GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

RAJYA SABHA
UNSTARRED QUESTION NO. 2119
TO BE ANSWERED ON 18.12.2025

Circular economy of batteries

2119. SHRI K.R.N. RAJESHKUMAR:

Will the Minister of ENVIRONMENT, FOREST AND CLIMATE CHANGE be pleased to state:

(a) the progress made towards establishing a robust circular economy for batteries in the country, including development of domestic recycling infrastructure, collection targets for end-of life batteries, utilization of recycled materials in new battery production and the steps taken to address challenges like informal recycling and technological gaps; and

(b) whether the Ministry is collaborating with other relevant Ministries to formulate a comprehensive national strategy covering the entire battery lifecycle and if so, the key highlights of such a strategy?

ANSWER

MINISTER OF STATE IN THE MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE
(SHRI KIRTI VARDHAN SINGH)

(a) to (b): Ministry of Environment, Forest and Climate Change (MoEF&CC), Government of India has published the Battery Waste Management Rules, 2022 on 24th August, 2022 for environmentally sound management of waste batteries. These rules cover all types of batteries viz. Electric Vehicle batteries, portable batteries, automotive batteries and industrial batteries. The rules are based on the concept of Extended Producer Responsibility (EPR) where the producers, including importers, of batteries have been given annual targets for collection and recycling or refurbishment of waste batteries against the batteries placed in the market. The rules mandate producers to use minimum percentage of domestically recycled materials in manufacturing of new batteries from FY 2027-28 onwards. Centralized online EPR portal has been developed for registration of producers and recyclers/ refurbishers, exchange of EPR certificates between producers and recyclers/ refurbishers and filing returns by producers and recyclers/ refurbishers.

So far, 4022 producers and 487 recyclers have been registered under these rules on the EPR portal. After the notification of these rules, around 58.26 lakh tonnes of battery waste has been recycled.

EPR mechanism under Battery Waste Management Rules, 2022 recognise only EPR certificates generated by registered recyclers. The EPR mechanism encourages formalisation

of informal sector to generate revenues from exchange of EPR certificates with producers, in addition to the revenue generated from sale of recycled materials.

To upgrade informal sector into formal value chain, a project on "Informal Sector Capacity Building Upgradation with formation of recycling clusters under the Scheme 'Micro & Small Enterprises Cluster Development (MSE-CDP) of MSME" has been initiated by MeitY.

MeitY has transferred the cost effective Li-ion battery recycling technology indigenously developed by Centre for Material for Electronics Technology (C-MET) to several recycling industries and start-ups as part of Mission LiFE under "Promote circularity campaign".

The Government has approved the PLI-ACC scheme "National Programme on Advanced Chemistry Cell (ACC) Battery Storage" in May 2021, with an outlay of Rs. 18,100 Crore for 50 GWh ACC capacity.

This initiative has acted as a catalyst for Indian cell manufacturers to setup a cell manufacturing unit. Apart from the PLI beneficiaries, more than 10 companies have announced setting up cell manufacturing unit for more than 100 GWh additional capacity.

Ministry of Mines has launched the scheme 'Critical Mineral Recycling Incentive Scheme' aimed at developing the recycling capacity in the country for extraction of critical minerals from secondary sources such as E-waste, spent Lithium-ion Batteries (LiBs), and other scrap.

Further, MoEF&CC facilitated the signing of Memorandum of Understanding between CSIR laboratories, like National Metallurgical Laboratory (NML), Advanced Materials and Processes Research Institute (AMPRI) and Central Electrochemical Research Institute (CECRI), and recycler organisations, to facilitate technology transfer and technical support to establish state-of-the-art recycling infrastructure, support domestic waste recycling, and secure critical mineral supplies through advanced recycling processes.

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