

## **Battery Systems For Electric Vehicle - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)**

Market Report | 2025-07-02 | 120 pages | Mordor Intelligence

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### **Report description:**

Battery Systems For Electric Vehicle Market Analysis

The battery systems for electric vehicles market stands at USD 114.92 billion in 2025 and is forecast to climb to USD 203.25 billion by 2030, reflecting a 12.08% CAGR by 2030. Incentive-driven adoption targets in North America and Europe, rapid cost declines in lithium-ion chemistry, and vertically integrated gigafactory roll-outs across Asia, North America, and Europe underpin this expansion. The market also benefits from solid-state breakthroughs that promise higher energy density and safety, while multi-chemistry packs combining lithium-ion with sodium-ion or ultracapacitors widen design flexibility. Competitive intensity remains high as Chinese producers use lithium iron phosphate cost advantages to win share, even as regulatory frameworks in the United States and the European Union tighten local-content demands. Supply-chain bifurcation, thermal-runaway recalls, and critical-mineral volatility temper the outlook but do not derail the secular growth trajectory.

Global Battery Systems For Electric Vehicle Market Trends and Insights

Government Incentives and Zero-Emission Mandates

Regulatory frameworks accelerate demand by anchoring minimum sales volumes for electric drivetrains. The United States offers tax credits up to USD 7,500 per qualifying vehicle and escalates domestic-content thresholds each year. California's Advanced Clean Cars II rule obliges automakers to reach 22% zero-emission sales in 2025 and 100% by 2035. The United Kingdom mandates 80% electric sales by 2030, while Canada targets 100% by 2035. Because non-compliance triggers sizable penalties,

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most vehicle makers lock in multi-year battery offtake contracts, providing cell manufacturers with volume security and cash-flow visibility.

### Declining Li-ion Costs and Energy Density Gains

Learning-curve effects and materials substitution continue to drive cost trajectories downward. Several top-tier cell makers aim to push pack costs below USD 60 per kWh by 2026, versus USD 118 per kWh in 2024. Energy density climbs through silicon-rich anodes that raise specific capacity by 25-50%, while lithium iron phosphate improves volumetric density with refined cathode coatings. Rapid cost declines widen the total addressable market into entry-level passenger cars, two-wheelers, and cost-sensitive commercial fleets.

### Critical-Mineral Supply and Price Volatility

Concentration in upstream refining exposes manufacturers to geopolitical risk. China refines 80% of global lithium iron phosphate cathode material, while one country produces the majority of cobalt. Demand for lithium is expected to grow five-fold by 2030, yet mine approvals lag, forcing price swings that compress cell-maker margins. Diversification efforts require several years to materialize, extending dependence on dominant suppliers and undermining price visibility.

Other drivers and restraints analyzed in the detailed report include:

OEM Giga-factory Build-outs and Supply Pacts / Fast-charging Network Expansion / Thermal-Runaway Recalls and Safety Perception /

For complete list of drivers and restraints, kindly check the Table Of Contents.

### Segment Analysis

Lithium-ion technology held 94.12% of the battery systems for electric vehicles market share in 2024 and remains the volume leader through 2030. Rapid pack-level innovation drives gravimetric densities toward 300 Wh/kg while trimming cost below USD 60 per kWh. The segment's entrenched manufacturing ecosystem spans materials, cell formats, and recycling streams, reinforcing scale advantages and lowering entry barriers for new vehicle OEMs.

Solid-state cells record the highest 39.92% CAGR, propelled by ceramic separators that curb dendrite growth and cut capacity fade to 5% after 1,000 cycles. Their superior energy storage enables compact pack designs that free cabin space and trim curb weight, key factors in high-performance or extended-range models. Commercial readiness hinges on automated sintering and high-pressure lamination lines that slash production cost to parity with conventional lithium-ion by the late decade.

Nickel manganese cobalt chemistry accounted for 61.38% of the battery systems for the electric vehicles market size in 2024, anchoring its position in premium passenger cars and light trucks that demand maximum range. Continuous cobalt-content reduction and manganese-rich formulations cut exposure to price spikes and ethical sourcing concerns.

Lithium iron phosphate rises sharply on the back of robust safety, abundant raw material supply, and lower cost, attracting budget segments and heavy-duty commercial vehicles. Sodium-ion cells, growing at 44.16% CAGR, unlock cold-temperature operation down to -40 C and tolerate frequent fast-charge cycles. Their near-zero lithium content buffers price risk and allows domestic resource utilization in regions lacking lithium reserves. Hybrid packs combining sodium-ion and lithium-ion optimize cost while maintaining performance, creating an architecture bridge toward full sodium-ion transition once density reaches 200 Wh/kg.

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The Battery Systems for Electric Vehicles Market Report is Segmented by Battery Type (Lithium-Ion, Nickel-Metal Hydride, and More), Battery Chemistry (NMC, NCA, LFP, and More), Vehicle Type (Passenger Cars and Commercial Vehicles), Propulsion Technology (Battery Electric Vehicle (BEV), Plug-In Hybrid Electric Vehicle (PHEV), and More), and Geography. The Market Forecasts are Provided in Terms of Value (USD) and Volume (Units).

## Geography Analysis

Asia-Pacific maintained 64.32% share of the battery systems for electric vehicles market in 2024, anchored by an integrated supply chain that stretches from mineral processing through cell assembly to vehicle manufacturing. China alone supports a significant growth through 2030 as domestic demand remains strong and exports surge, particularly to Southeast Asia and Latin America. Japan advances solid-state research while Korea pivots toward high-manganese chemistries to regain competitiveness. Government incentive alignment and coordinated infrastructure spending continue to reinforce the regional ecosystem.

North America registers the second-largest market, the Inflation Reduction Act channels USD 369 billion in clean-energy funding and sets escalating critical-mineral thresholds, creating a robust pipeline of new gigafactories and mid-stream refining projects. Similarly, Europe advances at 9.40% CAGR on the back of its Green Deal policies and the European Battery Alliance. Strategic autonomy drives localized cathode production and cell assembly funded by public-private joint ventures. Germany leads research partnerships that push silicon-rich anodes, whereas Spain and France focus on mass-market lithium iron phosphate.

The Middle East & Africa region posts the highest regional growth at 15.74% CAGR. Saudi Arabia invests USD 6 billion in an integrated battery complex to diversify its economy and secure downstream automotive manufacturing. The United Arab Emirates targets 25% electric vehicle penetration by 2035, anchoring charging-corridor build-outs along inter-emirate highways. Early-stage projects in Ghana, Morocco, and Rwanda benefit from concessional finance and development-agency technical assistance, positioning the continent for localized two-wheeler and light-commercial electrification.

## List of Companies Covered in this Report:

Contemporary Amperex Technology Co., Limited. (CATL) / BYD Co. Ltd. / LG Energy Solution Ltd. / Panasonic Holdings Corporation / Samsung SDI Co., Ltd. / SK On Co., Ltd. / AESC Group Ltd. / CALB / Gotion High-tech Co., Ltd. / EVE Energy Co., Ltd. / Farasis Energy Europe GmbH / Northvolt AB / ProLogium Technology Co., Ltd / QuantumScape Battery, Inc. / Solid Power Inc. / StoreDot / SES AI Corp. / Hitachi Energy Ltd. / Johnson Controls International plc /

## Additional Benefits:

The market estimate (ME) sheet in Excel format /  
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