

China will launch 388 new vehicle models during 2023-2025

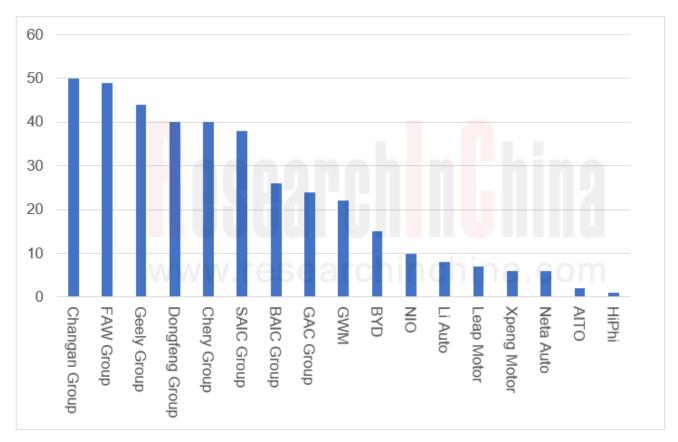
OEMs' Model Planning Research Report, 2023-2025, released by ResearchInChina, combs through model planning and features of Chinese independent brands, emerging carmakers, and joint venture brands in the next 3-5 years.

1. China will launch 388 new vehicle models during 2023-2025.

According to the summary on automakers' strategic planning, automakers in China will launch about 388 new passenger car models (including brand new/refitted models) from 2023 to 2025, and Changan, FAW, Chery, Geely, SAIC, Dongfeng and other large groups stay far ahead in terms of number of new car models.

- * Changan Auto plans to release 50 new models during 2023-2025, including 22 Changan brand models, 5 Qiyuan brand models (Changan's newest brand), 12 Deepal brand models (6 all-new + 6 refitted), 4 Avatr brand models, and 7 joint venture brand models.
- * **FAW Group** plans to release 49 new models from 2023 to 2025, including 15 Hongqi brand models, 13 Bestune brand models, and 21 models under joint venture brands such as FAW Volkswagen, FAW Audi, FAW Jetta, and FAW Toyota.

Number of New Vehicle Models Released by Automakers, 2023-2025E

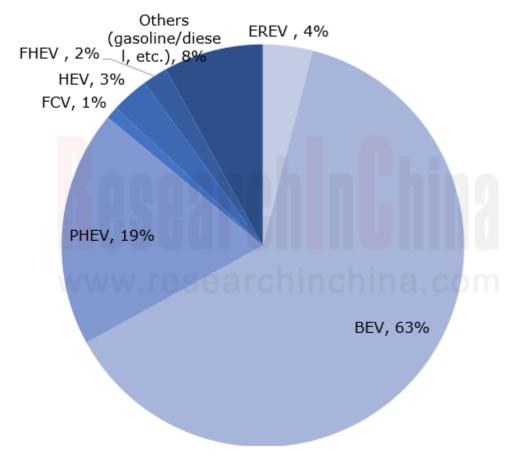




New Vehicles Structure by Energy Type

New Vehicles Structure by Energy Type, 2023-2025E

In terms of **energy type**, of the new vehicle models to be launched in the next three years, BEV will make up 63% and PHEV will share 19%, showing that automakers head in the direction of new energy. For example, FAW Group promotes its "All in" new energy strategy starting from 2023, and plans to launch 11 BEV models and 11 PHEV models in 2028.

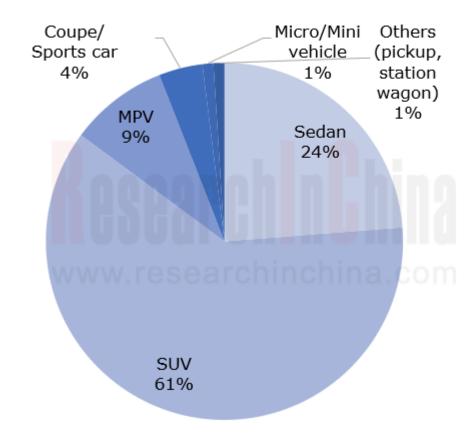




New Vehicle Models Structure by Energy Type

In terms of **vehicle type**, of the new vehicle models to be launched in the next three years, SUV will account for 61% and become the mainstream type. Among conventional OEMs, upcoming SUVs of Great Wall Motor and BYD will sweep more than 60% of the new vehicle models. Among emerging carmakers, SUVs to be launched by Li Auto and Leapmotor will take an over 70% share.

New Vehicle Models Structure by Type, 2023-2025E

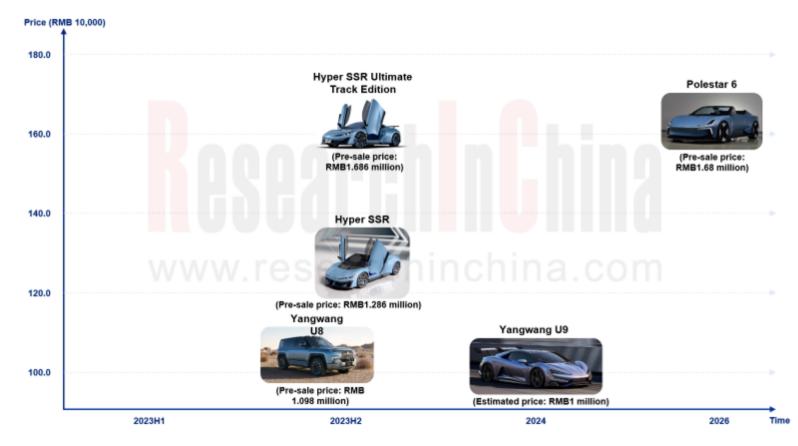




Models Structure by Price Range

By **price range**, automakers still target models priced at RMB100,000-300,000. However, as brands orient to high-end market, some OEMs will enter millionlevel luxury vehicle market. Examples include Yangwang U8, BYD's first allelectric SUV with a pre-sale price of RMB1.098 million; Yangwang U9, BYD's all-electric sports car with a price estimated at around RMB1 million: Hyper SSR, GAC Aion's supercar with a pre-sale price of RMB1.286-1.686 million: AITO's all-electric MPV with an estimated price of around RMB1 million; and Polestar 6 with a pre-sale price of RMB1.68 million. These models are further explorations by Chinese independent brands in their efforts to advance upward.

Million-Level Models to Be Launched, 2023-2026E





Automakers create abundant brand matrices through multi-brand strategy

2. Automakers create abundant brand matrices through multi-brand strategy.

In the intelligence track, OEMs like Geely, GWM, and Chery, which suffered a setback in the strategy of "more brands for bigger market share", return to the multi-brand strategy. Moreover, BYD and NIO (emerging brand), which have been carrying out a single-brand strategy, have also made multi-brand layout, hoping to set up a high-end, intelligent product image by introducing new brands and creating a richer brand matrix.

Multi-brand Layout of Some OEMs





Layout of Geely Group and BYD Auto

Geely Group has brewed three rounds of multi-brand strategy, and has boasted over 10 passenger car brands after a range of acquisitions and investments. In terms of brand layout, Geely targets low-to-mid-end fuel vehicle and hybrid electric vehicle markets below RMB120,000, with Emgrand + Vision series positioned in the low-end market below RMB100,000; Lynk & Co targets the mid-to-high-end market; Geometry, ZEEKR, and LIVAN build a solid foothold in the battery electric vehicle market, and target low-to-mid-end BEV, high-end BEV and battery-swap markets, respectively. In August 2023, Geely Holdings and Baidu jointly created the brand "Jiyue", which orients to high-end intelligent vehicle market.

In 2023, BYD Auto launched Yangwang and Formula Leopard, together with BYD (Dynasty and Ocean) and Denza constituting BYD's four-brand matrix, which covers products from the household to the luxury, from the general to the personalized, meeting the needs of using vehicles in all scenarios.

- * Yangwang, positioned as a "high-end intelligent electric vehicle" brand, targets the high-end new energy vehicle market above RMB500,000, having unveiled million-level new energy models Yangwang U8 and U9.
- * Formula Leopard, positioned between Denza and Yangwang, insists on "providing new energy luxury vehicles only". It is BYD's key layout in its attempt to complete the full range coverage "from household to luxury, from general to personalized". Formula Leopard's products will cover hardcore SUVs, sports cars and other professional new energy vehicles.



Source: BYD

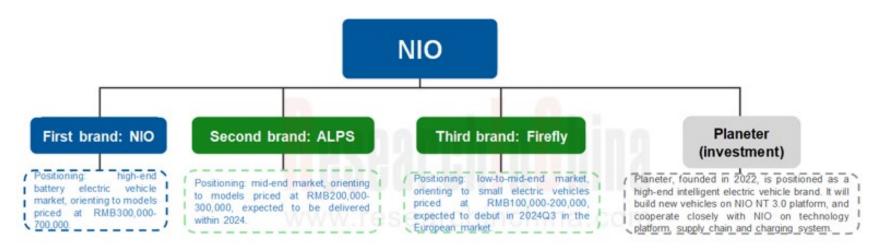


NIO will launch ALPS and Firefly

In 2024, NIO will launch its second brand, ALPS, and third brand, Firefly, forming a brand matrix with NIO brand, which will cover low-, mid- and high-end vehicles markets ranging from RMB100,000 to RMB700,000.

- * **ALPS** will build models based on NIO NT3.0 platform, supporting high-voltage fast charging technology. It targets mid-end models priced at RMB200,000-300,000. Its first product will be announced in late 2024.
- * **Firefly** works to develop A0/A00-class small cars, and equips them with L2+ driving assistance functions. It targets low-to-midend models priced at RMB100,000-200,000. The first product will be mass-produced in 2024 and begin to be delivered in the European market.

While trying hard to deploy its new brand matrix, NIO also invested tens of millions of US dollars (seed round) in electric vehicle startup Planeter (positioned as a high-end intelligent electric vehicle brand) in early 2023. NIO's president describes this incubation project as NIO's "strategic layout in the market segment". Planeter will build its first product on NIO's NT3.0 platform, benchmarking against high-end luxury SUVs such as Land Rover Range Rover and Mercedes-Benz S-Class.





Central computing platform, large Al model, and urban NOA will come into mass production in the next 3-5 years.

3. Central computing platform, large Al model, and urban NOA will come into mass production in the next 3-5 years.

In terms of product functions, China's passenger car market will see mass production of central computing platform, large AI model and urban NOA among other functions in the 3-5 years to come.

1. Central computing platform

Starting from 2023, intelligent vehicles have entered a rapid iteration cycle of hardware architecture.

- * **Leap Motor** released LEAP 3.0 architecture in September 2023;
- * **SAIC**'s Z-ONE Galaxy Full-stack Solution 3.0 featuring "central computing + zone controller" will be mass-produced in 2024:
- * **Geely** will launch central computing platform architecture GEEA 3.0 in 2025.

According to technology plans announced by automakers, E/E architecture has evolved from the distributed to the current centralized. The release of new-generation E/E architecture also brings more comprehensive functions, including high computing performance, high functional safety/information security, and continuous software update capability.

For example, Leapmotor's LEAP 3.0 architecture can cover A-E class models and multiple vehicle types, carries both EV and hybrid modes, and allows for unconscious vehicle OTA updates. Empowered by Leapmotor's self-developed full-stank technologies, in LEAP 3.0 architecture the self-developed self-built components of Leapmotor take up 70% of vehicle cost, and the generalization rate of the architecture reaches up to 88%, effectively reducing cost and improving efficiency.



Leap Motor entered LEAP3.0 architecture era



Source: Leap Motor



Large Al model

2. Large Al model

The combination of large AI models with intelligent vehicles brings far better intelligent driving and cockpit experiences, and enables a variety of functions such as human-machine natural interaction, voice control, knowledge quiz, and coding. For example, Chery STERRA voice assistant is added in LION AI model platform; Changan, Hongqi, Voyah, Great Wall, Geely, Dongfeng Nissan and Leapmotor among others connect Baidu ERNIE Bot large language model.

In August 2023, GAC launched its large AI model platform, which will be first available to intelligent voice interaction scenarios. This platform allows intelligent voice to combine benefits of various models, and uses vehicle local inference capabilities and cloud hybrid model technology for "accurate contextual semantic understanding". Coupled with GAC's ADIGO MAGIC scenario cocreation platform and cloud ecosystem services, it comprehensively enhances voice intelligence and emotion, and upgrades the "Q&A" mode to no-threshold, instinctive and natural dialogue. It will be firstly applied to Hyper GT.



Large Al model

GAC AI Large Model Platform Implementation Route

First to be implemented: intelligent cockpit (intelligent voice interaction scenarios)

In the future

Voice capability upgrade: based on environment and emotional state perception, understand user's intention and realize deep personalization and "human-like" interaction.

- Free dialogue: more accurate semantic understanding model, realizing "human-like" free communication.
- Mobile encyclopedia: knowing astronomy and geography.

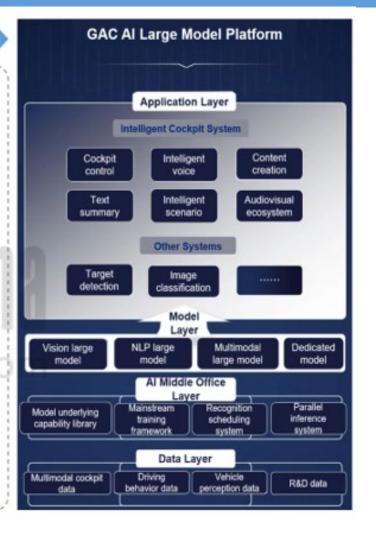
Driving experience upgrade: empower mobility experience, cover all-scenario driving services, and provide users with a deeper solution to their problems on the road.

- Vehicle assistant comprehensively integrates intelligent vehicle knowledge map, covering all scenarios and functions, and provides users with convenient access to usage guidelines and operation portals.
- Trip planning: based on user preference, location, environment perception and ecological services, accurately matches users' mobility needs and automatically generates travel tips.

Al super brain: powerful content generation and computing capabilities make intelligent cockpit a super brain for solving complex problems.

- Creation assistant independently creates content, analyzes and refines information, and improves creation and reading efficiency.
- Super brain: combines large language model and computing engine capabilities to parse mathematical problems and provide inference and computing processes.

Intelligent driving Team: global top Al expert Chen Xuewen leads the world's cutting-edge autonomous driving full-stack selfresearch X Lab team, which focuses on vision-only Progress: parking and driving fields have made breakthroughs Intelligent Connected Full Link Upgrade Positive R&D Field Digital Field Enhance multimodal Promote efficiency in data mining capability software development, and efficiency, combine verification. virtual massive data and simulation testing, etc., numerous cases provide intelligent and accelerate intelligent



Source: GAC R&D Center

vehicle iteration and

upgrading.



diagnosis and health

prediction for intelligent

vehicles, and establish full

life-cycle health expert

systems.

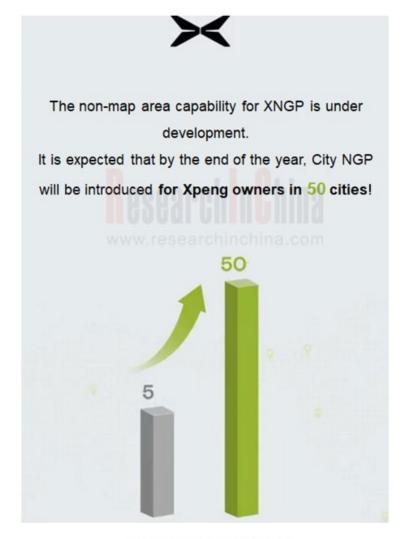
Advanced autonomous driving assistance

3. Advanced autonomous driving assistance

NOA function is a key breakthrough for automakers in their efforts to realize L3. Mature NOA solutions enable navigation-based urban and highway point-to-point autonomous driving. At present, automakers are making urban NOA layout. At the Shanghai Auto 2023, Xpeng Motor and Huawei first implemented urban NOA. In the second half of 2023, NOA solutions of NIO, Li Auto, Great Wall and other automakers will also be pushed.

Xpeng's City NGP has been introduced in 5 cities covered by HD maps. Xpeng plans to launch XNGP driving assistance technology in 50 cities by the end of 2023. It is also developing non-map area capability for XNGP.

In 2023, the first year of urban NOA, almost all leading companies in the new energy vehicle competition have released their own urban NOA plans. Their priority in the next 3-5 years is to provide urban coverage and promote vehicle models from top to bottom.



Source: Xpeng Motor



Table of Content (1)

1 Summary on OEMs' Model Planning

- 1.1 Number of New Vehicle Models Released by OEMs, 2023-2025E
- 1.2 New Vehicle Launch Plans, 2023-2025
- 1.2.1 New Vehicle Launch Plans: Models Priced at RMB0-100,000 &100-200,000
- 1.2.2 New Vehicle Launch Plans: Models Priced at RMB200,000-300,000 & 300,000-400,000
- 1.2.3 New Vehicle Launch Plans: Models Priced at RMB400,000-500,000 & 500,000-1,000,000
- 1.2.4 New Vehicle Launch Plans: Models Priced at over RMB1 Million
- 1.3 Sales Goals of OEMs, 2023-2025
- 1.4 Summary on New Vehicle Launch Plans of Chinese Independent OEMs, 2023-2025
- 1.5 Summary on New Vehicle Launch Plans of Emerging Carmakers, 2023-2025
- 1.6 Summary on New Vehicle Launch Plans of Joint Venture OEMs, 2023-2025

2 Chinese Conventional Independent OEMs' Model Planning

- **2.1 SAIC**
- 2.1.1 Brand Layout
- 2.1.2 Sales Volume
- 2.1.3 Brand Strategy
- 2.1.4 Sales Goal
- 2.1.5 Technology Planning
- 2.1.6 Roewe Model Planning
- 2.1.7 Roewe Representative Model: 3rd Generation Roewe RX5
- 2.1.8 MG Model Planning
- 2.1.9 MG Representative Model: MG ONE
- 2.1.10 IM Motor Model Planning
- 2.1.11 IM Motor Representative Model: IM L7
- 2.1.12 Rising Auto Model Planning

- 2.1.13 Rising Auto Representative Model: Rising R7
- 2.2 FAW
- 2.2.1 Brand Layout
- 2.2.2 Sales Volume
- 2.2.3 Brand Strategy
- 2.2.4 Sales Goal
- 2.2.5 Technology Planning
- 2.2.6 Hongqi Model Planning
- 2.2.7 Hongqi Representative Model: E-HS9
- 2.2.8 Bestune Model Planning
- 2.3 BYD
- 2.3.1 Brand Layout
- 2.3.2 Sales Volume
- 2.3.3 Brand Strategy
- 2.3.4 Sales Goal
- 2.3.5 R&D Center
- 2.3.6 Technology Planning
- 2.3.7 Dynasty/Ocean Model Planning
- 2.3.8 Representative Model: Seal
- 2.3.8 Representative Model: Frigate 07
- 2.3.9 Denza Model Planning
- 2.3.10 Denza Representative Model: D9
- 2.3.10 Denza Representative Model: N7
- 2.3.11 Yangwang Model Planning
- 2.3.12 Formula Leopard Model Planning
- 2.4 Geely
- 2.4.1 Brand Layout
- 2.4.2 Sales Volume
- 2.4.3 Development Planning



Table of Content (2)

- 2.4.4 Model Planning
- 2.4.5 R&D Center
- 2.4.6 Intelligent Ecosystem
- 2.4.7 Autonomous Driving
- 2.4.8 Chip
- 2.4.9 E/E Architecture
- 2.4.10 High-precision Positioning/HD Map
- 2.4.11 Model Planning
- 2.4.12 Representative Model: Boyue L
- 2.4.13 Lynk&Co Model Planning
- 2.4.14 Lynk&Co Representative Model: Lynk&Co 09 EM-P
- 2.4.15 Lynk&Co & MEIZU
- 2.4.16 Geometry Model Planning
- 2.4.17 Geometry Representative Model: G6
- 2.4.18 ZEEKR Model Planning
- 2.4.19 ZEEKR Representative Model: ZEEKR 009
- 2.4.20 LIVAN Model Planning
- 2.4.21 Galaxy Model Planning
- 2.4.22 Galaxy Representative Model: Galaxy L7
- 2.5 Dongfeng Motor
- 2.5.1 Brand Layout
- 2.5.2 Sales Volume
- 2.5.3 Development Planning
- 2.5.4 Model Planning
- 2.5.5 Technology Planning
- 2.5.6 Dongfeng Aeolus Model Planning
- 2.5.7 Dongfeng Forthing Model Planning
- 2.5.8 Voyah Model Planning
- 2.5.9 Voyah Core Technology

- 2.5.10 Voyah Representative Model: Voyah Dreamer
- 2.5.10 Voyah Representative Model: Voyah Zhuiguang
- 2.5.11 Dongfeng NAMMI Model Planning
- 2.6 Changan
- 2.6.1 Brand Layout
- 2.6.2 Sales Volume
- 2.6.3 Development Strategy
- 2.6.4 Sales Goal
- 2.6.5 Model Planning
- 2.6.6 Technology Planning
- 2.6.7 Changan Model Planning
- 2.6.8 Changan Representative Model: oShan Z6
- 2.6.9 Deepal Model Planning
- 2.6.10 Deepal Representative Model: Deepal SL03
- 2.6.11 Avatr Model Planning
- 2.6.12 Avatr Representative Model: Avatr 11
- 2.7 GAC
- 2.7.1 Brand Layout
- 2.7.2 Sales Volume
- 2.7.3 Development Planning
- 2.7.4 Model Planning
- 2.7.5 Autonomous Driving and Telematics Ecosystem
- 2.7.6 GAC Aion Protoss Architecture
- 2.7.7 GAC Intelligent Cockpit Upgrade
- 2.7.8 GAC Aion Model Planning
- 2.7.9 GAC Trumpchi Model Planning
- 2.7.10 GAC Trumpchi: Representative Model: E9
- **2.8 BAIC**
- 2.8.1 Brand Layout



Table of Content (3)

- 2.8.2 Sales Volume
- 2.8.3 Development Planning
- 2.8.4 Sales Goal
- 2.8.5 Model Planning
- 2.8.6 Technology Planning
- 2.8.7 "BEIJING" Model Planning
- 2.8.8 ARCFOX Model Planning
- 2.8.9 ARCFOX Representative Model: αS Huawei HI
- 2.9 GWM
- 2.9.1 Brand Layout
- 2.9.2 Sales Volume
- 2.9.3 Development Planning
- 2.9.4 Sales Goal
- 2.9.5 Technology Planning
- 2.9.6 Haval Model Planning
- 2.9.7 Haval Representative Model: Haval H6S
- 2.9.8 WEY Model Planning
- 2.9.9 WEY Representative Model: Blue Mountain DHT-PHEV
- 2.9.10 Ora Model Planning
- 2.9.11 Ora Representative Model: Lightning Cat
- 2.9.12 Tank Model Planning
- 2.9.13 Tank Representative Model: Tank 500
- 2.10 Chery
- 2.10.1 Brand Layout
- 2.10.2 Sales Volume
- 2.10.3 Development Planning
- 2.10.4 Sales Goal
- 2.10.5 Model Planning
- 2.10.6 Technology Planning

- 2.10.7 Chery Model Planning
- 2.10.8 EXEED Model Planning
- 2.10.9 EXEED Representative Model: STERRA ES
- 2.10.10 JETOUR Model Planning

3 Emerging Automakers' Model Planning

- 3.1 NIO
- 3.1.1 Development Planning
- 3.1.2 Model Planning
- 3.1.3 Sales Goal
- 3.1.4Ecosystem Layout
- 3.1.5 Representative Model: All-new ES8
- 3.1.5 Representative Model: ET5
- 3.2 Xpeng Motor
- 3.2.1 Models and Telematics Highlights
- 3.2.2 Development Planning
- 3.2.3 Sales Goal
- 3.2.4 Model Planning
- 3.2.5 Ultra-fast Charging Technology and Layout Planning
- 3.2.6 Ecosystem Layout
- 3.2.7 Representative Model: G6
- 3.2.7 Representative Model: G9
- 3.3 Li Auto
- 3.3.1 Models Distribution
- 3.3.2 Major Models and Their Features
- 3.3.3 Development Planning
- 3.3.4 Sales Goal
- 3.3.5 Model Planning
- 3.3.6 Supercharging Network Planning



Table of Content (4)

- 3.3.7 Ecosystem Layout
- 3.3.8 Representative Model: L9
- 3.4 Neta
- 3.4.1 Development Planning
- 3.4.2 Technology Planning
- 3.4.3 Sales Goal
- 3.4.4 Model Planning
- 3.4.5 Ecosystem Layout
- 3.4.6 E/E Architecture
- 3.4.7 Shanhai Platform
- 3.4.8 Representative Model: Neta S
- 3.5 Leap Motor
- 3.5.1 Technology Layout
- 3.5.2 Development Planning
- 3.5.3 Technology Planning
- 3.5.4 Sales Goal
- 3.5.5 Model Planning
- 3.5.6 Ecosystem Layout
- 3.5.7 Representative Model: C11
- 3.5.7 Representative Model: C01
- **3.6 AITO**
- 3.6.1 Models and Features Highlights
- 3.6.2 Representative Model: M5
- 3.6.2 Representative Model: M7
- 3.6.3 Model Planning
- 3.6.4 Huawei HarmonyOS 4.0 Intelligent Cockpit
- 3.7 HiPhi
- 3.7.1 Product Layout
- 3.7.2 Developer Platform

- 3.7.3 IVI System: HiPhi OS
- 3.7.4 Representative Model: HiPhi Z

4 Joint Venture OEMs' Model Planning

- 4.1 Toyota
- 4.1.1 Global Strategy Planning
- 4.1.2 Global Model Planning
- 4.1.3 Market Layout in China
- 4.1.4 FAW Toyota Model Planning
- 4.1.5 GAC Toyota Model Planning
- 4.2 Honda
- 4.2.1 Global Planning
- 4.2.2 Layout in China
- 4.2.3 Dongfeng Honda Model Planning
- 4.2.4 GAC Honda Model Planning
- 4.3 Hyundai
- 4.3.1 Model Planning
- 4.3.2 Beijing Hyundai Model Planning
- 4.4 Kia
- 4.4.1 Model Planning
- 4.4.2 Kia China Model Planning
- 4.5 Volkswagen
- 4.5.1 2030 Planning
- 4.5.2 Layout in China
- 4.5.3 SAIC Volkswagen Model Planning
- 4.5.4 FAW Volkswagen Model Planning
- 4.5.5 FAW Volkswagen Jetta Model Planning
- 4.6 Audi
- 4.6.1 Strategy Planning

- 4.6.2 FAW Audi Model Planning
- 4.6.3 SAIC Audi Model Planning
- 4.7 GM
- 4.7.1 GM China 2025 Planning
- 4.7.2 SAIC GM Buick Model Planning
- 4.7.3 SAIC GM Cadillac & Chevrolet Model

Planning

- 4.8 Mercedes-Benz
- 4.8.1 Strategy Planning
- 4.8.2 MB.OS Planning
- 4.8.3 Beijing Benz Model Planning
- 4.9 Other Brands
- 4.9.1 Chery Jaguar Land Rover
- 4.9.2 SAIC Skoda
- 4.9.3 Changan Ford & Mazda
- 4.9.4 Volvo & Polestar
- 4.9.5 Dongfeng Peugeot & Citroen
- 4.9.6 Dongfeng Nissan & Venucia

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