

GOVERNMENT OF INDIA  
MINISTRY OF MINES  
RAJYA SABHA  
**UNSTARRED QUESTION No. 1701**  
ANSWERED ON 04.08.2025

**STEPS TAKEN TO REUSE AND RECYCLE CRITICAL AND RARE EARTH  
METALS**

1701. SHRI KARTIKEYA SHARMA:

Will the Minister of MINES be pleased to state:

- (a) whether Government is taking any steps to reuse and recycle critical and rare earth metals, including magnets, Lithium cells, Copper, etc., if so, the details thereof;
- (b) whether Government is taking any measures to standardize the critical and rare earth metal recycling procedure, including battery recycling;
- (c) whether Government is taking any steps to promote the exploration and extraction technology for these minerals, if so, the details of the institutions involved; and
- (d) whether Government has received any proposals from the private sector to setup mining and extraction plans for these minerals in the country?

**ANSWER**

THE MINISTER OF COAL AND MINES  
(SHRI G. KISHAN REDDY)

(a): The National Critical Mineral Mission (NCMM), set up following approval by the Union Cabinet on 29.01.2025, comprises key interventions for increasing domestic capacity and building supply chain resilience in critical minerals. A scheme for promotion of recycling of critical minerals including rare earth elements and lithium is a part of this Mission. Further, under the Science & Technology (S&T) Programme of the Ministry of Mines, support is extended to Startups, MSMEs and research-driven enterprises for the development of indigenous technologies across the critical mineral value chain including recycling.

(b): Standardization measures in critical mineral recycling are within the extended producer responsibility framework of the Government, for which there are hazardous waste management rules for e-waste, battery waste, etc.

(c): The Geological Survey of India (GSI) assesses the potentiality of secondary enrichment for critical minerals through its Critical Mineral Assessment Programme (CMAP), launched in 2024-25. It has taken up 27 CMAP projects in different parts of the country. Further, to enhance the exploration of deep-seated minerals, especially critical minerals, GSI has adopted multiple strategies to intensify its search through various mineral discovery projects. These include:

- (i) National Geophysical Mapping, National Aero-Geophysical Mapping, and drone-based geophysical surveys;
- (ii) Innovative survey techniques like Magneto-Telluric surveys and Multispectral/Hyperspectral mapping; and
- (iii) Cutting-edge data processing and integration methods, including Regional Mineral Targeting (RMT), artificial intelligence and machine learning (AI/ML), 3D predictive modeling, and Mineral Prospectivity Mapping (MPM).

The implementation of these advanced technologies accelerates survey activities, enabling more focused exploration by narrowing down target areas and facilitating the efficient and effective discovery of concealed, deep-seated critical mineral resources across the country.

In addition, under the S&T programme, seven Start-ups/MSMEs have been supported to develop indigenous technologies for the exploration and extraction of critical minerals.

(d): Concessions for mineral blocks are granted through auction method. In case of critical and strategic mineral blocks, The Mines and Minerals (Development and Regulation) (MMDR) Amendment Act, 2023 has empowered the Central Government to exclusively auction such blocks. Till date, 34 critical and strategic mineral blocks have been successfully auctioned, of which 27 blocks are to private industry.

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