

Global Lithium-ion Battery Market

Market Research Report | 2025-03-26 | 141 pages | BCC Research

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Report description:

Description

Report Scope

This report analyzes different components in the global lithium-ion battery (LIB) market, including cathode, anode, electrolyte, separator and others (packaging materials, Au/Cu foil, etc.). It also examines different types of LIBs, including lithium nickel manganese cobalt (NMC), lithium iron phosphate (LFP), lithium nickel cobalt aluminum oxide (NCA) and others (lithium cobalt oxide [LCO], lithium titanate oxide [LTO], lithium manganese oxide [LMO]). The report also reviews different applications in the industry, including automotive, consumer electronics, energy storage systems (ESS) and others (industrial, medical devices, aerospace and telecommunications). The global LIB market is segmented by capacity, including below 3,000 mAh, 3,000-10,000 mAh, 10,000-60,000 mAh and 60,000 mAh and above.

Additionally, the report analyzes emerging technologies and developments, trends, competitive landscape and market dynamics. It also features a patent analysis of the LIB market, a chapter on environmental, social, and governance (ESG) considerations in development, and an examination of macroeconomic factors and emerging technologies. The report also includes a regional analysis of the markets in North America, Europe, Asia-Pacific and the Rest of the World (RoW, which includes South America, Middle East and Africa). Finally, it offers in-depth profiles of leading companies in the global market.

This analysis uses 2023 as its base year, with estimates for 2024 and forecasts through 2029. All market values are reported in U.S. dollars (USD) in millions.

Report Includes

- 56 data tables and 48 additional tables
- An overview of the global market for lithium-ion batteries (LIBs)
- Analyses of the global market trends, with sales data for 2023, estimates for 2024, forecasts for 2025, 2028, and projections of compound annual growth rates (CAGRs) through 2029
- Evaluation of and forecast for the LIB battery market (in USD millions), and a corresponding market share analysis by type, component, capacity, application and region

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- Facts and figures concerning the factors influencing the market with respect to growth trends, emerging technologies, and industry challenges
- Coverage of the regulatory framework and initiatives by governments, as well as safety concerns about the transport and storage of used LIBs
- Assessment of regional market breakdowns with subregional breakdowns for countries with promising LIB industries
- A discussion of the industry's ESG challenges and practices
- Market share analysis of the key companies and coverage of their proprietary technologies, strategic alliances, and other market strategies
- Profiles of the leading companies, including Contemporary Amperex Technology Co. Ltd. (CATL), BYD Company Ltd., LG Energy Solutions, Samsung SDI, and CALB

Executive Summary

Summary:

The global market for lithium-ion battery (LIB) is expected to grow from \$117.8 billion in 2024 and is projected to reach \$221.7 billion by the end of 2029, at a compound annual growth rate (CAGR) of 13.5% during the forecast period of 2024 to 2029.

A LIB is a rechargeable battery that stores energy by transferring lithium ions between a positive electrode (cathode) and a negative electrode (anode) via a liquid electrolyte. Electricity is generated when the ions flow from the anode to the cathode during discharge. LIBs are found in devices such as electronics, toys, wireless headphones, handheld power tools, appliances, electric cars and electrical ESS.

Market Dynamics and Growth Factors

The LIB market depends significantly on the rapidly expanding global adoption of electric vehicles (EVs). For example, global sales of EVs totaled nearly 14 million in 2023 and are projected to surpass 17 million in 2024, according to the International Energy Agency (IEA, 2024). Thus, the rise in EV sales should increase the demand for LIBs. The growing demand for energy storage solutions to support renewable energy integration is driving growing interest in LIBs, which offer low-cost and long-lasting storage capabilities. Government policies and incentives supporting renewable energy and a circular economy are contributing to the growth of the global LIB market. The rising priority among auto manufacturers to improve electric vehicle range via higher energy density should also grow the market.

Future Trends and Development

Artificial intelligence (AI)-driven innovations are changing battery management systems while also increasing safety and performance standards. Solid-state batteries and nanomaterials are expected to offer increased energy density and longevity. Universities have commenced research on LIBs, exploring advanced materials and chemical processes. The ongoing research into LIBs will demonstrate their significance in achieving environmental sustainability. By 2030, the IEA report anticipates 145 million electric vehicles will be on the roads. This rise in the number of EVs is expected to increase the market for LIB.

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