IESA Knowledge Paper
On
India Lead Acid Battery Recycling Scenario

(Market and Regulatory Overview)

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Lead-Acid Battery Market Forecast

On the basis of growth potential for the various sectors, IESA estimates total market for lead acid batteries for India will be between USD $10 billion to USD $11 billion by 2022 (at todays prices). An average growth of 10-12 % per annum with 7-9% growth for automobile, invertor UPS, Telecom and Traction and 20-25% for solar and other new thrust areas is predicted.

Table 1: Growth of Lead-Acid Battery Market in India

Country	2010	2016	2022
India	USD 3.2 Billion	~ USD 5 Billion	~ USD 10 Billion

Lead Recycling Scenario in India

The absence of proper smelting facilities and legislation regarding the recycling of lead acid batteries make them find their way to backyard smelting units. According to DPCC, lead emissions from the 45 odd illegal lead smelters shut down recently in the capital would be equivalent to almost 8 lakh cars using leaded petrol. A colossal 60,000 MT of lead from batteries is illegally recycled in India each year in hundreds of backyard smelters. Previously batteries were collected locally and sent to official regional recyclers, but in reality they are routinely broken apart on the street, the acid poured away and the lead extracted for further sale to unregistered recycling units, because of availability of cheap labour and lenient norms in India.

Battery Handling & Management Rules (BHMR) introduced a formal battery collection system by authorizing only some special agents to collect used batteries for recycling, which is not that effective because of belated implementation. Currently there are around 860 secondary smelters in operation. Even battery collectors do not have proper records of buyer smelter authorization. Only a small percentage of the total batteries sold are collected by the manufacturer, hence only a few manufacturers are able to collect 90 percent of the total batteries sold, as is desired by law.

The Various Stakeholders Involved in Lead- Acid Battery Recycling

- **Ministry of Environment and Forests**

1. Regulations affecting Lead Acid Battery Recycling - Hazardous Wastes MHR – 1989, amended in 2000 – Project proponents handling hazardous wastes must report to the concerned authorities regarding handing of wastes, obtain authorization for handling wastes, maintain proper records, file annual returns, label all packages, consignments etc., report any accident immediately, report import-export of hazardous waste in under HW Rules, 1989
2. E-waste (Handling and Management) rules 2011 – does not apply to batteries
3. Battery Management and Handling Rules, 2001 – amended in 2010

- **Central Pollution Control Board**

The CPCB must ensure implementation of and compliance with MoEF regulations.

1. Registration of recyclers
2. Guidelines for lead exposure and environmental compliance
3. Empower the SPCB to implement its guidelines in respective states

- **State Pollution Control Board**

1. Monitor setting up and operation of facilities
2. Registration of dealers
3. Ensure compliance with regulations

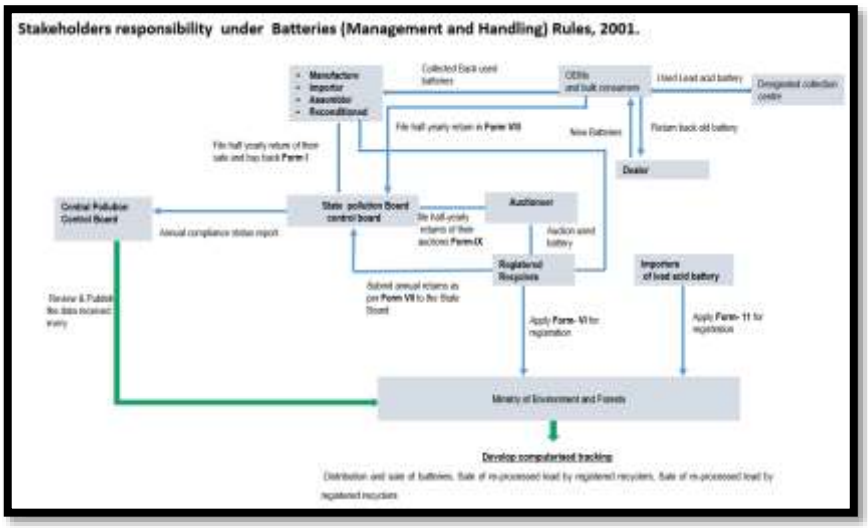

Fig. 1: Pictorial depiction of Procedure Set by BMHR Rules 2010

IESA recently released a full report on Indian Lead Acid market for stationary and motive applications. This report is for purchase, contact IESA Team for more details.

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The **India Energy Storage Alliance (IESA)** was launched in 2012 by **Customized Energy Solutions** to promote energy storage & micro grid technologies and their applications in India. IESA's vision to make India a global leader in energy storage & microgrid technology adoption and hub for manufacturing of these emerging technologies by 2020. IESA's mission is to make energy sector in India more competitive and efficient by creating awareness among various stakeholders in the industry and by promoting information exchange with the end users. IESA also provides insights to technology developers, original equipment manufacturers, policymakers, renewable players and system integrators on the policy landscape and business opportunities in India through frequent interaction with all key stakeholders. Please find more information on IESA at http://www.indiaesa.info/

Contact Us

Dr. Rahul Walawalkar CEM, CDSM

President & MD, Customized Energy Solutions (India)
Executive Director, Indian Energy Storage Alliance (IESA)
Cell: +1-516-639-5391 / +91-95-0303-1765

Mr. Debi Prasad Dash

Sr. Analyst, Customized Energy Solutions
Manager, India Energy Storage Alliance (IESA) Cell: +91-96-9971-9818
Phone: +91-20-3240-7682

A501, GO Square, Aundh Hinjewadi Link Road, Wakad | Pune, MH India – 411057

Email: contact@indiaesa.info
Website: www.indiaesa.info