

India Black Mass Market Assessment, By Battery Source [Automotive Battery, Industrial Battery, Consumer Electronics Battery, Others], By Battery Type [Li-ion Battery, Nickel-metal Hydride Battery, Others], By Recycling Process [Pyrometallurgical Process, Hydrometallurgical Process, Others], By Region, Opportunities and Forecast, FY2019-FY2033F

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Report description:

India black mass market is projected to observe a CAGR of 20.12% during the forecast period FY2026-FY2033, rising from USD 70.46 million in FY2025 to USD 305.40 million in FY2033. The market has experienced considerable growth in recent years and is expected to maintain an expansion in the coming years owing to a significant increase in the adoption rate of electric and hybrid vehicles, rapid advancement of technology, stringent government regulations on battery recycling, and rising integration of lithium-ion batteries in EVs. The India black mass market demand is rising owing to an increase in government incentives for battery recycling, a growing shift towards electric vehicles, and a considerable rise in battery manufacturing. In addition, India is witnessing considerable growth in electronic waste, propelled by rising demand for consumer electronics, rapid technological advancements, and shorter product life cycles, which will propel India black mass market growth in the forecast period. Furthermore, the Indian government is enforcing regulations on e-waste management and recycling. The government also encourages companies to adopt more sustainable practices, including recycling materials from e-waste to contribute to net zero carbon emissions.

Technological advancements in recycling technologies have made it cost-effective to recover valuable materials from e-waste. This has improved the feasibility of black mass as an efficient choice for managing e-waste, further driving the black mass market in India. Companies in the market are signing agreements to strengthen their presence and address the rising demand for black mass.

For instance, in July 2024, Lohum Cleantech Private Limited entered into a black mass offtake agreement with Recyclus Group to

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supply black mass from its lithium-ion battery recycling facility in Wolverhampton to Lohum's facility in India.

Rising E-Waste Generation Drives the India Black Mass Market Growth

India is witnessing an increase in electronic waste owing to rapid technological advancements, a rise in the production of non-durable products, and high consumer electric adoption. This rise in e-waste is creating a considerable market for black mass, which comprises extracting valuable metals including cobalt, lithium, and nickel from waste electronics. As e-waste gathers, the requirement for efficient recycling solutions becomes increasingly important, driving the India black mass market growth in the forecast period. Key participants in the market are significantly investing in advanced recycling technologies to recover these valuable metals and address the requirement for sustainable resource management. In addition, companies are collaborating to strengthen their market position in India black mass market and ensure that lithium-ion batteries are recycled the right way. For instance, in June 2023, LICO Materials Private Limited and Karo Sambhav Private Limited signed a Memorandum of Understanding to recycle and collect lithium-ion batteries and strengthen the circular economy of India.

Technological Advancements in Recycling Propels the India Black Mass Market Demand

Technological advancements in India are propelling the black mass market as advancements in recycling technologies have enhanced the efficiency and cost-effectiveness of extracting valuable metals from e-waste. Enhanced equipment and procedures can handle different and complex waste streams, raising the generation of valuable metals including cobalt, lithium, and nickel. These advancements make black mass recycling more economically sustainable and attractive to investors. The continuous technological advancements in recycling facilities can process e-waste more efficiently, supporting the circular economy, and reducing environmental impact. The trend towards advanced recycling technologies aligns with growing regulatory and consumer demands for eco-friendly e-waste management solutions. Companies in the market are increasing investments to expand their operations and strengthen their position in the India black mass market.

For instance, in January 2025, ACE Green Recycling, Inc announced its plans for Indian battery recycling plant. According to the company, the plant will be India's largest battery recycling operation and intends to have 10,000 metric tons of yearly lithium-iron phosphate battery recycling capacity in India by 2026.

Government Rules and Regulations Pushes India Black Mass Market Growth

The Indian government has implemented the E-Waste Rules, which mandate the effective collection, disposal, and recycling of e-waste. These rules obliged importers, producers, and manufacturers to manage e-waste responsibly, and to announce extended producer responsibility (EPR) schemes. In addition, such types of schemes promote the recycling of valuable materials from e-waste, indirectly supporting the black mass recycling market growth by confirming that e-waste is properly processed, and valuable resources are regained. Furthermore, the Government of India (GOI) also making different plans to increase the effectiveness of e-waste processing, which encourages black mass recycling initiatives. The GOI is also offering incentives for the development of recycling technologies to motivate private companies to invest significantly in advanced technologies. For instance, in March 2022, the Union Ministry of Electronics and Information Technology amended the Scheme for Promotion of Manufacturing of Electronic Components and Semiconductors guidelines to make e-waste recycling facilities eligible for incentives under the scheme.

Automotive Dominates the India Black Mass Market

Automotive holds the largest India black mass market share owing to a significant increase in electric vehicles, rising government incentives on the purchase and sale of electric vehicles, technological advancement in automobiles, and an increase in disposable income. The Indian government also offers incentives and subsidies to the buyers and sellers of electric vehicles, encouraging the adoption rate of electric automobiles, which further propels India black mass market growth in the forecast period. Companies in the India black mass market are significantly advancing technologies to push buyers toward buying more electric vehicles and recycling batteries of traditional vehicles, driving the black mass market growth in India. In addition, the Indian government is promoting the recycling of batteries and boosting domestic manufacturing to achieve greater domestic value and facilitate battery storage demand creation for electric vehicles and stationary storage.

For instance, government initiatives such as the FAME-II Scheme and Production Linked Incentives (PLIs) for Advanced Chemistry Cells are designed to promote domestic manufacturing and lower costs, with additional support for battery production and recycling in the Union Budget FY2024.

Lithium-ion Battery is Expected to Register the Largest Share in India Black Mass Market in the Forecast Period

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Lithium-ion battery is estimated to hold the largest market share in the market owing to an increase in EV adoption and consumer electronics. The proliferation of devices including laptops, tablets, and smartphones, and the surge in the adoption of electric vehicles, contributed to an increase in the black mass market in India. The introduction of advanced technologies for recycling lithium-ion batteries, including pyrometallurgical and hydrometallurgical methods, is being developed. While such advancements can enhance the effectiveness of official recycling, they also offer market growth opportunities for black mass market players to develop gaps. In addition, companies are increasingly aiming on sustainable practices and increasing investment in different research and development activities to ensure safe and sustainable black mass production practices. Furthermore, key participants are collaborating to enable second-life usage and revolutionize the way of recycling batteries.

For instance, in August 2023, Lohum Cleantech Private Limited announced a joint venture with Vecmocon Technology Pvt Ltd to work on the lifecycle management of electric vehicle batteries and aims to accelerate second-life battery usage.

Future Market Scenario (FY2026-FY2033)

□□India black mass market will see significant expansion propelled by continuous technological advancements in recycling, enhancing the efficiency and economic viability of extracting valuable metals like cobalt, lithium, and nickel from e-waste.

□□Government policies such as the E-Waste Rules and Extended Producer Responsibility (EPR) schemes will continue to foster market growth by ensuring proper e-waste processing and offering incentives for recycling innovation.

□□The automotive industry will remain a primary driver, with the increasing adoption of electric vehicles, fueled by government incentives and rising disposable incomes, significantly boosting black mass demand.

Key Players Landscape and Outlook

Companies in the market are significantly planning to invest in different research and development activities to enhance the functioning of recycling technologies and address the rising demand for valuable materials. Companies in the market are establishing relationships with manufacturers and industries that use recycled metals. In addition, companies in the Indian market for black mass must ensure compliance with environmental laws and standards connected to the recycling of hazardous materials. Furthermore, key participants in the market are implementing different growth strategies including joint ventures, mergers and acquisitions, acquisitions, partnerships, and others to expand their market presence and strengthen their position in the market.

In May 2024, Attero Recycling Private Limited announced an investment of USD 994 million USD in the next 5 years to increase its E-waste recycling capacity.

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*Companies mentioned above DO NOT hold any order as per market share and can be changed as per information available during research work.

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