

# The Mobility Paper

## Market Landscape

February 2025

### The Struggle for Battery Electric Vehicle Supremacy

**S&P Global**  
Mobility

# Executive Summary

A perfect storm is brewing for OEMs and electric vehicles (EVs). Momentum is slowing in the transition to EVs and battery-electric vehicle (BEV) penetration is now contracting in every major region. Political and economic disruption along with pushback from the West on Chinese BEV imports are also creating volatility in the market. Furthermore, OEMs must grapple with the dilemma of high BEV production costs and lower profitability.

How can global OEMs build a path to profitability in this environment? Many are tweaking BEV strategies, with some projected to produce internal combustion engine (ICE) vehicles into the 2030s. Along the way, they will need to align new regulations with market and industry realities.

Innovation is the only way forward in this difficult landscape, with increased investment in technology and scaling as soon as products hit the market. As OEMs scramble for market dominance, they will be fighting for their very survival.



## This Mobility Paper will cover:

- Introduction: Uncertainty clouding the BEV market
- Forecasting: A look into the crystal ball
- Analysis: BEV realities... and opportunities
- Projections: Trends to watch
- Conclusions: Grabbing the bull by its horns

# The Struggle for Battery Electric Vehicle Supremacy

## Survival and building path of profitability

### Uncertainty is clouding the market

The transition to EVs is slowing and BEV penetration is now contracting in every major region. How can global OEMs build a path to profitability in a volatile environment?

According to S&P Global Mobility analysts, robust challenges are being placed in front of BEV manufacturers. Henner Lehne, Vice President, Vehicle & Powertrain Group, outlined many of these issues in recent comments. He explained that annual global real GDP growth is forecast at 2.7% for 2025, and while conditions may pick up for 2026 with more accommodative financial conditions, weakness in new orders suggests loss of momentum in manufacturing activity, accompanied by lack of solid signals for investment.

### Politics loom over all

Despite strong BEV market momentum with global sales growing 30% in 2023 to a 12% market share overall, the future is uncertain from a BEV sales perspective. A real concern is political and economic disruptions along with pushback from the West on Chinese BEV imports. The election of Donald Trump to the US Presidency has only heightened uncertainty. The Red Sea route disruption also continues, and it is unclear whether EV subsidies will return to Germany, a situation mirrored in major markets globally as governments assess subsidies.

**The election of Donald Trump to the US Presidency has only heightened uncertainty.**

While Chinese and European OEMs are making inroads into each other's markets, China's BEVs are already close to price parity with internal combustion engine (ICE) vehicles, suggesting greater efficiency by manufacturers in that market.

### A mixed environment for OEMs

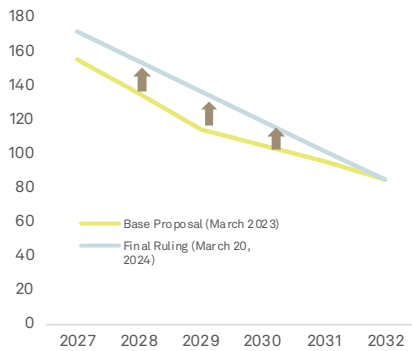
The Mainland Chinese market continues to be dynamic, with a vehicle trade-in scheme gaining momentum and domestic brands powering ahead with BEV production. Such competitiveness has led to an ongoing intense price war amongst OEMs globally, especially in China. While Chinese and European OEMs are making inroads into each other's markets, China's BEVs are already close to price parity with internal combustion engine (ICE) vehicles, suggesting greater efficiency by manufacturers in that market. Industry players, however, worry that consumers may adopt a wait-and-see approach. In the US, the risks appear to be far greater, with OEMs struggling to balance sales, production, inventory and incentives targets.

For Europe, a major concern is the advent of 2025 carbon dioxide (CO<sub>2</sub>) rules and how that will impact the market. European Union legislation is mandating CO<sub>2</sub> emissions reduction targets for new car and van sales, aiming at achieving 100% zero-emission vehicle sales by 2035.

Figure 1: Regulation Trends

**United States**

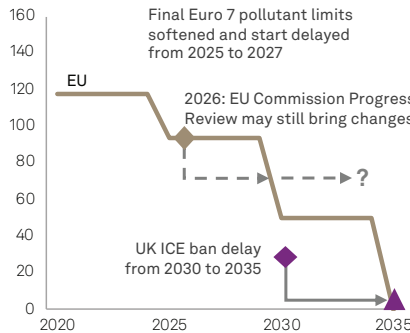
Light Vehicle CO2 Emission Standards (EPA g/mile)



Values including maximum credits.  
 NHTSA mpg values converted to GHG equivalent.  
 \* Preferred Alternative. \*\*PC2LT4 Proposal.

**Europe**

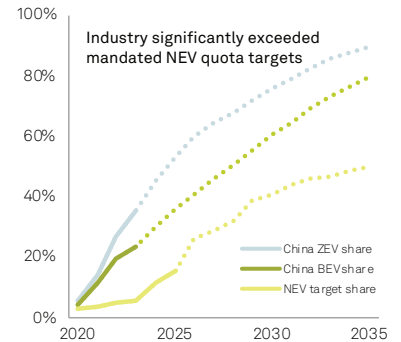
Passenger Car CO2 Emission Targets (WLTP g/km)



WLTP = Worldwide Harmonized Light Vehicles Test Procedure.

**China**

NEV\* performance (% of passenger car sales)



\*NEV=New Energy Vehicle includes BEV, PHEV, FCEV, REX  
 ZEV=Zero Emission Vehicle includes BEV, PHEV

Data compiled Apr 2024

EPA = U.S. Environmental Protection Agency. NHTSA = National Highway Traffic Safety Administration.

Sources: EPA, NHTSA; European Environment Agency, UK DfT; S&P Global Mobility Sales-based powertrain forecast Q3 2024.

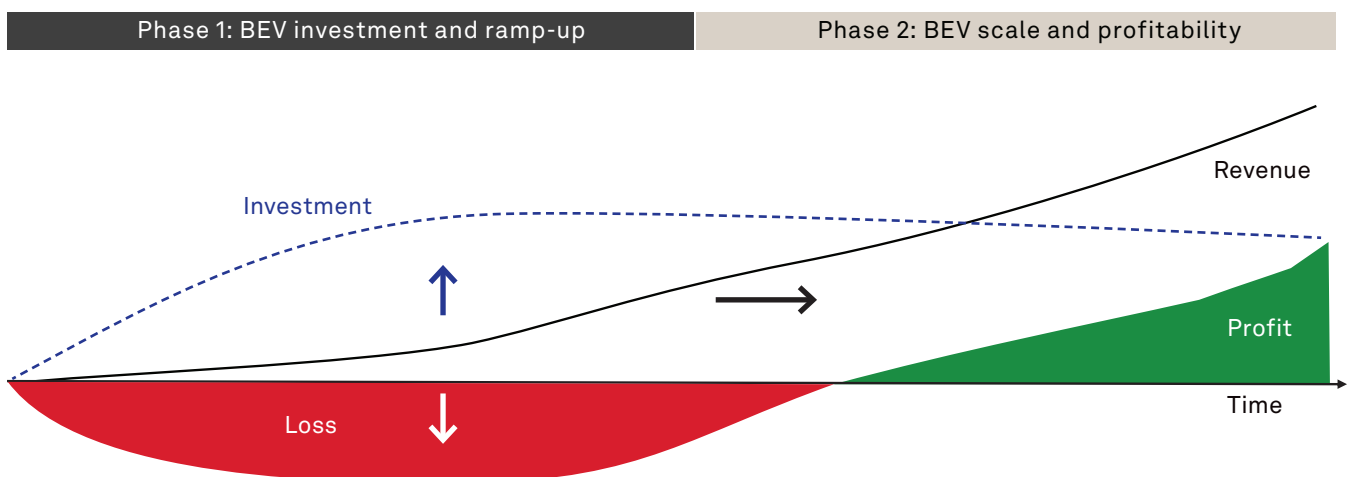
“The profit margins between internal combustion and electric cars are not converging as quickly as we had hoped”

– Audi CEO  
 Gernot Döllner, Dec. 2023

“It is no secret that the margins are lower for electric cars than for combustion engines,”

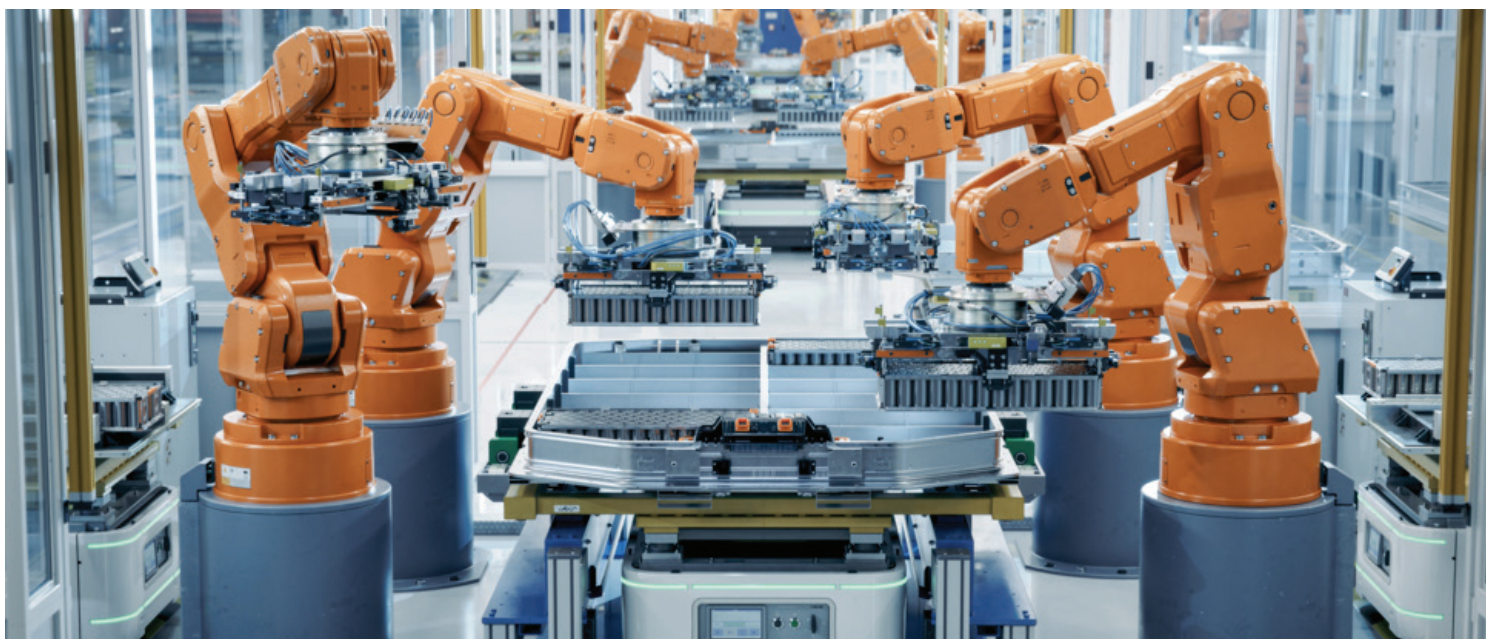
– Mercedes-Benz CFO  
 Harald Wilhelm, Feb. 2024

Figure 2: The Dilemma of High BEV Prices and Lower Profitability



EV = battery-electric vehicle.  
 \*Simplified for illustration only.

Source: S&P Global Mobility, interviews quoted from Automotive News Sport and Sueddeutsche Zeitung.



### A look into the crystal ball

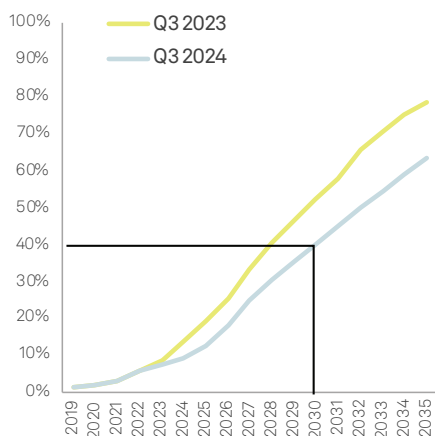
According to Lehne, OEMs are tweaking BEV strategies, with some projected to be producing internal combustion engine (ICE) vehicles into the 2030s; this situation will be exacerbated with the need to align new regulations with market and industry realities.

Taking the challenge of thriving in this dynamic environment head on, OEMs must also grapple with the dilemma of high BEV prices and lower profitability. They further need to contend with additional hurdles such as margin parity, dwindling BEV market demand, receding governmental subsidies and increasing competition.

**Figure 3: Notable Reductions in BEV Sales Volumes in the Short and Long Term**

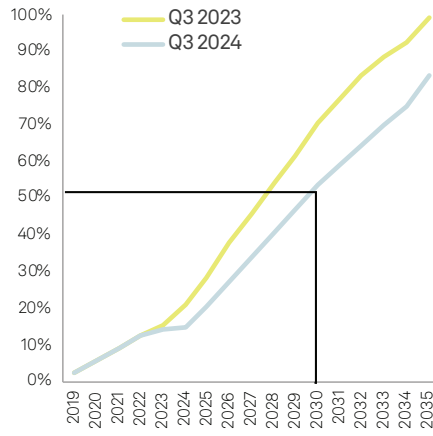
**US market BEV trend reduced as EPA proposal is opposed by a more relaxed one from NHTSA.**

#### BEV share for light vehicle sales



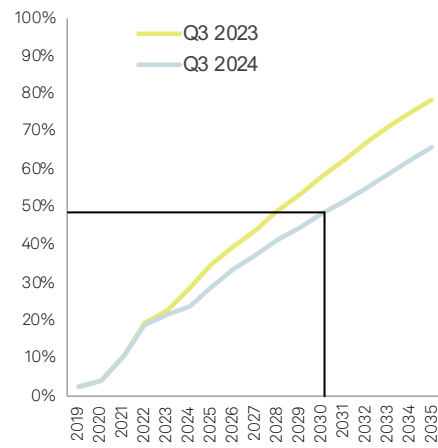
**EU 30 regulation is losing the role of the strongest driving force in a tougher market.**

#### BEV share for light vehicle sales



**Mainland China's long-term trend reduced as REXs and PHEVs take a more prominent role.**

#### BEV share for light vehicle sales



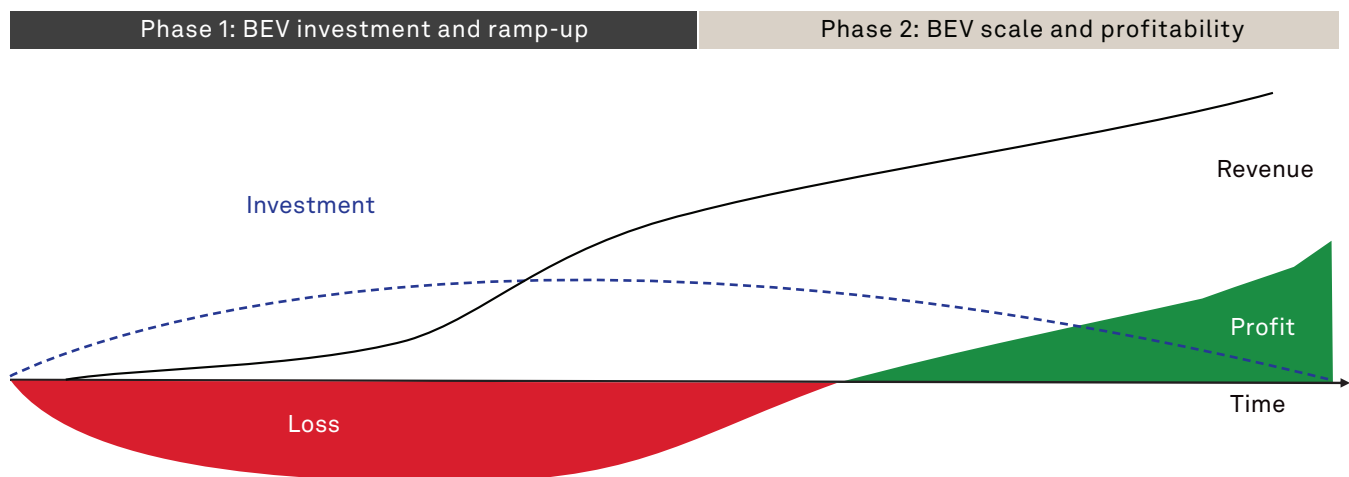
EPA = US Environmental Protection Agency; REX = range extended vehicle.  
Source: S&P Global Mobility Sales-based Powertrain Forecast — July 2024.

# The BEV realities... and opportunities

As Lehne points out, innovation is the only way forward in this difficult landscape, with increased investment in technology and scaling as soon as products hit the market—profitability will come from lower per-unit costs.

Gao Tao, Greater China Light Vehicle Production Forecast Lead at S&P Global Mobility, outlined some of the issues in recent opinions expressed to the media. A general trend is that momentum in the transition to EVs is slowing, with BEV penetration now contracting in every major region, Tao says. While Chinese and European OEMs are making inroads into each other's markets, China's BEVs are already close to price parity with internal combustion engine (ICE) vehicles, suggesting greater efficiency by manufacturers in that market.

**Figure 4: BEV ramp-up business model: Ideal case**



\*Simplified for illustration only.  
Source: S&P Global Mobility.

## The goldilocks zone

Managing manufacturing costs through opening viable new markets has always been an issue for BEV makers, and an emerging trend is expansion through Asia. S&P Global Mobility analysts have highlighted related issues in a recent article, *EV Makers To Bet \$20 Billion On South and Southeast Asia*.<sup>1</sup>

South and Southeast Asia (SSEA) offers a 'goldilocks zone' of affordable manufacturing, emerging market forces and more consumers. S&P Global Ratings estimates more than US\$20 billion will be spent building BEV production in this region for the next few years.

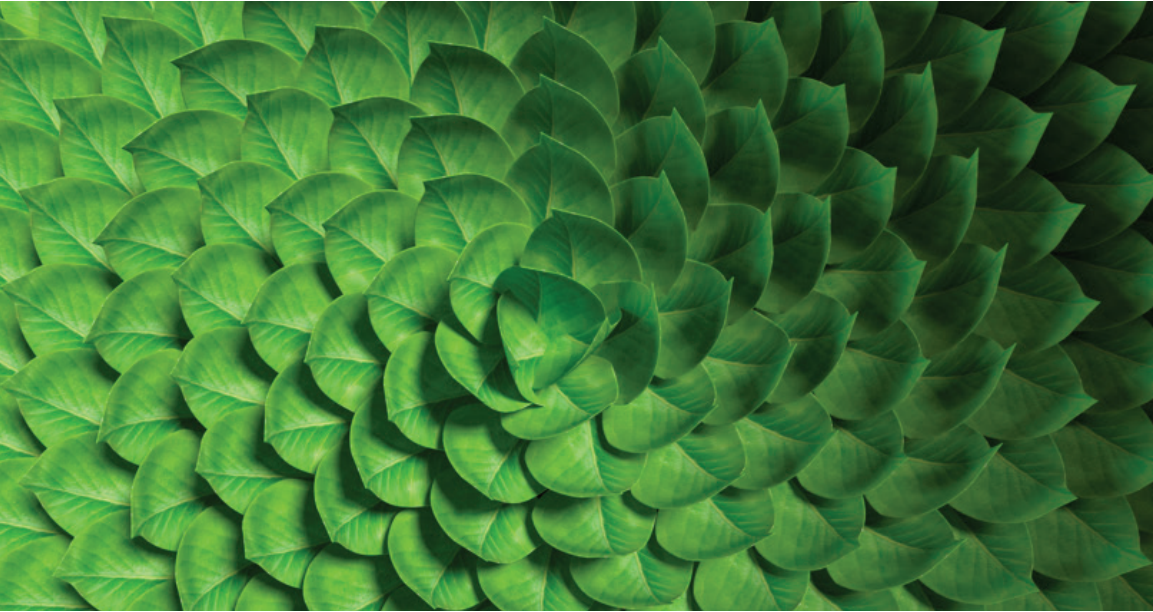
The zone's potential is supported by fundamentals of the region. Home to more than 2 billion people, SSEA has among the lowest car ownership rates globally. The region's potential for growth, in combination with expanding economies, rising disposable income, continuous urbanisation and low rates of vehicle ownership, sets a foundation for above-average growth.

It is likely, according to analysts, that BEVs will be leading the gains in many of these markets, with state measures and the lower lifecycle costs of ownership propelling sales. On top of all this, the region is brimming with supportive policies to bolster BEV adoption, and consumers in the region prioritise affordability, being additionally more open to new technology or brands.

It is a golden situation that will undoubtedly offer another boon to Chinese carmakers. These business opportunities, which are likely to outweigh their financial risks, will enable them to expand and build capacity. S&P Global Mobility analysts say SSEA will help Chinese carmakers diversify their operations and customer base. In light of intense competition at home, the goldilocks zone offers Chinese carmakers a means of exporting to markets such as Europe, which at present impose steep tariffs on direct China-originated BEV imports.

**South and Southeast Asia (SSEA) offers a 'goldilocks zone' of affordable manufacturing, emerging market forces and more consumers**





## Keeping sustainability in mind

Sustainability concerns are at the forefront of BEV makers' thoughts, according to a recent report, *Automotive Industry Tussles with Carbon Footprint*, from S&P Global Mobility.<sup>2</sup> These include a higher upfront cost, with the cost of BEVs comparing unfavourably to traditional ICE vehicles; limited charging infrastructure; and uneven legislative support. There may also be consumer concerns over BEV charging, as people buying a new vehicle frequently feel concerned about the limited range of BEVs and availability of charging infrastructure.

As the report points out, transitioning to BEVs requires the development of charging infrastructure and enhancement of the supply chain. These financial pressures can slow down industry progress towards achieving significant carbon footprint reductions. The automotive industry must navigate a complex landscape to achieve decarbonisation goals, when it comes to clean energy and transportation. The coordinated efforts of manufacturers, policymakers and consumers will drive meaningful change and overcome doubts, which potentially could propel consumers to change their minds about BEVs.

# Trends to watch

China is leading the West in the adoption of BEVs due to its affordable pricing. A number of market trends may emerge as OEMs scramble for market dominance.

## 1. Partnerships are on the rise:

Global and regional alliances between OEMs will likely see an increase. This will be subject to political and economic trends arising from the policies of major governments across the world. A situation of volatility and flexibility is likely to occur.

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## 2. Transformation accelerates:

Business and operations will focus on transitioning to an electrified, software-defined and circular business model, particularly with the increase in use of automation and artificial intelligence (AI) business tools. OEMs must be ready to contend with the effect of the higher cost of vehicles, the continuation of working from home, inflation, stagnant wages and more transport solutions such as apps for shared vehicles on sales. For example, S&P Global Mobility research shows that although EVs are still gaining popularity in the US market, the EV growth rate has slowed significantly compared to previous years. New vehicle registration data shows year-over-year EV growth in the first nine months of 2024 dropped 80% compared to the same period in 2023.<sup>3</sup>

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## 3. Regulatory influences:

Regional regulations are expected to drive electrification in new BEV markets, which include Thailand, Indonesia and Australia. S&P Global Mobility foresees Chinese OEMs will grow their share in these markets with attractive BEV offerings. With the US market likely to be off the cards, Chinese OEMs will be focusing their gaze upon Southeast Asia, and Belt and Road Countries, along with the Middle East. SSEA, as mentioned, is home to more than 2 billion people, yet being among the lowest car ownership rates globally.

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## 4. OEMs keep options open:

Despite challenging BEV sales, OEMs will not bring back entry-level ICE vehicles at scale. As a result, hybrids will remain relevant, particularly in Japan, Korea and US markets. The US vehicle market, in particular, is undergoing a significant shift, with hybrid vehicles gaining momentum as the popularity of EVs wanes.<sup>3</sup>

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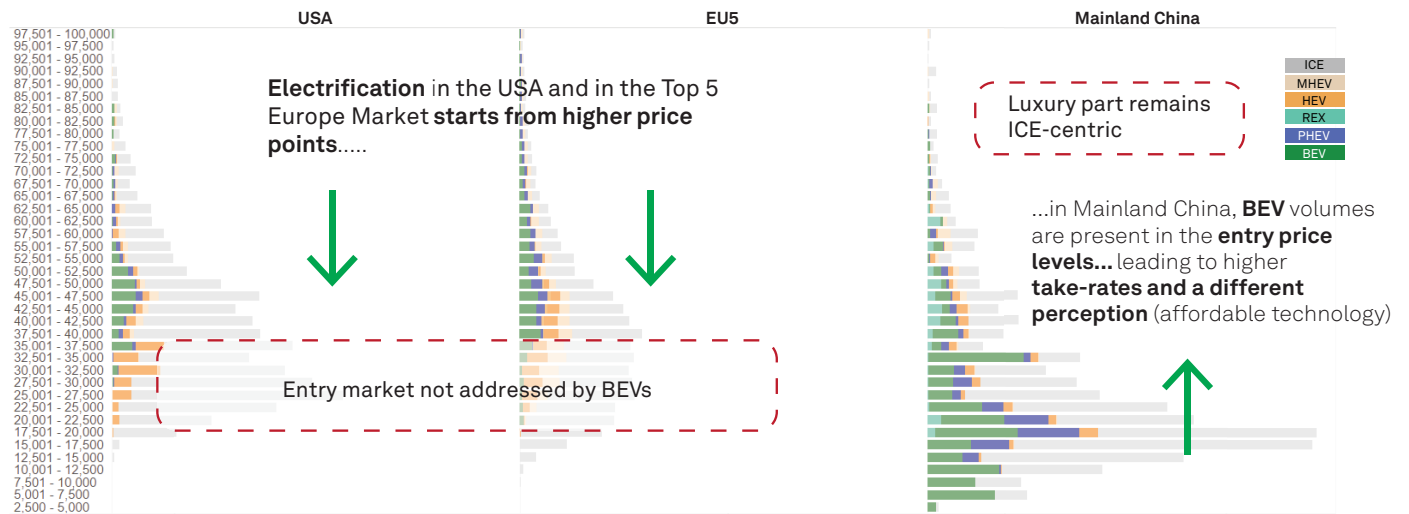
## 5. Batteries key to BEV market, but supply is uncertain:

Battery players are redefining the automotive supply chain; automotive demand will dominate the battery market by the end of the decade. While battery prices are declining, supply constraint risks are looming in 2025, with additional debates about optimal battery chemistries remaining unresolved.

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## Grabbing the bull by its horns

Figure 5: Volume Distribution by Price Brackets Across Regions (2023-24 YTD)

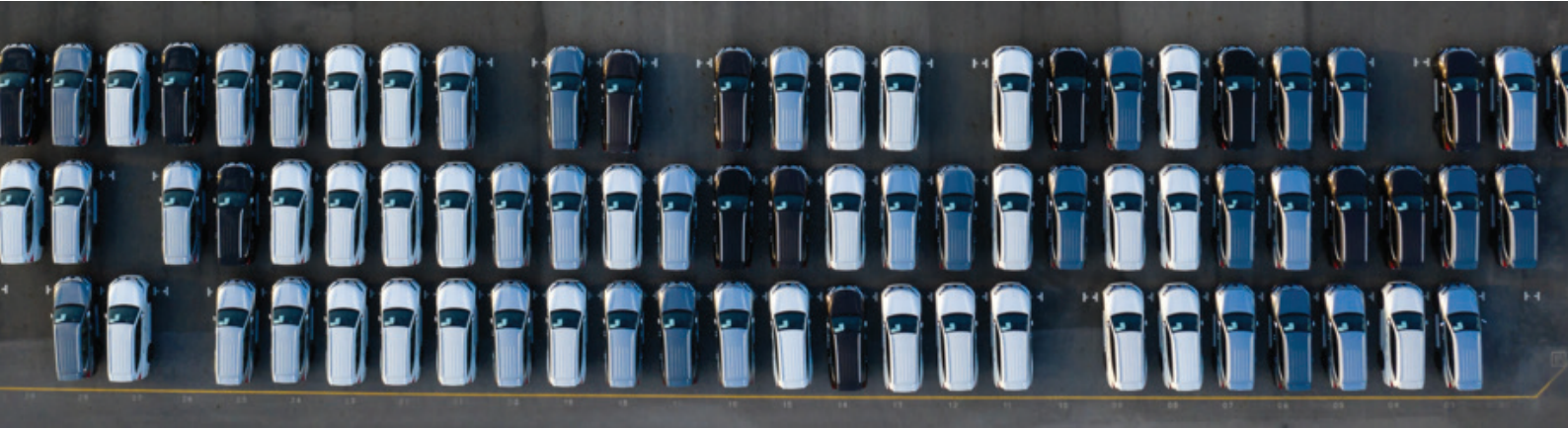


Source: S&P Global Mobility Enhanced Registrations Data  
 2024 YTD refers to 07/2024 for UE; to 07/2024 for USA; to 08/2024 for Mainland China  
 EU5 refers to Germany, France, Italy, Spain, United Kingdom

OEMs need to survive before they can thrive. The key to doing so lies in flexible market pricing for consumers. Electrification in the US and the top five European markets begins at higher price points. BEVs in Mainland China, however, are available at entry-level prices. Hence, OEMs must introduce products that align with consumer purchasing preferences while actively considering the competitive landscape in different markets.

OEMs must also continue to integrate their offerings into the communication, connected and entertainment landscape that consumers have become accustomed to, Tao said.

According to Tao, the next innovation area for OEMs will be in intelligent and autonomous driving. "This is why Tesla has abandoned volume targets and concentrated on AI and autonomous driving. Considering the significant investment in this area, including semiconductors and the software industry, there will be more collaboration in auto industry, not only among OEMs such as VW and Xpeng; and Stellantis and Leapmotor; but also, among OEMs and high-tech giants such as legacy OEMs using Huawei technology," he says.



# Conclusion

The gauntlet has been thrown down, with momentum in the transition to EVs slowing, and BEV penetration contracting. To work against this trend, BEV makers must increase their prices and competitiveness in the market. Partnerships, internal transformation and following consumer trends will be key. OEMs should stay flexible and resilient in the current business climate, where regulations and socio-political issues are beyond their control.

“Innovation is the only way forward in this difficult landscape, with increased investment in technology and scaling as soon as products hit the market—profitability will come from lower per-unit costs.”

**Henner Lehne**

Vice President,  
Vehicle & Powertrain Group  
S&P Global Mobility

“Tesla has abandoned its volume target and concentrated on AI and autonomous driving. Considering the significant investment in this area, including semiconductors and the software industry, there will be more collaboration in auto industry, not only among OEMs such as VW and Xpeng; and Stellantis and Leapmotor; but also among OEMs and high-tech giants such as legacy OEMs using Huawei technology”

**Gao Tao**

Manager, Greater China Light Vehicle  
Production Forecast Lead  
S&P Global Mobility

## Key Takeaways

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Momentum in the transition to EVs is slowing, and BEV penetration is now contracting in every major region

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A real concern is political disruption and economic overspill, along with pushback from the West on Chinese imports. The election of Donald Trump to the US Presidency has only heightened this. Red Sea route disruption continues, and it is unclear whether BEV subsidies will return to Germany

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The Mainland Chinese market continues to be dynamic, with a vehicle trade-in scheme gaining momentum, and domestic brands powering ahead with production

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Competitiveness has led to an ongoing intense price war. Industry players, however, worry that consumers may adopt a wait-and-see approach

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For Europe, a major concern is the advent of 2025 CO<sub>2</sub> rules and how that will impact the market

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Innovation is the only way forward in this difficult landscape, with increased investment in technology and scaling as soon as products hit the market—profitability will come from lower per-unit costs

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OEMs must also continue to integrate their offerings into the communication, connected and entertainment landscape that consumers have become accustomed to living with

## Contributing Editors



### Henner Lehne

Vice President, Vehicle & Powertrain Forecasting

Henner Lehne manages the Global Vehicle Sales and Production Forecast services and leads an experienced analyst team at S&P Global Mobility in each of the world's key automotive regions.

Henner Lehne is the Vice President of the global Vehicle and Powertrain group for the global Mobility division at S&P Global. In this role he is responsible for the global light vehicle sales, production and powertrain forecast services, the medium heavy commercial vehicle research, Parc/VIO forecasting as well as future mobility research. Henner leads an experienced team of over 150 analysts located in the world's key automotive regions.

In 2005 Henner joined CSM Worldwide as a market analyst, forecasting vehicle sales in Europe and since then has taken an active role in the growth story of the Mobility Division at S&P Global.

Prior to joining CSM Worldwide, Henner worked in the central marketing department at Porsche AG in Stuttgart. Henner holds a degree in international business and marketing from Fontys University of Professional Education, located in The Netherlands.



### Gao Tao

Manager, Greater China Light Vehicle Production Forecasting Lead

Gao Tao serves as the Manager of the Greater China Light Vehicle Production Forecast service at S&P Global Mobility.

His expertise in light vehicle production forecasting for China and Taiwan includes OEM strategy, platform, market trend and product lifecycle analysis of government policy and consumer pattern issues. Before joining S&P Global Mobility, Gao took the responsibility in the Strategic Market Research area in a German auto component company in Shanghai for seven years. He holds a master degree of Economics from the University Freiburg, Germany.



### Boni Sa

Associate Director, China Automotive Advisory Service

Boni Sa leads the automotive advisory services at S&P Global Mobility, in China and serve the customers globally.

Boni and the team in China act as the business planning partner for many OEMs including global OEMs, domestic carmakers, joint ventures, and national sales companies in China. Boni and the team work together with the customer to analyze the market, forecast trends and planning for future growth. Recent focused areas include market forecast, powertrain compliance strategy, advanced vehicle technology planning, mobility service strategy, etc.

Boni joined the advisory service team in 2015. Prior to that Boni was responsible for the Greater China Light Vehicle Production Forecasts for 6 years at the company.

## Contributing Editors



### Claire Fang

Senior Research Analyst, Forecast Intelligence and Strategy

Claire Fang is Senior Research Analyst within Forecast Intelligence and Strategy team at S&P Global Mobility

Her responsibilities include research and analysis of strategy planning, platform, product portfolio and marketing trends.

She has more than 5 years working experience in automotive and consulting industry with engineering background. Before joining S&P Global Mobility, Claire worked at a global market research company, where she analyzed market insights and trends of FMCG and TCG. Prior to that, she worked for global OES R&D center in China focusing on competitor analysis and product development.

Claire holds a Master's Degree in Mechanical Engineering from INSA de Lyon in France and a Bachelor's degree in Electrical Engineering in Harbin Institute of Technology in China.



### Lin Huaibin

Manager, China Light Vehicle Sales Forecast Automotive Lead

Huaibin Lin is a manager of automotive responsible for China light vehicles sales forecast at S&P Global Mobility.

Huaibin has played a leading role in S&P Global Mobility workshops and consulting projects for OEMs including BMW, Mercedes, Volvo, Ford, GM, Hyundai/Kia, Nissan, PSA, SAIC, Toyota, and VW; for suppliers including Continental, Bosch, Delphi, Eaton, Honeywell, Michelin, Philips and Saint Gobain; for consulting firms including Deloitte and KPMG. He also speaks about the China auto industry at conferences in Shanghai, Seoul, Tokyo, Frankfurt, Munich, Paris and Detroit. In addition, he conducted workshops for various investment banking firms and investment funds. He has 15+ years of experience in the automotive industry, including 3+ years at Chery Automobile. During his service in Chery, he developed expertise in initiating homologation plan and formulating overseas market entry strategy. He also served as a project manager for Chrysler-Chery Project.

He holds a Master of Science degree (full scholarship) in Financial Economics from Norwegian School of Management, Norway and a Bachelor of Science in Auditing from Xiamen University, China. He is fluent in Chinese (Native) and English.

## Citations

1. Claire Yuan, Satoshi Tanaka, Yuta Misumi, Stephen Chan, Jeremy Kim, Shruti Zatakia (2024, October), EV Makers To Bet \$20 Billion On South and Southeast Asia, <https://www.spglobal.com/ratings/en/research/articles/241029-ev-makers-to-bet-20-billion-on-south-and-south-east-asia-13290200>
2. Valtteri Vaisanen, Qifan Yang, Xi Wang (2024 September), Automotive Industry Tussles with Carbon Footprint, <https://www.spglobal.com/mobility/en/info/0924/the-mobility-paper-sustainable-mobility-01.html>
3. Tom Libby (2024 December), Hybrids Thrive as Electric Vehicle Growth Momentum Slows, <https://www.spglobal.com/mobility/en/research-analysis/hybrids-thrive-as-electric-vehicle-growth-momentum-slows.html>

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