



CRITICAL MINERALS

All the Right Elements Behind
The Star of Electrochemistry

Part III : India's Plan B & Megatrends

The post-Covid era saw an accelerated
pace of protectionist measures by key
players in the critical mineral value
chain, risking India's mineral security

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1 Plan B - Scouting for Critical Minerals Overseas



2 Plan B - Urban Mining to Ensure Raw Material Security



3 The Megatrends – Geopolitical Uncertainties, Nationalisation, and Increased Protectionism



4 The Megatrends – Just in Time to Just for Sure



5 Crystal-gazing into the Future – The Hunt for Critical Minerals in Deep Seas





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Post-Covid, China introduced several export restrictions on key critical minerals such as graphite, gallium, and germanium, as well as on technologies to extract and separate rare-earth elements, which have important applications in wind turbine permanent magnets. Similarly, many resource-rich countries have also increased protectionist policies. For instance, Mexico nationalised lithium mining, and Canada imposed restrictions on foreign investments in its critical minerals sector.



- The lack of domestic supply of critical minerals to support India's net-zero targets and the expected long lead times in the operationalisation of domestic critical mineral blocks, which are being auctioned at present, have led the Government of India (GoI) to scout for overseas critical mineral assets in South America, Australia, and Africa as an alternate measure to ensure mineral security.



- Khanij Bidesh India Limited, a joint venture of PSUs such as NALCO, Hindustan Copper, and Mineral Exploration Company, recently became the first domestic player to acquire overseas lithium brine assets in Argentina. Earlier, India also became the 14th member and the only developing country of the US-led Mineral Security Partnership (MSP) to strengthen its critical mineral supply chain.



- Given India's scarce primary resources of critical minerals, investing in circular supply chains remains important to ensure raw material security and reduce imports. However, India has had limited success in the recycling of even bulk materials. Therefore, developing the necessary infrastructure for achieving the Government's stiff recycling targets for critical minerals remains important.



- Developed countries are increasingly looking at rebuilding critical mineral supply chains nearer to shores. The US is providing incentives for meeting the targeted domestic sourcing requirement for critical minerals that are used in domestic EVs. The European Union is also aiming to achieve a targeted level of self-sufficiency in critical mineral extraction, processing and recycling by CY2030.



- The Government has outlined 31% of the overall allocation to the Production Linked Incentive (PLI) scheme to green energy technologies like solar PV, battery, and green hydrogen. However, such incentive schemes are missing for the exploration, mining and processing of critical minerals where India's domestic capabilities are at a nascent stage.



- The GoI has stepped up exploration activities of deep-sea resources owing to India's lack of adequate land-based resources of critical minerals. The International Seabed Authority has awarded two deep-sea exploration contracts to the GoI for mining critical minerals in the Central Indian Ocean. The Government is also targeting to begin the first-ever auction of offshore mineral blocks in FY2025.



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