

## Battery Recycling: Global Markets

Market Research Report | 2022-08-30 | 158 pages | BCC Research

### **AVAILABLE LICENSES:**

- Single User License \$5500.00
- 2-5 Users License \$6600.00
- Site License \$7920.00
- Enterprise License \$9504.00

### **Report description:**

Description

Report Scope:

This report will cover all the commercially available battery recycling methods actively utilized and consumed by key end-user industries in the battery recycling market. Its scope will also include all the applications for battery recycling. For lithium-ion batteries recycling end-of-life (EOL) lithium-ion batteries are considered.

Furthermore, the battery recycling industry will be analyzed at the regional and country levels. Regional and country-level markets are segmented and analyzed by chemistry, source and end-use.

The battery recycling market is segmented by battery chemistry into lead-acid, lithium-ion, nickel, and others (alkaline, mercury, zinc-carbon, zinc-air). On the basis of source, the battery recycling market is segmented into automotive, industrial, consumer, and electronic appliance batteries. In terms of end use, the battery recycling market is segmented into transportation, consumer electronics, industrial, and others.

The impact of the COVID-19 pandemic is also covered. The market size and estimations are provided in terms of revenue, with 2021 serving as the base year, and market forecasts are given for the period from 2022 to 2027.

This report discusses three future scenarios: pessimistic, consensus and optimistic; forecasts are provided for the consensus scenario. Battery recycling values are provided. A patent analysis and discussion of the battery recycling process are also included.

Report Includes:

**Scotts International. EU Vat number: PL 6772247784**

tel. 0048 603 394 346 e-mail: support@scotts-international.com

[www.scotts-international.com](http://www.scotts-international.com)

- 90 data tables and 8 additional tables
- An overview of the recent advances and analysis of global markets for battery recycling industry
- Analyses of the global market trends, with historic market revenue for 2021, estimates for 2022, forecasts for 2023, and projections of compound annual growth rates (CAGRs) through 2027
- Estimation of the actual market size for battery recycling in dollar value terms, and corresponding market share analysis by battery type (chemistry), source, end use, and geographic region
- Identification of the fastest-growing applications and technologies, and a holistic review of the current market trends that leads to increasing demand for battery recycling across the world
- Country specific data and market value analysis for the United States, Canada, Mexico, China, Japan, South Korea, India, Brazil, Argentina, South Africa, Belgium, Germany, U.K., France and other emerging economies
- Highlights of the key growth driving factors and constraints that will shape the market for battery recycling as the basis for projecting demand in the forecast period (2022-2027)
- In-depth information on increasing investments on R&D activities, key technology issues, industry specific challenges, major types of end-user markets, and COVID-19 implications on the progress of this market
- Assessment of the company competitive landscape comprising key market participants, their global market share analysis based on segmental revenues, product portfolios and recent developments
- Company profiles of major players within the industry, including Call2Recycle Inc, Aqua Metals Inc., Umicore, Exide Industries Ltd. and Glencore

## Executive Summary

### Summary:

The global battery recycling market was valued at \$REDACTED in 2021 and is projected to reach \$REDACTED by 2027. This market is expected to grow at a CAGR of REDACTED% from 2022 to 2027.

The goal of battery recycling is to reduce the number of batteries disposed of as municipal solid waste. Batteries contain several harmful compounds and heavy metals; thus, disposing of them like other home waste sparks worries about soil and water pollution.

Battery recycling is reusing and reprocessing batteries to minimize the number of batteries disposed of as solid waste. Batteries contain several toxic compounds and heavy metals, and the contamination of soil and water caused by their disposal has raised environmental concerns. Therefore, recycling batteries is necessary for both environmental and health reasons. Nowadays, people use batteries to power a wide variety of products. These include lamps, vehicles and phones. Batteries can be used as an additional source of electricity to power a home.

Most battery types can be recycled. However, some batteries are recycled more frequently than others, such as button cells and lead-acid car batteries (almost REDACTED% are recycled because of the value and toxicity of their chemicals). Rechargeable lithium-ion (Li-ion), nickel-zinc (Ni-Zn), nickel metal hydride (Ni-MH), and nickel-cadmium (Ni-Cd) batteries can also be recycled.

Most consumer batteries are disposable alkaline batteries. There is no currently available cost-neutral recycling solution for these batteries. Regulations for consumer disposal differ by area. A review of European consumer alkaline battery recycling found that it positively impacts the environment, albeit at a high cost compared to disposal. The same recycling procedure is used for batteries made of zinc-carbon and zinc-air. Nearly half of the portable batteries purchased in 2017 will be recycled between 2020 to 2024.

Many countries sell their used or spent lead-acid batteries (ULABs or SLABs) to other countries for recycling, making battery

recycling a global industry. As a result, obtaining precise evaluations of the domestic recycling rates in various countries can be challenging.

Additionally, lead-acid battery recycling (mostly from cars and motorcycles) is frequently carried out informally by individuals or small businesses in many nations, with little to no formal recordkeeping and ineffective governmental control.

Although restrictions differ from nation to country, ULABs (used lead-acid batteries) and SLABs (spent lead-acid batteries) are typically classified as "hazardous waste." They are therefore subject to the necessary safety, storage, handling, and transport laws. The Basel Convention is a multilateral international agreement that regulates all transboundary transfers of hazardous waste for recovery or disposal among the 172 participating nations. (The U.S. is not a party, although it has alternative agreements with the Organization for Economic Co-operation and Development (OECD), as well as with Canada and Mexico) (to which the U.S. ships many ULABs and SLABs for recycling).

## **Table of Contents:**

Table of Contents
Chapter 1 Introduction
1.1 Study Goals and Objectives
1.2 Reasons for Doing This Study
1.3 Scope of Report
1.4 Information Sources
1.5 Intended Audience
1.6 Methodology
1.7 Geographic Breakdown
1.8 Analyst's Credentials
1.9 BCC Custom Research
1.10 Related BCC Research Reports
Chapter 2 Summary and Highlights
Chapter 3 Market Overview
3.1 Current Market Overview
3.2 History of the Battery Recycling Industry
3.3 Development Trends in Electric Vehicle Battery Recycling
3.3.1 Solutions to Battery Recycling
3.3.2 Technologies for Alternative Batteries
3.3.3 Developments in Lithium-Ion Batteries (LIBs)
3.4 Advantages of Battery Recycling
3.4.1 Importance of Lithium-Ion Battery Recycling
3.4.2 Importance of Lead-acid Battery Recycling
3.4.3 Importance of Different Battery Recycling
3.5 Regulatory Framework for Battery Recycling
3.5.1 Europe
3.5.2 China
3.5.3 U.S.
3.5.4 International Efforts
3.6 Value Chain Analysis for Global Battery Recycling Market
3.6.1 Raw and Processed Materials
3.6.2 Cell Component Manufacturing
3.6.3 Cell Manufacturing

- 3.6.4 Battery Pack Manufacturing
- 3.6.5 Electric Vehicle Manufacturing
- 3.6.6 Recycling
- 3.7 Dynamics in the Global Market
- 3.7.1 Market Drivers
- 3.7.2 Market Restraints
- 3.7.3 Key Challenges
- 3.7.4 Market Opportunities
- 3.8 Porter's Five Forces Model
- 3.8.1 Supplier Power
- 3.8.2 Buyer Power
- 3.8.3 Threat of New Entrants
- 3.8.4 Threat of Substitute
- 3.8.5 Competitive Rivalry
- 3.9 COVID-19 and Ukraine-Russia War Impact on the Global Market
- 3.9.1 COVID-19 Impact
- 3.9.2 Russia and Ukraine War Impact
- 3.10 Industry Expert Insights
- 3.10.1 Patent Analysis
- Chapter 4 Market Breakdown by Chemistry
- 4.1 Overview
- 4.2 Lead-acid
- 4.2.1 Recycling of Lead-Acid Batteries
- 4.3 Lithium-ion
- 4.3.1 Lithium Battery Chemistry
- 4.3.2 Construction of Lithium-Ion Batteries
- 4.3.3 A Thorough Method for Recycling Lithium-Ion Batteries Used in Electric Vehicles
- 4.3.4 Lithium-Ion Battery Manufacturers
- 4.4 Nickel
- 4.4.1 Nickel-metal hydride (Ni-MH) batteries
- 4.5 Others (Alkaline, Mercury, Zinc-carbon, Zinc-air)
- 4.5.1 Recycling Alkaline and Zinc-Carbon
- 4.5.2 Recycling Mercury Batteries
- Chapter 5 Market Breakdown by Source
- 5.1 Overview
- 5.1.1 Benefits of Recycling Batteries
- 5.2 Automotive Batteries
- 5.2.1 Economics for Electric Cars
- 5.2.2 Environmental Factors
- 5.3 Industrial Batteries
- 5.3.1 Types of Industrial Batteries
- 5.4 Consumer and Electronic Appliance Batteries
- 5.4.1 Types of Consumer and Electronic Appliance Batteries
- Chapter 6 Market Breakdown by End Use
- 6.1 Overview
- 6.1.1 Uses of Batteries
- 6.2 Transportation

6.3 Industrial  
6.4 Consumer Electronics  
6.5 Other End Uses (Toys, Medical Devices, Watches)

Chapter 7 Market Breakdown by Region

7.1 Overview

7.2 North America

7.2.1 U.S.

7.2.2 Canada

7.2.3 Mexico

7.3 Europe

7.3.1 Germany

7.3.2 Belgium

7.3.3 U.K.

7.3.4 France

7.3.5 The Rest of Europe

7.4 Asia-Pacific

7.4.1 China

7.4.2 Japan

7.4.3 South Korea

7.4.4 India

7.4.5 Rest of Asia-Pacific

7.5 South America

7.5.1 Legal Framework

7.5.2 Brazil

7.5.3 Argentina

7.5.4 Rest of South America

7.6 The Middle East and Africa

7.6.1 South Africa

7.6.2 Rest of Middle East and Africa

Chapter 8 Competitive Landscape

8.1. Overview

8.2. Recent and Upcoming Developments in the Battery Recycling Industry

8.3. Worldwide Li-Ion Battery-Recycling Projects

8.4. Innovations Ongoing in the Electric Vehicles Which Will Create a Boost for Battery Recycling Market

8.4.1 Vehicle to Grid (V2G)

8.4.2 Wireless Electric Vehicle Charging

8.4.3 Charging of Mobile Devices

8.4.4 Lightning-Fast Charging

8.4.5 Advancements in Battery Technology

8.5 Innovations in Battery Technologies

8.5.1 Lithium-Ion Batteries

8.5.2 Batteries with Solid State Technology

8.5.3 Aluminum-Ion Rechargeable Batteries

8.5.4 Batteries Made of Lithium-Sulfur

8.5.5 Batteries Made of Metal and Air

Chapter 9 Company Profiles

ACCUREC-RECYCLING GMBH

**Scotts International. EU Vat number: PL 6772247784**

tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

AMERICAN MANGANESE INC.  
AQUA METALS INC.  
CALL2RECYCLE INC.  
CIRBA SOLUTIONS  
COM2 RECYCLING SOLUTIONS LLC  
DOE RUN CO.  
EAST PENN MANUFACTURING CO.  
ECOBAT  
ENERSYS  
EXIDE INDUSTRIES LTD.  
FORTUM  
G & P BATTERIES  
GEM CO. LTD.  
GLENCORE  
GOPHER RESOURCE  
GRAVITA INDIA LTD.  
GUANGDONG BRUNP RECYCLING TECHNOLOGY CO. LTD.  
LI-CYCLE CORP.  
NEOMETALS LTD.  
RAW MATERIALS CO. (RMC)  
TERRAPURE ENVIRONMENTAL  
TES  
UMICORE  
Chapter 10 Appendix: Acronyms  
10.1 Acronyms Used in this Report

**Scotts International. EU Vat number: PL 6772247784**

tel. 0048 603 394 346 e-mail: support@scotts-international.com  
www.scotts-international.com

## Battery Recycling: Global Markets

Market Research Report | 2022-08-30 | 158 pages | BCC Research

To place an Order with Scotts International:

- Print this form
- Complete the relevant blank fields and sign
- Send as a scanned email to support@scotts-international.com

### ORDER FORM:

Select license	License	Price
	Single User License	\$5500.00
	2-5 Users License	\$6600.00
	Site License	\$7920.00
	Enterprise License	\$9504.00
		VAT
		Total

\*Please circle the relevant license option. For any questions please contact support@scotts-international.com or 0048 603 394 346.

\*\* VAT will be added at 23% for Polish based companies, individuals and EU based companies who are unable to provide a valid EU Vat Numbers.

Email*	Phone*
<input type="text"/>	<input type="text"/>
First Name*	Last Name*
<input type="text"/>	<input type="text"/>
Job title*	
<input type="text"/>	
Company Name*	EU Vat / Tax ID / NIP number*
<input type="text"/>	<input type="text"/>
Address*	City*
<input type="text"/>	<input type="text"/>
Zip Code*	Country*
<input type="text"/>	<input type="text"/>
	Date
	<input type="text" value="2026-02-13"/>

Signature

**Scotts International. EU Vat number: PL 6772247784**

tel. 0048 603 394 346 e-mail: support@scotts-international.com

[www.scotts-international.com](http://www.scotts-international.com)



**Scotts International. EU Vat number: PL 6772247784**

tel. 0048 603 394 346 e-mail: support@scotts-international.com

[www.scotts-international.com](http://www.scotts-international.com)