




**S&P Global**  
Mobility

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# How Electric Vehicles Are **Reshaping Component Sourcing for OEMs**

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As the automotive industry shifts towards battery electric vehicles (BEVs), procurement leaders need to reevaluate their sourcing strategies for critical components, particularly batteries.

This transition is a strategic imperative, driven by numerous factors including geopolitical risks, the need for greater control over supply chains, regulatory compliance, and consumer demands.

As a procurement leader, navigating the EV transition requires you to consider how these challenges are reshaping your component sourcing landscape. It may be beneficial to adopt varied approaches to battery sourcing that align with your unique business model, market position, and technological capabilities.

## The Evolving Battery Value Chain

A conventional EV lithium-ion (Li-ion) battery consists of three primary components: the cell, the module, and the pack. Each of these components plays a crucial role in the overall functionality and efficiency of the battery system.

As you navigate the complexities of the battery value chain, exploring different levels of control over the sourcing of these components will be critical to maintaining business efficiency and profitability. Through the [Components Forecast Analytics](#) tool, S&P Global Mobility provides OEMs with timely, reliable, and comprehensive component market data and forecasts, which can be instrumental in understanding how these dynamics evolve.

Battery chemistry also plays a pivotal role in determining how stakeholders—OEMs, partners, cell manufacturers, and other third parties—participate across the value chain. Different chemistries, such as LFP or NMC, may influence whether components are developed in-house, outsourced, or co-developed through strategic partnerships.

Regardless of chemistry, OEMs are increasingly maintaining control over the integration of the battery system—including the cell, module, and pack—recognizing that such control is essential to ensuring performance, safety, cost efficiency, and competitive advantage in the electric era.

## Levels of Control in Battery Sourcing

OEMs and procurement leaders can adopt varying degrees of control over their battery sourcing strategies, which S&P Global Mobility categorizes into four main groups:



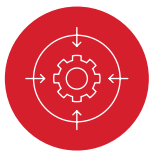
### Value chain integration

This approach involves complete vertical integration, where you develop and source all three battery components in-house. This model minimizes reliance on external suppliers and reduces your vulnerability to supply chain disruptions. Utilizing S&P Global Mobility's **Component Forecast Analytics** tool can help you assess supplier plant locations and capacities, enabling more informed decisions in this strategy.



### Partnerships

OEMs are increasingly forming strategic partnerships with cell manufacturers and component suppliers. This collaborative approach allows you to leverage external expertise while maintaining some level of control over your battery sourcing. The analytics tool can provide you insights into competitors' component strategies, helping you to identify potential partners that align with your sourcing goals.



### System integration

In this strategy, OEMs manage one or two components of the battery supply chain while sourcing the remaining components from third-party suppliers. This approach provides a balance between control and flexibility. By using comprehensive market data, you can better understand your sourcing strategies and measure a supplier's market power.

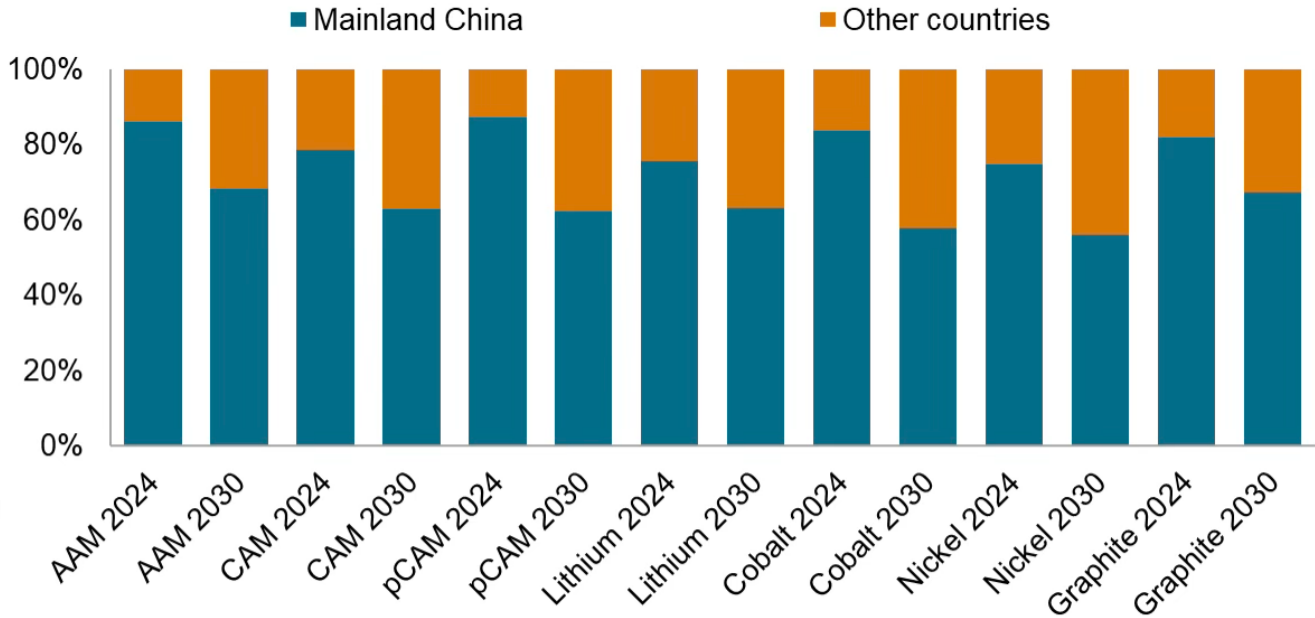


### Outsourcing

At the other end of the spectrum, some OEMs rely heavily on outsourcing, where their participation across the battery value chain is minimal. This model can expose your business to greater risks, particularly in the face of geopolitical uncertainties and supply chain disruptions.

# The Impact of Geopolitical Uncertainties

## Share of mainland China in battery material market



As of April 2025.

AAM = Anode active material; CAM = Cathode active material; pCAM = Cathode precursor

Source: S&P Global Mobility

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The global battery supply chain is increasingly vulnerable to geopolitical uncertainties, including tariffs, which have prompted many automakers to reconsider their sourcing strategies. Events such as trade disputes, regulatory changes, and resource scarcity can disrupt the flow of critical components, leading to production delays and increased costs.

As a result, your auto business needs to establish more resilient supply chains that can withstand these challenges.

The rising tensions between major economies, particularly between the United States and China, have only underscored the need to diversify your sourcing strategies. By investing in local production capabilities and forming partnerships with domestic suppliers, you can mitigate risks associated with geopolitical uncertainties.

This shift towards localization, with a **focus on more trade-insulated costs**, is expected to play a significant role in shaping the future of battery sourcing.

## Trends in Battery Sourcing Strategies

The trends in battery sourcing strategies reflect the broader transformation of the automotive industry towards electrification. According to S&P Global Mobility forecasts, the share of OEMs sourcing all three battery components in-house is projected to remain stable around 18% between 2024 and 2030.

Conversely, the reliance on outsourcing is expected to decline from about 24.4% to less than 21% in the same period. This shift indicates a growing preference for higher integration levels, which can significantly reduce the risk of supply chain disruptions.

In addition to vertical integration, the trend towards partnerships is gaining momentum. The share of partnerships in battery sourcing is anticipated to increase from just 11% in 2024 to 21% by 2030.

This collaborative approach allows automakers to leverage the expertise of specialized battery manufacturers while maintaining some degree of control over sourcing strategies. S&P Global Mobility's Component Forecast Analytics tool can also help you understand how megatrends such as electrification, autonomy, and connectivity are forecasted to impact revenue generation efforts.

System integration remains the most popular strategy among OEMs, currently accounting for nearly 46.3% of battery sourcing in gigawatt-hours. However, this share is expected to decline to about 40% by 2030 as OEMs increasingly explore partnerships and vertical integration.

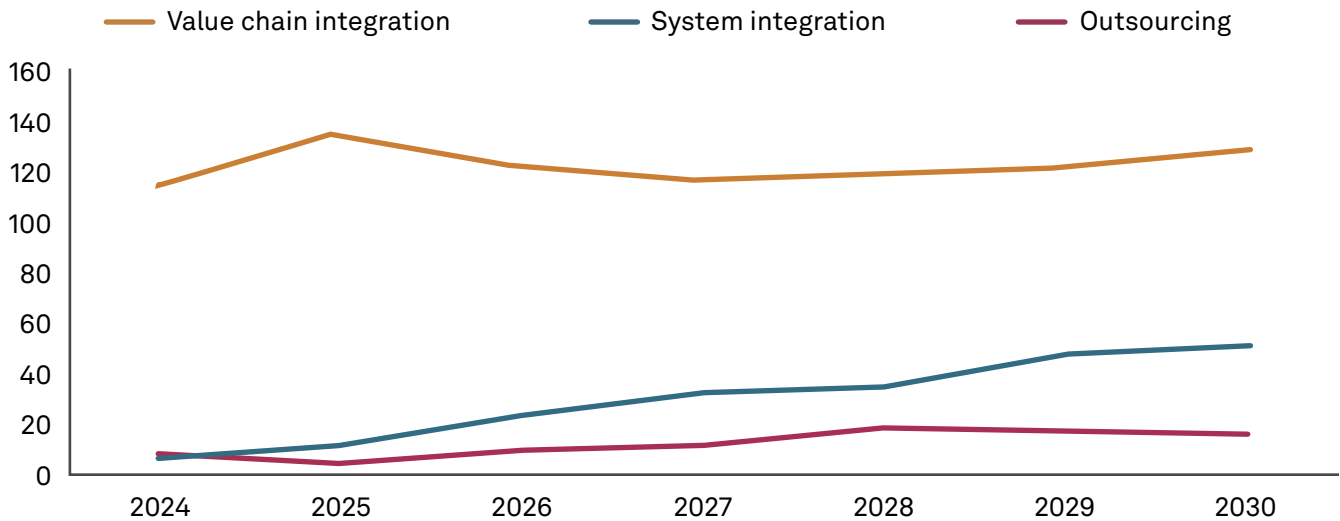


## Case Studies of Leading Automakers

Procurement leaders can learn from the diverse sourcing strategies adopted by other automakers, in response to electrification. Tesla, BYD, and Volkswagen (VW) have each developed distinct strategies that reflect their unique market positions and technological capabilities.

### Tesla: A Model of Vertical Integration

#### Tesla's battery system supply chain dynamics, 2024–30 (GWh)



As of April 2025.

Source: S&P Global Mobility

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Tesla has long been recognized for its commitment to vertical integration, particularly in the realm of battery sourcing. The U.S.-based electric vehicle manufacturer has made significant investments in in-house battery production capabilities, allowing it to maintain tight control over its supply chain.

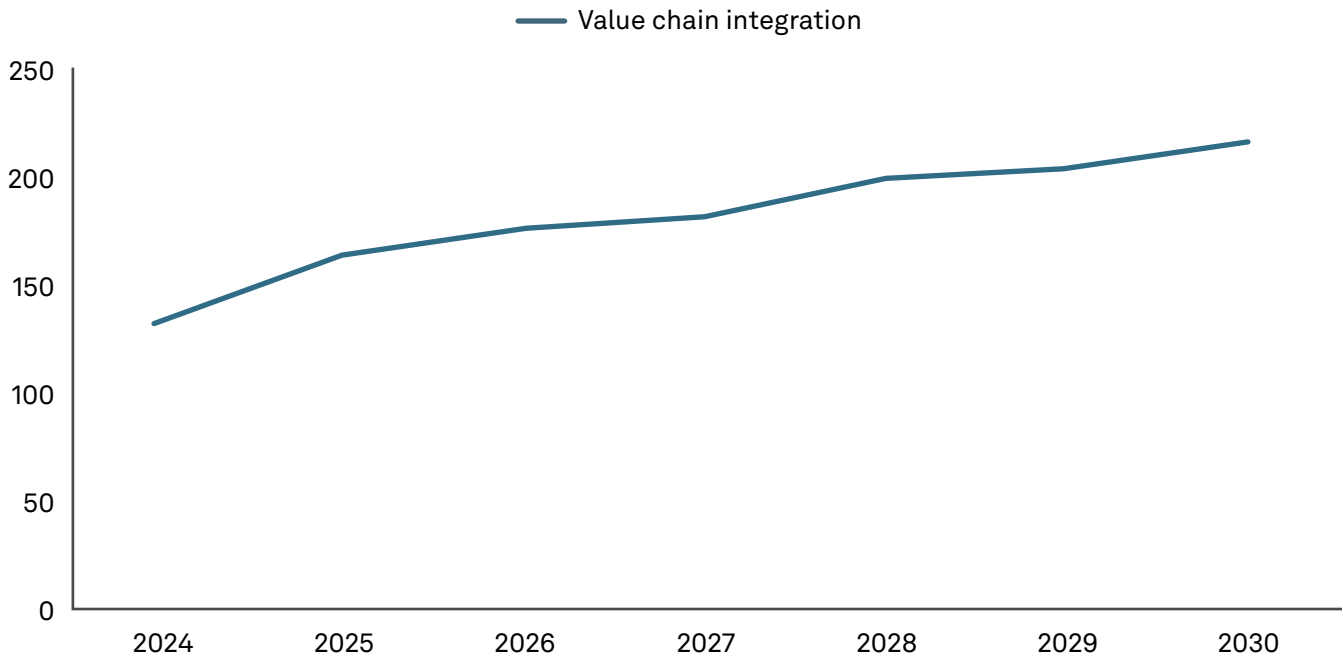
In 2024, Tesla fulfilled 4.5% of its battery cell demand through in-house production. The remaining cell requirements were sourced from various cell manufacturers, including Panasonic, CATL, and BYD. Tesla's reliance on external suppliers has been strategically managed, with a focus on building long-term partnerships with key players in the battery industry.

Tesla's expansion into global markets, particularly in China and Europe, has further influenced its battery sourcing strategy. The company has begun sourcing lithium iron phosphate (LFP) battery cells and packs from CATL for its Shanghai plant, while also procuring cells from BYD and LG Energy Solution. This diversification of suppliers allows Tesla to mitigate risks associated with supply chain disruptions while maintaining its commitment to vertical integration.

Looking ahead, Tesla plans to gradually increase its in-house cell manufacturing capacity. By 2030, the company aims for nearly 26% of the Li-ion cells used in its vehicles to be produced internally. Tesla is actively developing its 4680 cylindrical cells at its Texas gigafactory, with plans to expand production capacity significantly. This move not only enhances Tesla's control over its battery supply chain but also positions the company to capitalize on potential cost savings associated with in-house production.

## BYD: A Leader in In-House Production

### BYD's battery system supply chain dynamics, 2024–30 (GWh)



As of April 2025.

Source: S&P Global Mobility

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BYD has emerged as one of the most prominent players in the electric vehicle market, particularly in the realm of battery sourcing. The company currently meets its entire demand for plug-in electric vehicle (PEV) Li-ion batteries through in-house production. In 2024, BYD equipped over 136 GWh of batteries in its PEVs, with expectations to increase this figure by 8% Compound annual growth rate (CAGR) to more than 217 GWh in 2030.

BYD's commitment to in-house production extends to all three components of the battery system: cells, modules, and packs. This vertical integration allows BYD to maintain complete control over its battery supply chain, minimizing reliance on external suppliers and reducing the risks associated with supply chain disruptions.

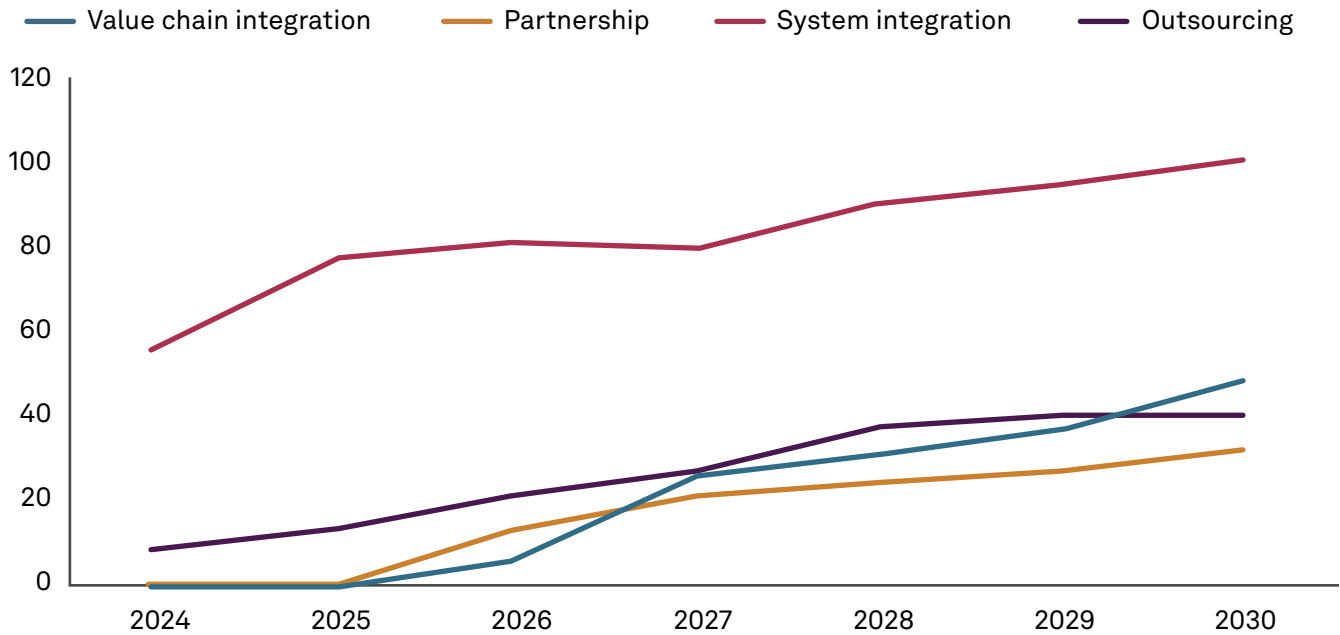
In addition to catering to its own production needs, BYD is positioning itself as a global supplier of battery cells. As the second-largest cell manufacturer in the world, trailing only CATL, BYD is already supplying a small number of cells to other automakers, including Toyota, FAW, Hyundai, and Tesla. By 2030, the company anticipates that more than 33% of the cells it produces will be delivered to external OEMs.

BYD has gained recognition for its innovative battery technologies, particularly in the development of iron-based Li-ion batteries. The company's blade battery has been widely regarded as one of the most efficient LFP batteries on the market.

In 2025, BYD plans to release the second generation of the Blade battery, which is expected to feature higher energy density and longer driving range. This advancement may attract increased demand from third-party OEMs, further solidifying BYD's position as a key player in the battery supply chain.

## Volkswagen: A Strategic Shift Towards Battery Sourcing

### Volkswagen group's battery system supply chain dynamics, 2024—30 (GWh)



As of April 2025.

Source: S&P Global Mobility

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Volkswagen is another major player in the electric vehicle market, with ambitious plans to increase its battery sourcing capabilities. The company is projected to have the highest demand for Li-ion batteries in the light-vehicle segment by 2030, surpassing both Tesla and BYD.

In 2022, VW established PowerCo, a dedicated battery company responsible for managing the group's global battery activities. This strategic move reflects VW's commitment to enhancing its in-house capabilities and reducing reliance on external suppliers. PowerCo is tasked with overseeing all aspects of battery development, from processing raw materials to managing European gigafactories.

VW's first battery-cell factory is set to commence production in Salzgitter, Germany, in 2025. The company is focused on developing a unified battery cell that allows for flexible use of various chemical elements, ensuring compatibility across a wide range of models within the VW Group. By 2030, PowerCo aims to invest more than €20 billion in the development of its battery business, underscoring the company's commitment to vertical integration.

While VW is increasing its in-house sourcing for battery cells, the company also recognizes the importance of partnerships. The share of battery demand met through partnerships is expected to rise significantly, from almost nil in 2024 to over 14% by 2030. This dual approach of in-house development and strategic partnerships reflects VW's desire to balance control with flexibility in its battery sourcing strategy.

# The Future of Battery Sourcing in the Automotive Industry

As the automotive industry continues to evolve, vehicle electrification will remain a driving force behind your component sourcing strategies. OEMs need to adapt to the challenges and opportunities presented by electrification, including the need for greater control over battery supply chains, the pursuit of sustainability, and the management of geopolitical risks.

The trend towards vertical integration is likely to persist, with more automakers seeking to develop in-house capabilities for battery production. This shift will enable you to enhance your control over the supply chain, reduce reliance on external suppliers, and mitigate risks associated with supply chain disruptions.

At the same time, partnerships will play a crucial role in the battery sourcing landscape. As OEMs seek to balance control with flexibility, strategic collaborations with specialized battery manufacturers will become increasingly important.

These partnerships will allow you to leverage external expertise while maintaining some level of control over your sourcing strategies. The [Component Forecast Analytics](#) tool can assist you in identifying new program opportunities in the coming 6 to 12 years, ensuring you remain competitive in the rapidly evolving market.

As the demand for electric vehicles continues to rise, the competition among automakers to secure reliable sources of battery components will intensify. OEMs need to invest in research and development to drive innovation in battery technologies, ensuring they remain competitive in the rapidly evolving market.

## Conclusion

Vehicle electrification continues to grow, as evidenced by consumer adoption and EV charging infrastructure trends. According to the most recent S&P Global Mobility Consumer Surveys, 53% of respondents now have home charging available, up from 44% in 2022. Still, range anxiety continues to exist, with 69% of respondents wanting 200 miles of minimum range on a BEV, up from 65% in 2022.

As your company navigates the complexities of the battery value chain, adopting diverse approaches that reflect your unique market positions, consumer adoption trends, and technological capabilities will be key.

The trends towards vertical integration and strategic partnerships will play a significant role in shaping the future of battery sourcing, enabling OEMs to enhance control, mitigate risks, and drive innovation in the electric vehicle market. As the automotive industry continues to evolve, procurement leaders must remain agile and responsive to the changing dynamics of the battery supply chain to thrive in the era of electrification.

In this transformative environment, the ability to adapt and innovate will be paramount to establishing your company's leadership in the electrified automotive landscape. By leveraging new technologies, fostering strategic partnerships, and investing in sustainable practices, you can position your business for success in the rapidly changing world of electric vehicles.

S&P Global Mobility provides OEMs and automotive suppliers with timely, reliable, and comprehensive component market data and forecasts as well as optional customized analysis. Forecasts for 150+ components are updated monthly.

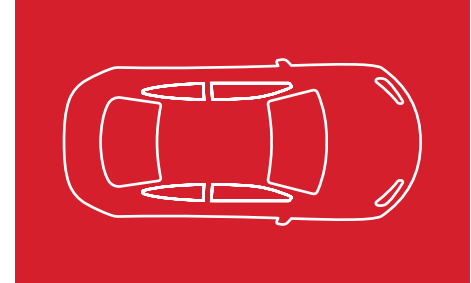
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