Global Lithium-ion Battery Market Expansion to 2031 | Amid Rising Renewable Energy & EV Boom Fuel

The Lithium-ion Battery Market is projected to reach $124.4 Billion by 2031, driven by EV demand and energy storage needs.

Lithium-Ion Battery Market

AUSTIN, TX, UNITED STATES, July 25, 2025 /EINPresswire.com/ -- Lithium-Ion Battery Market Poised for Exponential Growth Amid Electrification Boom

Market Size

The global Lithium-ion Battery Market Size was valued at USD 43.5 Billion in 2023 and is projected to grow to USD 124.4 Billion by 2031, registering a CAGR of 13.5% over the forecast period from 2024 to 2031.

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> In 2023, the U.S. Lithium-ion Battery Market surged amid rising EV adoption and energy storage demand, contributing to the global market's projected growth to $124.4 Billion by 2031."
>
> *DataM Intelligence 4Market Research LLP*

Recent Investments & Strategic Moves
EnergyX Acquisition (USA)
General Motors□backed EnergyX secured 35,000 acres of lithium□rich land in the Smackover formation, expanding its U.S. lithium holdings to ~47,500 acres. The move aims to support a new refinery in Texas with a production target of 12,500 metric tons/year by 2028, scaling to 50,000 tons/year by 2030

GM & LG Launch LMR Battery Development (USA)
GM and LG Energy Solution have committed to developing lithium manganese□rich (LMR) battery cells for electric trucks and SUVs. These cobalt□free

prismatic cells aim for up to 400□mile range, with commercial rollout expected by 2028 via their Ultium Cells joint venture.

Market Drivers and Opportunities
Electrification of Transportation: The global shift toward EVs is generating unprecedented demand for high-performance lithium-ion batteries, creating opportunities for innovation in fast-charging and long-range capabilities.

Renewable Energy Integration: Lithium-ion batteries are playing a critical role in stabilizing energy grids by storing solar and wind power, reducing reliance on fossil fuels.

Next-Gen Battery Technologies: Advancements in solid-state, cobalt-free, and silicon anode batteries are enhancing energy density, safety, and lifecycle performance.

Government Incentives: Subsidies and policy mandates supporting clean energy adoption continue to stimulate large-scale investment in battery infrastructure.

Geographical Share
North America: A surge in domestic battery manufacturing and government-backed funding programs is driving rapid growth. The U.S. is focused on reducing its dependency on foreign supply chains and expanding EV infrastructure.

Asia-Pacific: Countries like Japan, China, and South Korea are global leaders in production and innovation, with Japan making strong strides in solid-state and grid storage batteries.

Europe: Nations are investing in localized battery production facilities and sustainable sourcing, alongside strong regulatory frameworks promoting green mobility.

Key Player:

Noteworthy companies shaping the lithium-ion battery industry include:

Panasonic Corporation
Samsung SDI
LG Chem
BYD
A123 Systems
CATL
Hitachi Energy
General Electric
EVE Energy
Northvolt

Market Segments:

By Type: (Lithium Cobalt Oxide (LiCoO2), Lithium Iron Phosphate (LiFePO4), Lithium Nickel Cobalt Aluminum Oxide (LiNiCoAlO2 or NCA), Lithium Nickel Manganese Cobalt Oxide (LiNiMnCoO2 or NMC), Lithium Titanate (Li4Ti5O12 or LTO), Lithium Manganese Oxide)

By Material: (Cathode Material, Anode Material, Electrolyte Material, Separator Material, Current Collector Material, Others)

By Capacity: (0 to 3,000 mAh, 3,000 t0 10,000 mAh, 10,000 to 60,000 mAh, 60,000 mAh and Above)

By Voltage: (Low (Below 12 V, Medium (12-36V), High (Above 36V))

By End-User: (Automotive, Consumer Electronics, Aerospace and Defense, Marine, Industrial, Healthcare, Industrial and Manufacturing, Others)

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Recent Developments (USA)

2025
A U.S.-based battery tech firm began commercial production of solid-state lithium-ion batteries featuring improved safety and 50% longer lifespan. The batteries also offer ultra-fast charging and are designed for electric vehicles and grid storage applications.

A large-scale investment initiative was launched to establish new gigafactories focused on building a domestic battery supply chain, supporting the national transition to electric mobility.

2024
An advanced lithium-ion battery plant became operational in the Midwest, supplying high-performance cells for commercial trucks and buses.

A collaborative R&D program was initiated between major U.S. automakers and battery manufacturers to develop cobalt-free lithium-ion chemistries.

Recent Developments (Japan)

2025
A leading Japanese battery manufacturer deployed a utility-scale battery energy storage system at a renewable power plant in Fukushima. This project supports Japan’s goal of achieving 50% renewable energy share by 2040.

New lithium-ion batteries designed for autonomous industrial robots were launched, offering fast wireless charging and longer operational cycles to support 24/7 automation.

2024
A domestic technology company introduced a high-energy-density lithium-ion cell for electric aviation and drone applications, improving flight range and weight efficiency.

Japan expanded pilot projects for next-generation lithium-ion batteries integrated into urban power grids to support decentralized energy systems.
Recent Product Launches & Technological Breakthroughs

Ion Storage Systems (USA): Solid□State Battery Production Begins Ion Storage Systems started manufacturing high□energy solid□state batteries in Maryland. These cells offer 50% longer lifespan, faster charging, and enhanced safety, all with compatibility for existing lithium-ion production lines.

Stellantis and Factorial (Global/USA)

In collaboration with startup Factorial, Stellantis unveiled solid-state FEST cells, achieving 375□Wh/kg and charging from 15–90% in just 18 minutes. They're expected to enter demonstration fleets by 2026.

CATL Super Tech Day Launches (China/Global)
CATL introduced three innovative battery systems:
Sodium□ion NEV battery
Shenyao Dual□Core battery

Second□generation Shenxing Ultra□Charge battery
These feature self□generated anode technology (boosting volumetric and gravimetric energy density by 60% and 50%, respectively) and are poised to replace up to half of LFP battery usage.

Electrovaya Robotics Battery Systems
Electrovaya rolled out several battery solutions tailored for autonomous robotic platforms across three OEM partners, optimized for industrial automation applications.

Conclusion

The Lithium-ion Battery Market is on the brink of a technological revolution. With increasing demand across transportation, energy, and industrial automation, coupled with heavy investments in R&D and localized production, the market is expected to play a central role in shaping the global energy landscape. Both the U.S. and Japan are emerging as innovation hubs, driving advancements that will power the next era of electrification and sustainability.

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