# North America Battery Recycling Market Forecast 2026-2034

Market Report | 2026-01-19 | 187 pages | Inkwood Research

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**Report description:**

KEY FINDINGS
The North America battery recycling market size is set to be valued at $6135.72 million as of 2026 and is expected to reach $13586.66 million by 2034, progressing with a CAGR of 10.45% during the forecast period, 2026-2034.
MARKET INSIGHTS
The North America battery recycling market experiences robust expansion driven by federal incentives supporting electric vehicle adoption and domestic manufacturing initiatives. The U.S. Department of Energy allocated $144 million in grants during 2024 to construct commercial-scale lithium-ion battery recycling facilities. These investments strengthen domestic supply chains for critical minerals, including lithium, cobalt, and nickel. Moreover, the Inflation Reduction Act mandates minimum percentages of recycled content in new EV batteries to qualify for tax credits.
At least 40% of critical minerals in US-made EV batteries must come from US miners or recycling plants, or mines in countries with free trade agreements with the US. This requirement rises incrementally, reaching higher thresholds by 2026. Consequently, automotive manufacturers forge strategic partnerships with regional recyclers to secure compliant material sources. Additionally, extended producer responsibility regulations are gaining traction across multiple states.
California pioneered battery stewardship programs requiring producers to finance collection and recycling infrastructure. Vermont followed by mandating primary battery producers to fund recycling programs statewide. These regulatory frameworks create predictable revenue streams for recycling operators while improving collection rates. Furthermore, growing EV penetration generates substantial volumes of manufacturing scrap and early warranty returns requiring immediate processing.
Major companies such as Umicore, Li-Cycle, Glencore, Redwood Materials, Stena Metall AB, and LG Energy Solutions dominate the global battery recycling market, leveraging their advanced recycling technologies and global networks. Regional players establish partnerships with OEM service centers to capture end-of-life battery flows systematically.
REGIONAL ANALYSIS
The North America battery recycling market growth assessment includes the analysis of the United States and Canada.
The United States commands the largest share of North American battery recycling capacity through concentrated investments in advanced processing infrastructure. Federal policies prioritize domestic critical mineral supply chains to reduce dependence on foreign sources. The Defense Production Act authorizes rapid production expansion for battery materials essential to national security.
In March 2022, the United States invoked the Defence Production Act to rapidly boost US production of critical minerals for EV and

storage batteries, focusing on lithium, nickel, cobalt, graphite, and manganese. This legislation enables government funding for private sector recycling facility construction. Nevada emerges as a leading recycling hub with multiple commercial-scale operations.

Accordingly, companies, including Redwood Materials and American Battery Technology Company, establish facilities near gigafactory clusters. This geographic concentration reduces transportation costs while enabling closed-loop material flows. Redwood Materials operates collection programs across retail locations, universities, and non-profit organizations nationwide. Their Nevada facility targets 100 GWh of cathode active material production using recycled content. Similarly, Texas develops significant recycling infrastructure through strategic investments.

Further, in December 2024, Ace Green Recycling announced a merger with Athena Technology Acquisition Corp. II, valued at $250 million, with plans to develop a flagship battery recycling plant in Texas. The state offers favorable business conditions and proximity to growing EV manufacturing operations. Regulatory alignment between federal and state programs accelerates market development. However, public charging infrastructure challenges and policy uncertainties create adoption headwinds in certain regions.

Manufacturing scrap represents the primary feedstock source for US recyclers during the current growth phase. Gigafactory production lines generate substantial quantities of rejected cells and electrode materials requiring immediate processing. These materials offer higher purity compared to end-of-life batteries since they originate from controlled manufacturing environments. Consequently, recyclers achieve superior economics in processing production scrap versus mixed consumer returns.

Redwood Materials provides one of the clearest examples of large-scale EV battery recycling, with its process designed to deliver materials that go directly back into battery production. Their South Carolina facility aims for recovery rates above 95% for critical minerals. Partnerships with Toyota and Panasonic secure steady feedstock supplies while creating offtake agreements for recovered materials. These closed-loop arrangements demonstrate vertical integration benefits across the battery value chain.

Additionally, warranty returns from early EV deployments provide growing recycling volumes. Automotive recalls and accident write-offs contribute supplementary material flows. However, the major wave of retired passenger EV batteries remains several years distant. Most current-generation vehicles retain sufficient capacity for continued automotive use. Therefore, recyclers build capacity proactively to handle anticipated volume increases during the late 2020s. Investment activity reflects long-term market confidence despite near-term supply constraints.

Canada develops battery recycling infrastructure aligned with domestic EV manufacturing expansion and critical mineral resource development. The nation possesses abundant lithium, nickel, and cobalt deposits supporting integrated battery supply chains. Government initiatives promote value-added processing rather than raw material exports. Ontario and Quebec attract recycling investments through provincial incentives and proximity to automotive manufacturing clusters.

Li-Cycle established black mass production facilities in Ontario, leveraging hydrometallurgical expertise. Their Spoke & Hub technology model enables distributed collection and mechanical processing followed by centralized chemical extraction. This approach optimizes logistics while achieving economies of scale in final material recovery. Furthermore, Canada's trade relationship with the United States facilitates cross-border material flows under USMCA provisions. Recyclers access expanded feedstock sources while serving integrated North American automotive markets.

Federal programs support research collaborations between recycling companies and academic institutions. These partnerships advance direct recycling technologies, preserving cathode material structures. Environmental regulations emphasize sustainable processing methods with minimal emissions and waste generation. Provincial governments coordinate with municipalities to establish battery collection networks through existing waste management infrastructure.

SEGMENTATION ANALYSIS

The North America battery recycling market is segmented into chemistry, application, recycling process, and source. The chemistry segment is further categorized into lead-acid, nickel-based, lithium-based, and others.

The lithium-based chemistry segment captures the fastest growth trajectory, driven by electric vehicle battery proliferation across the region. Lithium-ion batteries contain high concentrations of valuable materials, including lithium, cobalt, nickel, and manganese. NMC cathode chemistries dominate automotive applications because they balance energy density, thermal stability, and cycle life effectively. Consequently, recycling operations focus primarily on recovering these specific materials for reintegration into battery manufacturing supply chains.

Advanced hydrometallurgical processes dissolve cathode materials and separate individual metals through sequential precipitation steps. Recovery rates exceed 95% for cobalt and nickel, while lithium extraction reaches 90% in state-of-the-art facilities. These high recovery rates justify capital investments in sophisticated processing equipment. Moreover, regulatory mandates increasingly require minimum recycled content percentages in new battery production. The battery minerals must meet certain purity requirements to qualify for federal tax credits.

Therefore, recyclers invest heavily in purification technologies, producing battery-grade materials meeting stringent quality specifications. Market dynamics favor lithium-ion recycling economics as commodity prices for virgin materials fluctuate significantly. Recycled materials provide price stability while reducing supply chain vulnerabilities. Companies vertically integrate recycling operations with cathode manufacturing to capture additional value. This integration trend accelerates as automotive OEMs seek supply chain control and sustainability improvements.

COMPETITIVE INSIGHTS

Some of the top players operating in the North America battery recycling market include Redwood Materials, American Battery Technology Company, Retriev Technologies, Li-Cycle, etc.

Redwood Materials operates as a leading lithium-ion battery recycling and materials refining company headquartered in Nevada. The company was founded by JB Straubel, a co-founder of Tesla, bringing deep automotive and battery expertise. Redwood specializes in recovering and refining critical battery materials, including lithium, cobalt, nickel, and copper, from end-of-life batteries and manufacturing scrap. Their integrated operations encompass collection logistics, mechanical processing, hydrometallurgical refining, and cathode active material production.

The company maintains collection partnerships with automotive manufacturers, including Toyota, Ford, and Volkswagen. Additionally, Redwood operates consumer recycling programs enabling individuals to return batteries through retail locations and mail-in services. Their Nevada facility processes batteries into anode copper foil and cathode active materials ready for battery cell manufacturing. This closed-loop approach reduces North American dependence on imported battery materials.

COMPANY PROFILES

1. ACCUREC RECYCLING GMBH
2. AQUA METALS INC
3. BATTERY RECYCLING MADE EASY LLC
4. BATTERY SOLUTIONS INC
5. CALL2RECYCLE INC
6. ECO-BAT TECHNOLOGIES LTD
7. EXIDE TECHNOLOGIES
8. NEOMETALS LTD
9. RAW MATERIALS COMPANY
10. RECUPYL SAS
11. RECYLEX SA
12. THE DOE RUN RESOURCES CORPORATION
13. UMICORE SA
14. GS YUASA CORPORATION
15. RETRIEV TECHNOLOGIES INC

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