

Battery Recycling Market by Source (Automotive Batteries, Industrial Batteries, Consumer & Electronic Appliance Batteries), Chemistry (Lead Acid, Lithium-based, Nickel-based), Material (Metals, Electrolyte, Plastics) and Region - Global Forecast to 2030

Market Report | 2023-06-13 | 264 pages | MarketsandMarkets

AVAILABLE LICENSES:

- Single User \$4950.00
- Multi User \$6650.00
- Corporate License \$8150.00
- Enterprise Site License \$10000.00

Report description:

The battery recycling market is projected to grow from USD 26.9 billion in 2023 to USD 54.3 billion by 2030, at a CAGR of 10.5%. The battery recycling market is on the way to intense growth across different industries such as automotive, electronics, and energy storage. The market involves the collection, processing, and recycling of various types of batteries, such as lead-acid, lithium-based, nickel-based, sodium-based, and alkaline batteries to support the circular economy.

"By source, industrial batteries segment accounted for the second-largest share in battery recycling market in 2022."

The industrial batteries segment held the second-largest share in 2022. The growth of this segment can be attributed to the requirement of battery recycling in the industrial sector due to the rising need for energy storage devices such as large-scale batteries used for grid stabilization and integration of renewable energy sources. Effective battery end-of-life management is necessary as more industrial sites install energy storage devices. Spent batteries can be recycled to recover important materials, maintaining a steady supply for future energy storage projects.

"By chemistry, the lithium-based batteries segment accounted for the second-largest share in battery recycling market in 2022." The lithium-based chemistry segment held the second-largest share in 2022. Batteries made of lithium are essential for storing renewable energy and ensuring a steady supply of power, which helps the battery market expand. Recycling lithium-based batteries can result in significant energy and cost savings. Also, the recycling process uses less resources compared to the extraction and refining of raw materials. These factors further fuel the need for battery recycling of lithium-based batteries.

Scotts International. EU Vat number: PL 6772247784 tel. 0048 603 394 346 e-mail: support@scotts-international.com www.scotts-international.com

"The battery recycling market in Europe accounted for the second-largest share in 2022."

Europe has set strict legislation and guidelines in order to ensure the management of batteries, including their collection, recycling, and disposal. The Battery Directive of the European Union promotes a circular economy by setting specified goals for the collecting and recycling of batteries. The growth of battery recycling in Europe is significantly impacted by compliance with these restrictions, as businesses strive to reach recycling goals and avoid penalties.

Profile break-up of primary participants for the report:

- By Company Type: Tier 1 65%, Tier 2 20%, and Tier 3 15%
- By Designation: C-level Executives 25%, Directors 30%, and Others 45%
- -¬By Region: North America 30%, Europe -20%, Asia Pacific 40%, Middle East & Africa-7%, South America -3%

The battery recycling report is dominated by players, such as ACCUREC Recycling GmbH (Germany), American Battery Technology Company (US), Aqua Metals, Inc. (US), Call2Recycle, Inc. (US), Cirba Solutions (US), Contemporary Amperex Technology Co., Limited (China), East Penn Manufacturing Company (US), Ecobat (US), Element Resources (US), EnerSys (US), Exide Industries Ltd. (India), Fortum (Finland), GEM Co., Ltd. (China), Glencore (Switzerland), Gopher Resource (US), Gravita India Limited (India), Li-Cycle Corp. (Canada), Neometals Ltd. (Australia), Raw Materials Company (Canada), RecycLiCo Battery Materials Inc. (Canada), Redwood Materials Inc. (US), Shenzhen Highpower Technology Co., Ltd. (China), Stena Recycling (Sweden), TES (Singapore), Terrapure (Canada), The Doe Run Company (US), The International Metals Reclamation Company (US), and Umicore (Belgium), and others

Research Coverage:

The report defines, segments, and projects the size of the battery recycling market based on source, chemistry, and region. It strategically profiles the key players and comprehensively analyzes their market share and core competencies. It also tracks and analyzes competitive developments, such as partnership, agreement, and expansion undertaken by them in the market. Reasons to Buy the Report:

The report is expected to help the market leaders/new entrants in the market by providing them with the closest approximations of revenue numbers of the battery recycling market and its segments. This report is also expected to help stakeholders obtain an improved understanding of the competitive landscape of the market, gain insights to improve the position of their businesses and make suitable go-to-market strategies. It also enables stakeholders to understand the pulse of the market and provide them information on key market drivers, restraints, challenges, and opportunities.

The report provides insights on the following pointers:

- Analysis of key drivers (increase in demand for electric vehicles), restraints (safety issues related to the storage and transportation of spent batteries), opportunities (growing demand for renewable energy storage), and challenges (high cost of recycling and dearth of technologies) influencing the growth of the battery recycling market.
- Product Development/Innovation: Detailed insights on upcoming technologies, research & development activities in the battery recycling market.
- Market Development: Comprehensive information about lucrative markets the report analyses the battery recycling market across varied regions.
- Market Diversification: Exhaustive information about new services, various recycling processes, untapped geographies, recent developments, and investments in the battery recycling market.
- Competitive Assessment: In-depth assessment of market shares, growth strategies and service offerings of leading players such

Scotts International, EU Vat number: PL 6772247784

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

as Call2Recycle, Inc. (US), Cirba Solutions (US), Element Resources (US), Umicore (Belgium), Contemporary Amperex Technology Co., Limited (China), and Exide Industries Ltd. (India) among others in the battery recycling market.

Table of Contents:

1 Introduction 33

- 1.1 STUDY OBJECTIVES 33
- 1.2 MARKET DEFINITION 33
- 1.2.1 INCLUSIONS AND EXCLUSIONS 34

TABLE 1 BATTERY RECYCLING MARKET: INCLUSIONS AND EXCLUSIONS 34

1.3 MARKET SCOPE □ 34

FIGURE 1□BATTERY RECYCLING MARKET SEGMENTATION□34

- 1.3.1 ⊓REGIONAL SCOPE □ 35
- 1.3.2 □YEARS CONSIDERED □ 35
- 1.4 CURRENCY CONSIDERED 36
- 1.5 UNITS CONSIDERED 36
- 1.6 LIMITATIONS 36
- 1.7□STAKEHOLDERS□36
- 1.8 SUMMARY OF CHANGES 36
- 2 RESEARCH METHODOLOGY 38
- 2.1 RESEARCH DATA 38

FIGURE 2□BATTERY RECYCLING MARKET: RESEARCH DESIGN□38

- 2.1.1 SECONDARY DATA 39
- 2.1.1.1 Key data from secondary sources 39
- 2.1.2 PRIMARY DATA 39
- 2.1.2.1 Key data from primary sources 39
- 2.1.2.2 Participating companies for primary research 40
- 2.1.2.3 Breakdown of primary interviews 40
- 2.1.2.4 Key industry insights 40
- 2.2 MATRIX CONSIDERED FOR ASSESSING DEMAND 41

FIGURE 3∏MAIN MATRIX CONSIDERED FOR ASSESSING DEMAND FOR BATTERY RECYCLING∏41

- 2.3 MARKET SIZE ESTIMATION 41
- 2.3.1 BOTTOM-UP APPROACH 42

FIGURE 4∏MARKET SIZE ESTIMATION: BOTTOM-UP APPROACH∏42

2.3.2 TOP-DOWN APPROACH 42

FIGURE 5∏MARKET SIZE ESTIMATION: TOP-DOWN APPROACH 42

- 2.4 METHODOLOGY FOR SUPPLY-SIDE SIZING OF BATTERY RECYCLING MARKET (1/2) 43
- 2.5 METHODOLOGY FOR SUPPLY-SIDE SIZING OF BATTERY RECYCLING MARKET (2/2) 44
- 2.5.1 CALCULATIONS BASED ON SUPPLY-SIDE ANALYSIS 44
- 2.5.2 GROWTH RATE ASSUMPTIONS/GROWTH FORECAST 45
- 2.6 MARKET BREAKDOWN AND DATA TRIANGULATION 46

FIGURE 6□BATTERY RECYCLING MARKET: DATA TRIANGULATION□46

- 2.7 IMPACT OF RECESSION 47
- 2.8 RESEARCH ASSUMPTIONS 147
- 2.9 RESEARCH LIMITATIONS 47
- 2.10 RISK ANALYSIS 48

3 EXECUTIVE SUMMARY 49

TABLE 2[BATTERY RECYCLING MARKET SNAPSHOT: 2023 VS. 2030[50

Scotts International, EU Vat number: PL 6772247784

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

FIGURE 7 AUTOMOTIVE BATTERIES SEGMENT TO HOLD LARGEST MARKET SHARE DURING FORECAST PERIOD 50

FIGURE 8 EUROPE TO WITNESS HIGHEST CAGR DURING FORECAST PERIOD 51

4□PREMIUM INSIGHTS□52

4.1∏ATTRACTIVE OPPORTUNITIES IN BATTERY RECYCLING MARKET∏52

FIGURE 9 HIGH OUTPUT OF SPENT BATTERIES FROM ELECTRIC VEHICLES TO DRIVE BATTERY RECYCLING MARKET 52

4.2□BATTERY RECYCLING MARKET, BY REGION□52

FIGURE 10∏ASIA PACIFIC SEGMENT TO ACCOUNT FOR LARGEST SHARE DURING FORECAST PERIOD∏52

4.3□BATTERY RECYCLING MARKET, BY SOURCE□53

FIGURE 11 AUTOMOTIVE BATTERIES TO REGISTER HIGHEST CAGR FROM 2023 TO 2030 53

4.4□BATTERY RECYCLING MARKET, BY CHEMISTRY□53

FIGURE 12 | LITHIUM-BASED SEGMENT TO HOLD LARGEST MARKET SHARE DURING FORECAST PERIOD | 53

5∏MARKET OVERVIEW∏54

5.1 | MARKET DYNAMICS | 54

FIGURE 13 DRIVERS, RESTRAINTS, OPPORTUNITIES, AND CHALLENGES IN BATTERY RECYCLING MARKET 54

- 5.1.1 DRIVERS 55
- 5.1.1.1 Increasing demand for electric vehicles 55
- 5.1.1.2 Stringent government regulations and EPA guidelines 55
- 5.1.1.3 Rising demand for recycled products and materials 56
- 5.1.1.4 Increasing awareness of resource conservation 56
- 5.1.2 RESTRAINTS ☐ 56
- $5.1.2.1 \square Safety$ issues related to storage and transportation of spent batteries $\square 56$
- 5.1.3 □ OPPORTUNITIES □ 57
- 5.1.3.1 Growing demand for renewable energy storage 57
- 5.1.3.2∏Increasing adoption of lithium-ion batteries due to decline in price□57
- 5.1.4 CHALLENGES 57
- 5.1.4.1 High cost of recycling and dearth of technologies 57
- 5.2 □ VALUE CHAIN ANALYSIS □ 58

FIGURE 14 VALUE CHAIN ANALYSIS OF BATTERY RECYCLING MARKET 58

?

5.3∏ECOSYSTEM MAP∏59

FIGURE 15 ECOSYSTEM MAP OF BATTERY RECYCLING MARKET 59

TABLE 3∏ECOSYSTEM OF BATTERY RECYCLING MARKET∏60

5.4 PORTER'S FIVE FORCES MODEL 61

5.4.1 PORTER'S FIVE FORCES ANALYSIS FOR LEAD ACID BATTERY RECYCLING 61

FIGURE 16∏LEAD ACID BATTERY RECYCLING MARKET: PORTER'S FIVE FORCES ANALYSIS∏61

TABLE 4 LEAD ACID BATTERY RECYCLING MARKET: PORTER'S FIVE FORCES ANALYSIS 62

- 5.4.1.1 Bargaining power of suppliers 62
- 5.4.1.2 Threat of new entrants 62
- 5.4.1.3 Threat of substitutes 62
- 5.4.1.4 Bargaining power of buyers 63
- 5.4.1.5 Intensity of competitive rivalry 63
- 5.4.2 PORTER'S FIVE FORCES ANALYSIS FOR LITHIUM-ION BATTERY RECYCLING 64

FIGURE 17 LITHIUM-ION BATTERY RECYCLING MARKET: PORTER'S FIVE FORCES ANALYSIS | 64

TABLE 5 TLITHIUM-ION BATTERY RECYCLING MARKET: PORTER'S FIVE FORCES ANALYSIS 65

- 5.4.2.1 Bargaining power of suppliers 65
- 5.4.2.2 Threat of new entrants 65
- 5.4.2.3 Threat of substitutes 65

Scotts International, EU Vat number: PL 6772247784

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

- 5.4.2.4 Bargaining power of buyers 66
- 5.4.2.5 Intensity of competitive rivalry 66
- 5.5 TECHNOLOGY ANALYSIS 66
- 5.5.1□INTRODUCTION□66
- 5.5.2 TECHNOLOGY 66
- 5.5.2.1 Hydrometallurgy 66
- 5.5.3 PYROMETALLURGY 67
- 5.5.4 PYROLYSIS 67
- 5.5.5 MECHANICAL THERMODYNAMIC RECYCLING 68
- 5.5.6 COMPARATIVE ANALYSIS 68
- 5.6 TARIFF AND REGULATORY LANDSCAPE 68
- TABLE 6□REGULATIONS AND STANDARDS FOR BATTERIES□68
- 5.6.1 NORTH AMERICA BATTERY RECYCLING REGULATIONS 70
- 5.6.2 EUROPE BATTERY RECYCLING REGULATIONS 171
- 5.6.3 ASIA PACIFIC BATTERY RECYCLING REGULATIONS 73
- 5.7 PATENT ANALYSIS □ 73
- 5.7.1 METHODOLOGY 73
- 5.7.2 DOCUMENT TYPE 73

FIGURE 18 NUMBER OF GRANTED PATENTS, PATENT APPLICATIONS, AND LIMITED PATENTS 73

FIGURE 19 PUBLICATION TRENDS - LAST 10 YEARS 74

?

5.7.3 INSIGHTS 74

FIGURE 20 LEGAL STATUS OF PATENTS 74

5.7.4 JURISDICTION ANALYSIS 75

FIGURE 21 TOP JURISDICTION, BY DOCUMENT 75

5.7.5 TOP COMPANIES/APPLICANTS 76

FIGURE 22 TOP 10 PATENT APPLICANTS 76

TABLE 7 RECENT PATENTS BY GUANGDONG BRUNP RECYCLING TECHNOLOGY CO., LTD. 76

TABLE 8 RECENT PATENTS BY UNIV CENTRAL SOUTH 77

TABLE 9 RECENT PATENTS BY AQUA METALS, INC. 77

TABLE 10 TOP 10 PATENT OWNERS IN LAST 10 YEARS 78

5.8 CASE STUDY: ATTERO RECYCLING 78

5.8.1 □KEY HIGHLIGHTS □ 79

5.9 KEY CONFERENCES AND EVENTS (2023-2024) 79

TABLE 11 BATTERY RECYCLING MARKET: KEY CONFERENCES AND

EVENTS (2023-2024) [79]

5.10 KEY STAKEHOLDERS AND BUYING CRITERIA 81

5.10.1 KEY STAKEHOLDERS IN BUYING PROCESS 81

FIGURE 23 INFLUENCE OF STAKEHOLDERS ON BUYING PROCESS FOR TOP

THREE END-USE INDUSTRIES[81]

TABLE 12 INFLUENCE OF STAKEHOLDERS ON BUYING PROCESS FOR TOP

THREE END-USE INDUSTRIES (%)[81

5.10.2 BUYING CRITERIA 82

FIGURE 24 KEY BUYING CRITERIA FOR TOP THREE END-USE INDUSTRIES 82

TABLE 13 KEY BUYING CRITERIA FOR TOP THREE END-USE INDUSTRIES 82

5.11 Trends/disruptions impacting customer business 83

FIGURE 25 TRENDS/DISRUPTIONS IMPACTING LITHIUM-ION BATTERY ECOSYSTEM 83

Scotts International, EU Vat number: PL 6772247784

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

5.12 PRICING ANALYSIS OF RAW MATERIALS 83

5.12.1 LITHIUM 83

FIGURE 26 PRICE OF LITHIUM CARBONATE, JANUARY 2019 TO APRIL 2023 84

5.12.2□LEAD□84

FIGURE 27 PRICE OF LEAD, JANUARY 2019 TO APRIL 2023 84

5.12.3 | NICKEL | 84

FIGURE 28 PRICE OF NICKEL, JANUARY 2019 TO APRIL 2023 85

5.12.4 | COBALT | 85

FIGURE 29 PRICE OF COBALT, JANUARY 2019 TO APRIL 2023 85

5.13 TRADE DATA 86

TABLE 14∏IMPORT DATA OF BATTERIES, 2021∏86

TABLE 15 EXPORT DATA OF BATTERIES, 2021 86

?

6□BATTERY RECYCLING MARKET, BY PROCESSING STATE 87

6.1 □ EXTRACTION OF MATERIAL □ 87

6.2□REUSE, REPACKAGING, AND SECOND LIFE□88

6.3 □ DISPOSAL □ 88

7 BATTERY RECYCLING MARKET, BY RECYCLING PROCESS 89

7.1 INTRODUCTION 89

7.2∏HYDROMETALLURGY∏89

7.3 PYROMETALLURGY 90

TABLE 16□COMPARISON OF GENERIC RECYCLING METHODS USED TO RECOVER BATTERY COMPONENTS□90

TABLE 17 BATTERY RECYCLING PROCESSES USED BY DIFFERENT COMPANIES 91

7.4 LEAD ACID BATTERY RECYCLING PROCESS 91

7.5 LITHIUM-ION BATTERY RECYCLING PROCESS 92

7.5.1 GROWTH OPPORTUNITIES FOR LITHIUM-ION BATTERY RECYCLING MARKET 92

TABLE 18 OVERALL BATTERY RECYCLING CAPACITIES OF VARIOUS COUNTRIES 93

8□BATTERY RECYCLING MARKET, BY MATERIAL□94

8.1 INTRODUCTION 94

8.2∏METALS∏94

TABLE 19 METALS BY WEIGHT PERCENTAGE IN MOST COMMON BATTERY CHEMISTRIES 94

TABLE 20 MAJOR RECOVERABLE METALS FROM VARIOUS BATTERY CHEMISTRIES AFTER RECYCLING 194

 $8.3 \verb||ELECTROLYTES|| 95$

8.4 PLASTICS 95

8.5 OTHER COMPONENTS 95

9□BATTERY RECYCLING MARKET, BY CHEMISTRY□96

9.1⊓INTRODUCTION□97

FIGURE 30∏LITHIUM-BASED SEGMENT TO LEAD BATTERY RECYCLING MARKET DURING FORECAST PERIOD∏97

TABLE 21 BATTERY RECYCLING MARKET, BY CHEMISTRY, 2018-2020 (USD MILLION) 97

TABLE 22 BATTERY RECYCLING MARKET, BY CHEMISTRY, 2021-2030 (USD MILLION) 98

9.2□LEAD ACID□98

9.2.1 LOW RECYCLING COSTS AND HIGH RECOVERY RATE TO DRIVE MARKET 98

TABLE 23 LEAD ACID BATTERIES: BATTERY RECYCLING MARKET, BY REGION,

2018-2020 (USD MILLION) □99

TABLE 24 LEAD ACID BATTERIES: BATTERY RECYCLING MARKET, BY REGION,

2021-2030 (USD MILLION)∏99

9.3 NICKEL-BASED 99

Scotts International, EU Vat number: PL 6772247784

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

9.3.1 HIGHER POWER DENSITY TO DRIVE SEGMENT GROWTH 99

TABLE 25 NICKEL-BASED BATTERIES: BATTERY RECYCLING MARKET, BY REGION, 2018-2020 (USD MILLION) 100 TABLE 26 NICKEL-BASED BATTERIES: BATTERY RECYCLING MARKET, BY REGION, 2021-2030 (USD MILLION) 100 9.4 LITHIUM-BASED 101

9.4.1 INCREASING GLOBAL CONSUMPTION TO DRIVE MARKET 101

TABLE 27 LITHIUM-BASED BATTERIES: BATTERY RECYCLING MARKET, BY REGION, 2018-2020 (USD MILLION) 101

TABLE 28 \square LITHIUM-BASED BATTERIES: BATTERY RECYCLING MARKET, BY REGION, 2021-2030 (USD MILLION) \square 102

TABLE 29 AUTOMOTIVE LITHIUM-BASED: BATTERY RECYCLING MARKET, BY REGION, 2018-2020 (UNITS) 102 TABLE 30 AUTOMOTIVE LITHIUM-BASED: BATTERY RECYCLING MARKET, BY REGION, 2021-2030 (UNITS) 102

9.5[OTHERS[]103

TABLE 31 OTHERS: BATTERY RECYCLING MARKET, BY REGION,

2018-2020 (USD MILLION)∏103

TABLE 32 OTHERS: BATTERY RECYCLING MARKET, BY REGION,

2021-2030 (USD MILLION) 103

10 BATTERY RECYCLING MARKET, BY SOURCE 104

10.1 INTRODUCTION 105

FIGURE 31 | AUTOMOTIVE BATTERIES SEGMENT TO DOMINATE BATTERY RECYCLING MARKET DURING FORECAST PERIOD | 105

TABLE 33 BATTERY RECYCLING MARKET, BY SOURCE, 2018-2020 (USD MILLION) 105

TABLE 34 BATTERY RECYCLING MARKET, BY SOURCE, 2021-2030 (USD MILLION) 106

10.2∏AUTOMOTIVE BATTERIES∏106

10.2.1 HIGH DEMAND FOR ELECTRIC VEHICLES TO DRIVE MARKET GROWTH 106

TABLE 35 AUTOMOTIVE BATTERIES: BATTERY RECYCLING MARKET, BY REGION,

2018-2020 (USD MILLION) 107

TABLE 36 AUTOMOTIVE BATTERIES: BATTERY RECYCLING MARKET, BY REGION,

2021-2030 (USD MILLION)∏107

10.3□INDUSTRIAL BATTERIES□107

10.3.1 NEED FOR POWER BACKUP IN INDUSTRIAL SECTOR TO SUPPORT MARKET GROWTH 10.7 10.3.1 NEED FOR POWER BACKUP IN INDUSTRIAL SECTOR TO SUPPORT MARKET GROWTH 10.7 10.3.1 NEED FOR POWER BACKUP IN INDUSTRIAL SECTOR TO SUPPORT MARKET GROWTH 10.7 10.3.1 NEED FOR POWER BACKUP IN INDUSTRIAL SECTOR TO SUPPORT MARKET GROWTH 10.7 10.3.1 NEED FOR POWER BACKUP IN INDUSTRIAL SECTOR TO SUPPORT MARKET GROWTH 10.7 10.3.1 NEED FOR POWER BACKUP IN INDUSTRIAL SECTOR TO SUPPORT MARKET GROWTH 10.7 10.3.1 NEED FOR POWER BACKUP IN INDUSTRIAL SECTOR TO SUPPORT MARKET GROWTH 10.7 10.3.1 NEED FOR POWER BACKUP IN INDUSTRIAL SECTOR TO SUPPORT MARKET GROWTH 10.7 10.3 NEED FOR POWER BACKUP IN INDUSTRIAL SECTOR TO SUPPORT MARKET GROWTH 10.7 10.3 NEED FOR POWER BACKUP IN INDUSTRIAL SECTOR TO SUPPORT MARKET GROWTH 10.7 10.3 NEED FOR POWER BACKUP IN INDUSTRIAL SECTOR TO SUPPORT MARKET GROWTH 10.7 10.3 NEED FOR POWER BACKUP IN INDUSTRIAL SECTOR TO SUPPORT MARKET GROWTH 10.7 10.3 NEED FOR POWER BACKUP IN INDUSTRIAL SECTOR TO SUPPORT MARKET GROWTH 10.7 10.3 NEED FOR POWER BACKUP IN INDUSTRIAL SECTOR TO SUPPORT MARKET GROWTH 10.7 NEED FOR POWER BACKUP IN INDUSTRIAL SECTOR TO SUPPORT MARKET GROWTH 10.7 NEED FOR POWER BACKUP IN INDUSTRIAL SECTOR TO SUPPORT MARKET GROWTH 10.7 NEED FOR POWER BACKUP IN INDUSTRIAL SECTOR TO SUPPORT MARKET GROWTH 10.7 NEED FOR POWER BACKUP IN INDUSTRIAL SECTOR TO SUPPORT MARKET GROWTH 10.7 NEED FOR POWER BACKUP IN INDUSTRIAL SECTOR TO SUPPORT MARKET GROWTH 10.7 NEED FOR POWER BACKUP IN INDUSTRIAL SECTOR TO SUPPORT MARKET GROWTH 10.7 NEED FOR POWER BACKUP IN INDUSTRIAL SECTOR TO SUPPORT MARKET GROWTH 10.7 NEED FOR POWER BACKUP IN INDUSTRIAL SECTOR TO SUPPORT MARKET GROWTH 10.7 NEED FOR POWER BACKUP IN INDUSTRIAL SECTOR TO SUPPORT MARKET GROWTH 10.7 NEED FOR POWER BACKUP IN INDUSTRIAL SECTOR TO SUPPORT MARKET GROWTH 10.7 NEED FOR POWER BACKUP IN INDUSTRIAL SECTOR TO SUPPORT MARKET SECTOR TO SUPPORT MARKET SECTOR TO SUPPORT MARKET SECTOR TO SUPPORT SECTOR

TABLE 37 INDUSTRIAL BATTERIES: BATTERY RECYCLING MARKET, BY REGION,

2018-2020 (USD MILLION)[108

TABLE 38 INDUSTRIAL BATTERIES: BATTERY RECYCLING MARKET, BY REGION,

2021-2030 (USD MILLION)[108

10.4 CONSUMER & ELECTRONIC APPLIANCE BATTERIES 108

10.4.1 GROWING USE OF CONSUMER & ELECTRONIC APPLIANCES TO PROPEL MARKET DEMAND 108

TABLE 39[]CONSUMER & ELECTRONIC APPLIANCE BATTERIES: BATTERY RECYCLING MARKET, BY REGION, 2018-2020 (USD MILLION)[]109

TABLE 40 CONSUMER & ELECTRONIC APPLIANCE BATTERIES: BATTERY RECYCLING MARKET, BY REGION, 2021-2030 (USD MILLION) 109

?

11 BATTERY RECYCLING MARKET, BY REGION 110

 $11.1 \verb||INTRODUCTION|| 111$

FIGURE 32□BATTERY RECYCLING MARKET, BY REGION (USD MILLION)□111

TABLE 41 \square BATTERY RECYCLING MARKET, BY REGION, 2018-2020 (USD MILLION) \square 111

TABLE 42 BATTERY RECYCLING MARKET, BY REGION, 2021-2030 (USD MILLION) 112

11.2□ASIA PACIFIC□112

11.2.1□IMPACT OF RECESSION□112

FIGURE 33 ASIA PACIFIC BATTERY RECYCLING MARKET SNAPSHOT 113

TABLE 43 ASIA PACIFIC: BATTERY RECYCLING MARKET, BY COUNTRY,

Scotts International. EU Vat number: PL 6772247784

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

2018-2020 (USD MILLION)[114

TABLE 44 ASIA PACIFIC: BATTERY RECYCLING MARKET, BY COUNTRY,

2021-2030 (USD MILLION) □114

TABLE 45 ASIA PACIFIC: BATTERY RECYCLING MARKET, BY CHEMISTRY,

2018-2020 (USD MILLION) ☐ 115

TABLE 46 ASIA PACIFIC: BATTERY RECYCLING MARKET, BY CHEMISTRY,

2021-2030 (USD MILLION) □115

TABLE 47 ASIA PACIFIC: BATTERY RECYCLING MARKET, BY SOURCE,

2018-2020 (USD MILLION)[115

TABLE 48 ASIA PACIFIC: BATTERY RECYCLING MARKET, BY SOURCE,

2021-2030 (USD MILLION) □116

11.2.2 | CHINA | 116

11.2.2.1 Growing electric vehicle market to propel battery recycling in China 116

TABLE 49 CHINA: BATTERY RECYCLING MARKET, BY SOURCE,

2018-2020 (USD MILLION) □116

TABLE 50 CHINA: BATTERY RECYCLING MARKET, BY SOURCE,

2021-2030 (USD MILLION) ☐ 117

11.2.3□INDIA□117

11.2.3.1 Increasing cleaner energy initiatives to drive market 117

TABLE 51 INDIA: BATTERY RECYCLING MARKET, BY SOURCE,

2018-2020 (USD MILLION)[117

TABLE 52 INDIA: BATTERY RECYCLING MARKET, BY SOURCE,

2021-2030 (USD MILLION)∏118

11.2.4∏APAN∏118

11.2.4.1 Growth in battery manufacturing to create demand for recycling 118

TABLE 53∏JAPAN: BATTERY RECYCLING MARKET, BY SOURCE,

2018-2020 (USD MILLION) П118

TABLE 54 JAPAN: BATTERY RECYCLING MARKET, BY SOURCE,

2021-2030 (USD MILLION)[119

11.2.5 SOUTH KOREA 119

11.2.5.1 Substantial growth in automotive sector to positively impact market 119

TABLE 55 SOUTH KOREA: BATTERY RECYCLING MARKET, BY SOURCE,

2018-2020 (USD MILLION)□119

TABLE 56 SOUTH KOREA: BATTERY RECYCLING MARKET, BY SOURCE,

2021-2030 (USD MILLION) ☐ 120

?

11.2.6 INDONESIA 120

11.2.6.1 Lead-acid batteries to drive growth 120

TABLE 57 INDONESIA: BATTERY RECYCLING MARKET, BY SOURCE,

2018-2020 (USD MILLION)∏120

TABLE 58 INDONESIA: BATTERY RECYCLING MARKET, BY SOURCE,

2021-2030 (USD MILLION) \square 120

 $11.2.7 \verb|| MALAYSIA \verb||| 121$

11.2.7.1 Requirement of energy storage to increase demand for battery recycling 121

TABLE 59 MALAYSIA: BATTERY RECYCLING MARKET, BY SOURCE,

2018-2020 (USD MILLION) \square 121

TABLE 60 MALAYSIA: BATTERY RECYCLING MARKET, BY SOURCE,

Scotts International, EU Vat number: PL 6772247784

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

www.scotts-international.com

2021-2030 (USD MILLION)∏121

11.2.8 AUSTRALIA 122

11.2.8.1□Supportive government policies to aid market growth□122

TABLE 61

∏AUSTRALIA: BATTERY RECYCLING MARKET, BY SOURCE,

2018-2020 (USD MILLION)∏122

TABLE 62 AUSTRALIA: BATTERY RECYCLING MARKET, BY SOURCE,

2021-2030 (USD MILLION)[122

11.2.9 TAIWAN 122

11.2.9.1 Increasing number of vehicles to support market growth 122

TABLE 63 TAIWAN: BATTERY RECYCLING MARKET, BY SOURCE,

2018-2020 (USD MILLION) П123

TABLE 64 TAIWAN: BATTERY RECYCLING MARKET, BY SOURCE,

2021-2030 (USD MILLION) П123

11.2.10 | THAILAND | 123

11.2.10.1 Electric mobility sector to drive market 123

TABLE 65 \square THAILAND: BATTERY RECYCLING MARKET, BY SOURCE, 2018-2020 (USD MILLION) \square 123

TABLE 66[]THAILAND: BATTERY RECYCLING MARKET, BY SOURCE, 2021-2030 (USD MILLION)[]124

11.2.11 REST OF ASIA PACIFIC 124

TABLE 67 REST OF ASIA PACIFIC: BATTERY RECYCLING MARKET, BY SOURCE, 2018-2020 (USD MILLION) 124

TABLE 68 REST OF ASIA PACIFIC: BATTERY RECYCLING MARKET, BY SOURCE, 2021-2030 (USD MILLION) 124

11.3 NORTH AMERICA 125

11.3.1□IMPACT OF RECESSION□125

FIGURE 34 NORTH AMERICA BATTERY RECYCLING MARKET SNAPSHOT 125

TABLE 69∏NORTH AMERICA: BATTERY RECYCLING MARKET, BY COUNTRY, 2018-2020 (USD MILLION)∏126

TABLE 70 NORTH AMERICA: BATTERY RECYCLING MARKET, BY COUNTRY, 2021-2030 (USD MILLION) 126

TABLE 71 NORTH AMERICA: BATTERY RECYCLING MARKET, BY CHEMISTRY, 2018-2020 (USD MILLION) □ 126

TABLE 72 NORTH AMERICA: BATTERY RECYCLING MARKET, BY CHEMISTRY, 2021-2030 (USD MILLION) 127

TABLE 73∏NORTH AMERICA: BATTERY RECYCLING MARKET, BY SOURCE, 2018-2020 (USD MILLION)∏127

TABLE 74 NORTH AMERICA: BATTERY RECYCLING MARKET, BY SOURCE, 2021-2030 (USD MILLION) 127

11.3.2∏US∏128

11.3.2.1 US to lead market in North America 128

TABLE 75∏US: BATTERY RECYCLING MARKET, BY SOURCE, 2018-2020 (USD MILLION)∏128

TABLE 76 US: BATTERY RECYCLING MARKET, BY SOURCE, 2021-2030 (USD MILLION) 128

11.3.3 CANADA 129

11.3.3.1 Battery recycling programs to support market 129

TABLE 77∏CANADA: BATTERY RECYCLING MARKET, BY SOURCE, 2018-2020 (USD MILLION)∏129

TABLE 78 CANADA: BATTERY RECYCLING MARKET, BY SOURCE, 2021-2030 (USD MILLION) 129

11.3.4 MEXICO 129

11.3.4.1 $\hspace{-0.05cm}\square$ Government initiatives to fuel demand $\hspace{-0.05cm}\square$ 129

TABLE 79 MEXICO: BATTERY RECYCLING MARKET, BY SOURCE, 2018-2020 (USD MILLION) 130

TABLE 80 MEXICO: BATTERY RECYCLING MARKET, BY SOURCE, 2021-2030 (USD MILLION) 130

11.4 EUROPE 130

11.4.1□IMPACT OF RECESSION□130

FIGURE 35∏EUROPE BATTERY RECYCLING MARKET SNAPSHOT∏131

TABLE 81 EUROPE: BATTERY RECYCLING MARKET, BY COUNTRY, 2018-2020 (USD MILLION) 132 TABLE 82 EUROPE: BATTERY RECYCLING MARKET, BY COUNTRY, 2021-2030 (USD MILLION) 132

TABLE 83 EUROPE: BATTERY RECYCLING MARKET, BY CHEMISTRY, 2018-2020 (USD MILLION) 132

Scotts International, EU Vat number: PL 6772247784

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

TABLE 84 EUROPE: BATTERY RECYCLING MARKET, BY CHEMISTRY, 2021-2030 (USD MILLION) 133 TABLE 85 EUROPE: BATTERY RECYCLING MARKET, BY SOURCE, 2018-2020 (USD MILLION) 133 TABLE 86 EUROPE: BATTERY RECYCLING MARKET, BY SOURCE, 2021-2030 (USD MILLION) 133 11.4.2 GERMANY 134

11.4.2.1 Shift toward renewable energy to drive market 134

TABLE 87 GERMANY: BATTERY RECYCLING MARKET, BY SOURCE, 2018-2020 (USD MILLION) 134 TABLE 88 GERMANY: BATTERY RECYCLING MARKET, BY SOURCE, 2021-2030 (USD MILLION) 134 11.4.3 UK 134

11.4.3.1 Growth of electric vehicles to propel demand 134

TABLE 89 UK: BATTERY RECYCLING MARKET, BY SOURCE, 2018-2020 (USD MILLION) 135 TABLE 90 UK: BATTERY RECYCLING MARKET, BY SOURCE, 2021-2030 (USD MILLION) 135

11.4.4 □ FRANCE □ 135

 $11.4.4.1 \verb|| Development in battery recycling technologies to fuel market growth \verb||| 135$

TABLE 91 \square FRANCE: BATTERY RECYCLING MARKET, BY SOURCE, 2018-2020 (USD MILLION) \square 136 TABLE 92 \square FRANCE: BATTERY RECYCLING MARKET, BY SOURCE, 2021-2030 (USD MILLION) \square 136 11.4.5 \square ITALY \square 136

11.4.5.1 Increasing capacity to recycle batteries and electric vehicles sales to drive market 136 TABLE 93 ITALY: BATTERY RECYCLING MARKET, BY SOURCE, 2018-2020 (USD MILLION) 136 TABLE 94 ITALY: BATTERY RECYCLING MARKET, BY SOURCE, 2021-2030 (USD MILLION) 137 11.4.6 SPAIN 137

 $11.4.6.1 \\ \square Growing investments to promote electric vehicle sales to propel market \\ \square 137$

TABLE 95□SPAIN: BATTERY RECYCLING MARKET, BY SOURCE, 2018-2020 (USD MILLION)□137

TABLE 96□SPAIN: BATTERY RECYCLING MARKET, BY SOURCE, 2021-2030 (USD MILLION)□137

11.4.7 NETHERLANDS 138

11.4.7.1 Growing consumer electronics industry to support market growth 138

TABLE 97 NETHERLANDS: BATTERY RECYCLING MARKET, BY SOURCE, 2018-2020 (USD MILLION) 138 TABLE 98 NETHERLANDS: BATTERY RECYCLING MARKET, BY SOURCE, 2021-2030 (USD MILLION) 138 11.4.8 REST OF EUROPE 138

TABLE 99 REST OF EUROPE: BATTERY RECYCLING MARKET, BY SOURCE, 2018-2020 (USD MILLION) 139 TABLE 100 REST OF EUROPE: BATTERY RECYCLING MARKET, BY SOURCE, 2021-2030 (USD MILLION) 139 11.5 SOUTH AMERICA 139

11.5.1⊓IMPACT OF RECESSION⊓139

TABLE 101 SOUTH AMERICA: BATTERY RECYCLING MARKET, BY COUNTRY, 2018-2020 (USD MILLION) 140 TABLE 102 SOUTH AMERICA: BATTERY RECYCLING MARKET, BY COUNTRY, 2021-2030 (USD MILLION) 140 TABLE 103 SOUTH AMERICA: BATTERY RECYCLING MARKET, BY CHEMISTRY, 2018-2020 (USD MILLION) 140 TABLE 104 SOUTH AMERICA BATTERY RECYCLING MARKET, BY CHEMISTRY, 2021-2030 (USD MILLION) 141 TABLE 105 SOUTH AMERICA BATTERY RECYCLING MARKET, BY SOURCE, 2018-2020 (USD MILLION) 141 TABLE 106 SOUTH AMERICA BATTERY RECYCLING MARKET, BY SOURCE, 2021-2030 (USD MILLION) 141 7

11.5.2 BRAZIL 142

11.5.2.1 Brazil to lead market in South America during forecast period 142

TABLE 107 BRAZIL: BATTERY RECYCLING MARKET, BY SOURCE, 2018-2020 (USD MILLION) 142

TABLE 108∏BRAZIL: BATTERY RECYCLING MARKET, BY SOURCE, 2021-2030 (USD MILLION)∏142

11.5.3 | ARGENTINA | 143

11.5.3.1 Development of battery recycling facilities to drive market 143

TABLE 109 ARGENTINA: BATTERY RECYCLING MARKET, BY SOURCE, 2018-2020 (USD MILLION) 143

Scotts International, EU Vat number: PL 6772247784

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

```
TABLE 110 ARGENTINA: BATTERY RECYCLING MARKET, BY SOURCE, 2021-2030 (USD MILLION) 11.5.4 CHILE 143
```

11.5.4.1 Battery recycling market to register second-highest CAGR in South America 143

TABLE 111∏CHILE: BATTERY RECYCLING MARKET, BY SOURCE, 2018-2020 (USD MILLION)∏144

TABLE 112∏CHILE: BATTERY RECYCLING MARKET, BY SOURCE, 2021-2030 (USD MILLION)∏144

11.5.5 REST OF SOUTH AMERICA 144

TABLE 113 TREST OF SOUTH AMERICA: BATTERY RECYCLING MARKET, BY SOURCE, 2018-2020 (USD MILLION) 144 TABLE 114 REST OF SOUTH AMERICA: BATTERY RECYCLING MARKET, BY SOURCE, 2021-2030 (USD MILLION) 145 11.6 MIDDLE EAST & AFRICA 145

11.6.1∏IMPACT OF RECESSION∏145

TABLE 115 MIDDLE EAST & AFRICA: BATTERY RECYCLING MARKET, BY COUNTRY, 2018-2020 (USD MILLION) 145
TABLE 116 MIDDLE EAST & AFRICA: BATTERY RECYCLING MARKET, BY COUNTRY, 2021-2030 (USD MILLION) 146
TABLE 117 MIDDLE EAST & AFRICA: BATTERY RECYCLING MARKET, BY CHEMISTRY, 2018-2020 (USD MILLION) 146
TABLE 118 MIDDLE EAST & AFRICA: BATTERY RECYCLING MARKET, BY CHEMISTRY, 2021-2030 (USD MILLION) 146
TABLE 119 MIDDLE EAST & AFRICA: BATTERY RECYCLING MARKET, BY SOURCE, 2018-2020 (USD MILLION) 147
TABLE 120 MIDDLE EAST & AFRICA: BATTERY RECYCLING MARKET, BY SOURCE, 2021-2030 (USD MILLION) 147
11.6.2 SAUDI ARABIA 147

11.6.2.1 Government initiatives toward renewable energy sector to drive demand for battery recycling 147 TABLE 121 SAUDI ARABIA: BATTERY RECYCLING MARKET, BY SOURCE, 2018-2020 (USD MILLION) 147 TABLE 122 SAUDI ARABIA: BATTERY RECYCLING MARKET, BY SOURCE, 2021-2030 (USD MILLION) 148?

11.6.3 UAE 148

11.6.3.1 Government support to enhance electric vehicles to drive market 148

TABLE 123 UAE: BATTERY RECYCLING MARKET, BY SOURCE, 2018-2020 (USD MILLION) 148

TABLE 124∏UAE: BATTERY RECYCLING MARKET, BY SOURCE, 2021-2030 (USD MILLION)∏148

11.6.4 SOUTH AFRICA 149

11.6.4.1 Automotive batteries segment to lead market 149

TABLE 125 SOUTH AFRICA: BATTERY RECYCLING MARKET, BY SOURCE, 2018-2020 (USD MILLION) 149 TABLE 126 SOUTH AFRICA: BATTERY RECYCLING MARKET, BY SOURCE, 2021-2030 (USD MILLION) 11.6.5 EGYPT 149

11.6.5.1 Focus on electronic waste management to enhance market growth 149

TABLE 127∏EGYPT: BATTERY RECYCLING MARKET, BY SOURCE, 2018-2020 (USD MILLION)∏150

TABLE 128 EGYPT: BATTERY RECYCLING MARKET, BY SOURCE, 2021-2030 (USD MILLION) 150

11.6.6 REST OF MIDDLE EAST & AFRICA 150

TABLE 129 REST OF MIDDLE EAST & AFRICA: BATTERY RECYCLING MARKET, BY SOURCE, 2018-2020 (USD MILLION) 150 TABLE 130 REST OF MIDDLE EAST & AFRICA: BATTERY RECYCLING MARKET, BY SOURCE, 2021-2030 (USD MILLION) 151 12 COMPETITIVE LANDSCAPE 152

12.1□INTRODUCTION□152

12.2 STRATEGIES ADOPTED BY KEY PLAYERS 152

TABLE 131 OVERVIEW OF STRATEGIES ADOPTED BY KEY MANUFACTURERS 152

12.3 MARKET SHARE ANALYSIS 154

12.3.1 RANKING OF KEY MARKET PLAYERS, 2022 154

FIGURE 36 RANKING OF TOP SIX PLAYERS IN BATTERY RECYCLING MARKET, 2022 154

12.3.2 MARKET SHARE OF KEY PLAYERS 154

FIGURE 37 BATTERY RECYCLING MARKET SHARE ANALYSIS 155

TABLE 132 BATTERY RECYCLING MARKET: DEGREE OF COMPETITION 155

12.3.2.1 Call2Recycle, Inc. 155

Scotts International, EU Vat number: PL 6772247784

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

12.3.2.2 Cirba Solutions 156

12.3.2.3 Element Resources 156

12.3.2.4 Umicore 156

12.3.2.5 Contemporary Amperex Technology Co., Limited 156

12.3.2.6 Exide Industries Ltd. 156

12.3.3 REVENUE ANALYSIS OF TOP 6 PLAYERS 157

FIGURE 38 REVENUE ANALYSIS OF KEY COMPANIES (2018-2022) 157

12.4 COMPANY PRODUCT FOOTPRINT ANALYSIS 158

FIGURE 39[BATTERY RECYCLING MARKET: COMPANY FOOTPRINT[]158
TABLE 133[BATTERY RECYCLING MARKET: CHEMISTRY FOOTPRINT[]159

?

TABLE 134 BATTERY RECYCLING MARKET: RECYCLING PROCESS FOOTPRINT 160
TABLE 135 BATTERY RECYCLING MARKET: COMPANY REGION FOOTPRINT 161

12.5 COMPANY EVALUATION MATRIX (TIER 1) 162

12.5.1□STARS□162

12.5.2∏EMERGING LEADERS∏162

12.5.3 PERVASIVE PLAYERS 162

12.5.4 PARTICIPANTS 162

FIGURE 40 COMPANY EVALUATION QUADRANT: BATTERY RECYCLING MARKET (TIER 1 COMPANIES) 163

12.6 COMPETITIVE BENCHMARKING 164

TABLE 136 BATTERY RECYCLING MARKET: DETAILED LIST OF KEY STARTUPS/SMES 164

TABLE 137□BATTERY RECYCLING MARKET: COMPETITIVE BENCHMARKING OF KEY STARTUPS/SMES□165

12.7 STARTUP/SME EVALUATION QUADRANT 166

12.7.1 PROGRESSIVE COMPANIES 166

12.7.2 RESPONSIVE COMPANIES 166

12.7.3 DYNAMIC COMPANIES 166

12.7.4 STARTING BLOCKS 166

FIGURE 41 STARTUP/SM EVALUATION QUADRANT: BATTERY RECYCLING MARKET 167

12.8 RECENT DEVELOPMENTS 168

12.8.1 ☐ PRODUCT LAUNCHES ☐ 168

TABLE 138 BATTERY RECYCLING MARKET: PRODUCT LAUNCHES (2019-APRIL 2023) 168

12.8.2 | DEALS | 168

TABLE 139□BATTERY RECYCLING MARKET: DEALS (2019-APRIL 2023)□168

12.8.3 OTHER DEVELOPMENTS 182

TABLE 140 BATTERY RECYCLING MARKET: EXPANSIONS, INVESTMENTS, AND INNOVATIONS (2019-APRIL 2023) 182

13 COMPANY PROFILES 188

(Business overview, Products offered, Recent Developments, MNM view)*

13.1 KEY COMPANIES 188

13.1.1 CALL2RECYCLE, INC. 188

TABLE 141 CALL2RECYCLE, INC.: COMPANY OVERVIEW 188
TABLE 142 CALL2RECYCLE, INC.: PRODUCTS OFFERED 188

TABLE 143 CALL2RECYCLE, INC.: DEALS 189

13.1.2∏CIRBA SOLUTIONS∏191

TABLE 144 CIRBA SOLUTIONS: COMPANY OVERVIEW 191
TABLE 145 CIRBA SOLUTIONS: PRODUCTS OFFERED 191

TABLE 146 CIRBA SOLUTIONS: DEALS 192
TABLE 147 CIRBA SOLUTIONS: OTHERS 193

Scotts International, EU Vat number: PL 6772247784

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

13.1.3 ELEMENT RESOURCES 194

?

TABLE 148 ELEMENT RESOURCES: COMPANY OVERVIEW 194 TABLE 149 ELEMENT RESOURCES: PRODUCTS OFFERED 194

13.1.4 UMICORE 196

TABLE 150 UMICORE: COMPANY OVERVIEW 196
FIGURE 42 UMICORE: COMPANY SNAPSHOT 197
TABLE 151 UMICORE: PRODUCTS OFFERED 197

TABLE 152 UMICORE: DEALS 198

13.1.5 CONTEMPORARY AMPEREX TECHNOLOGY CO., LIMITED 201

TABLE 153[CONTEMPORARY AMPEREX TECHNOLOGY CO., LIMITED: COMPANY OVERVIEW[201 TABLE 154]CONTEMPORARY AMPEREX TECHNOLOGY CO., LIMITED: PRODUCTS OFFERED[201

TABLE 155 CONTEMPORARY AMPEREX TECHNOLOGY CO., LIMITED: DEALS 202 TABLE 156 CONTEMPORARY AMPEREX TECHNOLOGY CO., LIMITED: OTHERS 203

13.1.6 EXIDE INDUSTRIES LTD. 204

TABLE 157 EXIDE INDUSTRIES LTD.: COMPANY OVERVIEW 204 FIGURE 43 EXIDE INDUSTRIES LTD.: COMPANY SNAPSHOT 204 TABLE 158 EXIDE INDUSTRIES LTD.: PRODUCTS OFFERED 205

TABLE 159 EXIDE INDUSTRIES LTD.: OTHERS 205

13.1.7 ☐ ACCUREC RECYCLING GMBH ☐ 206

TABLE 160

[ACCUREC RECYCLING GMBH: COMPANY OVERVIEW]

[206]

TABLE 161

[ACCUREC RECYCLING GMBH: PRODUCTS OFFERED]

[206]

TABLE 162

ACCUREC RECYCLING GMBH: OTHERS

13.1.8

AMERICAN BATTERY TECHNOLOGY COMPANY

208

TABLE 163 AMERICAN BATTERY TECHNOLOGY COMPANY: COMPANY OVERVIEW 208 TABLE 164 AMERICAN BATTERY TECHNOLOGY COMPANY: PRODUCTS OFFERED 208

TABLE 165

AMERICAN BATTERY TECHNOLOGY COMPANY: DEALS

TABLE 166

AMERICAN BATTERY TECHNOLOGY COMPANY: OTHERS

13.1.9 AQUA METALS, INC. 210

TABLE 167

AQUA METALS, INC.: COMPANY OVERVIEW

10210

FIGURE 44

AQUA METALS, INC.: COMPANY SNAPSHOT

11211

TABLE 168

AQUA METALS, INC.: PRODUCTS OFFERED

211

TABLE 169

AQUA METALS, INC.: DEALS

11

TABLE 170

AQUA METALS, INC.: OTHERS

12

12

13.1.10 EAST PENN MANUFACTURING COMPANY 213

TABLE 171 EAST PENN MANUFACTURING COMPANY: COMPANY OVERVIEW 213
TABLE 172 EAST PENN MANUFACTURING COMPANY: PRODUCTS OFFERED 213

13.1.11 ECOBAT 214

TABLE 173 \square ECOBAT: COMPANY OVERVIEW \square 214 ABLE 174 \square ECOBAT: PRODUCTS OFFERED \square 214

TABLE 175 ECOBAT: DEALS 215
TABLE 176 ECOBAT: OTHERS 215

?

13.1.12□ENERSYS□216

TABLE 177 ENERSYS: COMPANY OVERVIEW 216 FIGURE 45 ENERSYS: COMPANY SNAPSHOT 216 TABLE 178 ENERSYS: PRODUCTS OFFERED 217

Scotts International. EU Vat number: PL 6772247784

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

www.scotts-international.com

13.1.13 FORTUM 218

TABLE 179 FORTUM: COMPANY OVERVIEW 218 FIGURE 46 FORTUM: COMPANY SNAPSHOT 219 TABLE 180 FORTUM: PRODUCTS OFFERD 219

TABLE 181 FORTUM: DEALS 220 TABLE 182 FORTUM: OTHERS 220 13.1.14 GEM CO., LTD. 222

TABLE 183 GEM CO., LTD.: COMPANY OVERVIEW 222
TABLE 184 GEM CO., LTD.: PRODUCTS OFFERED 222

TABLE 185 GEM CO., LTD.: DEALS 223

 $13.1.15 \\ \square GLENCORE \\ \square 224$

TABLE 186 GLENCORE: COMPANY OVERVIEW 224 FIGURE 47 GLENCORE: COMPANY SNAPSHOT 225 TABLE 187 GLENCORE: PRODUCTS OFFERED 225

TABLE 188 GLENCORE: DEALS 226 13.1.16 GOPHER RESOURCE 227

TABLE 189 GOPHER RESOURCE: COMPANY OVERVIEW 227 TABLE 190 GOPHER RESOURCE: PRODUCTS OFFERED 227

TABLE 191 GOPHER RESOURCE: DEALS 228

13.1.17 GRAVITA INDIA LTD. □229

TABLE 192 GRAVITA INDIA LTD.: COMPANY OVERVIEW 229 FIGURE 48 GRAVITA INDIA LTD.: COMPANY SNAPSHOT 230 TABLE 193 GRAVITA INDIA LTD.: PRODUCTS OFFERD 230

TABLE 194 GRAVITA INDIA LTD.: OTHERS 231

13.1.18 LI-CYCLE CORP. 232

TABLE 195 LI-CYCLE CORP.: COMPANY OVERVIEW 232 FIGURE 49 LI-CYCLE CORP.: COMPANY SNAPSHOT 232 TABLE 196 LI-CYCLE CORP.: PRODUCTS OFFERED 233

TABLE 197 LI-CYCLE CORP.: DEALS 233
TABLE 198 LI-CYCLE CORP.: OTHERS 235

13.1.19 NEOMETALS LTD. 236

TABLE 199 NEOMETALS LTD.: COMPANY OVERVIEW 236
TABLE 200 NEOMETALS LTD.: PRODUCTS OFFERED 236
TABLE 201 NEOMETALS LTD.: PRODUCT LAUNCHES 237

TABLE 202 NEOMETALS LTD.: DEALS 237
TABLE 203 NEOMETALS LTD.: OTHERS 237

?

13.1.20 RAW MATERIALS COMPANY 239

TABLE 204 RAW MATERIALS COMPANY: COMPANY OVERVIEW 239 TABLE 205 RAW MATERIALS COMPANY: PRODUCTS OFFERED 239

13.1.21 RECYCLICO BATTERY MATERIALS INC. 240

TABLE 206 RECYCLICO BATTERY MATERIALS INC.: COMPANY OVERVIEW 240 TABLE 207 RECYCLICO BATTERY MATERIALS INC.: PRODUCTS OFFERED 240 TABLE 208 RECYCLICO BATTERY MATERIALS INC.: PRODUCT LAUNCHES 240

TABLE 209 RECYCLICO BATTERY MATERIALS INC.: DEALS 241

13.1.22 \square REDWOOD MATERIALS INC. \square 243

TABLE 210 REDWOOD MATERIALS INC.: COMPANY OVERVIEW 243

Scotts International, EU Vat number: PL 6772247784

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

TABLE 211 REDWOOD MATERIALS INC.: PRODUCTS OFFERED 243

TABLE 212 REDWOOD MATERIALS INC.: DEALS 244
TABLE 213 REDWOOD MATERIALS INC.: OTHERS 245

13.1.23 SHENZHEN HIGHPOWER TECHNOLOGY CO., LTD. 246

TABLE 214 SHENZHEN HIGHPOWER TECHNOLOGY CO., LTD.: COMPANY OVERVIEW 246 TABLE 215 SHENZHEN HIGHPOWER TECHNOLOGY CO., LTD.: PRODUCTS OFFERD 246

13.1.24 STENA RECYCLING 247

TABLE 216 STENA RECYCLING: COMPANY OVERVIEW 247 TABLE 217 STENA RECYCLING: PRODUCTS OFFERED 247

TABLE 218 STENA RECYCLING: DEALS 248
TABLE 219 STENA RECYCLING: OTHERS 248

13.1.25 TERRAPURE 249

TABLE 220 TERRAPURE: COMPANY OVERVIEW 249 TABLE 221 TERRAPURE: PRODUCTS OFFERED 249

13.1.26 TES 250

TABLE 222 TES: COMPANY OVERVIEW 250
TABLE 223 TES: PRODUCTS OFFERED 250

TABLE 224 TES: DEALS 250 TABLE 225 TES: OTHERS 252

13.1.27 THE DOE RUN COMPANY 253

TABLE 226 THE DOE RUN COMPANY: COMPANY OVERVIEW 253
TABLE 227 THE DOE RUN COMPANY: PRODUCTS OFFERED 253
13.1.28 THE INTERNATIONAL METALS RECLAMATION COMPANY 254

TABLE 228 THE INTERNATIONAL METALS RECLAMATION COMPANY: COMPANY OVERVIEW 254
TABLE 229 THE INTERNATIONAL METALS RECLAMATION COMPANY: PRODUCTS OFFERED 254

*Details on Business overview, Products offered, Recent Developments, MNM view might not be captured in case of unlisted companies.

13.2 OTHER COMPANIES 255

 $13.2.1 \verb||BATREC INDUSTRIE|| 255$

TABLE 230 BATREC INDUSTRIE: COMPANY OVERVIEW 255

?

13.2.2 BATTERY RECYCLING MADE EASY (BRME) □256

TABLE 231 BATTERY RECYCLING MADE EASY (BRME): COMPANY OVERVIEW 256

13.2.3 DUESENFELD GMBH 257

TABLE 232 DUESENFELD GMBH: COMPANY OVERVIEW 257

13.2.4 ENVIROSTREAM AUSTRALIA PTY LTD. 258

TABLE 233 ENVIROSTREAM AUSTRALIA PTY LTD.: COMPANY OVERVIEW 258

13.2.4.1 Recent developments 258

TABLE 234 ENVIROSTREAM AUSTRALIA PTY LTD.: OTHERS 258

13.2.5 EURO DIEUZE INDUSTRIE (E.D.I.) 259

TABLE 235 EURO DIEUZE INDUSTRIE (E.D.I.): COMPANY OVERVIEW 259

13.2.6 LITHION RECYCLING 260

TABLE 236 LITHION RECYCLING: COMPANY OVERVIEW 260

13.2.7 METALEX PRODUCTS LTD. 260

TABLE 237 METALEX PRODUCTS LTD.: COMPANY OVERVIEW 260

13.2.8 \square ONTO TECHNOLOGY \square 261

TABLE 238 ONTO TECHNOLOGY: COMPANY OVERVIEW 261

Scotts International, EU Vat number: PL 6772247784

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

www.scotts-international.com

13.2.9 SITRASA 261

TABLE 239 SITRASA: COMPANY OVERVIEW 261

13.2.10 SMC RECYCLING 262

TABLE 240 SMC RECYCLING: COMPANY OVERVIEW 262

13.2.11 TATA CHEMICALS LIMITED 262

TABLE 241 TATA CHEMICALS LIMITED: COMPANY OVERVIEW 262

14 ADJACENT AND RELATED MARKETS 263

14.1 INTRODUCTION 263

14.2 LIMITATIONS 263

14.3∏LITHIUM-ION BATTERY RECYCLING MARKET∏263

14.3.1 | MARKET DEFINITION | 263

14.3.2 MARKET OVERVIEW 263

14.3.3 LITHIUM-ION BATTERY RECYCLING MARKET, BY SOURCE 264

TABLE 242 AUTOMOTIVE: LITHIUM-ION BATTERY RECYCLING MARKET, BY REGION, 2017-2020 (USD MILLION) 264 TABLE 243 AUTOMOTIVE: LITHIUM-ION BATTERY RECYCLING MARKET, BY REGION, 2021-2031 (USD MILLION) 264

TABLE 244

AUTOMOTIVE: LITHIUM-ION BATTERY RECYCLING MARKET, BY REGION, 2017-2020 (UNITS)

TABLE 245

AUTOMOTIVE: LITHIUM-ION BATTERY RECYCLING MARKET, BY REGION, 2021-2031 (UNITS)

265

TABLE 246 NON-AUTOMOTIVE: LITHIUM-ION BATTERY RECYCLING MARKET, BY SOURCE, 2017-2020 (USD MILLION) 265
TABLE 247 NON-AUTOMOTIVE: LITHIUM-ION BATTERY RECYCLING MARKET, BY SOURCE, 2021-2031 (USD MILLION) 266

15 APPENDIX 267

15.1 DISCUSSION GUIDE 267

15.2 KNOWLEDGESTORE: MARKETSANDMARKETS? SUBSCRIPTION PORTAL 269

15.3 CUSTOMIZATION OPTIONS 271

15.4□RELATED REPORTS□271

15.5∏AUTHOR DETAILS∏272



To place an Order with Scotts International:

Complete the relevant blank fields and sign

Scotts International. EU Vat number: PL 6772247784 tel. 0048 603 394 346 e-mail: support@scotts-international.com

www.scotts-international.com

☐ - Print this form

Battery Recycling Market by Source (Automotive Batteries, Industrial Batteries, Consumer & Electronic Appliance Batteries), Chemistry (Lead Acid, Lithium-based, Nickel-based), Material (Metals, Electrolyte, Plastics) and Region - Global Forecast to 2030

Market Report | 2023-06-13 | 264 pages | MarketsandMarkets

DDED FORM		
RDER FORM:		
elect license	License	Price
	Single User	\$4950.00
	Multi User	\$6650.00
	Corporate License	\$8150.00
	Enterprise Site License	\$10000.00
	VA	Т
	Total	al
lease circle the rele	evant license option. For any questions please contact support@scotts-international.com or 0048 603	394 346.
* VAT will be added	evant license option. For any questions please contact support@scotts-international.com or 0048 603 at 23% for Polish based companies, individuals and EU based companies who are unable to provide Phone*	
** VAT will be added mail*	at 23% for Polish based companies, individuals and EU based companies who are unable to provide Phone*	
** VAT will be added mail* rst Name*	at 23% for Polish based companies, individuals and EU based companies who are unable to provide	
* VAT will be added mail* rst Name*	at 23% for Polish based companies, individuals and EU based companies who are unable to provide Phone*	
** VAT will be added	at 23% for Polish based companies, individuals and EU based companies who are unable to provide Phone*	

Zip Code*	Country*	
	Date	2025-05-20
	Signature	