

China Car & NEV Market 2023 – Booming & Charging Ahead

- “A Look Back and Look Ahead” - for Amcham Shanghai Auto Committee

January 19, 2023

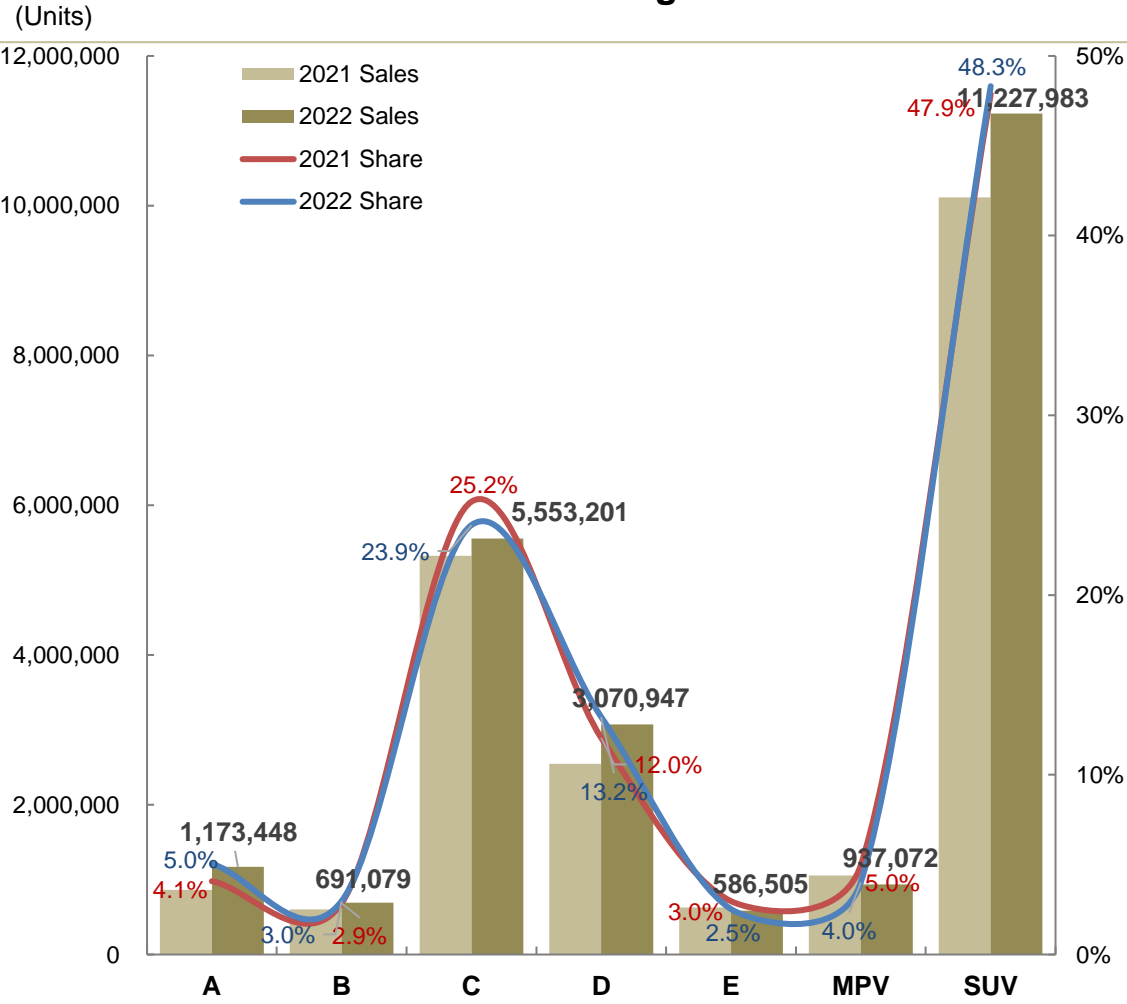


- ✓ **China Car Market Review**
 - ✓ China NEV Market Overview
 - ✓ Major Regulations & Policy Trends
 - ✓ Market Outlook 2023

Passenger Car Market – By Segment Sales Volume

In 2022, domestic auto sales reached 26,863,745 units, y-o-y growth of 2.2%. Passenger Car (Car/MPV/SUV) sales hit 23,240,235 units, y-o-y growth of 10.2%.

Passenger Car Sales Volume & Segment Share (YTD) Changes 2021 & 2022



Segment	Sales Volume Growth (YTD)	Sales Growth (%)	Share Changes (Percentage Points)
A	311,267	36.1%	1.0
B	87,687	14.5%	0.1
C	230,651	4.3%	-1.3
D	525,401	20.6%	1.2
E	-40,654	-6.5%	-0.4
MPV	-118,162	-11.2%	-1.0
SUV	1,117,023	11.0%	0.5
Total (PV)	2,113,213	10.0%	-

Sources: CAAM; AutoForesight Research & Analysis

ICE Car Sales Growth – By Segment

In 2022, most ICE segments decreased y-o-y, only ICE D-sedan grew due to purchase tax cut stimulus

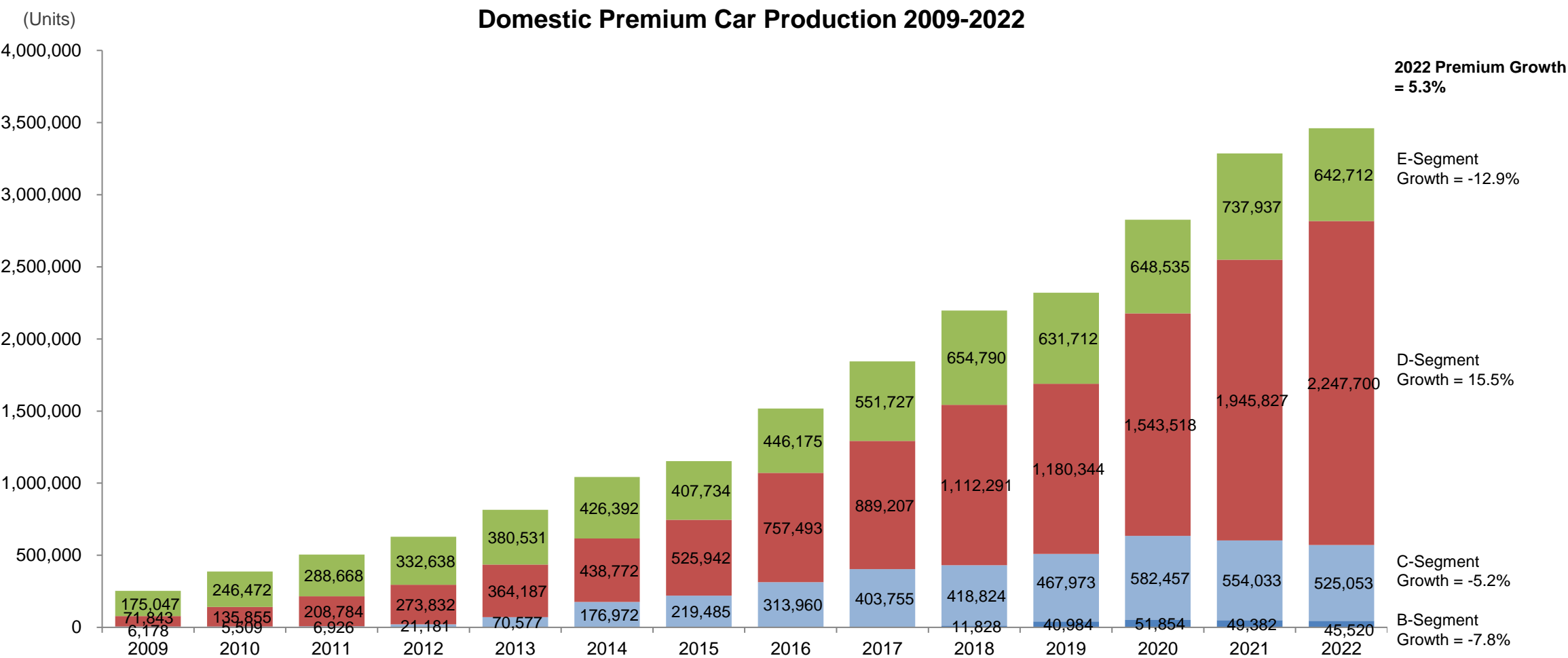
ICE Car Sales Growth By Segment

Segment	ICE Car Sales Growth YTD 2022											
	Jan	Feb-YTD	Mar-YTD	Apr-YTD	May-YTD	Jun-YTD	Jul-YTD	Aug-YTD	Sep-YTD	Oct-YTD	Nov-YTD	Dec-YTD
A	3.5%	-1.6%	-31.3%	-29.7%	-21.3%	-29.7%	-31.5%	-31.4%	-16.2%	15.9%	24.3%	-1.7%
B	-21.2%	-19.0%	-21.3%	-30.4%	-33.3%	-29.0%	-27.2%	-27.2%	-24.3%	-21.9%	-21.1%	-24.4%
C	-11.6%	-2.8%	-7.6%	-17.2%	-17.3%	-10.8%	-6.1%	-3.7%	-2.5%	-2.7%	-6.0%	-7.8%
D	-0.2%	6.5%	1.0%	-13.6%	-10.6%	1.0%	6.7%	10.1%	14.6%	12.5%	10.0%	7.2%
E	-12.2%	-7.9%	-18.6%	-29.7%	-27.4%	-18.3%	-15.9%	-12.5%	-9.6%	-11.0%	-13.3%	-13.6%
MPV	-1.3%	4.5%	-7.1%	-20.9%	-21.1%	-16.1%	-13.9%	-11.8%	-9.5%	-12.0%	-14.3%	-15.1%
SUV	-4.2%	1.3%	-4.9%	-17.5%	-17.4%	-12.0%	-7.1%	-3.4%	-1.1%	-1.1%	-3.4%	-5.3%
Total	-6.4%	0.0%	-6.0%	-17.9%	-17.6%	-11.1%	-6.5%	-3.5%	-1.2%	-1.6%	-4.0%	-5.9%

Sources: CAAM; AutoForesight Research & Analysis

Domestic Premium Car - By Segment

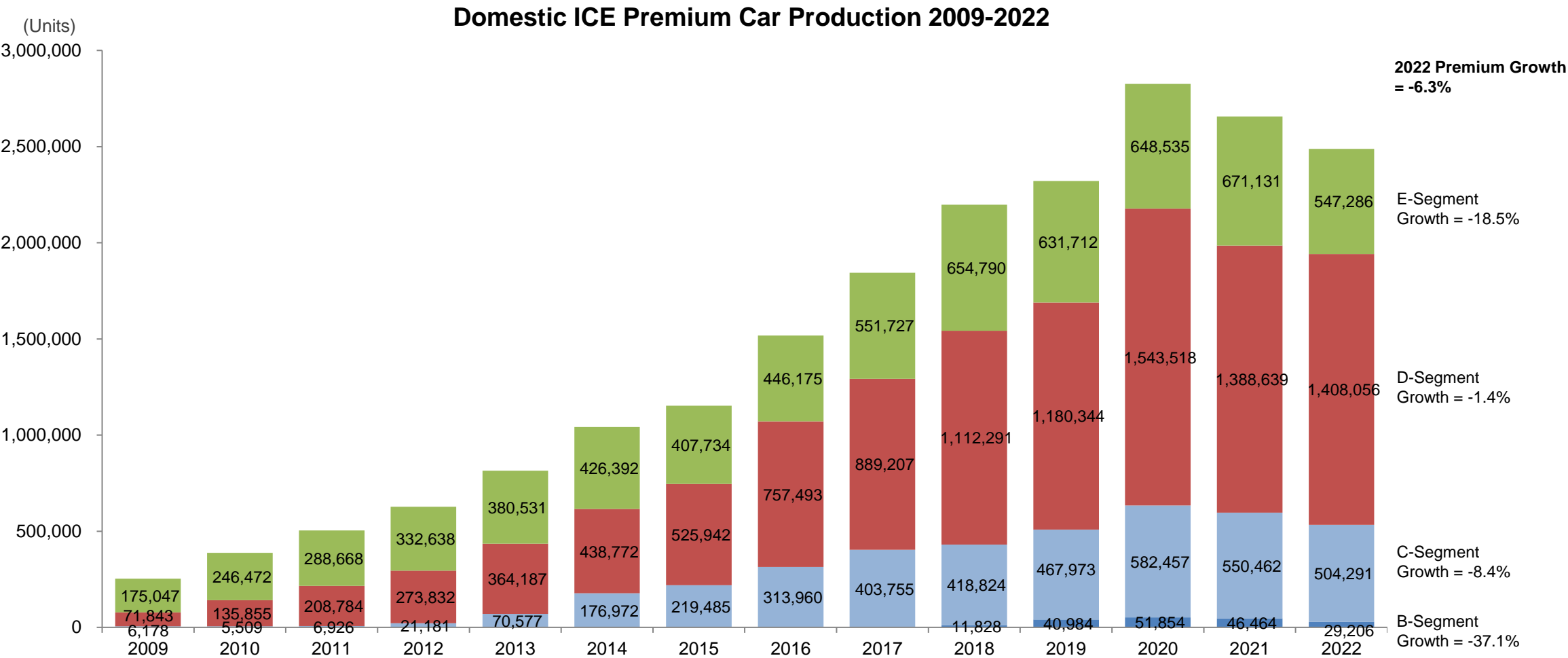
In 2022, domestic premium car production hit 3,460,985 units, increasing by 5.3%, or 173,806 units.



Source: CAAM Data; AutoForesight Analysis * Including Sedan, MPV and SUVs

Domestic ICE Premium Car - By Segment

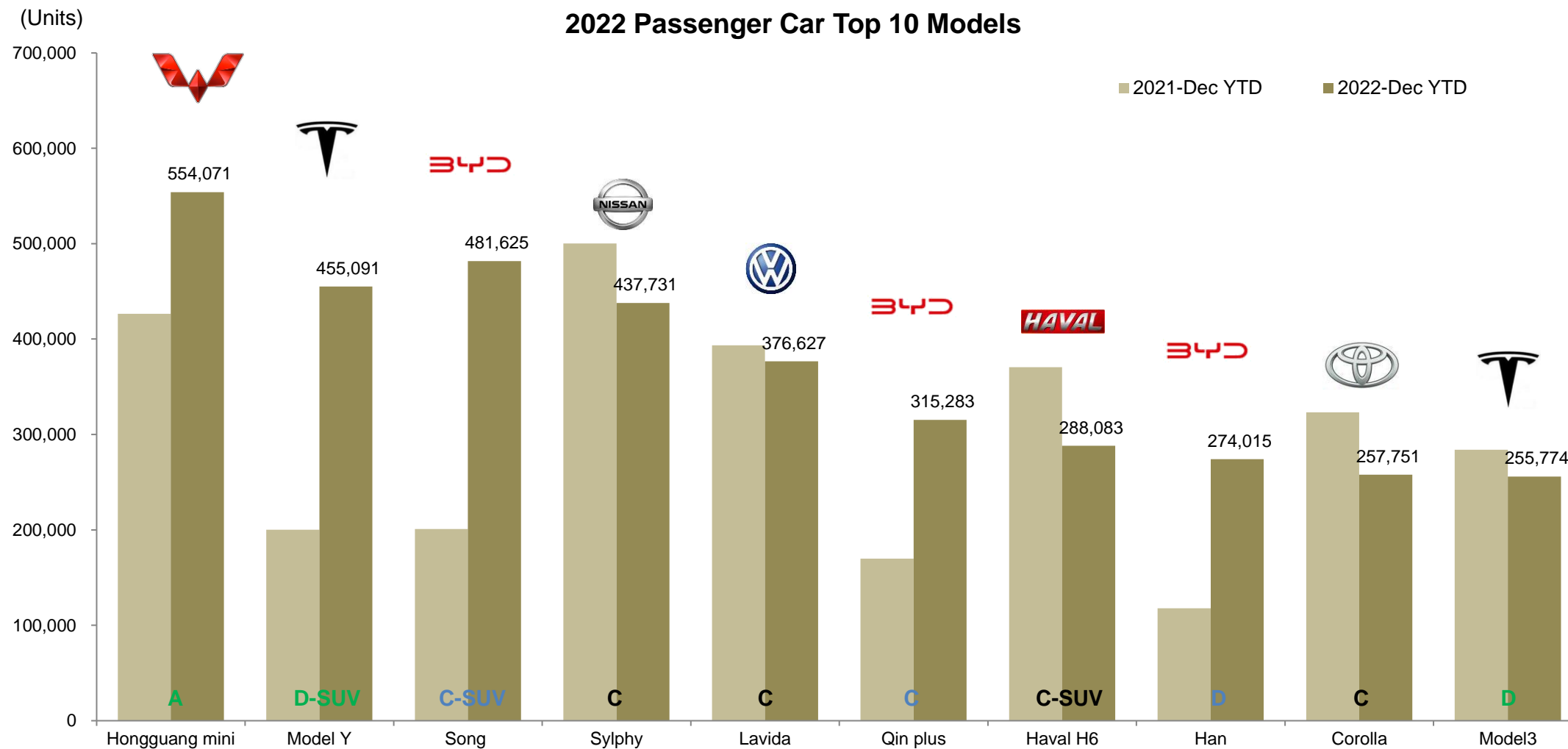
In 2022, domestic ICE premium car production hit 2,488,839 units, decreasing by -6.3%, or -167,857 units.



Source: CAAM Data; AutoForesight Analysis * Including Sedan, MPV and SUVs

Top-10 Best-selling Models - 2022

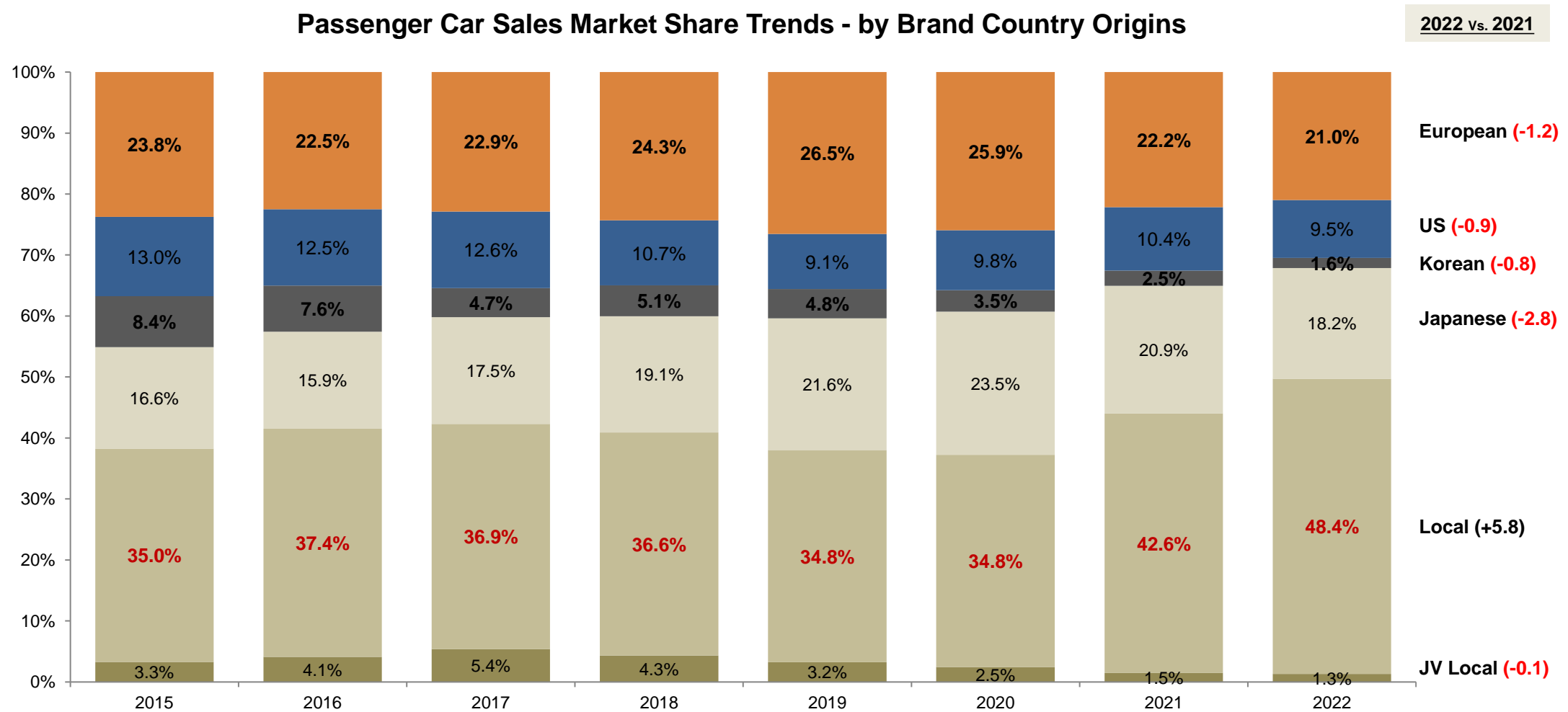
Among 2022 Top-10 models, there were 6 NEVs and 4 ICE cars



Sources: CAAM; AutoForesight Research & Analysis

Sales Market Share Trends - By Brand Country Origins

The share of local brands accounted for 48.4% in 2022, up 5.8 points year-on-year

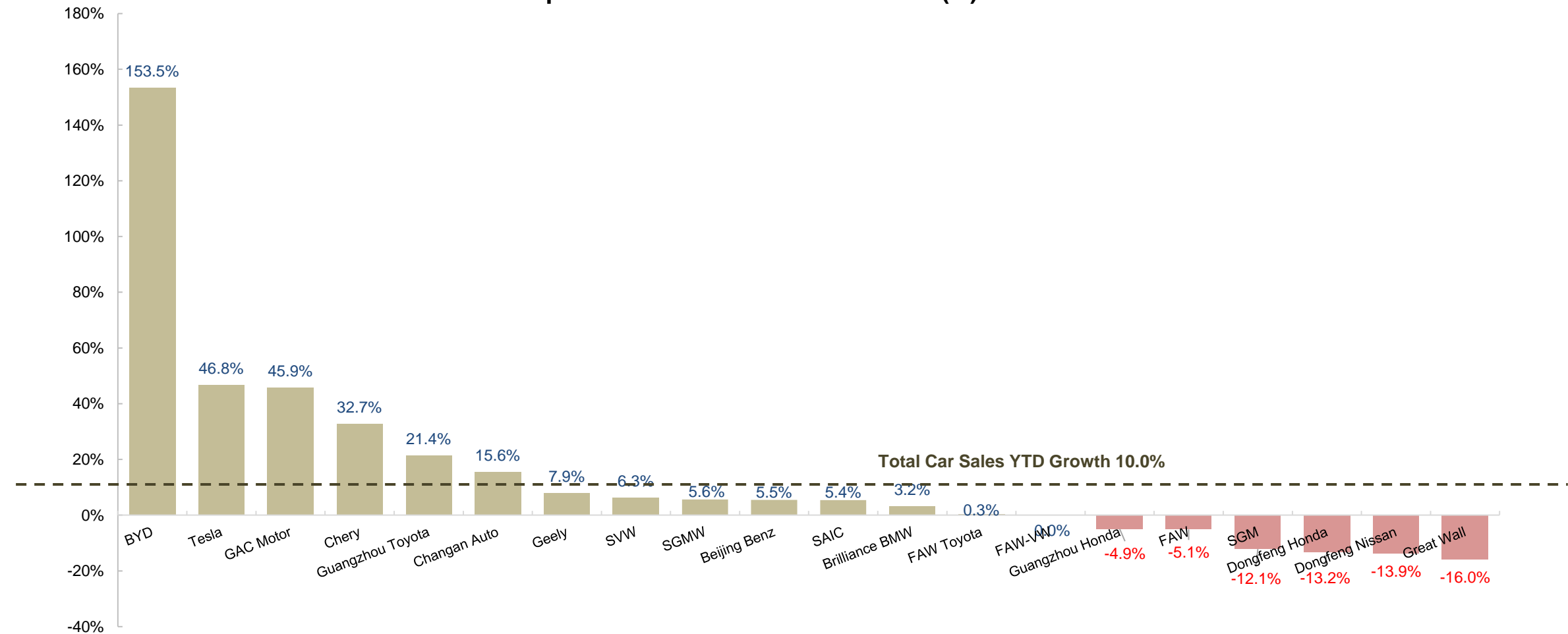


Sources: CAAM; AutoForesight Research & Analysis; including only Car, MPV and SUV

Top-20 Car Makers Sales Growth – Dec-2022 YTD

By end of 2022, compared with the industry average growth of 10.0%, 6 top-20 manufacturers were growing faster

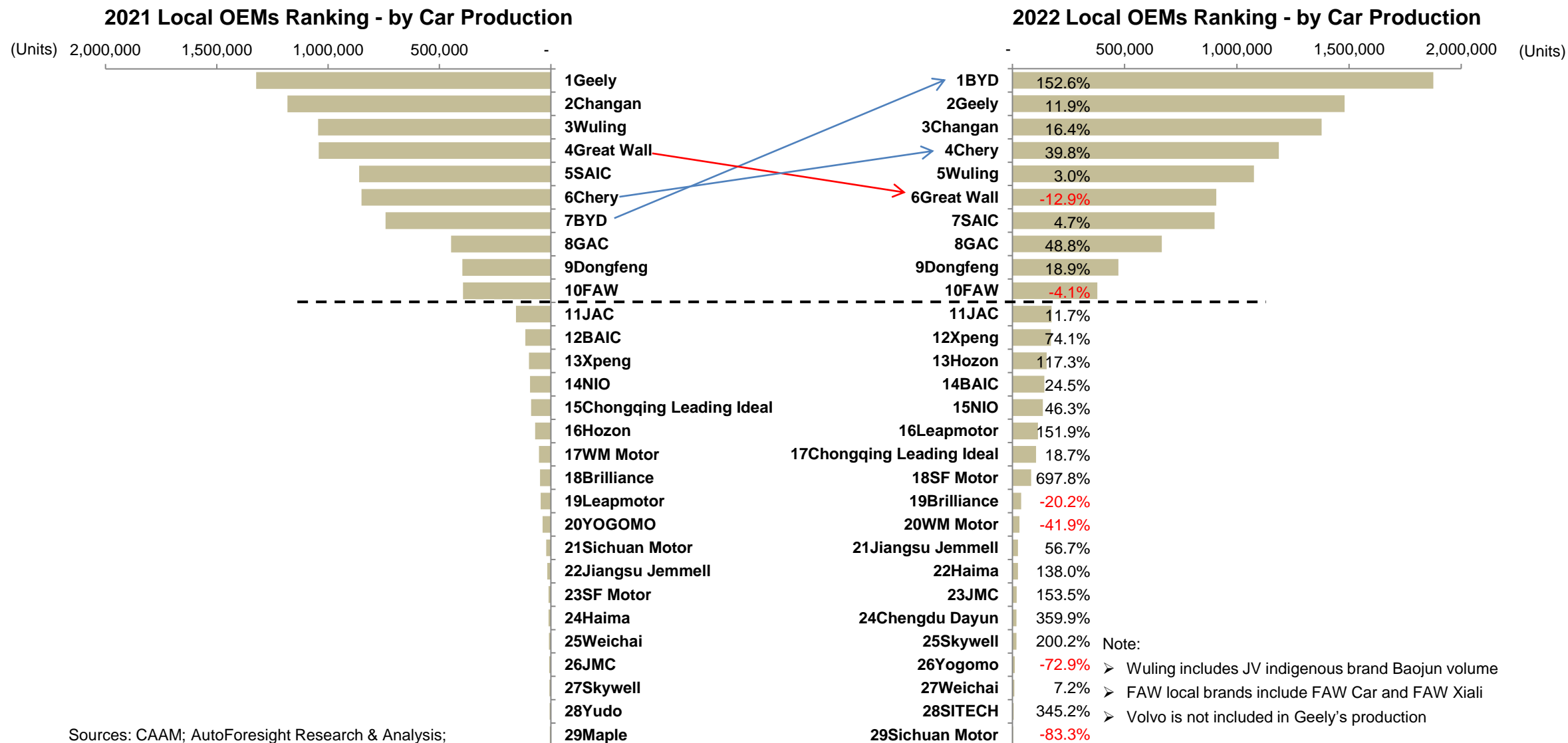
Top 20 Manufacturers Sales Growth (%) - 2022



Sources: CAAM; AutoForesight Research & Analysis

Local OEMs Ranking – By Production

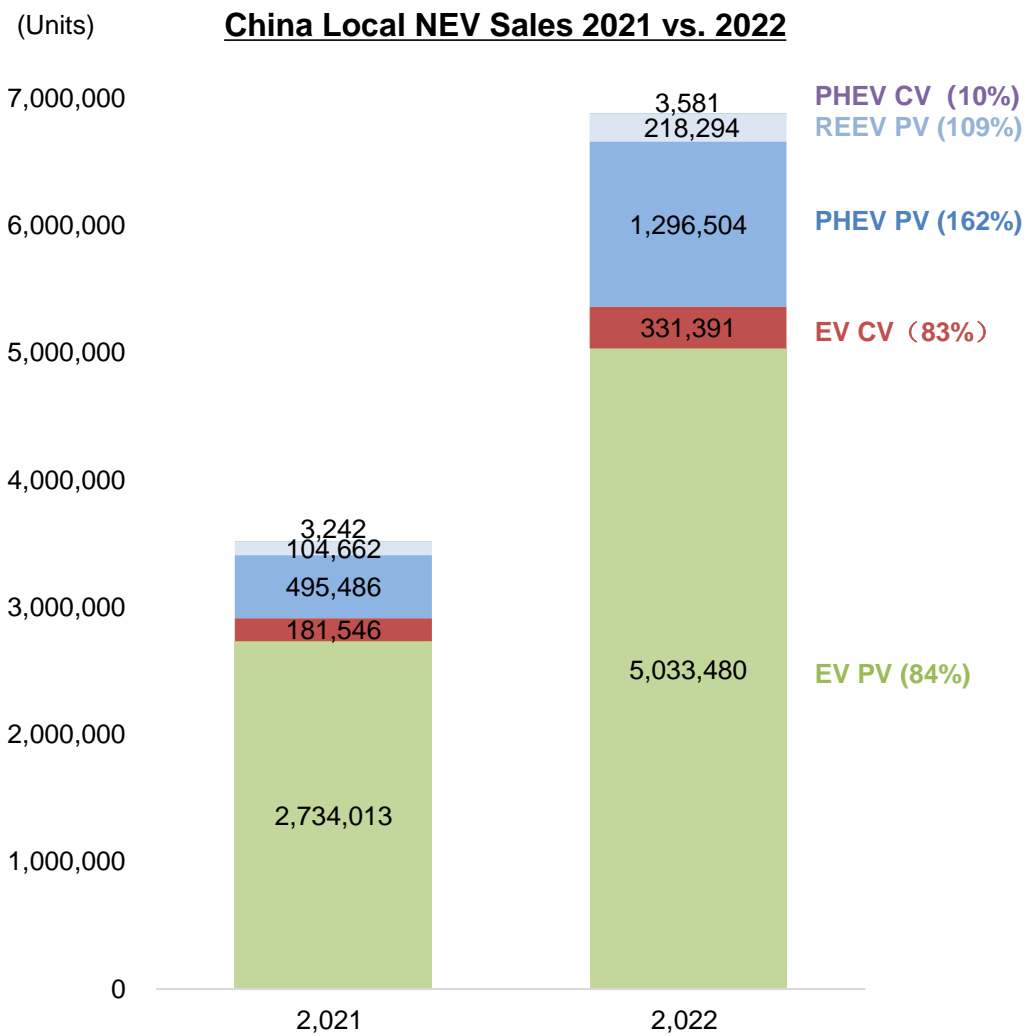
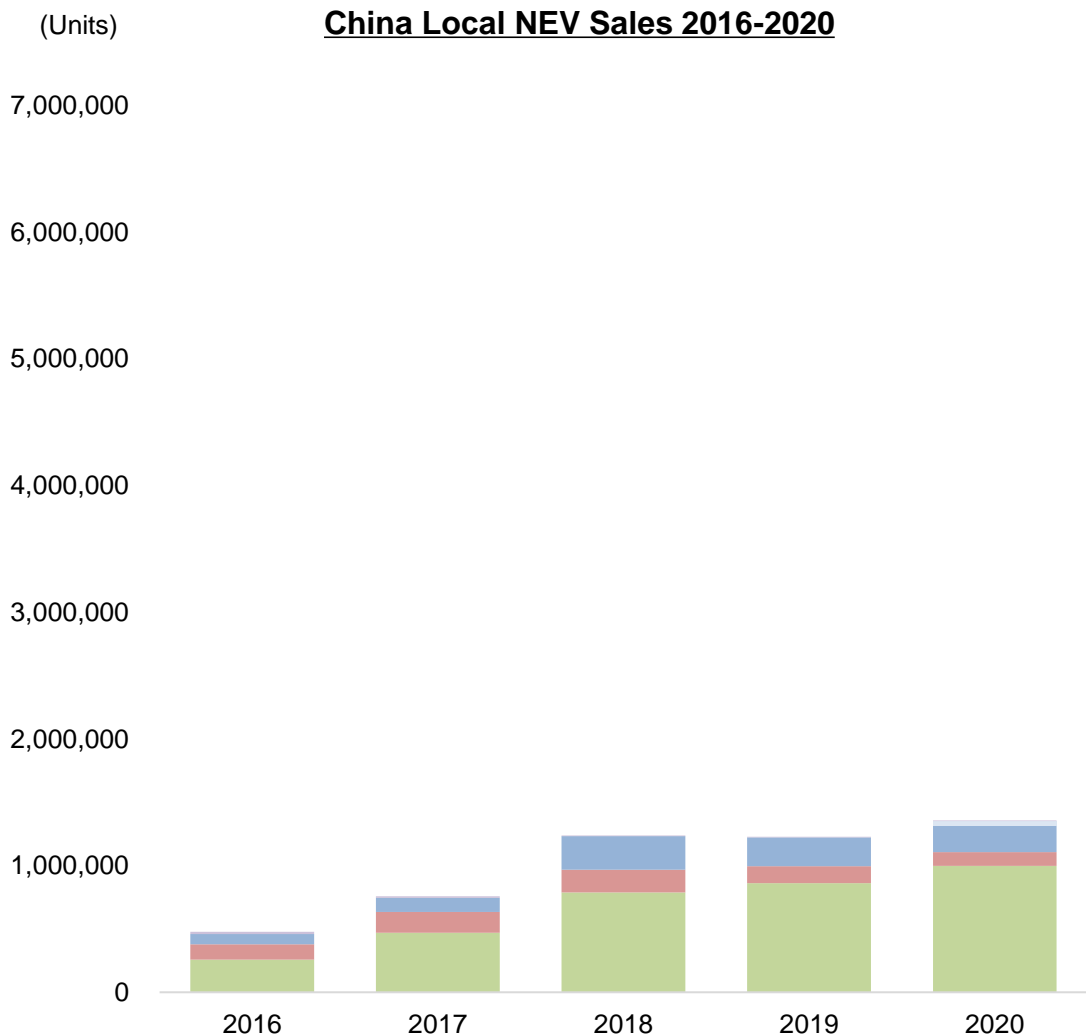
In 2022, BYD rose to No.1, the fastest in the ranking



- ✓ China Car Market Review
- ✓ **China NEV Market Overview**
- ✓ Major Regulations & Policy Trends
- ✓ Market Outlook 2023

China NEV Sales – By Segment

In 2022, China NEV sales reached 6,883,250 units, increasing by 96% year-on-year, up 3.36 million units.

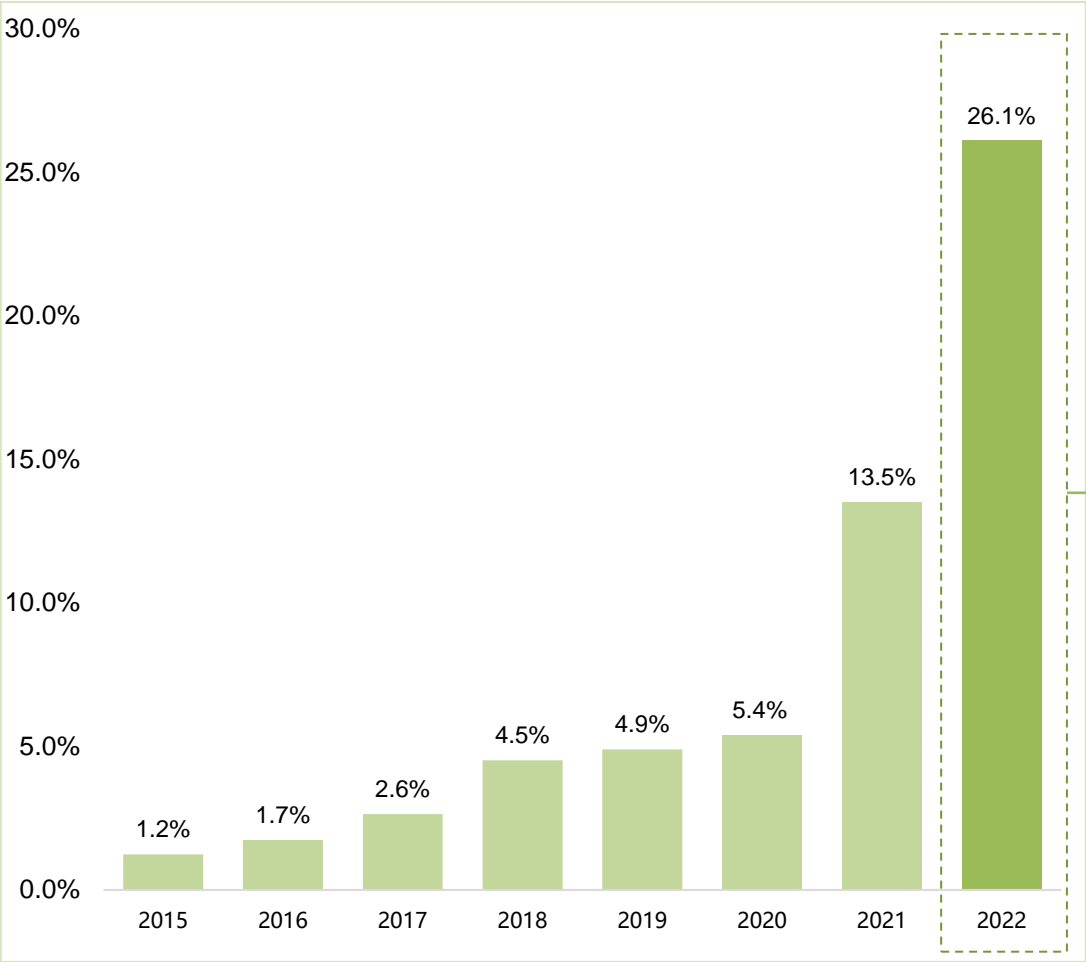


Source: CAAM; AutoForesight Research & Analysis

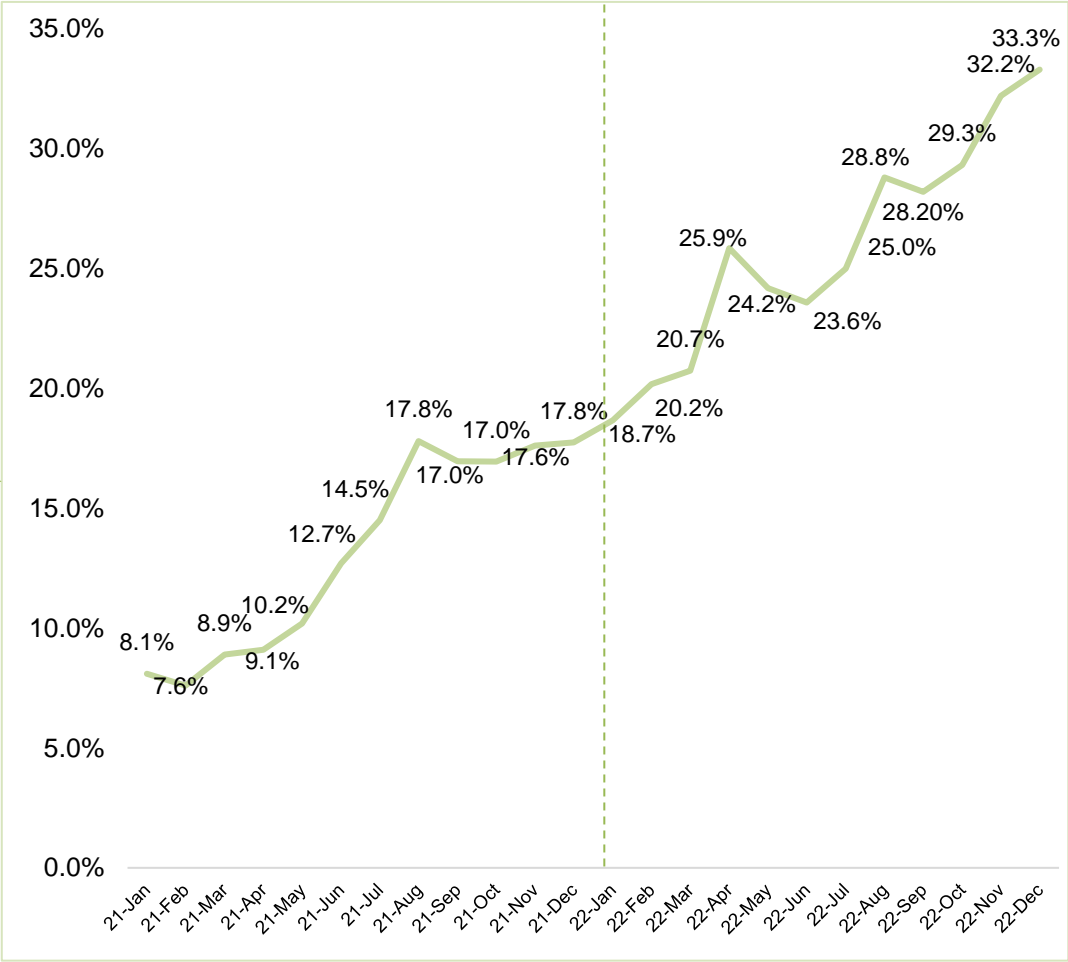
NEV Production Proportion

In 2022, NEV accounted for 26.1% of the total vehicle production, and the monthly share set a record of 33.3% in December

Share of NEV Production to Total Vehicle Production 2015 - 2022



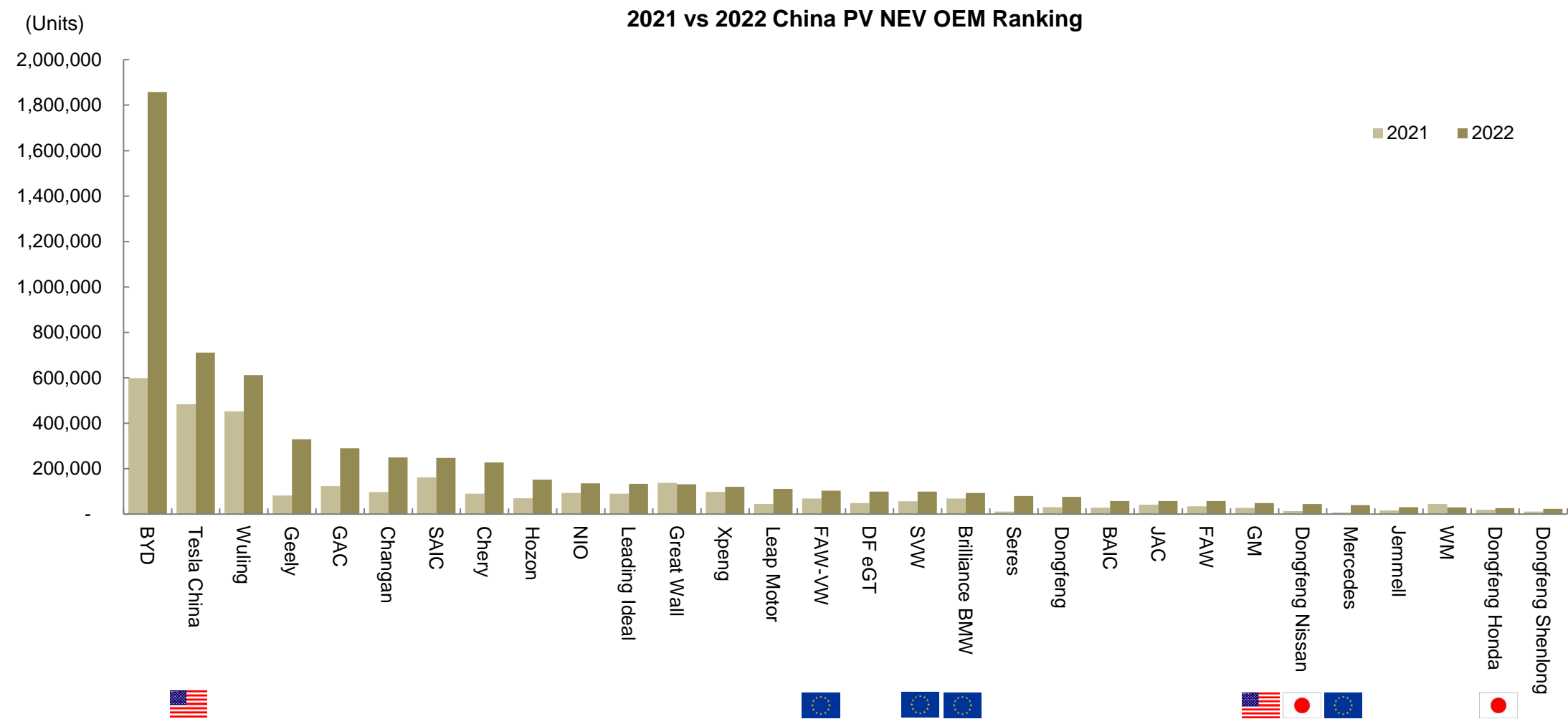
Monthly Share of NEV Production to Total Vehicle Production



Source: CAAM; AutoForesight Research & Analysis

China PV NEV OEM Ranking - 2022

China local brands still took the lead, only 2 foreign manufacturers entered Top-15



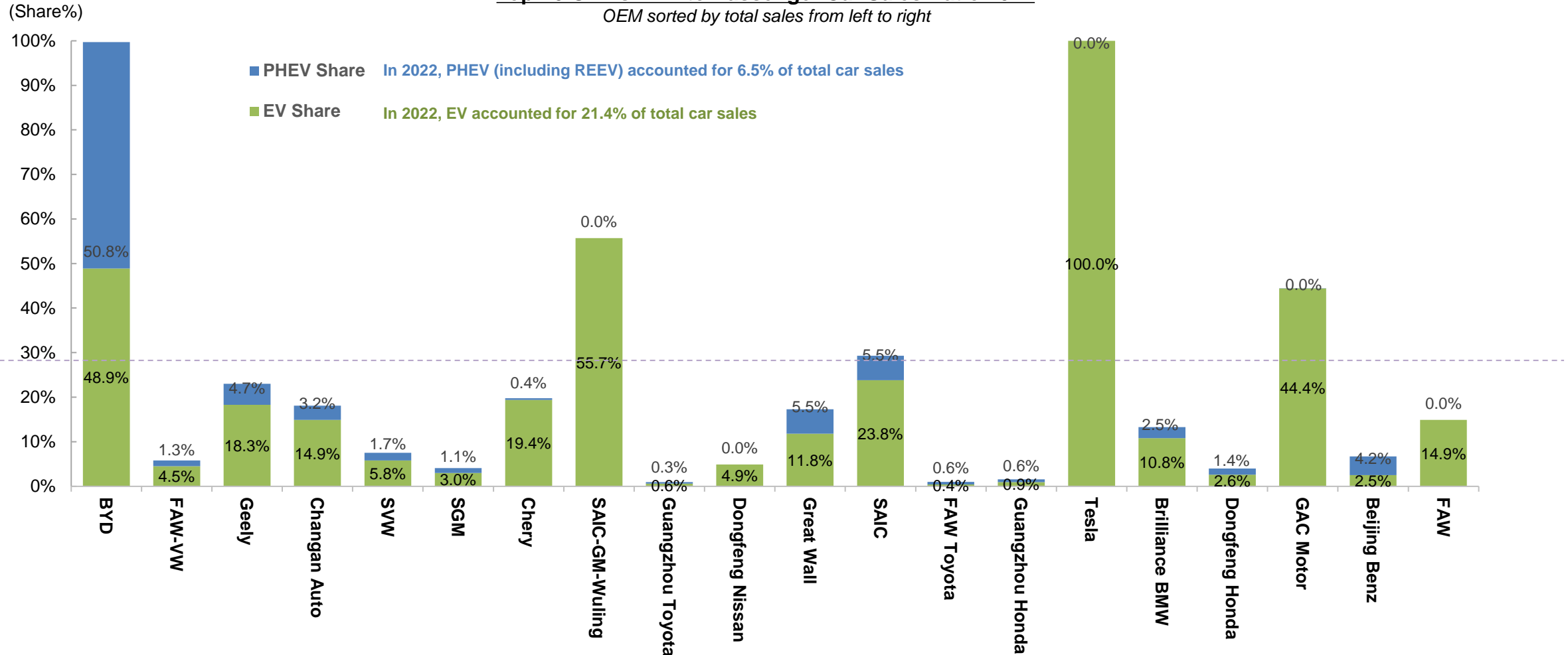
Source: CAAM; AutoForesight Research & Analysis

Top-20 Manufacturers' NEV to Passenger Car Sales Ratio

In 2022, Tesla registered the highest EV to passenger car sales ratio, followed by Wuling & BYD

Top-20 OEMs NEV to Passenger Car Sales Ratio 2022

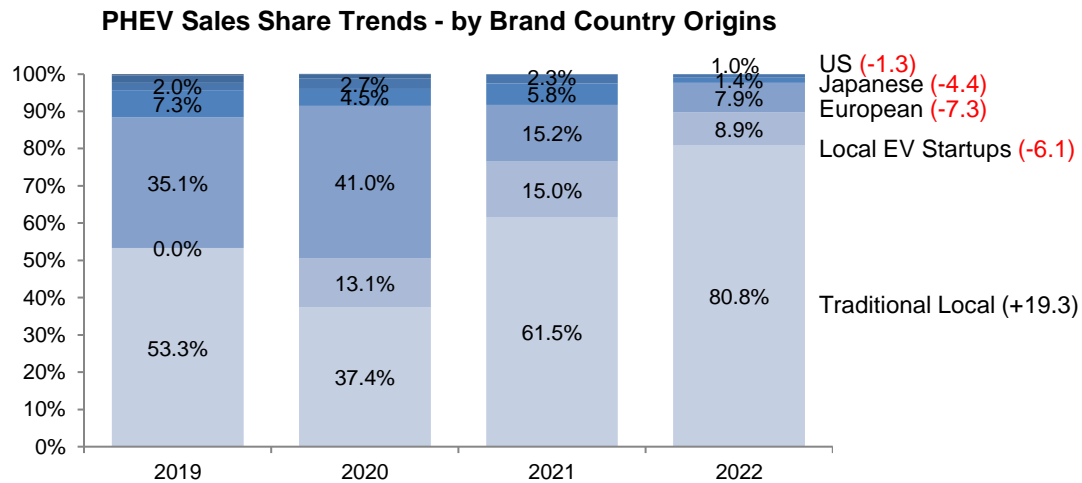
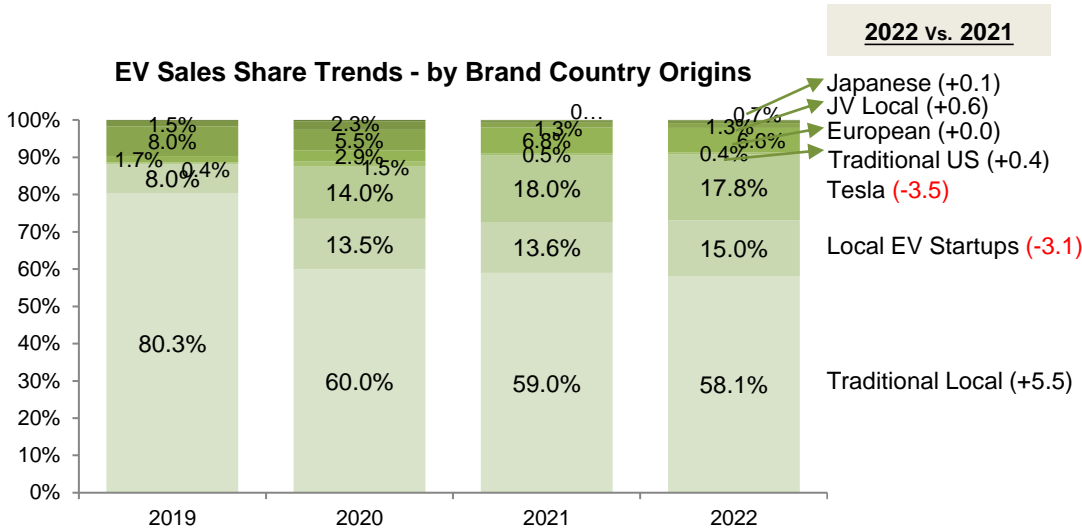
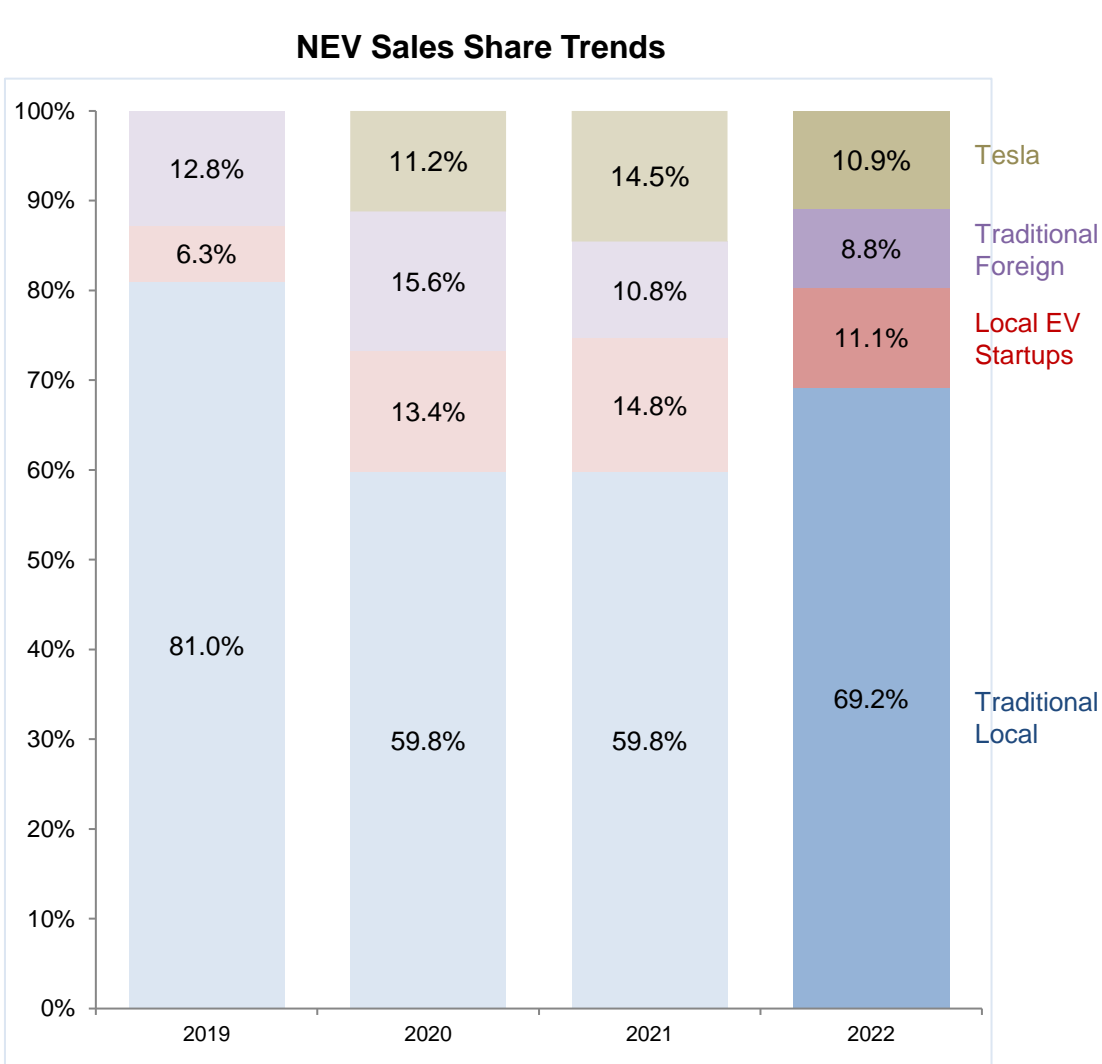
OEM sorted by total sales from left to right



Source: OEM Website & AutoForesight Research

NEV Sales Share Trends - By Country

In 2022, NEV share of foreign brands accounted for 19.7%, half of which came from Tesla

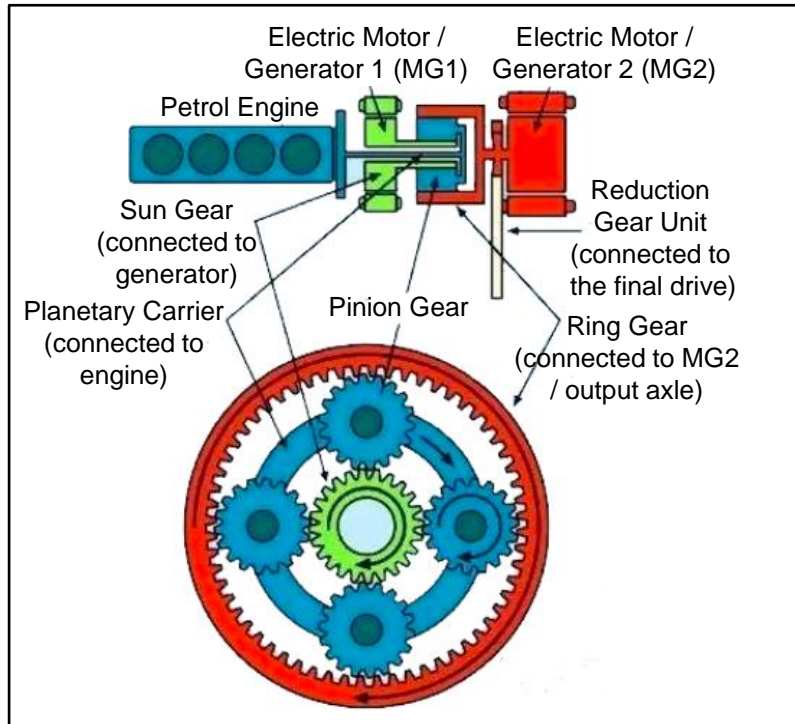


Sources: CAAM; AutoForesight Research & Analysis

Hybrid Technology Route - Toyota vs. Honda

Honda i-MMD system is relatively simple, balancing fuel consumption, power and cost better. The planetary gear structure of Toyota THS system is complex, although the driving is smooth, the manufacturing process requirements are too high.

Schematic Diagram of Toyota THS System



Toyota THS system:

- Power combination of high power fuel engine and low power motor
- It is a structure between series and parallel. The engine and motor can be blended into two different power flow outputs through planetary gears, that is, motor and engine cooperate to drive vehicle simultaneously

Toyota THS vs. Honda i-MMD:

Advantages of Toyota THS system:

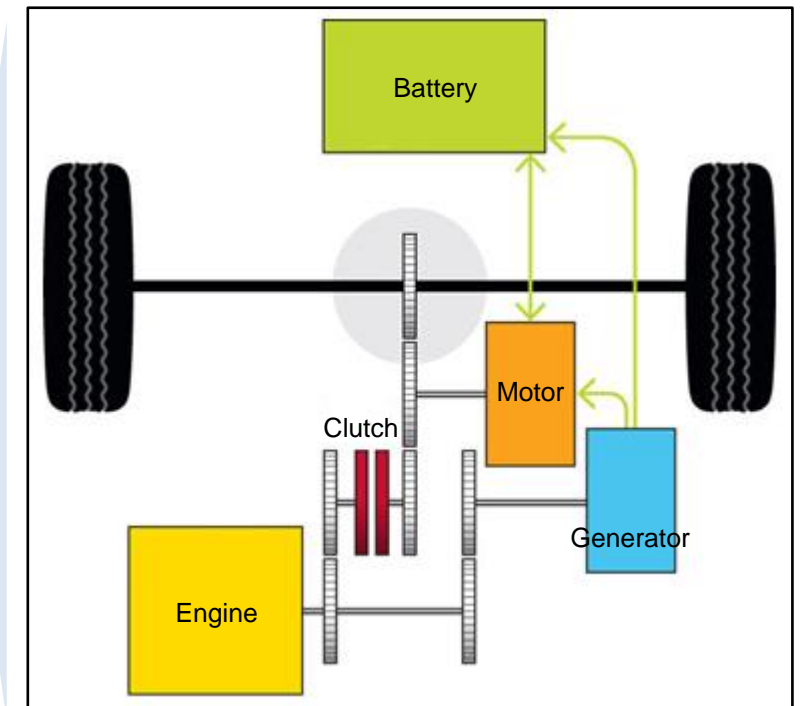
- Toyota THS distributes the power of engine, MG1 and MG2 to achieve optimal control among emission, fuel consumption and power, so as to save energy and fuel
- Compared with Honda i-MMD, Toyota THS is less dependent on motor power, so it has relatively low requirements for electric drive performance and the corresponding electric drive cost is low

Advantages of Honda i-MMD system:

- The structure is simpler than Toyota THS system
- The motor drives the vehicle directly, so it accelerates quickly
- The engine is often in a high speed range, so that the engine can obtain the highest fuel efficiency and maximize fuel efficiency

In general, Toyota THS hybrid focuses on the efficiency of oil-electric coordination, while Honda i-MMD hybrid focuses on electric drive

Schematic Diagram of Honda i-MMD System



Honda i-MMD system:

- Power combination of high power motor and low power fuel engine
- Most of the daily working conditions are in series mode. The engine only acts as a generator, and the motor directly drives the vehicle
- In fact, i-MMD is more like an range-extended electric drive system with direct drive function by engine than a hybrid system

- ✓ China Car Market Review
- ✓ China NEV Market Overview
- ✓ **Major Regulations & Policy Trends**
- ✓ Market Outlook 2023

Major economic institutions estimated China 2023 GDP would grow 3.8% - 5.6%

Research Institutions' Outlook Of China 2023 GDP

Firms	2023 GDP Forecast
Barclays	3.8%
World Bank	4.3%
Deutsche Bank	4.3%
J.P. Morgan	4.3%
IMF	4.4%
Goldman Sachs	4.5%
Standard Chartered Bank	4.5%
ADB	4.5%

Firms	2023 GDP Forecast
Allianz	4.5%
UBS	4.6%
Nomura	4.8%
Morgan Stanley	5.4%
Merrill Lynch	5.4%
DBS Group	5.4%
Citigroup	5.6%

Source: Media; AutoForesight Research & Analysis

NEV Subsidies & Purchase Tax Exemptions

The NEV subsidy was canceled in early 2023. The purchase tax exemption will be eliminated in early 2024.

NEDC(km)	EV Subsidy				
	Subsidy Amount 2018 (RMB)	Subsidy Amount 2019 (RMB)	Subsidy Amount 2020 (RMB)	Subsidy Amount 2021 (RMB)	Subsidy Amount 2022 (RMB)
100km≤R < 150km	0	0	0	0	0
150km≤R < 200km	15,000	0	0	0	0
200km≤R < 250km	24,000	0	0	0	0
250km≤R < 300km	34,000	18,000	0	0	0
300km≤R < 400km	45,000	18,000	16,200	14,400	9,100
R≥400km	50,000	25,000	22,500	20,000	12,600

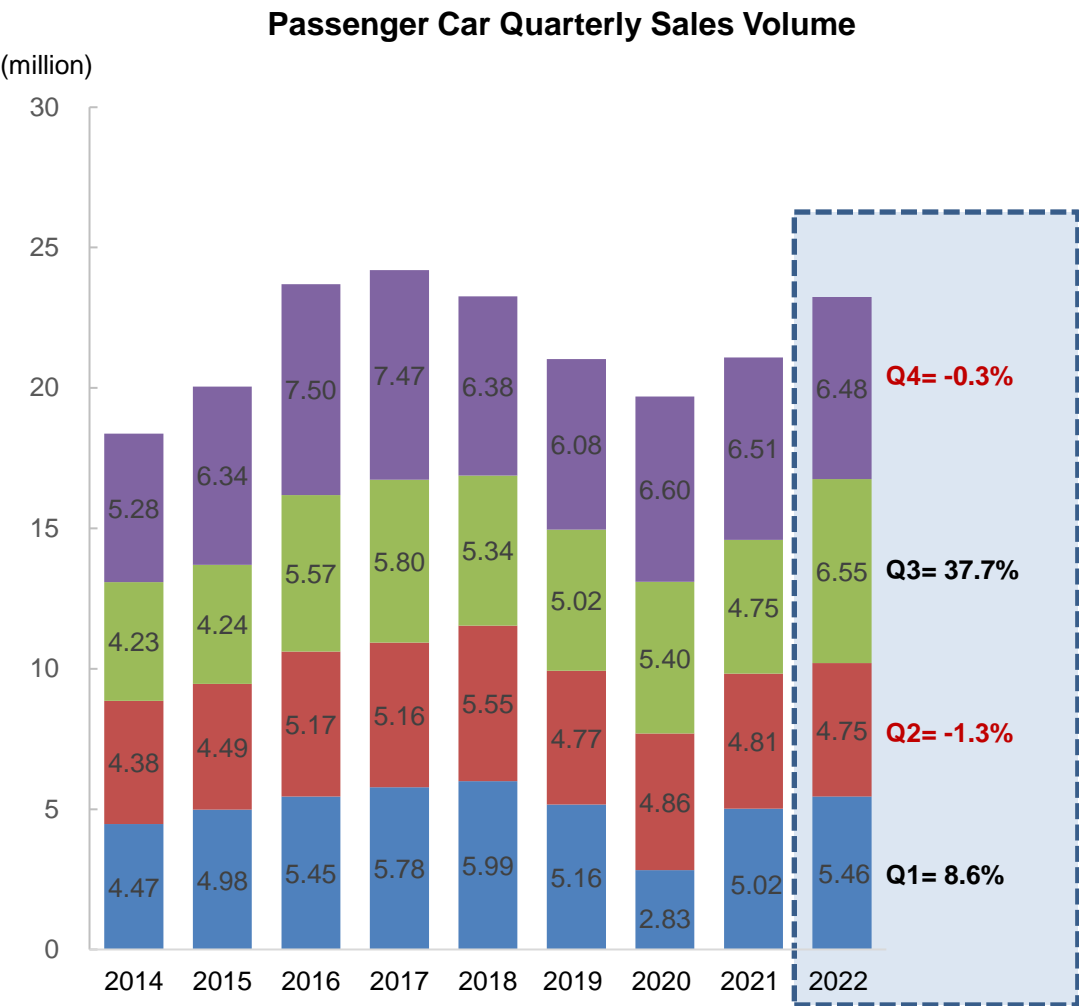
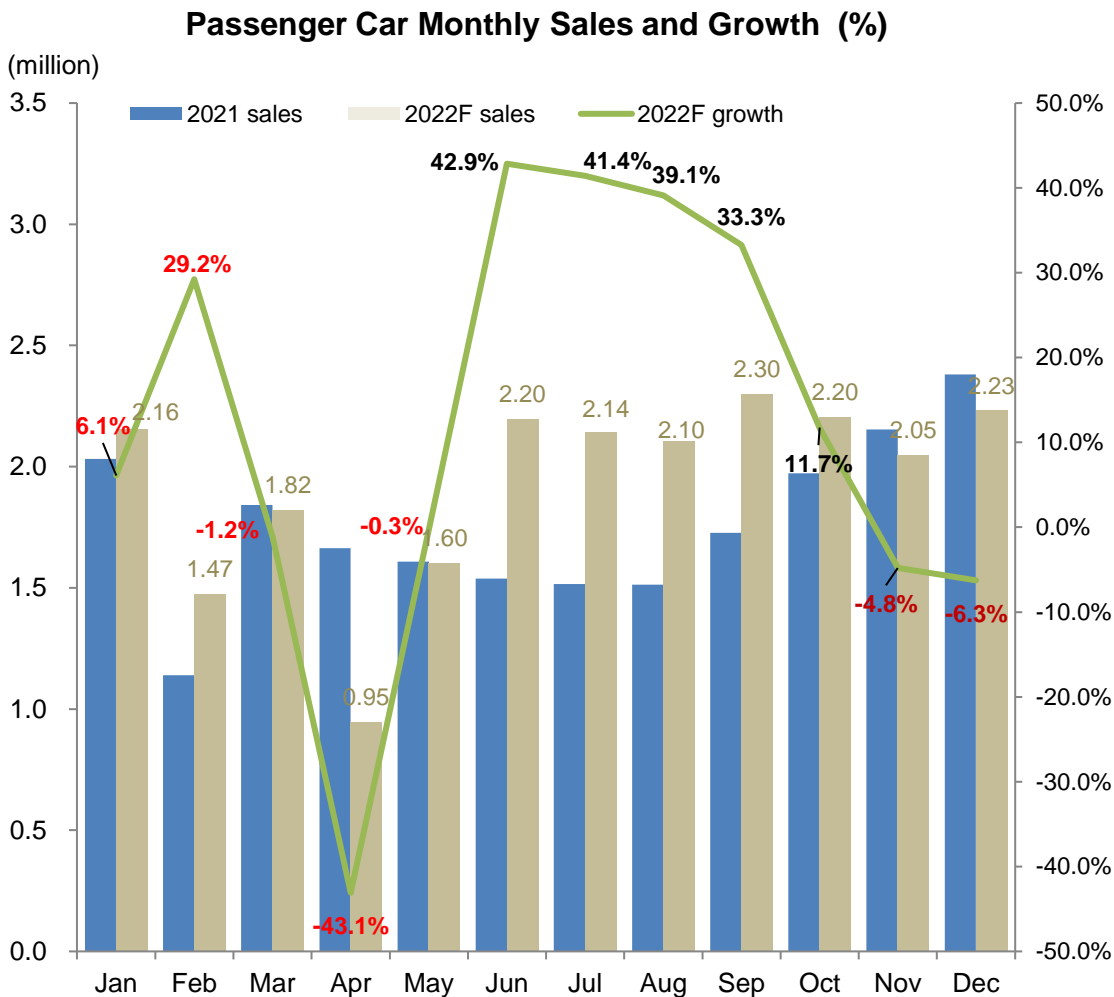
	PHEV Subsidy				
	Subsidy Amount 2018 (RMB)	Subsidy Amount 2019 (RMB)	Subsidy Amount 2020 (RMB)	Subsidy Amount 2021 (RMB)	Subsidy Amount 2022 (RMB)
R≥50km	22,000	10,000	9,000	8,000	4,800

Source: MOF; AutoForesight Research & Analysis

- ✓ China Car Market Review
- ✓ China NEV Market Overview
- ✓ Major Regulations & Policy Trends
- ✓ **Market Outlook 2023**

Passenger Car Demand Outlook – 2023

China 2022 car sales increased by 10% to 23 million units. It is expected 2023 car market will have no growth, due to ending of policy stimulus



Sources: CAAM; AutoForesight Research & Analysis

Thanks!

Zhang Yu
Managing Director
Automotive Foresight (Shanghai) Co., Ltd.

Tel: 86-21-3868-0868
Cell: 86-18621807182
Email: yz@autoforesight.com

Zhang Yu's WeChat QR Code:



China Passenger Car Market Updates

Launched in 2012, China Passenger Car Market Updates is our basic product, updated quarterly/monthly, covering all aspects of current market/policy/competitive situation/forecast.

China Passenger Car Market Quarterly/Monthly Updates

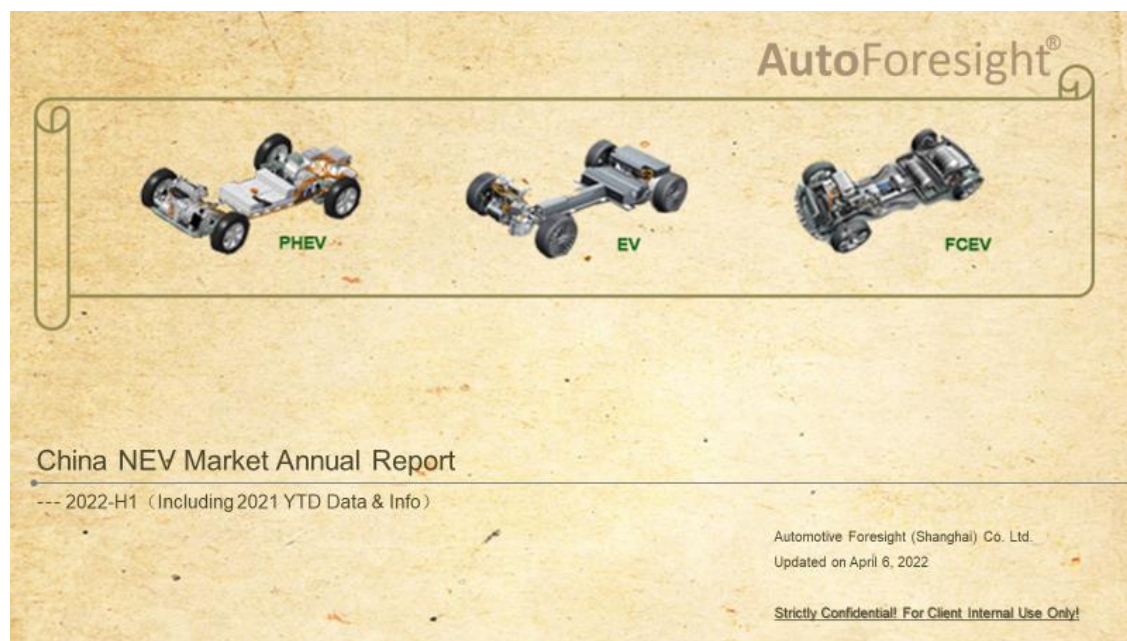
<div><div><div>AutoForesight®</div><div></div></div><div><div>China Passenger Car Market Quarterly Updates</div><div>2022-Q3 Edition (Including Jan-Sep Data & Info)</div><div>Automotive Foresight (Shanghai) Co., Ltd. Updated on Oct 28, 2022</div><div>Strictly Confidential! For Client Internal Use Only!</div></div></div>	
<div><div>Agenda</div><div><div><div>• Executive Summary</div><div>-----</div><div>3-8</div></div><div>• Macro Economy & Industry Trends</div><div>-----</div><div>9</div><div><div>1. Overview of Macroeconomic Related Indicators</div><div>-----</div><div>10-17</div></div><div><div>2. Overview of Finance & Foreign Economic and Trade</div><div>-----</div><div>18-27</div></div><div><div>3. PV Industry Updates</div><div>-----</div><div>28-34</div></div><div><div>4. Brief of IC Shortage</div><div>-----</div><div>35-40</div></div><div>• Auto Industry Policy</div><div>-----</div><div>41</div><div><div>1. Traffic Restrictions & Plate Control</div><div>-----</div><div>42</div></div><div><div>2. Environment & Emission</div><div>-----</div><div>43-46</div></div><div><div>3. New Energy</div><div>-----</div><div>47-67</div></div><div><div>4. Taxes & International Trade</div><div>-----</div><div>68-70</div></div><div><div>5. Controlling Market Concentration</div><div>-----</div><div>71-73</div></div><div><div>6. Aftermarket & Vehicle in Use</div><div>-----</div><div>74-75</div></div><div><div>7. Other Major Policies</div><div>-----</div><div>76-78</div></div><div>• Market Overview & Trends</div><div>-----</div><div>79</div><div><div>1. Car Categories & Segmentation</div><div>-----</div><div>80-81</div></div><div><div>2. Passenger Vehicle Market Overview and Analysis</div><div>-----</div><div>82-93</div></div><div><div>3. Passenger Car Market Overview and Analysis</div><div>-----</div><div>94-108</div></div><div><div>4. Sedan Market Overview and Analysis</div><div>-----</div><div>109-115</div></div><div><div>5. MPV Market Overview and Analysis</div><div>-----</div><div>116-120</div></div><div><div>6. SUV Market Overview and Analysis</div><div>-----</div><div>121-128</div></div><div><div>7. Premium Car Market Overview and Analysis</div><div>-----</div><div>129-135</div></div><div>• Major OEMs & Competitive Landscape</div><div>-----</div><div>136</div><div><div>1. Passenger Car & Competitive Landscape</div><div>-----</div><div>137-138</div></div><div><div>2. Local OEMs & Competitive Landscape</div><div>-----</div><div>139-141</div></div><div><div>3. Overview of OEMs Capacity & Investment</div><div>-----</div><div>142-146</div></div><div><div>4. Top20 OEMs & Competitive Landscape</div><div>-----</div><div>147-152</div></div><div><div>5. Top20 OEM Dealers & Competitive Landscape</div><div>-----</div><div>153-155</div></div><div><div>6. Top10 OEMs & Tesla's Production and Sales Trend</div><div>-----</div><div>156-178</div></div><div>• Product Trends & New Models</div><div>-----</div><div>179</div><div><div>1. Trend Analysis of the Highest Cumulative Sales Model</div><div>-----</div><div>180</div></div><div><div>2. Trend Analysis of the Fastest Cumulative Sales Growing Model</div><div>-----</div><div>181-182</div></div><div><div>3. New Models in China - by Ownership</div><div>-----</div><div>183-185</div></div><div><div>4. New Models in China - by segmentation</div><div>-----</div><div>186-190</div></div><div>• Demand Analysis & Short Term Outlook</div><div>-----</div><div>191</div><div><div>1. Trend Analysis of GDP and Passenger Vehicle Sales Growth</div><div>-----</div><div>192-193</div></div><div><div>2. Passenger Car Market Short-term Forecast Analysis</div><div>-----</div><div>194-204</div></div><div><div>3. Passenger Car Market Medium- and Long-term Forecast Analysis</div><div>-----</div><div>205-213</div></div><div>• Appendix</div><div>-----</div><div>215</div><div><div>1. More economic data; Industry updates etc.</div><div>-----</div><div>216-228</div></div><div><div>2. Policies</div><div>-----</div><div>229-292</div></div></div></div>	

Note: The China Passenger Car Market Quarterly Updates is updated at the end of January, April, July and October each year; The China Passenger Car Market Monthly Updates is completed by the end of each month

China's NEV Market Annual Report

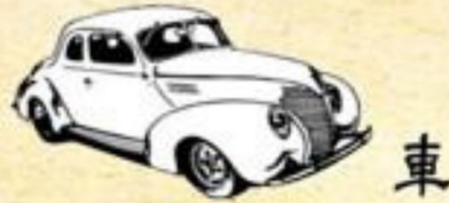
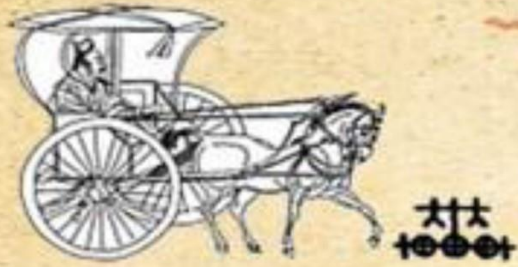
Launched in early 2015, an annual updated in-depth analysis report on NEV policies, markets, technologies, consumer attitudes and forecasts; The Market Overview, Policy and Forecast sections are updated monthly.

China NEV Semi-Annual/Monthly Updates



Agenda		AutoForesight®
• Executive Summary	4-10	
• NEV Market Overview	11	
1. Classification of Chinese Automobile and NEV Scope	12-17	
2. Analysis of Relevant Factors in the NEV Development	18-23	
3. Trend Analysis of NEV Production and Sale	24-37	
• NEV Policy & Infrastructure	38	
1. Policy Overview	39-70	
2. Credit Point Policy	71-99	
3. Subsidy & Preferential Policies	100-131	
4. Promotion Policy (Including FCV)	132-155	
5. Charging Facilities Policy	156-178	
6. Conclusion	179-183	
• China NEV Technology & Battery Industry Summary	184	
1. Battery	185-231	
2. Battery Control System	232-235	
3. Electric Motor	236-247	
4. Electric Motor Control System	248-251	
• OEM Competitive Situation & Major Models	252	
1. New energy technology route & sales analysis of domestic and foreign passenger vehicle enterprises	253-258	
2. Chinese OEM New Energy Development Plan	259-263	
3. Segmentation of Chinese Major OEM New Energy Development Plan	264-286	
4. Relevant Analysis of New Energy Vehicle Enterprises in China	287-296	
5. Price Distribution & Influencing Factors Analysis of NEV	297-308	
6. Analysis of Tax-free New Energy Passenger Vehicles in China	309-326	
7. Sales and Performance Analysis of Luxury Passenger Cars	327-330	
8. Analysis of Tax-free New Energy Commercial Vehicles in China	331-340	
• Consumer Attitudes & Demand Analysis	341	
1. NEV Consumer Overview	342-352	
2. Consumer Research: EV Owners	353-388	
3. Consumer Research: PHEV Owners	389-412	
• Conclusion & Forecast	413	
1. Analysis of NEV Driving Factors	414-419	
2. NEV Planning Forecast in China	420-428	
3. Market Demand Prospect and Forecast of NEV in China	429-437	
• Appendix	438	
1. Top10 New Energy Passenger Vehicle	439-448	
2. Description of Major Battery Manufacturers in China	449-469	
3. Description of Major Start-up OEMs in China	470-501	

Note: The annual report on new energy is updated at the end of March each year (Chinese & English version); The other eleven monthly updates will be completed before the end of each month, NEV hot topics will be selected for analysis every month, and the selection of monthly topics can be discussed and agreed with customers.



© Copyright 2023, AutoForesight, Automotive Foresight (Shanghai) Co. Ltd, is the copyright holder for this document. No part of this document may be copied, downloaded, stored in a retrieval system, further transmitted or otherwise reproduced, stored, disseminated, transferred, or used, in any form or by any means, without AutoForesight's prior written agreement.

Each reproduction of any part of this document must contain notice of AutoForesight's copyright as follows: © Copyright 2023, Automotive Foresight (Shanghai) Co. Ltd, Viewing and/or using the data contained in this copyrighted document shall constitute a contract between the viewer and/or user and Automotive Foresight (Shanghai) Co. Ltd, that the viewer and/or user will not violate AutoForesight's above stated copyright policy.

By viewing and/or using the data contained in this copyrighted document, the viewer and/or user warrants that he/she is authorized and has the full authority to bind any corporate entity that may benefit from said viewing and/or use to the above referenced copyright contract and a general subscription contract for the viewing and/or use of the document, including the payment of all subscription fees.

Disclaimer: All information included in this report has been verified to the greatest extent possible. Although every attempt has been made to ensure the accuracy of the information included in this report, AutoForesight claims no responsibility for any loss or damage resulting from any publication, error, or omission in this report.