Lithium-ion Battery Recycling - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2020 - 2029

Market Report | 2024-02-17 | 120 pages | Mordor Intelligence

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Report description:

The Lithium-ion Battery Recycling Market size is estimated at USD 3.25 billion in 2024, and is expected to reach USD 8.97 billion by 2029, growing at a CAGR of 22.49% during the forecast period (2024-2029).

Among different types of battery recycling technology, the lithium-ion battery (LIB) recycling market is expected to dominate the global battery recycling market in the latter part of the forecast period, majorly due to the demand for lithium-ion batteries and its ability such as favorable capacity-to-weight ratio. Moreover, Rising concerns over battery waste disposal and stringent government policies clubbed with the increase in usage of lithium-ion battery due to the declining lithium-ion battery prices and growing adoption of electric vehicles, are likely to drive the lithium-ion battery recycling market during the forecast period. However, the raw materials for the manufacturing of lithium-ion batteries are available at a low cost, whereas a high cost is incurred in recycling. The high cost, along with the lack of a strong supply chain and low yield related to battery recycling, is likely to restrain the growth of the battery recycling market during the forecast period.

Key Highlights
-The power sector witnessing significant growth owing to requirement for energy storage solutions in the wake of policy-level initiatives to promote renewable power generation and massive deployment of electric vehicles.
-Advancements in battery technologies leading to the creation of technologically advanced batteries being developed by manufacturers are likely to create a massive opportunity for the battery recycling companies to invest and redirect their resources to make a breakthrough battery recycling technology.
-Asia-Pacific is expected to lead the lithium-ion battery recycling market, during the forecast period, due to the growth of the manufacturing sector, renewables power and the EV demand.

Lithium-Ion Battery Recycling Market Trends

Increasing Demand In Power Industry

- The price of lithium-ion batteries has fallen steeply over the past 10 years. In 2018, the lithium-ion battery price was USD 176 per kWh. Lithium-ion battery prices are falling continuously, and the price decreased by 17.75% in 2018 compared to the price in 2017. The lithium-ion battery used in various application related to power sector such as ESS and other, which in turn likely to drive the market in power sector.
- The two principal reasons for the drastic cost decline are:

- The steady improvement of battery performance achieved through sustained R&D, aimed at improving battery materials, reducing the amount of non-active materials and the cost of materials, improving cell design and production yield, and increasing production speed.
- Increase in production volume for end user in power industry, particularly in China, which helped in achieving the economies of scale in lithium-ion battery manufacturing, and the large capacity additions, which increased the competition among manufacturers (further declining the prices, but at the expense of the profitability of the manufacturers).

- These trends result in sharp and sustained cost reduction which is expected to help cement lithium-ion as the battery chemistry of choice in all energy storage, power industry markets, including grid-scale, behind-the-meter storage, residential storage, and micro-grids.
- Furthermore, the decline in average lithium-ion battery prices is expected to continue and reach approximately USD 100/kWh by 2025, in turn, making it much more cost-competitive than other battery types. The trend is expected to result in an increased application of lithium-ion batteries in new and exciting markets, such as energy storage systems (ESS), paired with renewables, like solar, wind, or hydro, for both residential and commercial applications, during the forecast period.
- Hence, with declining prices, the use of lithium-ion batteries is expected to rise in power industry. The need for recycling these batteries is also expected to gain pace during the forecast period, in order to make the adoption of such batteries more sustainable and eco-friendlier.

Asia-Pacific to Dominate the Market

- Lithium-ion batteries have traditionally been used mainly in consumer electronic devices, such as mobile phones, notebook, and PCs, but are now increasingly being redesigned for use as the power source of choice in hybrid and the complete electric vehicle (EV) range, owing to factors, such as low environmental impact, as EV does not emit any CO2, nitrogen oxides, or any other greenhouse gases.
- The emergence of the new and exciting markets, such as electric vehicle and energy storage systems (ESS), for both the commercial and residential applications, is driving the demand for LIB. Moreover, ESS, coupled with renewables, such as wind, solar, or hydro, is technically and commercially necessary for increasing grid stability, consequently, driving the LIB segment.
- Currently, China is the largest market for electric vehicles, as the country accounts for around 40% of the global sale. China is making efforts to reduce the air pollution level in the country, and it is expected to register a high growth rate in the electric vehicle sales, consequently, leading to the high demand for LIB.
- Currently, China is the largest manufacturer of lithium-ion battery majorly for electric vehicles. In China, lithium production in the country, increasing from 6,800 metric tons in 2017 to 8,000 metric tons in 2018. As batteries are always related to environmental concerns, the government of china presents a policy for recycling facilities that the industry must set up as required.

- Furthermore, in August 2018, the Government of India directed an outlay of INR 5,500 crore for the second phase of the Faster Adoption and Manufacturing of Hybrid and Electric Vehicles (FAME) India Scheme, for encouraging the adoption of EVs and local manufacturing of lithium-ion batteries. Thus, several automobile component manufacturers and power and energy solution providers in India, such as Amazon and Amara Raja Batteries, have put forth plans for manufacturing lithium-ion batteries locally, to leverage the booming green vehicles market in the country.
- Additionally, the R&D investment by the government in the region on developing technologies can help decrease the cost incurred for the recycling process, which can motivate the recycling companies to take up recycled material for manufacturing a new product, and thereby, helping the growth of the market. Hence the recent trends are expected to propel the lithium-ion battery recycling marketduring the forecast period.

Lithium-Ion Battery Recycling Industry Overview

The lithium-ion battery recycling market is moderately fragmented due to few companies operating in the industry because of the complex technology. The key players in this market include Glencore, GS Yuasa Corporation, Li-Cycle Technology, Recupyl Sas,Umicore, Metal Conversion Technologies, and others.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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