP
汽车标准化国际青年工程师交流项目
GLOBAL YOUNG ENGINEER EXCHANGE PROGRAM

Tianjin Declaration

Vision

To build a global platform where young automotive engineers unleash their creativity, enhance professional competence, and collaborate across cultures and disciplines—shaping the future of the automotive industry and advancing global industrial governance.

Mission

- Implement the UN 2030 Youth Strategy
- Foster global youth–industry interaction and development
- Promote automotive standard innovation and governance
- Advance sustainable international standardization

Establish the **International Training Base** for Automotive Standardization Engineers

Call for **Exceptional Academic Papers**

Encourage **Joint Research Initiatives** Among Young Standardization Engineers

Industry Partner

FAW GROUP

GEELY

International Dialogue

Technical Workshop

Field Visit

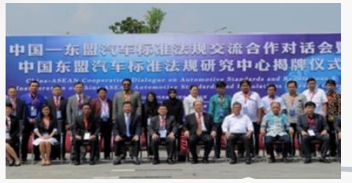
Cultural Exchange

Regional Cooperation

The China-ASEAN Automotive Dialogue on Standards and Regulation

- An open dialogue platform for exchanging and sharing the latest development of automotive standardization in China and ASEAN since 2018.
- In 2023, it became an important activity under ACFTA SC-STRACAP as part of collaboration between APWG and CATARC.
- **In August 2025, the 7th AD was hosted by CATARC and the ACCSQ APWG, with SGMW as co-host. More than 30 delegates from ASEAN Member States and ASEAN Secretariat participated, while 6 experts from government agencies, standardization bodies, and manufacturers shared the latest research and practical experiences in electrification and intelligent vehicles.**

1st, 2018
Jarkarta, Indonesia



2nd, 2018
Nanning, China

3rd, 2019
Bandung, Indonesia

4th, 2022
Video Conference

5th, 2023
Liuzhou, China

6th, 2024
Bangkok, Thailand

7th , 2025
Nanning, China

FACILITATE REGIONAL CONNECTIVITY

03

NEXT STEP

China' 15th five-year plan (2026-2030) signal

The Central Committee of the Communist Party of China has released its **official recommendations** for the **15th Five-Year Plan,** providing the most detailed outline yet of the country's policy priorities for economic and social development over the next five years. Adopted at the fourth plenary session in Beijing from October 20 to 23, the recommendations set the framework for the 15th Five-Year Plan, which is expected to be formally released and implemented in March 2026.

The 15th Five-Year Plan recommendations outline China's strategy for **high-quality, innovation-driven growth,** focusing on **industrial upgrading, technological self-reliance, increased domestic demand,** and **expanded openness,** among other policy priorities.

谢谢！

THANKS

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