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Used Electric Vehicle Battery Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Vehicle Type (Two-Wheeler, Passenger Car, Commercial Vehicle), By Type (Lead Acid, Lithium-Ion), By Application (Energy Storage, Electric Vehicle Charging, Base Station, Low-Speed EV, Others), By Region & Competition, 2021-2031F

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Abstracts

The Global Used Electric Vehicle Battery Market is projected to grow substantially from USD 1.31 billion in 2025 to USD 5.71 billion by 2031, reflecting a robust 27.81% CAGR. This market focuses on repurposing retired lithium-ion automotive batteries for second-life energy storage or recovering raw materials. Its growth is primarily driven by stringent environmental regulations mandating circular economy practices and the urgent industrial need to secure independent supply chains for critical minerals. By 2025, pilot battery passport programs covered over 80% of the global EV battery market, establishing essential traceability infrastructure for managing these assets throughout their lifecycle.

Market Driver

The strategic necessity to secure critical raw material supply chains is the principal catalyst propelling the Global Used Electric Vehicle Battery Market, aiming to reduce reliance on volatile foreign mining operations. By treating retired units as "urban mines," stakeholders can efficiently recover valuable metals like lithium, cobalt, and nickel, stabilizing production costs for new energy storage solutions and insulating manufacturers from geopolitical supply shocks; CATL subsidiary Brunp Recycling achieved a 99.6% recovery rate for nickel, cobalt, and manganese in October 2025.

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Concurrently, the surging global volume of retired electric vehicle batteries is forcing rapid industrial expansion to manage this hazardous yet valuable feedstock. As early-generation EV fleets reach end-of-life, the influx of spent packs scales recycling operations from pilot phases to commercial mass production, turning waste management into a profitable material sourcing strategy. Redwood Materials, for instance, recycled 20 GWh of lithium-ion batteries in 2024, validating large-scale domestic recycling infrastructure, further supported by a $1 billion US Department of Energy funding initiative announced in August 2025 to expand critical minerals production and battery recycling.

Market Challenge

A significant impediment to the Global Used Electric Vehicle Battery Market's expansion is the lack of standardized diagnostic protocols for assessing the residual health of retired units. The absence of universally accepted testing methodologies compels operators to rely on fragmented, proprietary evaluation methods, generating substantial technical uncertainty regarding battery safety, remaining capacity, and chemical stability. This complexity hinders accurate asset valuation and certification for second-life applications. Without a reliable, uniform standard, facilities cannot implement the automated, high-throughput grading systems essential for economic viability, thus stalling the transition from pilot projects to industrial-scale operations. These inefficiencies create a severe bottleneck in the reverse supply chain, increasing operational costs and eroding the price competitiveness of used batteries compared to new ones, restricting market liquidity despite global demand for EV batteries surpassing 750 GWh in 2024, highlighting the critical need for streamlined, uniform health verification to prevent stranded inventory.

Market Trends

Two key trends are rapidly industrializing the market. First, the integration of second-life batteries into stationary energy storage systems is evolving into a viable alternative to new storage manufacturing, driven by the need to support energy-intensive infrastructure such as data centers and renewable microgrids. Repurposing retired EV packs creates decentralized power reserves, mitigating grid strain while maximizing the utility of critical minerals before final recycling. This operational shift validates the technical feasibility of using residual lithium-ion capacity for high-demand commercial applications, moving beyond pilot phases into commercial deployment; Redwood Materials launched a division and a 63 MWh microgrid project using repurposed modules in June 2025. Second, the expansion of Battery-as-a-Service (BaaS) and

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leasing models is transforming the economic landscape of the reverse supply chain by addressing financial barriers. To overcome high upfront capital costs and technical risks associated with used assets, market players are introducing structured financial products that separate asset ownership from operational usage. This evolution allows for aggregating decentralized storage projects into investable portfolios, unlocking the institutional capital necessary for large-scale expansion; B2U Storage Solutions exemplified this trend in December 2025 by launching a structured finance fund for a 150 MWh portfolio of grid-connected second-life projects.

Key Market Players

Contemporary Amperex Technology Co., Limited (CATL)

LG Energy Solution, Ltd.

Panasonic Holdings Corporation

Samsung SDI Co., Ltd.

BYD Company Limited

Tesla, Inc.

Robert Bosch GmbH

Umicore SA

Li-Cycle Holdings Corp.

Redwood Materials, Inc.

Report Scope

In this report, the Global Used Electric Vehicle Battery Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Used Electric Vehicle Battery Market, By Vehicle Type

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- Two-Wheeler
- Passenger Car
- Commercial Vehicle

Used Electric Vehicle Battery Market, By Type

- Lead Acid
- Lithium-Ion

Used Electric Vehicle Battery Market, By Application

- Energy Storage
- Electric Vehicle Charging
- Base Station
- Low-Speed EV
- Others

Used Electric Vehicle Battery Market, By Region

- North America
  - United States
  - Canada
  - Mexico
- Europe
  - France

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United Kingdom

Italy

Germany

Spain

Asia Pacific

China

India

Japan

Australia

South Korea

South America

Brazil

Argentina

Colombia

Middle East & Africa

South Africa

Saudi Arabia

UAE

Competitive Landscape

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Company Profiles: Detailed analysis of the major companies present in the Global Used Electric Vehicle Battery Market.

Available Customizations:

Global Used Electric Vehicle 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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