



全国汽车标准化技术委员会

National Technical Committee of Auto Standardization

The 12th Public and Private Joint Forum in Asian Region

Country Report -China

CATARC Auto Standardization Research Institute
Dec 7, 2021

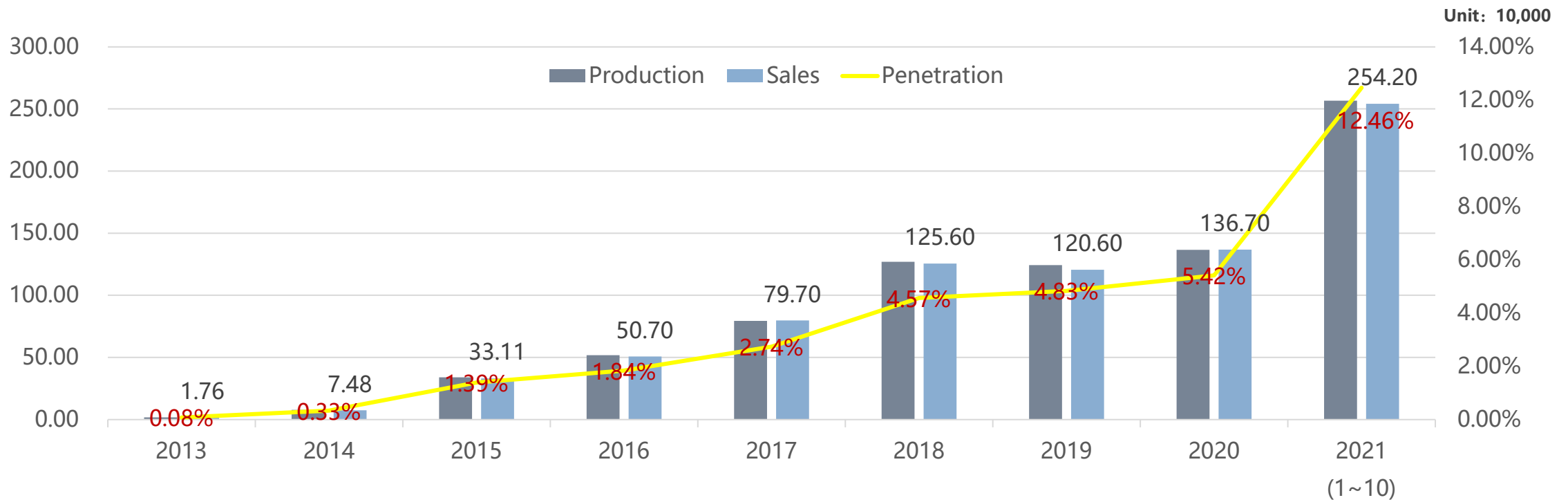
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1.1 Market volume

- From Jan to Oct 2021, the overall auto sales volume was 20.587 million units, up 5.4% year on year. The sales volume of NEV was 2.542 million, up 176.6% year on year, and the proportion of NEV sales rose rapidly from 5.4% in 2020 to 12.46%.
- By Oct 2021, the cumulative sales of NEV in China exceeded 8 million.



**Production, sales and market share of NEV in China
from 2010 to Oct 2021**

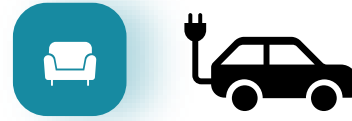
Data source: CAAM

PEV•PHEV•FCEV~ Parallel Technical Roadmaps



Mainly medium vehicles and below to realize the promotion and application of pure electric technology in the fields of family cars, rental services, business cars and medium and short distance commercial use vehicles.

EV



Mainly compact vehicles and above to realize the application of plug-in hybrid technology in short daily average range scenarios like private vehicles, business vehicles and other.

PHEV



Mainly buses and urban logistics vehicles mainly with the focus on the promotion of hydrogen production from renewable energy and industrial hydrogen by - product in regions where hydrogen is abundant, gradually reaching a total scale of about 1 million vehicles.

FCEV

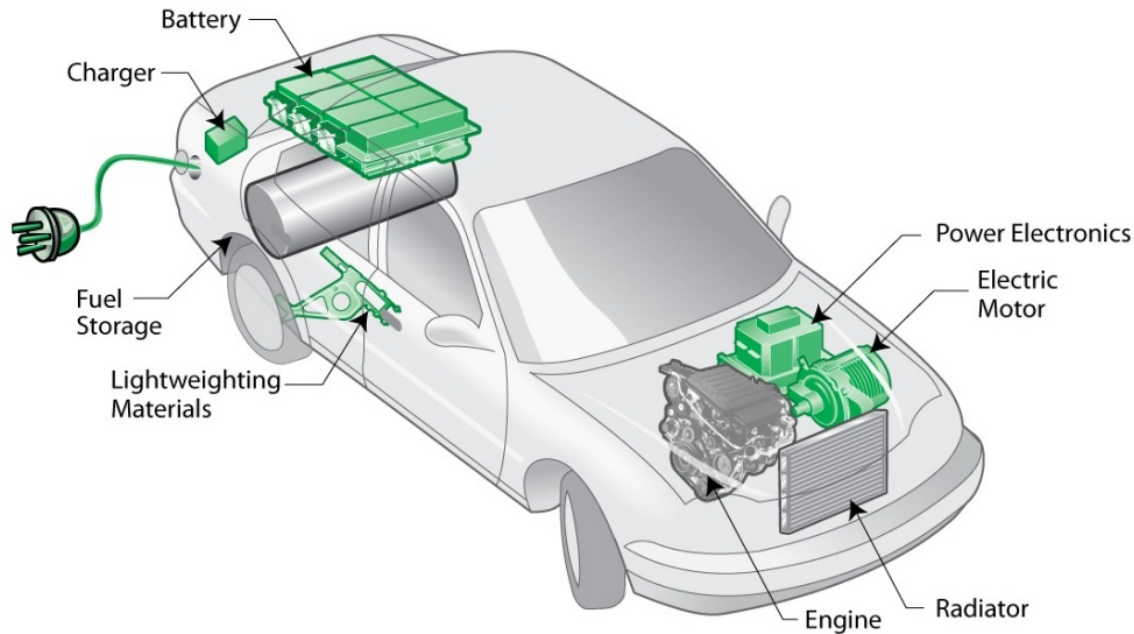
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2.1 EV standard system

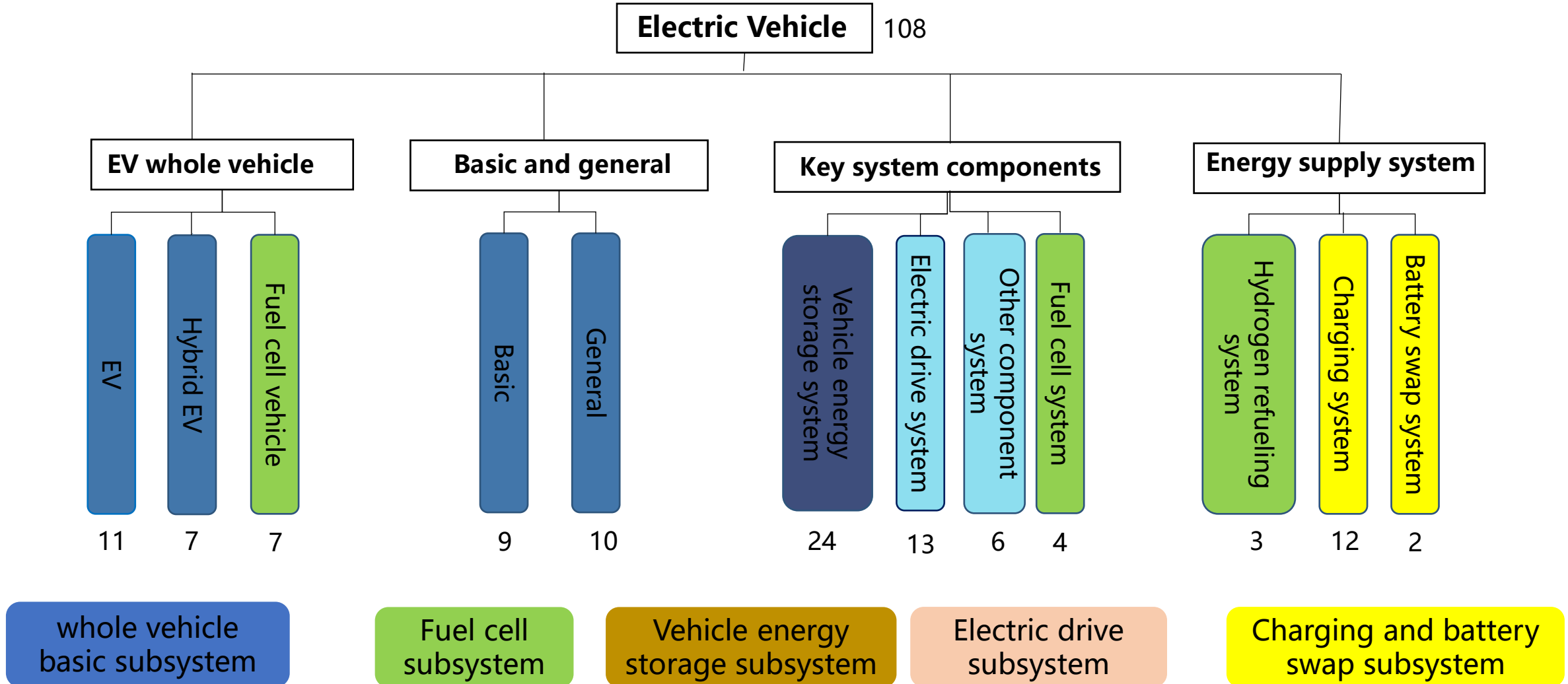
- As a vehicle, EV shall meet all the general auto standards applicable to it.
- Compared with conventional vehicle, EV has differences in terms of energy storage system, power system and power supply system, so the EV standard system is established surrounding on those special characteristics.



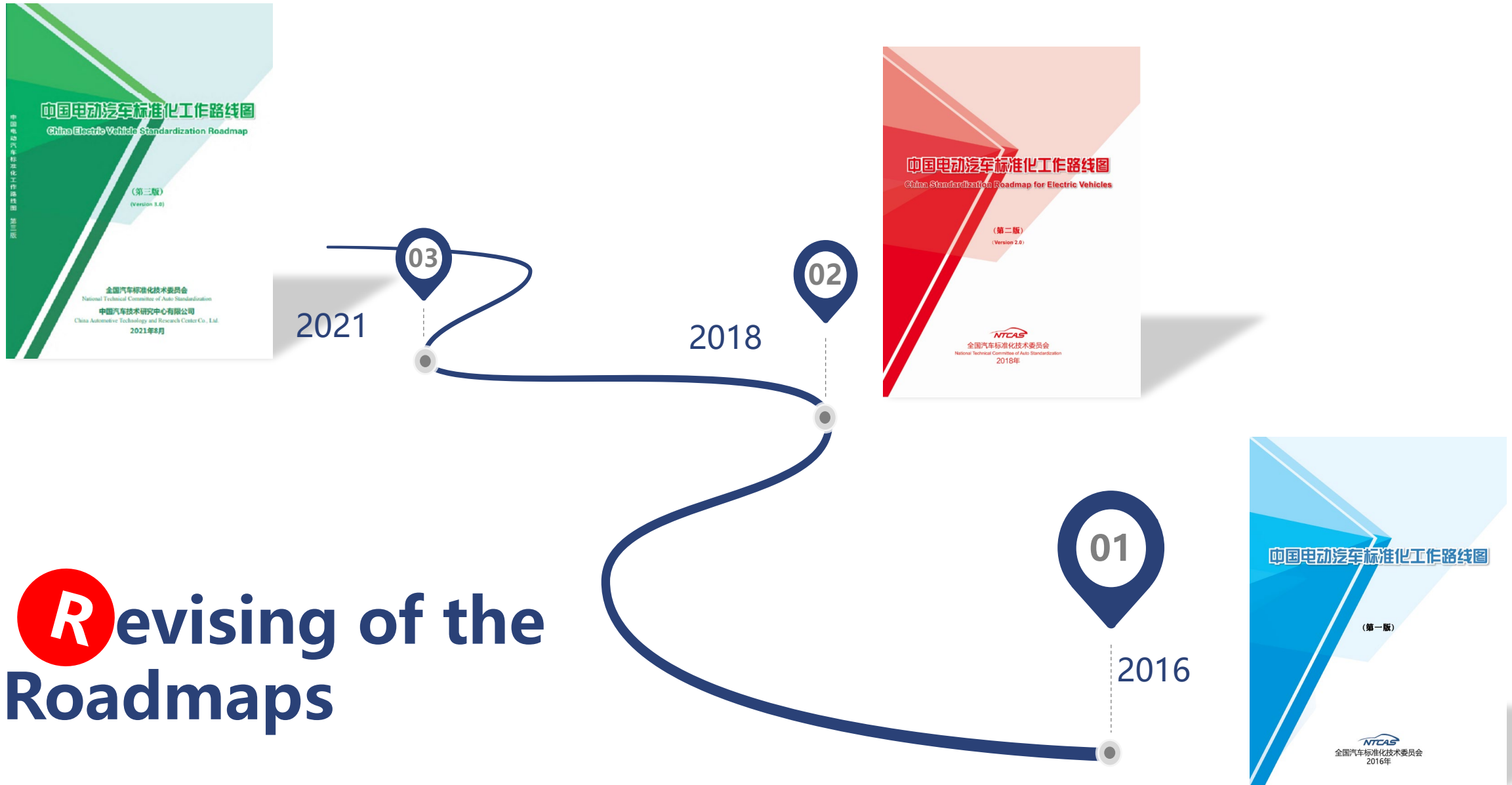
- Energy storage system: fuel tank → power battery, hydrogen tank, super capacitor ...
- Power system: ICE+ transmission → traction electric motor
- Energy supply: Add the gasoline or diesel → charging, refuel the compressed hydrogen
- Electric system: 12V/24V low voltage → ~500V high voltage + low voltage

2.1 EV standard system

- At the moment there are 108 valid standards (80 national standards and 28 industrial standards) ; 8 standards are submitted and awaiting the approval; 20 standards are under research.



2.2 China Standardization Roadmaps for EVs



2.3 Orientations of EV standard system



Whole
vehicle

Strengthen whole vehicle safety performance standards and optimize the test method standards of whole vehicle power performance and economy performance

H₂

Fuel cell

Facilitate the standard project package and expedite the commercialized application



Power
battery

Multi-angle performance assessment standard to cover the whole cycle of vehicle energy storage system



Electric
drive

Revise the crucial standards to catch up with the trend of electromechanical integration



Charging &
discharging

Battery swap

- Enhance standard supply to mitigate the challenges of inconvenient and slow charging and optimize the charging experience
- Build standard system, promote the sharing of battery swap facilities and guide the battery pack swap

2.4 EV certification system (key points selected)



Interoperability requirements

Connection set of conductive charging for electric vehicles—Part 1: General requirements	GB/T 20234.1-2015
Connection set for conductive charging of electric vehicles—Part 2: AC charging interface	GB/T 20234.2-2015
Connection set for conductive charging of electric vehicles—Part 3: DC charging interface	GB/T 20234.3-2015
Communication protocols between off-board conductive charger and battery management system for electric vehicle	GB/T 27930-2015

2.4 EV certification system (key points selected)

Safety Requirements

Safety requirements and test methods for traction battery of electric vehicle	GBT 31485-2015
Electric vehicles traction battery pack or system safety requirements	GB38031-2020
Electric vehicles traction battery cell safety requirements	GB38031-2020
Lithium-ion traction battery pack and system for electric vehicles-Part 3:Safety requirements and test methods	GB/T 31467.3-2015
On-board rechargeable energy storage system(REESS)	GB/T 18384.1-2015
Vehicle operational safety means and protection against failures	GB/T 18384.2-2015
Protection of persons against electric shock	GB/T 18384.3-2015
Hybrid electric vehicles safety specification	GB/T 19751-2005
Electric vehicles safety requirements	GB18384-2020
Electric buses safety requirements	GB38032-2020
Fuel cell electric vehicles-Safety requirements	GB/T 24549-2020

Energy Consumption Requirements

Limits and test method of magnetic and electric field strength from electric vehicles	GB/T18387-2017
Electric vehicles--Energy consumption and range (cycle method)	GB/T18386-2017
Electric vehicles--Energy consumption and range (low temperature)/(high temperature)/(normal temperature regular cycle method)/(normal temperature shortened method)	GB/T 18386.1-2021
(Heavy-duty vehicle) Electric vehicles--Energy consumption and range	GB/T18386—2017
Electric vehicles--Energy consumption and range (Equivalent speed method)	GB/T18386—2017
Test methods for energy consumption of light-duty hybrid electric vehicles	GB/T19753-2021 GB19578-2021
Test methods for energy consumption of heavy-duty hybrid electric vehicles	GB/T19754-2015 GB/T 18386-2017

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3 Introduction of CASIC

- On Feb 18, 2020, CASIC (China Automobile Standards Internationalization Center) (Geneva) was officially established.

Openness
Collaboration



Integration
Contribution



CASIC (Geneva) adheres to the basic principles of “openness, collaboration, integration and contribution”, strives to fully follow and participate in the harmonization of formulating international standards and regulations of UN, ISO, IEC etc., and thus build the bridge facilitating the collaboration among international organizations, governments and relevant industries.



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1 Standard system

China's NEVs have entered a rapid development stage driven by the market, and the standard system and roadmap have been gradually updated iteratively with the development of technology.

2 Certification system

Safety and environmental protection are the core of certification and as large volume of EVs enter the market, the relevant certification system needs to adapt to the development trend of the industry and the market.

3 Internationalization

The internationalization of standards and regulations should be conducted in a two-way manner. All organizations are welcome to participate in the harmonization of standards and regulations in China.



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