The Mobility Paper

E-Mobility

July 2025

China's PHEV/REEV bandwagon- an opportunity or a pitfall?

S&P Global
Mobility

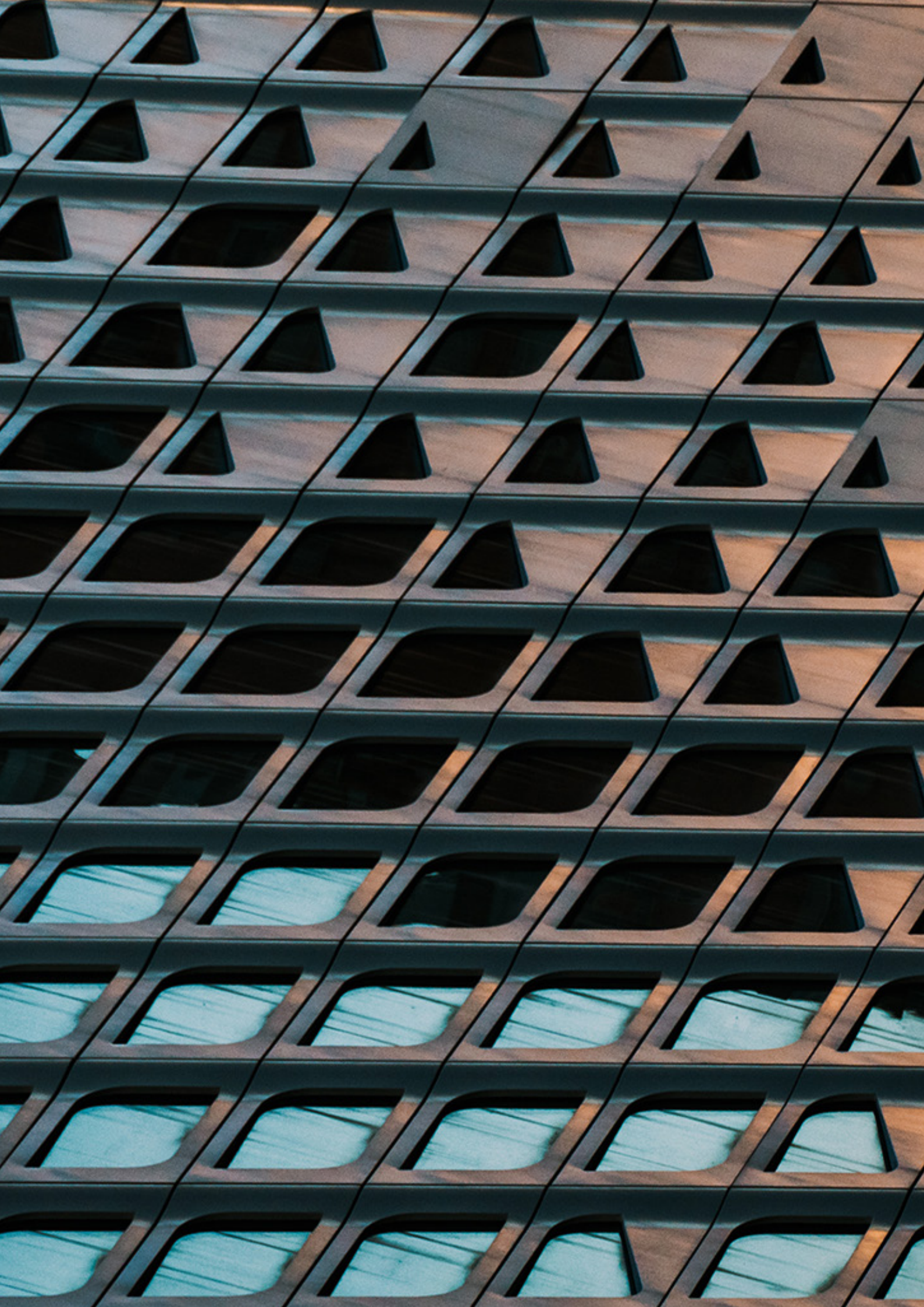
Executive Summary

In mainland China, battery electric vehicles (BEVs), plug-in hybrid electric vehicles (PHEVs), and range-extended electric vehicles (REEVs) have all seen remarkable growth in recent years, with differing technological highlights and value propositions for customers. Under intensified market competition, OEMs are further developing their powertrain strategies based on a mix of factors: regulation evolvement, technical feasibility, and market demand.

What is the current landscape of the Chinese powertrain market? As policy frameworks continue to evolve, how should companies weigh technology pathways, consumer demand, cost pressures, and regulatory risk? Where are PHEV and REEV technologies headed next? And as overseas markets shift, what new opportunities and potential pitfalls lie ahead for Chinese brands? This report explores these critical questions from multiple angles.

This Mobility Paper will cover:

- Mainland China leads as PHEVs and REEVs become scarce in overseas markets
- Mapping the local PHEV and REEV battleground
- Decoding the technology breakout of PHEVs and REEVs at the Auto Shanghai Show
- Powertrain transformation driven by regulatory direction
- Strategic powertrain choices under mounting dual-credit pressure
- Dual breakthrough with PHEV price disruption and REEV premium positioning
- Expanding into Europe's transitioning market and new global opportunities
- PHEVs and REEVs gradually eroding the final stronghold of internal combustion engines



Mainland China leads as PHEVs and REEVs become scarce in overseas markets

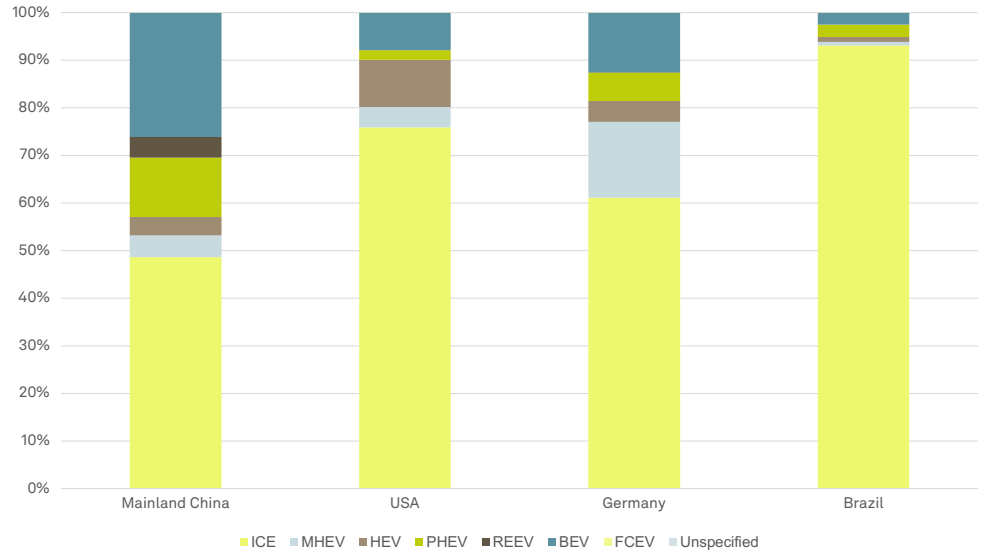
Mainland China has solidified its position as a global powerhouse in the automotive industry, underpinned by unmatched market scale. In 2024, sales of new energy vehicles topped ten million units for the first time, marking a decade of global leadership in volume.

Mainland China's approach to light vehicle electrification stands in sharp contrast to other major markets such as the United States, Germany, and Japan. In 2024, battery electric vehicles claimed a larger share of sales in China than in those peer markets. Plug-in hybrids have surged in popularity, while range-extended electric vehicles built on battery electric platforms have also gained meaningful traction. These patterns highlight Mainland China's distinct path in powertrain adoption compared to global norms.

"It is important to note that the structure of Mainland China's powertrain market differs significantly from that of major automotive markets such as the United States, Germany, and Japan."

Boni Sa
Director of Automotive Planning Solutions
S&P Global Mobility

2024 Light Vehicle Sales by PSD - selected country



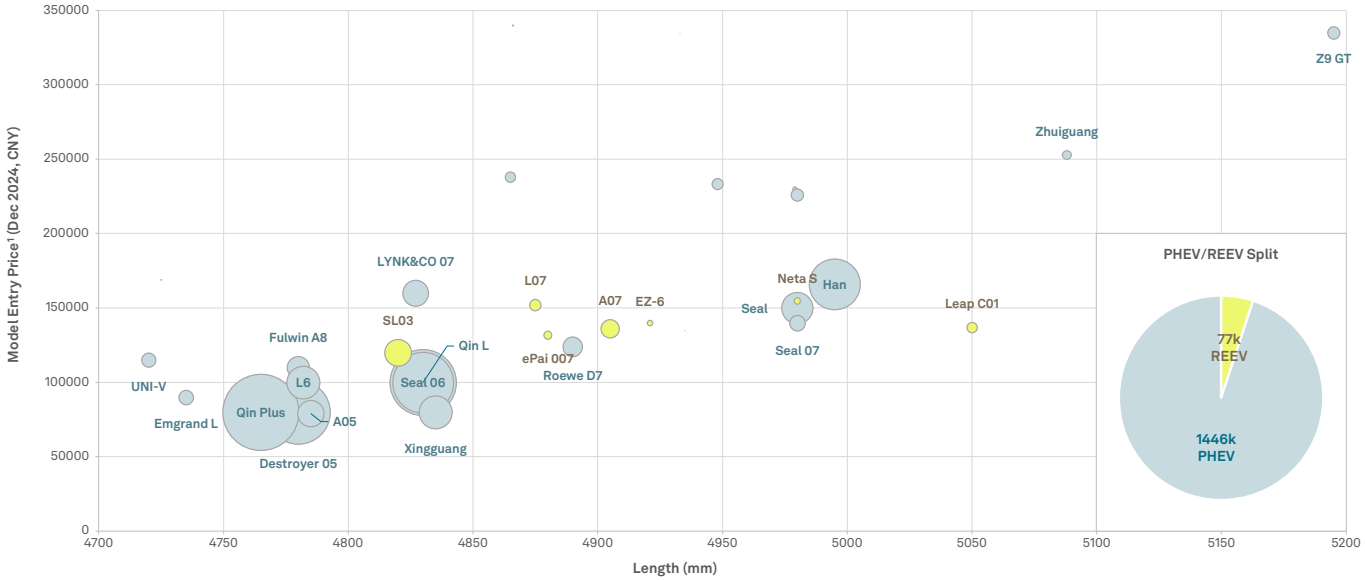
Source: S&P Global Mobility

Mapping the PHEV and REEV battleground in Mainland China

In Mainland China's segmented vehicle market, PHEVs and REEVs have each carved out distinct positions.

PHEVs dominate the sedan segment, particularly in the lower and mid-range tiers, supported by early entry and strong economies of scale. The BYD Qin PLUS DM-i illustrates the success of PHEVs in this space. Measuring between 4.7 and 4.85 meters in length, it uses a 1.5-liter plug-in hybrid system that delivers effective cost control and broad market appeal. Its strong value proposition has allowed it to capture the majority share of demand among budget-conscious buyers.

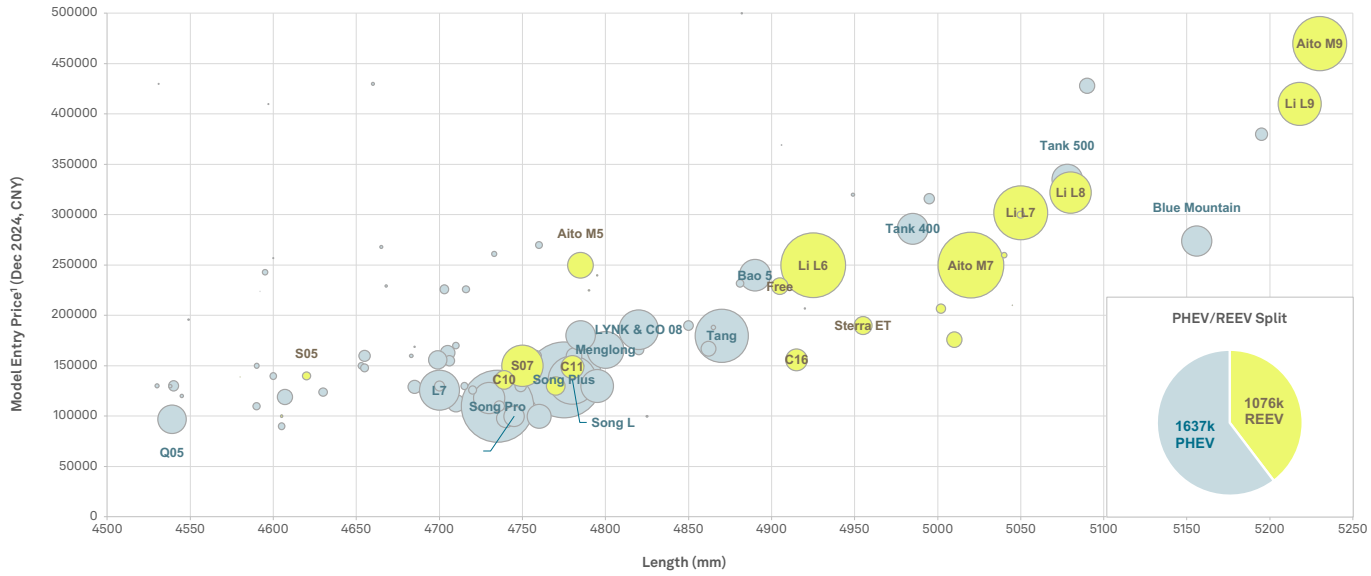
China PHEV / REEV Length & Price Positioning (2024[1], Car)



Note: 1) Venicle price data is based on 2024 January-December volume & price
2) Length is weighted average for each brand

REEVs have gained competitive ground in the large sedan segment. Although fully electric models account for a sizable portion of this market, a handful of REEV sedans such as the Leapmotor C01 and Dongfeng eπ 007 have stood out for their cost advantages. By delivering impressive performance and sufficient range without relying on large battery packs, these models find their sweet spots balancing electrification driving experience and cost control.

China PHEV / REEV Length & Price Positioning (2024[1], SUV)



Note: 1) Venicle price data is based on 2024 January-December volume & price
2) Length is weighted average for each brand

A similar pattern appears in the SUV segment. In the 4.7-to-4.85-meter range, plug-in hybrid SUVs benefit from clear cost advantages and scale efficiencies, while REEVs in the same space struggle with trade-offs between range and cost. Models like the Changan UNI-V iDD and BYD Song Pro DM-I have performed particularly well in this lower-tier SUV category.

In the mid to large SUV segment above five meters, REEVs have delivered robust performance. Representative models such as the Aito M9 and Li Auto L9, positioned as intelligent and premium range-extended offerings, have achieved solid market results since 2024.

S&P Global Mobility believes that the D and E segments will become the key battleground for PHEVs and REEVs across both sedans and SUVs. PHEVs entered these segments earlier and currently benefit from scale advantages. However, as REEV production expands and cost-reduction strategies take effect, product competitiveness in this space is expected to improve. upper E-segment in China (MSRP higher than RMB300,000), REEVs are positioned better to combine electric driving experience and advanced features as compared with the PHEVs in the same price range for time being. At the same time, PHEVs continue to demonstrate leading characteristics in handling, sport dynamics and off-road capability, giving them viable entry points into this segment.

> “We expect the D and E segments to become the primary battleground for PHEVs and REEVs across both the sedan and SUV markets.”

Shengying Du
Principal Analyst, Automotive Planning Solutions
S&P Global Mobility

Decoding the technology breakout of PHEVs and REEVs at 2025 Shanghai International Auto Show

As a key platform for the automotive industry, the 2025 Shanghai International Auto Show highlighted the latest progress in PHEV and REEV development. Thirty-five new models made their debut, becoming a central highlight of the exhibition.

In terms of powertrain type, PHEVs accounted for around two thirds of the new models, reflecting their mainstream position and strong market appeal. From a development perspective, PHEV offerings are becoming more diverse. Brands such as BYD and Wuling have targeted the mass market with affordable pricing, good fuel economy and everyday practicality, building a wide user base in the lower and mid-level segments. At the same time, automakers such as Geely and Chery have begun to introduce PHEV models in the mid to large SUV category, signaling an upward expansion of the segment.

2025 Shaghai Auto Show Scan - 35 New PHEV and REEV offerings

	SOP 2025	SOP 2026/2027	Concept
REEV	• Changan: Deepal S09 • Chery: Chery T11 • GAC: Hyprtec: HL • Dongfeng: Mengshi 817 • BYD: Yangwang U8L • Mazda EZ-60 JV • Huawei: Aito M8 • Huawei: Stelato S9 • Huawei: Maextro S800	• VW ID. EAR JV • Chery: Jetour G900	• Chery: Exeed Tianji • FAW: Hongqi Offroad
PHEV	• BYD: Seal 06 wagon • BYD: Sealion 06 • BYD: Sealion 07 • BYD: Tang L • BYD: Han L • Wuling: Baojun Xiangjin • Geely: Zeeker 9X • Geely: Lynk&Co 900 • Geely: Xingyao 8 • FAW: Hongqi H5 • FAW: Hongqi HS9 • Changan: Qiyuan Q07 • Chery: Chery A9L • Chery: Jetour G700 • GAC: Xiangwang S9 • GAC: Xiangwang M8 • Nissan: Frontier Pro JV	• Chery: Jetour F700 • Chery: Tiggo 9L	• Geely: Galaxy Cruiser • BYD: Denza Z • BYD: Dynasty D

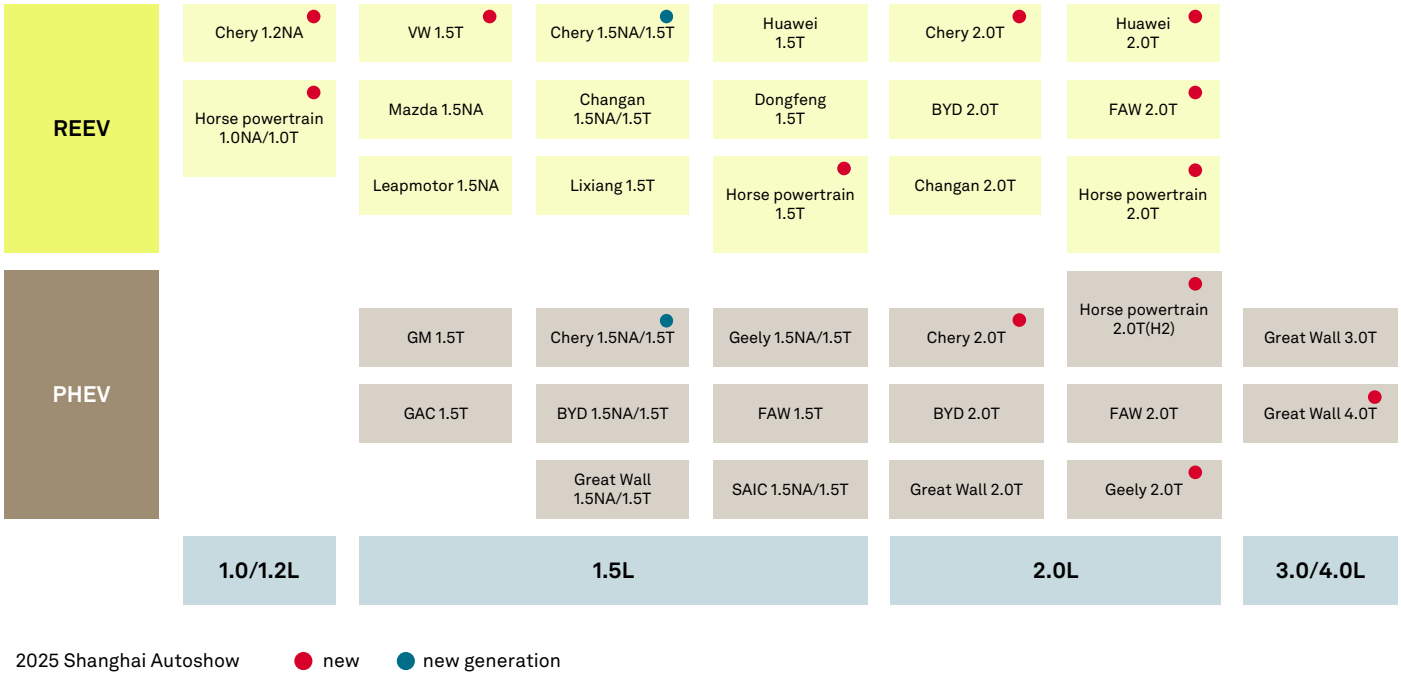
REEV development focuses on the premium SUV segment, especially among flagship models. Automakers have launched a range of high-end series — often numbered, such as the 8 Series and 11 Series — to anchor this space at the top of their lineups. At the same time, there are manufacturers who have started developing REEV sedans, mostly focused on full-size flagship models.

Joint venture brands also drew attention at the 2025 Shanghai International Auto Show as most are now collaborating more closely with Chinese partners to target high-end and large-format segments, aiming to align more precisely with local consumer preferences.

In the large off-road SUV category, PHEVs and REEVs are increasingly the default choice. Their adoption reflects the performance demands of off-road driving, where power, range, and reliability are non-negotiable.

The powertrain strategies revealed at the 2025 show followed a clear direction. Automakers are sharpening their focus while broadening their approach across technologies and vehicle classes.

2025 Shaghai Auto Show Scan - Highlights of the Powertrain Showcase



As Mainland China's new energy vehicle market continues to scale, automakers are actively reducing their dependence on traditional internal combustion engines. In 2024, there are automakers who initiated broad reductions in engine variety. Consolidating engine lineups helps streamline manufacturing, lower costs, and improve production efficiency at scale.

Chery has introduced a new generation of compact range-extender engines, including a two-cylinder naturally aspirated 1.2-liter, a horizontally opposed two-cylinder 1.0-liter, and a turbocharged three-cylinder 1.0T. These engines are built and designed specifically for range-extended applications. While compact REEVs remain limited in the current market, such launches reflect early-stage investment in platform readiness and long-term product planning.

As Chinese brands move into higher segments, larger displacement engines are becoming essential. A growing number of companies are deploying 2.0T engines for PHEVs, aiming to meet demand for stronger performance. In parallel, there are manufacturers who introduce 2.0T-based range extenders to strengthen REEV offerings in the premium SUV space.

We expect powertrain strategies to become more modular. Original Equipment Manufacturers (OEM) now offer a single model with multiple engine options, paired with different electric motor and battery configurations. This approach improves product coverage while keeping core architectures flexible and cost-effective.

> **"A new trend is emerging in powertrain strategy, with some automakers offering a single model with two engine configurations to differentiate between trims, combined with varied motor and battery pairings to expand product coverage."**

Jiajia Wang
Principal Analyst, China Light Vehicle Powertrain Forecast
S&P Global Mobility

Powertrain transformation driven by regulatory direction

Mainland China's incentive programs continue to shape both the pace and rhythm of its new energy vehicle market. Policies aimed at scrappaging and replacement have already delivered measurable impact. As of mid-May 2025, just over a year since the program launched in April 2024, the Ministry of Commerce reported a total of ten million applications. The incentive programs particularly benefit the small and micro vehicle segments, where subsidies have directly translated into spiking sales volume.

Tax policies are also shifting consumer behavior. A planned 50 percent reduction in purchase tax for 2026, compared to the current 100 percent reduction, is expected to stimulate market demand, pulling it forward to late 2025. The phase-out of tax exemptions in 2028 could create a similar demand spike at the end of 2027. These incentives influence more than just total volume, they also impact when consumers buy and what they choose, driving short-term swings in demand and reshaping the sales cadence across the market.

China Regulations/Incentive Impacts on Powertrain Solutions

Regulation/Incentive	Impact period	Positive impact	Negative impact	Impact on
Scarp/replacement incentive	short-term	All		Consumers
Purchase tax exemption	middle-term	PHEV/REEV/BEV/FCEV	Non-NEV	
CAFC regulation	long-term	PHEV/REEV/BEV/FCEV & Low fuel consumption model		OEMs
NEV credit regulation	long-term			
Emission regulation	long-term	BEV/FCEV	PHEV/REEV/ Non-NEV	

On the regulatory front, policy is setting a clear direction for how Mainland China's powertrain landscape is evolving. The dual-credit system, emissions regulations, and fuel consumption standards each play a distinct role in driving the shift toward greener, more efficient, and more sustainable technologies.

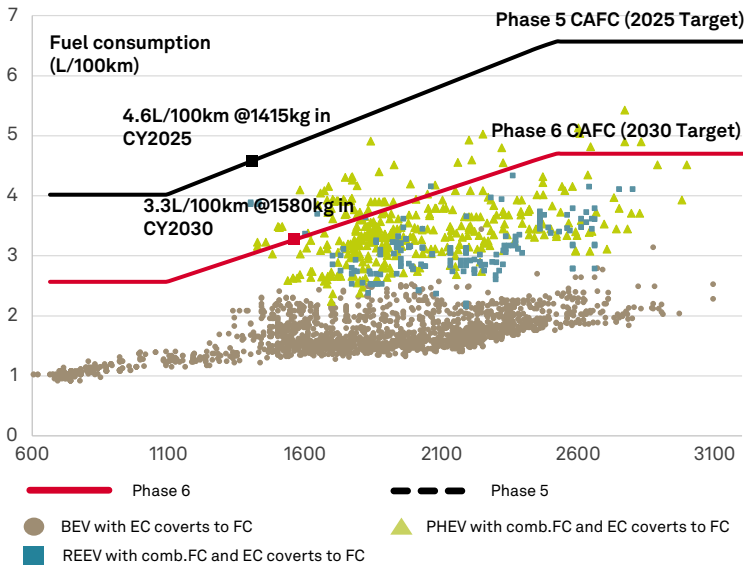
The dual-credit policy remains one of the most influential levers. It favors both new energy vehicles and low fuel consumption internal combustion models, creating explicit regulatory incentives. Its two-track compliance structure, covering both NEV and fuel economy performance, has pushed automakers to increase investment in electrification and energy-efficient platforms to an unprecedented new level.

Emissions standards, which primarily target combustion-powered vehicles, are also reinventing powertrain strategies. Notably, the current framework has raised the cost of diesel models, with significant impact on the commercial vehicle segment. To meet stricter targets, commercial vehicle manufacturers must invest heavily in upgrading engine technologies and emissions control systems. For passenger vehicles, the impact is more moderate in the near term. However, the transition from China 6 to China 7 will still require technical refinements to ensure compliance with upcoming standards.

Performance of Different NEW Solutions under China's Phase 6 CAFC Target

Phase 6 CAFC Target

- Scope: China PV market
- Effective from: Jan 2026
- **Phase VI CAFC target : 3.3L/100km with base mass of 1580kg**
- Test cycle: WLTC/CLTC
- CAFC phase in plan: CY2026 130%; CY2027 124%; CY2028 117%; CY2029 109%; CY2030 100%
- Remove NEV coefficient
- **Calculate NEV electricity consumption and convert into fuel consumption value in CAFC result**
- **Introduce non-NEV CAFC concept**

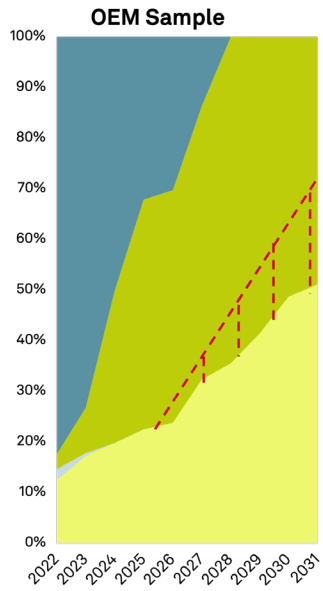


As regulatory pressures intensify, automotive manufacturers are reassessing their R&D priorities. A key decision lies in whether to continue investing heavily in a broad range of engine platforms or to streamline product lines and focus resources on technologies with greater long-term return. In this shift, there are automotive players who have started to reduce their development efforts on conventional internal combustion engines and redirecting investments toward new energy powertrains or low-consumption combustion systems that are more aligned with evolving regulations and more sustainable market trends.

Upgraded fuel consumption standards are also having a significant impact on powertrain strategy. The most notable change in Phase VI compared with Phase V is the requirement to convert battery electric energy consumption into equivalent fuel consumption. This revision has had a direct effect on the policy timeline for different electrification technologies.

Based on current test-cycle data, BEVs typically register between 1.5 and 2.0 liters per one hundred kilometers in converted fuel consumption. This is well below the 2030 regulatory threshold and reinforces the regulatory advantage of BEVs, supporting further market expansion. Range-extended electric vehicles average between 2.5 and 3.5 liters and remain within compliance limits, sustaining policy support for continued adoption. Plug-in hybrids vary more widely, from 2.5 to 4.0 liters, with around 20 percent of PHEV models projected to fall short of 2030 compliance targets.

An Example of the impact of the Electricity Consumption Calculations Method Requested in Phase 6 CAFC



CY 2030 PSD mix	Fuel consumption	
50% ICE	6L/100km	
50% BEV	exclude electricity consumption	include electricity consumption
	12kWh/100km -> 0L/100km	12kWh/100km -> 1.4L/100km
CAFC est.	3.0L/100km	3.7L/100km

Sources: S&P Global Mobility;

While official targets for Phase VII fuel consumption standards have not been released, the direction is clear. If future limits are tightened to around 2.0 liters per 100 kilometers (about 62.14 mi), compliance will become significantly more difficult for both REEVs and PHEVs. This possibility is already pushing automakers to act. Leading companies are expanding R&D, accelerating work on advanced powertrain systems, and making early strategic adjustments to prepare for more aggressive regulatory requirements beyond 2030.

Strategic powertrain choices under mounting dual-credit pressure

As seen, mainland China's dual-credit framework has become a central constraint shaping powertrain decisions. Automakers have been exploring multiple compliance pathways, each with distinct trade-offs in cost, operational complexity, and alignment with long-term product strategy.

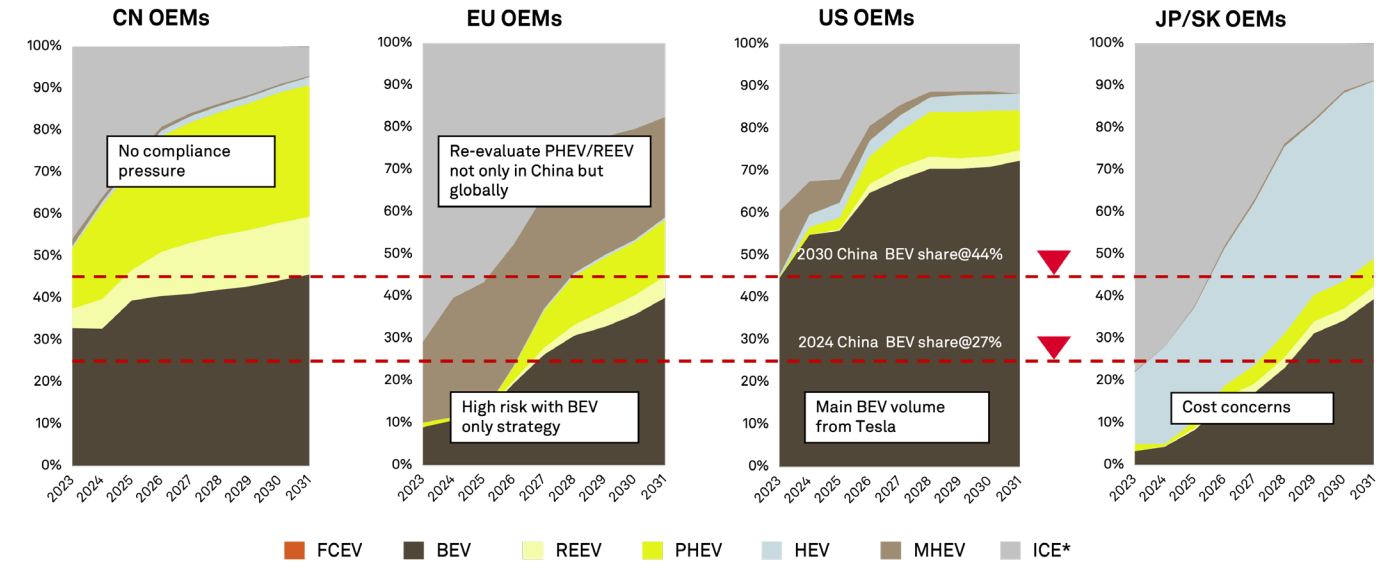
1. Credit acquisition
For smaller-scale or high-margin players, purchasing credits offers a shortcut to compliance. Brands with limited domestic sales volume, particularly import-focused Original Equipment Manufacturers (OEM), often find it more cost-effective to buy NEV credits than to reengineer their powertrain portfolios. For large-volume manufacturers, however, it cannot be a long-term compliance strategy. The cost of compliance through credit purchases at scale is rarely viable.

2. Product portfolio adjustment
There are industry players who shift their model mix by phasing out high-consumption ICE variants to improve fleet averages, without materially increasing BEV volume. While effective in regulatory terms, this approach can erode both revenue and profit. For most joint-venture brands, combustion models remain critical to earnings and reducing them may compromise competitiveness in core segments.

3. Hybrid optimization
Japanese OEMs tend to maintain a minimal BEV footprint while leveraging Hybrid Electric Vehicle (HEV) platforms to reduce average fuel consumption across ICE fleets. European and North American brands are increasingly turning to PHEV and REEV technologies, often developed in partnership with local Chinese automakers to meet local regulatory compliance and enhance consumer experience.

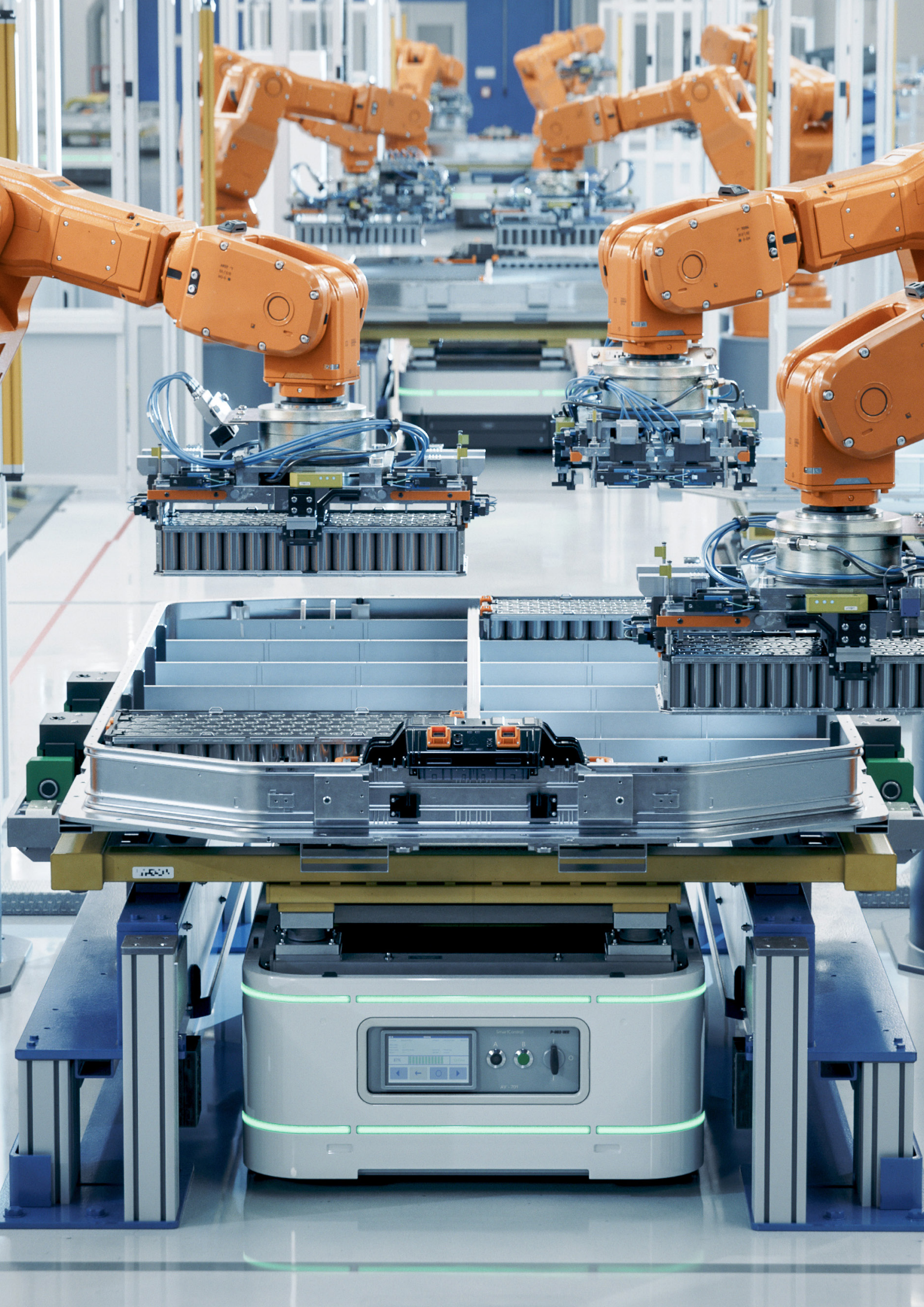
4. Full electrification
Part of automakers are considering a complete shift to BEV-only portfolios. While this aligns with long-term policy direction, execution risk remains high. Infrastructure gaps, battery cost volatility, and persistent consumer concerns around range continue to limit BEV adoption in various car segments. A rapid transition may expose manufacturers to supply chain stress, margin pressure, and slower-than-expected market acceptance.

Diversified Powertrain Stratergies in China May Also Impact thr Global Landscape



Notes: ICE* include ICE: stop start Sources: S&P Global Mobility;

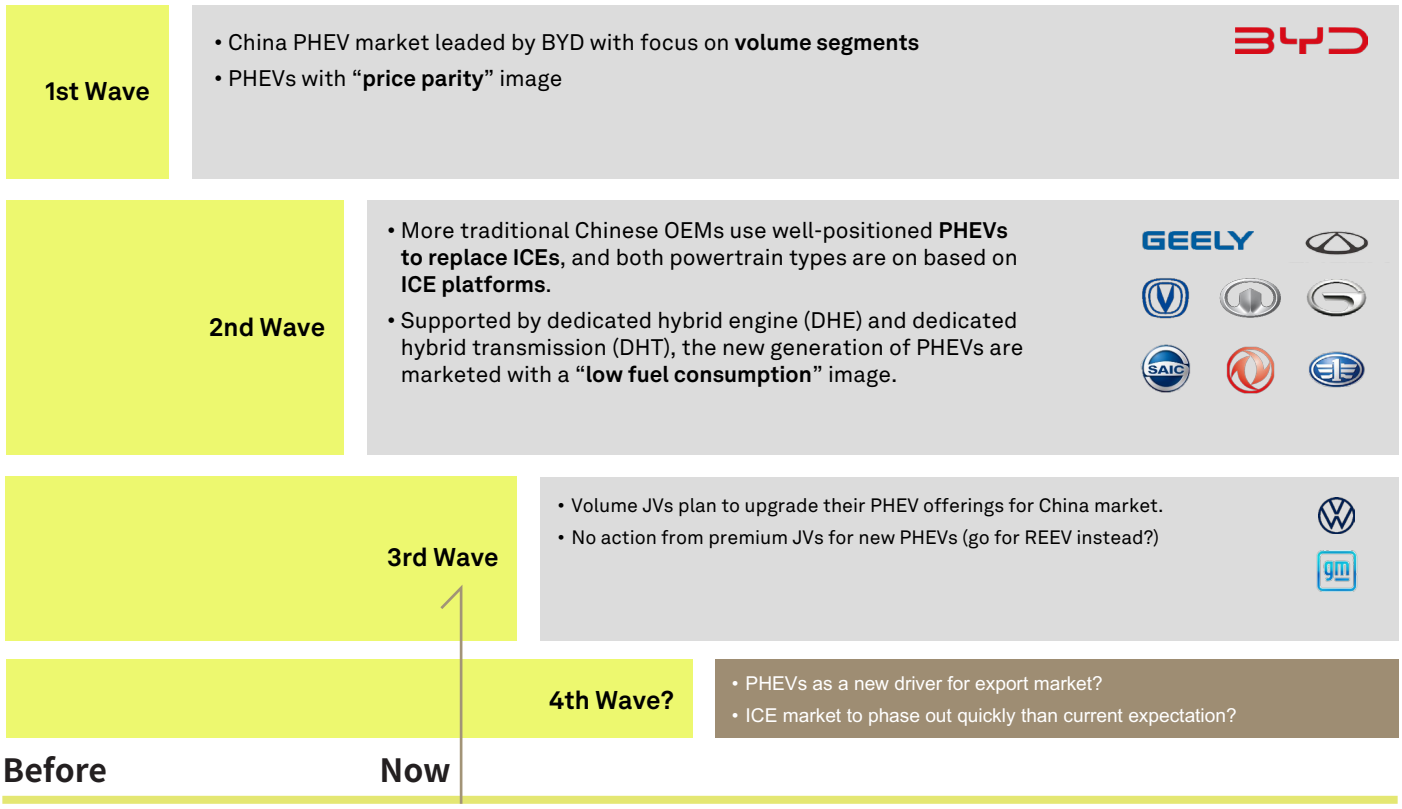
Automakers are pursuing an in-China-for-China strategy, developing products that align with local demand and industry trends while ensuring global compatibility. This shift and momentum are slowly but surely establishing China as a core driver of powertrain innovation and the evolution of global market structure.



Dual breakthrough with PHEV price disruption and REEV premium positioning

PHEVs and REEVs are emerging as both opportunities and challenges in the context of global expansion, prompting a strategic shift in how automakers define and pursue market growth.

China's PHEV Stratergy Started with Price Parity Offerings



Price competitiveness had in the past determined PHEV market growth. Moving forward, automakers must enhance their PHEV offerings by upgrading ICE-based platforms and developing hybrid-dedicated powertrains designed to deliver stronger fuel economy.

The upward movement of brand positioning is also opening new opportunities for PHEVs. Previously concentrated in the sub-150,000 RMB segment and below the D-class range. PHEVs are now expanding into mid and full-size sedans and Sport Utility Vehicles (SUV) as the technology matures, and consumer expectations increase with time.

Platform integration is emerging as another lever for PHEV development. With volumes continuing to increase, manufacturers are shifting toward PHEV-first architectures that enable tighter integration of the engine, battery, and motor. These platforms support advanced intelligent features, system-level optimization, and overall performance improvements. Export markets are also becoming a key area of growth for PHEVs. For

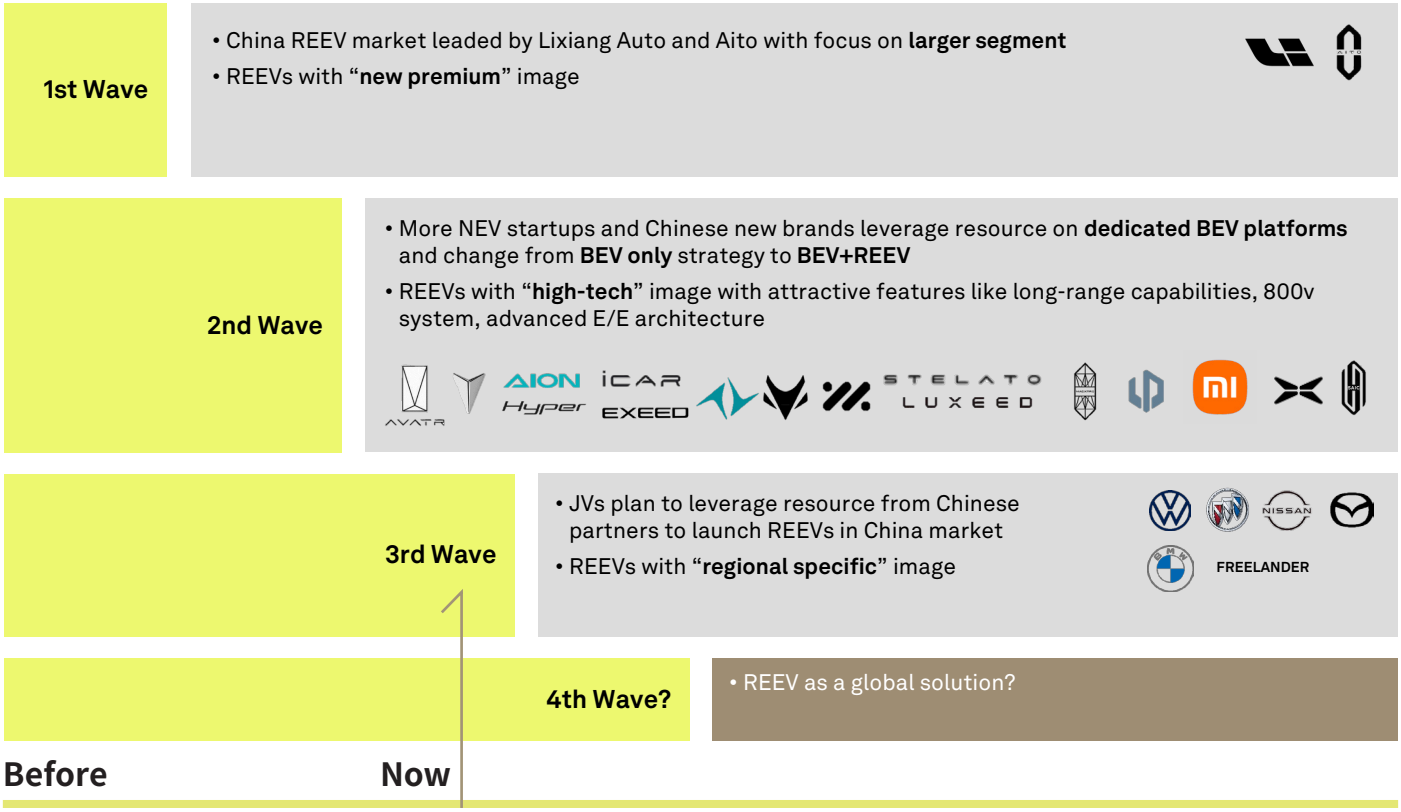
example, Chery's Super Hybrid Platform was showcased at the "Hybrid Night and Open-Source Initiative" event in Wuhu, Anhui province, on April 10, 2025. During the event, the Chinese automaker unveiled plans to launch 39 hybrid models in 2025, as part of a broader strategy to expand its global hybrid technology offerings.

REEVs today enjoy a new premium identity in the high-end segment, especially for their large sedans and SUVs. Built primarily on BEV platforms, these models offer extended range, 800V fast charging, and advanced electronic and electrical architecture. As a result, more automakers are evolving from BEV-only strategies toward combined BEV plus REEV portfolios, leveraging shared platform assets to diversify product offerings.

"BYD is currently leading in China's PHEV with focus on volume segments along with "price parity" image. The REEV market is dominated by Lixiang Auto and Aito with focus on larger segments.

Jiajia Wang
Principal Analyst, China Light Vehicle Powertrain Forecast
S&P Global Mobility

China's REEV Stratergy Initiated with "New Premium" Image



The REEV segment is attracting increased interest from joint ventures and international brands who wish to partner with Chinese automakers to co-develop localized products. Companies such as BMW and Volkswagen are collaborating with domestic partners to introduce REEV models tailored to the high-end NEV segment in China.

Looking ahead, if REEVs can address key constraints in small and compact-class vehicles, particularly around cost efficiency and space utilization, they have the potential to evolve into viable solutions globally.

Expanding into Europe's transitioning market and new global opportunities

PHEVs and REEVs are creating new momentum for Chinese automakers in global expansion.

In Europe, legacy manufacturers are under pressure. The shift to full electrification has brought prohibitive costs in R&D and factory retooling, while public charging infrastructure remains uneven and underbuilt. Consumer acceptance has been held back by range anxiety and long charging times. These structural issues have slowed BEV adoption, falling short of industry expectations.

At the same time, the regulatory outlook is shifting. The EU's 2035 carbon reduction target is subject to midterm review in 2026, with a real possibility of policy revision. This opens a window for transition technologies that can meet interim emissions goals at lower cost and with faster market readiness.

Chinese automakers are well-poised to lead in this space. PHEV and REEV platforms are mature, cost-efficient, and increasingly competitive in performance. One path forward is to partner with European brands and use their established channels to accelerate adoption. Another is to enter directly, using product supremacy and speed-to-market to build a share in a constrained but still-open market.

That opportunity comes with undefined risks. European policymakers may adopt more protectionist measures, including tariff increases or targeted restrictions aimed at imported technologies.

In less regulated markets such as Thailand and Brazil, the challenge is different. PHEVs are not yet widely recognized, and local consumers are still more familiar with traditional ICE and HEV offerings. Here, typically, Japanese brands dominate with a solid record of reliability and efficiency, while European brands retain strength through premium positioning and brand equity.

Success in these markets requires precision. Chinese manufacturers will need to localize product design, match usage conditions, and align with consumer expectations while leveraging their core technology advantages.

PHEVs and REEVs gradually eroding the final stronghold of internal combustion engines

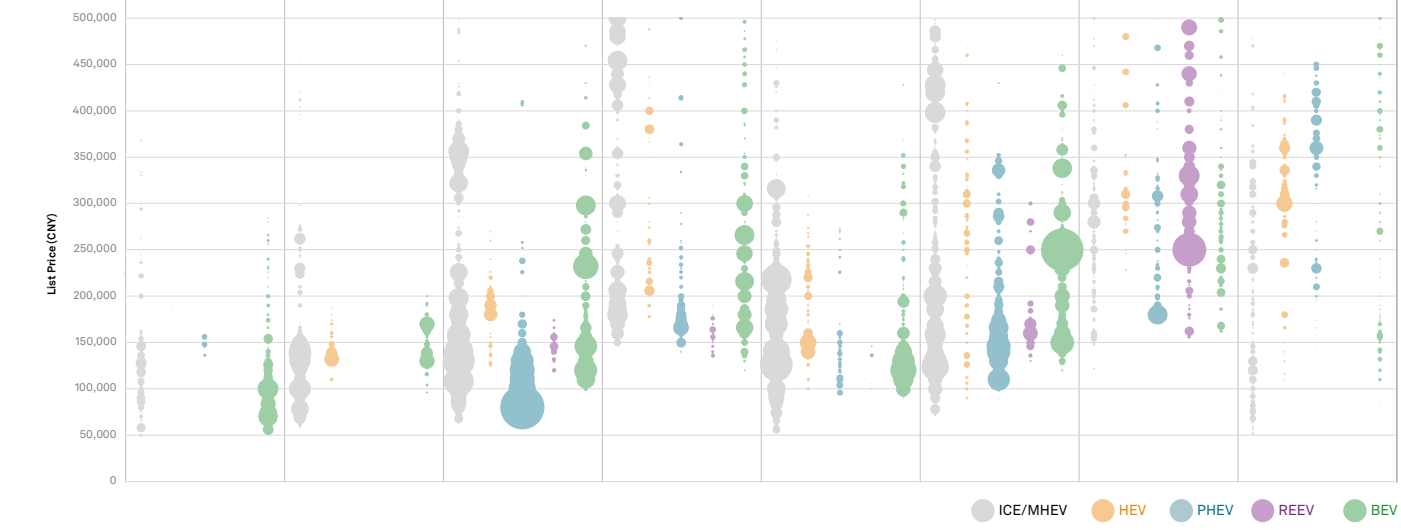
Mainland China's 2024 vehicle pricing landscape reveals distinct adoption patterns for PHEVs and REEVs across market segments.

In the sedan category, the 150,000 to 250,000 RMB range is emerging as a key zone for future growth. Currently, plug-in hybrid sedans—led by BYD—are mostly in the sub-150,000 RMB segment. In the 150,000 to 250,000 range, there is still no clear market leader, while traditional ICE models continue to account for 50 to 55 percent of sales. As powertrain technology advances and cost barriers fall, PHEVs and REEVs will move upward into this space. Their advantages in energy efficiency and regulatory compliance make them strong candidates to displace ICE share and establish a firm presence in what may be combustion's last stronghold.

PHEV & REEV expansion: opportunity or challenge

PSD Pricing Structure Comparison per Segment (2024[1])

	Subcompact					Compact Car[2]					Mid-Size Car[2]					Full-Size Car[2]					Compact SUV					Mid-Size SUV					Full-Size SUV					MPV				
PSD	ICE	HEV	PHEV	REEV	BEV	ICE	HEV	PHEV	REEV	BEV	ICE	HEV	PHEV	REEV	BEV	ICE	HEV	PHEV	REEV	BEV	ICE	HEV	PHEV	REEV	BEV	ICE	HEV	PHEV	REEV	BEV	ICE	HEV	PHEV	REEV	BEV	ICE	HEV	PHEV	REEV	BEV
Volume[1] (k units)	241	1	16	-	638	1162	116	-	-	218	2571	117	1213	49	1007	1413	93	232	29	665	2565	195	86	4	871	2638	152	1306	167	1260	537	92	229	905	224	307	258	215	-	128
Share %	27%	0%	2%	-	71%	78%	8%	-	-	15%	52%	2%	24%	1%	20%	58%	4%	10%	1%	27%	69%	5%	2%	0%	23%	48%	3%	24%	3%	23%	27%	5%	12%	46%	11%	34%	28%	24%	-	14%



Note: 1) Vehicle price data is based on 2024 January-December volume & price
2) Car mainly includes hatchback, sedan, wagon, as defined by S&P Global Mobility Regional Sub-segment

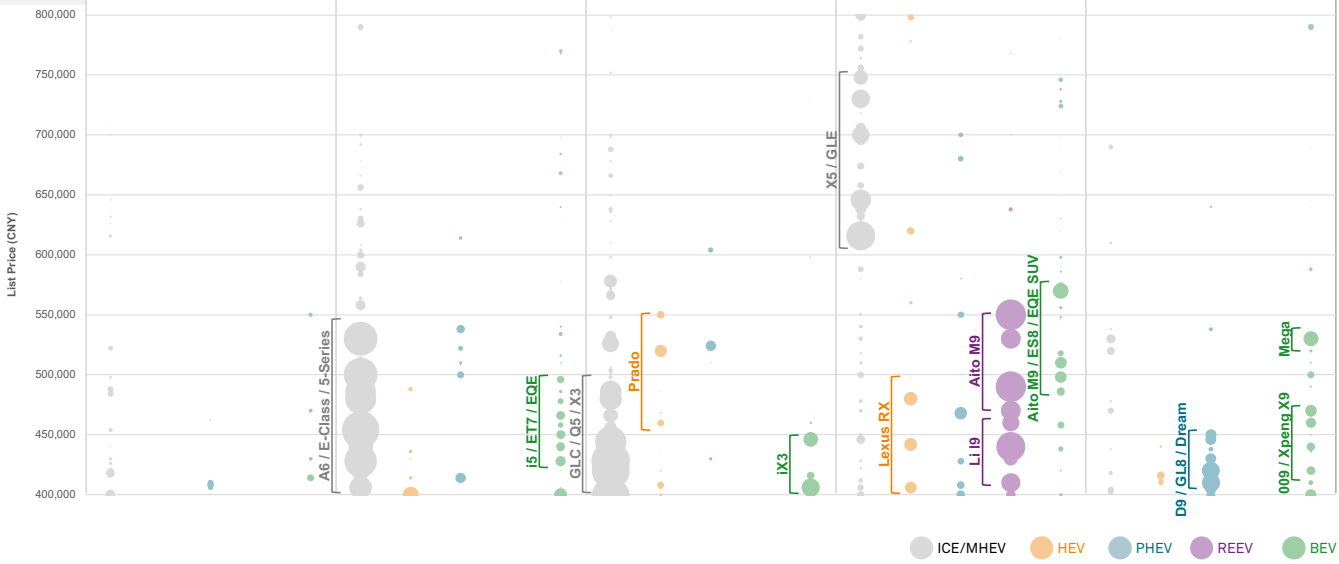
The SUV segment is highly competitive, yet it continues to offer meaningful headroom for PHEVs and REEVs. In the 200,000 to 300,000 RMB range, new energy models such as Tesla and Li Auto have already gained strong footing, with ICE share falling to 35 to 40 percent. For PHEVs and REEVs, success in this space depends on narrowing the gap in intelligent features, performance, and price.

In the premium market above 400,000 RMB, ICE vehicles still hold 60 to 65 percent share. While extended-range models from players like Li Auto and Aito have made progress, PHEVs remain underrepresented. Products that combine advanced digital systems with off-road capability may have the potential to break new frontiers in this segment.

PHEV & REEV expansion: opportunity or challenge

PSD Pricing Structure Comparison per Segment (2024[1])

	Mid-Size Car[2]					Full-Size Car[2]					Mid-Size SUV					Full-Size SUV					MPV				
PSD	ICE	HEV	PHEV	REEV	BEV	ICE	HEV	PHEV	REEV	BEV	ICE	HEV	PHEV	REEV	BEV	ICE	HEV	PHEV	REEV	BEV	ICE	HEV	PHEV	REEV	BEV
Volume[1] (k units)	2571	117	1213	49	1007	1413	93	232	29	665	2638	152	1306	167	1260	537	92	229	905	224	307	258	215	-	128
Share %	52%	2%	24%	1%	20%	58%	4%	10%	1%	27%	48%	3%	24%	3%	23%	27%	5%	12%	46%	11%	34%	28%	24%	-	14%

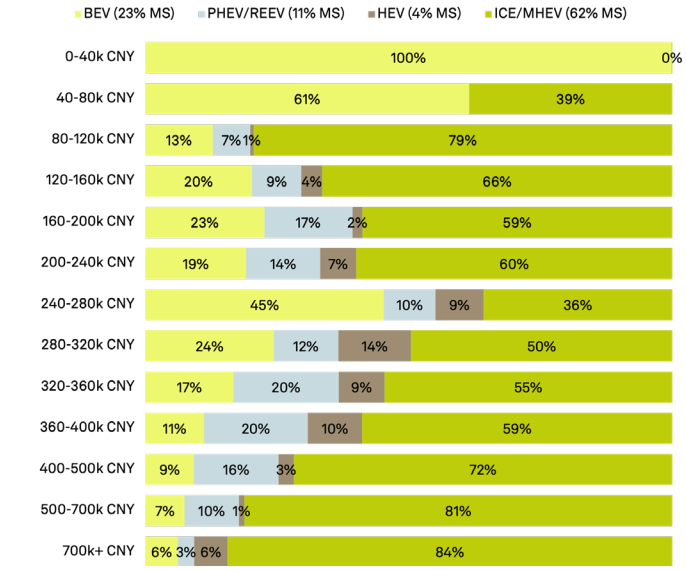


Note: 1) Vehicle price data is based on 2024 January-December volume & price
2) Car mainly includes hatchback, sedan, wagon, as defined by S&P Global Mobility Regional Sub-segment

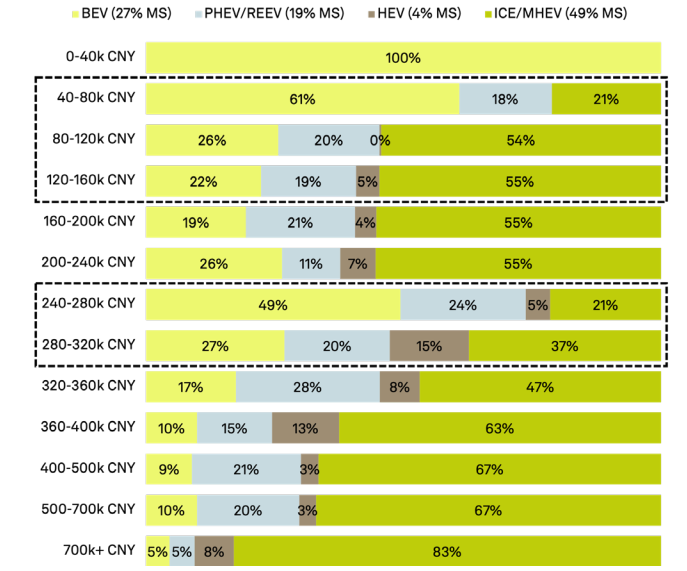
PHEV and REEV technologies each follow distinct architectures, but in practice the line between them is increasingly blurred. While the technical definitions remain clear, market positioning and consumer perception have begun to converge. The two formats are now evolving in parallel, often within the same product segments. As regulatory pressures intensify, along with the shift in OEM strategies, electrification is gaining ground. This trend is visible even in the mid- and high-end market, where ICE share is falling at a faster pace. Although combustion models remain part of forward product plans, recent performance shows declining appeal for legacy platforms. Scale efficiency in ICE production is weakening, and its strategic relevance is starting to erode.

ICE/MHEV Quickly losing market share in core price bracket

China PV Sales Price Structure by PSD (2023)[1]



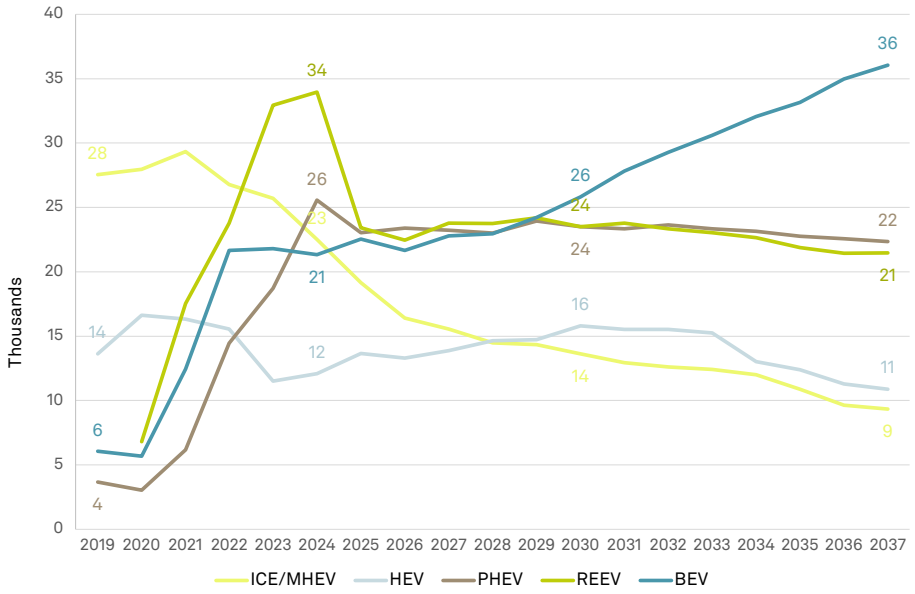
China PV Sales Price Structure by PSD (2024)[1]



Note: 1) List price is based S&P Global Mobility Unsuance data

ICE/MHEV to see further scale decrease

China Model Scale by PSD (2019-2037)[1]



Model Number	2019	2025	2030	2035
ICE/MHEV	713	480	264	120
HEV	29	84	89	64
PHEV	65	145	260	238
REEV	1	36	108	107
BEV	144	289	482	507

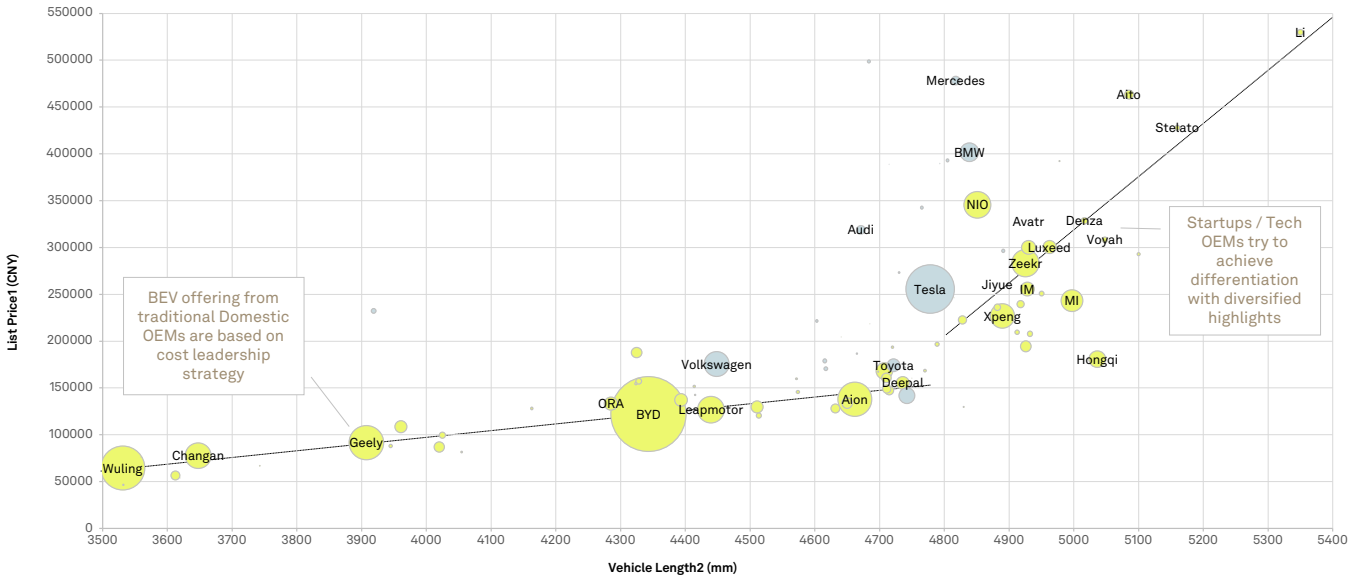
Source: S&P Global Mobility, 2025 Q1 Sales-based Powertrain Forecast

In the BEV segment, brand development has entered a more uncertain phase. Automakers are broadly following one of two paths: focusing on cost efficiency or targeting higher-value product positions. Yet advances in battery technology and supply chain optimization have done little to reduce overall cost structures, limiting the effectiveness of cost-based strategies. As a result, the emphasis is shifting toward capturing value in segments where product differentiation and pricing power are stronger. At the same time, slower market growth is increasing commercial risk. To sustain competitiveness, automakers are turning to intelligent systems, service-led models, and autonomous driving technologies as the next sources of product advantage.

> Cost-based BEV are facing bottlenecks as battery technology development slows in recent years. OEMs need to focus on value-based BEV market continuously, leveraging AI and autonomy as value drivers."
>
> **Shengying Du**
> Principal Analyst, Automotive Planning Solutions
> S&P Global Mobility

BEV Positioning: Cost leadership or differentiations?

China BEV Price & Range Positioning of Major Brands (2024[1])



Note: 1) List price is based S&P Global Mobility Insurance data, 2024 January-December volume & price
2) Length is weighted average for each brand

Internal combustion is set to lose significant ground as electrification continues to reshape the market. While BEV growth is slowing, PHEVs and REEVs will continue to capture an increasing number of shares in new vehicle sales. Their long-term competitiveness depends on resolving key barriers. Battery innovation, reliable access to charging infrastructure, and lower system costs remain critical. PHEVs and REEVs will only secure long-term advantage if they can resolve these underlying constraints.

Key Takeaways

PHEVs have secured early dominance in lower and mid-range segments through first-mover advantage and scale. REEVs show stronger potential in upper segments. D and E classes are emerging as the next core battlegrounds for both technologies.

In the E segment and above, REEVs offer structural cost advantages, while PHEVs maintain an edge in driving dynamics, performance, and off-road capability, which provides a viable path into higher-end markets.

In the large SUV off-road segment, OEMs favor PHEV and REEV solutions due to specific performance, range, and reliability requirements associated with off-road usage.

Powertrain strategies are diversifying. Automakers are:

- downsizing engines for efficiency,
- deploying 2.0T platforms to meet premium product needs, and
- offering multi-engine configurations within a single model line, paired with varied motor and battery systems to expand lineup coverage.

Scrappage and replacement incentives boost short-term demand. Over the long term, the regulatory levers including dual-credit policy, emissions standards, and fuel consumption targets continue to shape the Mainland China's powertrain roadmap.

Navigating compliance is now central to product and investment strategy. Automakers are adopting varied approaches: credit trading, ICE portfolio restructuring, hybrid adoption pathways, and full electrification options where feasible.

Competition in the PHEV and REEV space is escalating. Incumbent OEMs are accelerating development cycles and expanding product offerings, while joint ventures are deepening local partnerships to meet rising domestic demand.

Chinese automakers possess strong technical maturity and cost advantages in PHEV and REEV platforms. These capabilities enable both collaborative entry into European markets and direct expansion where consumer education and policy alignment are in place.

The market outlook points to a sharp decline in ICE share, a deceleration in BEV growth, and continued share gains for PHEVs and REEVs as transition technologies gain traction.

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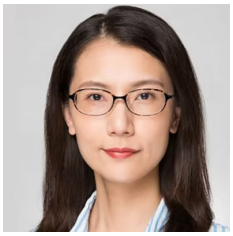

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Citations

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