

India's critical mineral push needs smart policy, AI-led exploration: Experts

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economictimes.indiatimes.com/industry/indl-goods/svs/metals-mining/indias-critical-mineral-push-needs-smart-policy-ai-led-exploration-experts/articleshow/123990211.cms

ANI

September 19, 2025



Synopsis

India is prioritizing critical minerals for its clean energy and manufacturing ambitions, emphasizing technology, sustainability, and policy reforms. The National Critical Minerals Mission aims to reduce import dependence through domestic exploration, processing, and recycling.

India's ambitions to become a global leader in [clean energy](#) and advanced manufacturing hinge on a forward-looking approach to critical minerals, rooted in smart policy, AI-driven exploration, and sustainable practices, said Arun Misra, Chairman of the CII National Committee on Mining and CEO of [Hindustan Zinc Ltd.](#)

Misra emphasized that India's mining journey is evolving from traditional sectors like coal and steel to minerals crucial for the green economy, such as lithium, cobalt, and rare earths.

He noted that policy reforms have begun to open the door to private exploration in critical minerals, a space previously dominated by public sector undertakings.

Misra stressed that India must ensure the growth of its mining sector does not come at the cost of environmental and social damage.

"Tomorrow's mining must be about more than extraction. It must be about waste management, water efficiency, and protecting communities. We must innovate

responsibly and ensure our air, water, and land remain intact even as we tap into our vast mineral wealth," he added.

Highlighting the role of critical minerals in enabling India's clean energy transition, Misra said that sectors like electric vehicles, solar energy, semiconductors, and electronics manufacturing are all heavily reliant on a stable and diversified supply of these resources.

"From mobility to manufacturing, critical minerals are the foundation of the next wave of industrial growth. We cannot afford to depend on imports alone," he cautioned.

India currently imports a majority of its critical minerals, often from a few dominant players, raising concerns around geopolitical risks and supply chain bottlenecks. The government's National Critical Minerals Mission (NCMM), launched in January 2025, aims to address this gap through exploration, processing, and recycling.

He emphasized the importance of enabling infrastructure such as industrial parks, facilitating ease of doing business, offering one-time capital subsidies, and attracting FDI to strengthen the domestic ecosystem. "De-risking starts from the home ground. We must enable backward integration, improve scale and quality, and leverage FTAs with Australia, EFTA, UK, EU, and the US to enter global value chains," he noted.

Thomas Cherian, Co-Chairman, CII National Committee on Mining and MD, Essel Mining & Industries Ltd., laid out a four-pronged roadmap for securing India's mineral future.

It includes government-industry collaboration with a stable policy and regulatory environment, global partnerships with mineral-rich nations to secure supply chain, academia and R&D to drive innovation in mineral processing and community engagement to ensure inclusive and sustainable development.

"Critical minerals are the levers of future industries, from electric vehicles to advanced electronics. By building domestic champions in processing and refining, India can compete globally," she said.

With India's National Critical Minerals Mission launched earlier this year and policy momentum gathering pace, the country is positioning itself to secure its mineral future.

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