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Electric Vehicle (EV) Battery Recycling Market Forecasts to 2032 – Global Analysis By Chemistry (Lithium-Ion Batteries, Nickel-Metal Hydride Batteries, Lead-Acid Batteries, and Sodium-Ion), Battery Source, Recycling Process, Recycling Stage, End User and By Geography

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Abstracts

According to Stratistics MRC, the Global Electric Vehicle (EV) Battery Recycling Market is accounted for $619.81 million in 2025 and is expected to reach $2670.17 million by 2032 growing at a CAGR of 23.2% during the forecast period. EV Battery Recycling involves reclaiming and reusing materials from spent or discarded electric vehicle batteries. It includes steps like collection, disassembly, and material recovery of essential elements such as lithium, cobalt, and nickel. The process aims to lessen environmental harm, conserve critical raw materials, and encourage sustainability. By reintroducing recovered materials into production, it supports a circular economy and reduces dependency on virgin resource extraction.

According to the regulations, about 75.0%, 65.0%, and 50% of the weight of battery must be recovered as recycled material for nickel-cadmium, lead-acid, and other chemistries, respectively.

Market Dynamics:

Driver:

Economic value of critical materials

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The surge in electric vehicle adoption is amplifying the need to reclaim essential metals like lithium, cobalt, and nickel from used batteries. These materials are vital for advanced battery production and are becoming increasingly scarce and costly. Recycling offers a strategic solution to recover these inputs, reducing reliance on unstable global supply chains. Innovations in direct recycling and hydrometallurgy are enhancing extraction efficiency and material quality. The financial and environmental benefits of recovering high-value materials are propelling investment in battery recycling infrastructure.

Restraint:

Technical complexity & heterogeneity

Differences in lithium-ion formats—such as LFP, NMC, and NCA—require customized dismantling and processing workflows. Manual disassembly remains hazardous and inefficient, especially with embedded electronics and high-voltage components. Automation is still evolving and struggles with non-standardized battery packs. Additional complications arise from adhesives, cooling systems, and integrated sensors that obstruct clean material separation. These technical challenges elevate operational costs and slow down the deployment of scalable recycling solutions.

Opportunity:

Creation of closed-loop supply chains

Automakers and recyclers are collaborating to secure secondary raw materials and reduce carbon footprints. Breakthroughs in direct cathode reuse and smart sorting technologies are enabling efficient material recovery. Digital tools like battery passports and blockchain are improving traceability and compliance across the recycling chain. Regulatory mandates in regions like the EU and China are accelerating circular practices through extended producer responsibility. These trends are driving innovation in reverse logistics, second-life battery applications, and regional recycling hubs.

Threat:

Fluctuation in virgin raw material prices

Instability in the pricing of virgin lithium, cobalt, and nickel threatens the competitiveness of recycled alternatives. When raw material costs decline, recycling operations may

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become economically unviable, discouraging investment. This volatility complicates long-term planning and delays the rollout of advanced recycling technologies. It also affects contract negotiations and financing for new facilities. Some companies are exploring price stabilization mechanisms and long-term procurement agreements to mitigate risk. However, without consistent policy support or mandatory recycled content requirements, the market remains exposed to commodity price swings.

Covid-19 Impact:

The COVID-19 pandemic disrupted global battery supply chains, delaying recycling initiatives and limiting access to end-of-life batteries. Workforce shortages and lockdowns impacted collection and processing operations, causing temporary setbacks. However, the crisis accelerated the adoption of digital tools such as AI-based diagnostics and remote monitoring systems. The pandemic underscored the importance of resilient, decentralized recycling infrastructure to reduce dependency on imports. Post-pandemic strategies now focus on automation, regional sourcing, and harmonized regulations to strengthen the recycling ecosystem.

The lithium-ion batteries segment is expected to be the largest during the forecast period

The lithium-ion batteries segment is expected to account for the largest market share during the forecast period, due to their widespread use in electric vehicles and energy storage systems. These batteries contain high concentrations of valuable metals, making them prime candidates for recovery. Advances in hydrometallurgical and direct recycling methods are improving extraction rates and reducing environmental impact. The growing EV fleet is generating a consistent stream of spent batteries, boosting recycling demand. Manufacturers are increasingly designing batteries with end-of-life recovery in mind, enhancing recyclability.

The energy storage systems segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the energy storage systems segment is predicted to witness the highest growth rate, driven by the expansion of renewable energy installations. As solar and wind projects scale up, the demand for grid-level storage is rising, leading to more battery retirements. ESS batteries often have unique configurations that require specialized recycling approaches. Innovations in modular design and second-life applications are streamlining the transition from reuse to recycling. Utilities and startups

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are investing in ESS-specific recycling technologies to manage increasing volumes.

Region with largest share:

During the forecast period, the Asia Pacific region is expected to hold the largest market share, supported by its dominance in EV production and battery manufacturing. Countries like China, Japan, and South Korea are investing in advanced recycling technologies and policy frameworks. China's regulatory mandates and industrial consolidation are accelerating the development of large-scale recycling facilities. Major players in the region are vertically integrating recycling into their supply chains to improve efficiency. Government incentives and joint ventures are fostering innovation in automated dismantling and material recovery.

Region with highest CAGR:

Over the forecast period, the North America region is anticipated to exhibit the highest CAGR, driven by rising EV adoption and supportive legislation. U.S. policies like the Inflation Reduction Act are channeling investments into domestic battery supply chains and recycling infrastructure. Companies such as Redwood Materials and Li-Cycle are pioneering scalable, closed-loop recycling models. Automakers are partnering with recyclers to secure critical materials and meet sustainability targets. Growth in battery collection networks and second-life applications is expanding the regional recycling footprint.

Key players in the market

Some of the key players in Electric Vehicle (EV) Battery Recycling Market include Redwood, Ecobat, Retriev Technologies, Li-Cycle, Neometals, American Battery Technology Company, Umicore, American Manganese, Sumitomo Metal Mining, Glencore, Ganfeng Lithium, Stena Recycling, Fortum, ACCUREC, and Altilium.

Key Developments:

In September 2025, American Battery Technology Company and Call2Recycle announced a strategic partnership to advance the recycling of lithium-ion batteries for consumers across the United States. This collaboration expands ABTC's business model from primarily business-to-business operations to include a direct-to-consumer recycling channel, creating a more robust circular economy for essential battery metals.

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In March 2022, Retriev Technologies has acquired Battery Solutions, the North American leader in sustainable, end-to-end management solutions for end-of-life batteries and consumer electronics. The combined offering brings two complementary industry leaders together to create the first and only comprehensive battery management solution in North America.

Chemistries Covered:

- Lithium-Ion Batteries
- Nickel-Metal Hydride Batteries
- Lead-Acid Batteries
- Sodium-Ion

Battery Sources Covered:

- Battery Electric Vehicles (BEVs)
- Plug-in Hybrid Electric Vehicles (PHEVs)
- Hybrid Electric Vehicles (HEVs)

Recycling Processes Covered:

- Pyrometallurgical Process
- Hydrometallurgical Process
- Mechanical/Physical Process
- Direct Recycling Process

Recycling Stages Covered:

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- Collection & Logistics
- Dismantling & Sorting
- Material Extraction & Refining
- Reuse & Repurposing

End Users Covered:

- Automotive Industry
- Energy Storage Systems
- Consumer Electronics
- Industrial Applications
- Other End Users

Regions Covered:

- North America
  - US
  - Canada
  - Mexico
- Europe
  - Germany
  - UK
  - Italy

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- France
- Spain
- Rest of Europe

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- Brazil
- Chile
- Rest of South America

Middle East & Africa

- Saudi Arabia
- UAE

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Qatar

South Africa

Rest of Middle East & Africa

What our report offers:
- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2024, 2025, 2026, 2028, and 2032
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

Free Customization Offerings:

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and

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strategic alliances

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Note: Tables for North America, Europe, APAC, South America, and Middle East & Africa Regions are also represented in the same manner as above.

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