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Cylindrical Lithium-Ion Battery Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented, By Type (LiCoO2 Battery, LiMn2O4 Battery, NMC & NCA, Others), By Application (Automotive, Electronics, Others), By Region, By Competition, 2020-2030F

https://marketpublishers.com/r/C0FDF943B0A7EN.html
Date: May 2025
Pages: 180
Price: US$ 4,500.00 (Single User License)
ID: C0FDF943B0A7EN

Abstracts

Market Overview

The Cylindrical Lithium-Ion Battery Market was valued at USD 10.48 Billion in 2024 and is projected to reach USD 31.83 Billion by 2030, growing at a CAGR of 20.16%. This market encompasses the global development, production, and deployment of cylindrical-format lithium-ion batteries—rechargeable energy storage units known for their tubular design, superior energy density, mechanical durability, and cost-effective manufacturability. Commonly made with lithium-based cathodes (like LiCoO?, LiFePO?, or NCA), graphite or silicon anodes, and housed in metallic enclosures, these batteries are widely used in sectors demanding reliability and thermal efficiency. Their growing application across electric vehicles (EVs), consumer electronics, and industrial tools underscores their significance as a preferred energy storage solution.

Key Market Drivers

Growing Demand for Electric Vehicles (EVs)

The rapid global rise in electric vehicle (EV) adoption is a major factor propelling the growth of the cylindrical lithium-ion battery market. Spurred by environmental concerns, stringent emissions regulations, and government-backed incentives such as subsidies

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and tax benefits, automakers are increasingly transitioning toward electric mobility. Cylindrical lithium-ion batteries have become integral to this shift due to their modular architecture, compact design, cost-efficiency, and reliable thermal performance. These batteries are especially suited for EV formats like electric scooters, two-wheelers, and light commercial vehicles.

Companies like Tesla have led the way in integrating cylindrical cells into EV battery packs, citing their advantages in ease of assembly, scalability, and cost-effective mass production. The cylindrical form factor enables dense packaging and efficient space utilization, enhancing range and performance. Technological advances in battery chemistry and management systems have further boosted the appeal of cylindrical cells by improving lifecycle and safety. The EV boom in Asia-Pacific, particularly in China and India, is driving large-scale domestic battery production and accelerating supply chain development.

As electrification extends to public transport and commercial fleets, and as new entrants and OEMs increase investment in battery technologies, cylindrical lithium-ion batteries are well-positioned to meet evolving industry demands. The global EV market surged past 10 million units sold in 2023, reflecting a 50% year-over-year increase, with EVs now representing around 15% of total new car sales worldwide—highlighting the sector’s pivotal role in the ongoing market expansion.

Key Market Challenges

Raw Material Supply Chain Vulnerabilities and Cost Volatility

A major challenge for the cylindrical lithium-ion battery market lies in the unstable and cost-sensitive supply chain of essential raw materials like lithium, cobalt, and nickel. These materials are critical for producing high-energy-density batteries but are geographically concentrated in areas prone to political and logistical instability. For instance, cobalt largely originates from the Democratic Republic of Congo, while lithium is primarily sourced from South America's Lithium Triangle. Such dependencies introduce geopolitical risks and price volatility, which can disrupt global production cycles.

Moreover, processing capabilities are concentrated in a few countries—most notably China—leading to overreliance and heightened exposure to trade policies, tariffs, or regulatory shifts. These supply chain challenges impact production costs and pose hurdles for manufacturers attempting to scale efficiently or respond to surging demand

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across emerging EV and energy storage markets.

Key Market Trends

Increasing Adoption in Electric Vehicles (EVs)

The widespread use of cylindrical lithium-ion batteries in EVs marks a transformative trend within the energy storage sector. Once confined to devices like laptops and power tools, cylindrical cells—especially 18650 and 21700 formats—are now becoming integral to electric mobility solutions due to their uniform size, robust thermal properties, and manufacturing scalability.

Leading EV manufacturers, including Tesla, have validated the suitability of cylindrical batteries for high-performance applications, demonstrating that with advanced battery management systems, these cells offer durability, energy efficiency, and modular flexibility. As the automotive sector accelerates its transition to low-emission technologies, cylindrical batteries are proving essential for delivering long-range capabilities and fast-charging performance.

Additionally, advancements in lithium-ion chemistries—such as NCA and NMC—are enhancing energy density and extending battery life, while the use of automated manufacturing processes ensures cost-effectiveness and production consistency. OEMs benefit from the ability to customize battery configurations to meet specific vehicle needs, reinforcing the growing appeal of cylindrical cells in the evolving EV ecosystem.

Key Market Players

Panasonic Holdings Corporation

Samsung SDI Co., Ltd.

LG Energy Solution, Ltd.

Contemporary Amperex Technology Co., Limited (CATL)

Murata Manufacturing Co., Ltd.

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BAK Power Battery Co., Ltd.

Tianjin Lishen Battery Joint-Stock Co., Ltd.

EVE Energy Co., Ltd.

Hitachi Chemical Co., Ltd.

BYD Company Limited

Report Scope:

In this report, the Global Cylindrical Lithium-Ion Battery Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Cylindrical Lithium-Ion Battery Market, By Type:

LiCoO? Battery

LiMn?O? Battery

NMC & NCA

Others

Cylindrical Lithium-Ion Battery Market, By Application:

Automotive

Electronics

Others

Cylindrical Lithium-Ion Battery Market, By Region:

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North America

- United States
- Canada
- Mexico

Europe

- France
- United Kingdom
- Italy
- Germany
- Spain

Asia-Pacific

- China
- India
- Japan
- Australia
- South Korea

South America

- Brazil
- Argentina

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Colombia

Middle East & Africa

South Africa

Saudi Arabia

UAE

Kuwait

Turkey

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Cylindrical Lithium-Ion Battery Market.

Available Customizations:

Global Cylindrical Lithium-Ion Battery Market report with the given Market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional Market players (up to five).

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