

OPINION | India's path to self-reliance in rare-earth magnet supply for the future



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India is pivoting towards self-sufficiency in rare-earth magnets, essential for EVs, renewables, and defence -- through policy reforms, private sector involvement, and expanding domestic mining and recycling capacities



The global scramble for rare-earth magnets has placed India at a strategic crossroads. India relies on China for 60–96% of critical mineral refining across lithium, graphite, cobalt, and nickel, leaving domestic manufacturers vulnerable to price shocks and supply disruptions. With China imposing export restrictions on rare-earth magnets, the vulnerability of the Indian industry, particularly in critical sectors like electric vehicles (EVs), renewables, defence, and electronics, has never been more evident. The ongoing supply constraints have spurred both the Indian government and private sector to initiate a broad-based response aimed at reducing import dependence and building domestic capacity.

Rare-earth magnets are indispensable components in high-efficiency motors, batteries, and electronic devices. Their role is especially prominent in EV powertrains, wind turbine generators, and missile guidance systems. The proposed solution hinges on a three-pronged strategy: (1) scaling domestic mineral refining, (2) building circularity and recycling infrastructure, and (3) diversifying import partners with strategic stockpiles.

Early signals of private sector initiatives

In a recent development, Hindustan Zinc, a Vedanta Group company, has emerged as the winning bidder for India's first private-sector auction of a monazite block in Uttar Pradesh. Monazite, a mineral rich in neodymium and praseodymium, is crucial for producing high-performance permanent magnets.

In a parallel development, Maiki South Mining Private Limited has secured the Katghora Lithium and REE Block in Chhattisgarh, further underscoring the growing momentum among private players to lock in strategic mineral reserves critical for India's clean energy and advanced manufacturing ambitions.

Policy tailwinds, including the recently passed MMDR Amendment Bill 2025, add further momentum by permitting lease area expansion, enabling the addition of critical minerals to existing leases without extra charges, and allowing surplus production sales -- reforms that strengthen the ability of players like Hindustan Zinc to scale exploration and fast-track participation in the critical minerals value chain.

Complementing these efforts is the Vedanta Group's broader strategy to invest in downstream integration, spanning from ore processing to component-grade output. This pivot to critical minerals seems like a logical evolution for resource-rich conglomerates seeking growth beyond legacy commodities.

Public sector expands capacity, but private investment is key

The state-owned IREL (India) Ltd currently remains the sole producer of rare-earth elements in the country. With mining and separation plants in Odisha and Kerala, and a magnet manufacturing facility in Visakhapatnam, IREL has formed the bedrock of India's rare-earth capability to date. However, public sector efforts alone will not be sufficient to meet the scale and pace required.

Recognising this, the government is actively encouraging private sector participation and reducing entry barriers. The National Critical Minerals Mission, announced earlier this year with an ambitious allocation of ₹34,300 crores, is a cornerstone of this strategy. The mission covers 30 minerals, including rare earths, and offers a comprehensive framework involving policy incentives, faster approvals, R&D funding, establishing Centres of Excellence, and viability gap support for early-stage investments.

Automotive industry braces for uncertainty

Rare-earth supply disruptions have already had ripple effects across the Indian automotive sector. Sona BLW Precision Forgings (Sona Comstar), India's largest importer of rare-earth magnets and a leading EV components supplier, has declared plans to begin domestic magnet manufacturing.

Meanwhile, Indian automakers are also responding. During its Q1 FY26 earnings call, Maruti Suzuki confirmed that its engineering teams are actively working on alternate solutions to tackle magnet shortages. With magnets embedded in almost every advanced automotive subsystem, from drive motors to infotainment, any disruption can cause significant manufacturing delays.

Import bill rising, risks widening

According to a recent SBI report, India's rare-earth magnet imports surged to \$291 million in FY25, a four-year high. The sharp rise reflects not just increased demand but also a growing urgency among companies to build buffer stocks amid geopolitical uncertainty.

Sectors such as electronics, auto manufacturing, and renewable energy remain particularly vulnerable, given their high dependence on imported magnets and the limited flexibility to switch to alternative materials.

This is no longer just a trade imbalance or supply chain vulnerability. Access to rare-earth magnets has become a strategic imperative for India's economy.

The road ahead: From dependence to dominance

India holds approximately 5–6% of global rare-earth reserves but contributes less than 1% to global production. Bridging this gap will demand coordinated action across multiple fronts, including mining, refining, manufacturing, stockpiling, reuse and circularity, and R&D. It will also require close alignment between government policy and industry execution.

Battery recycling and circularity can bring advantages and help meet up to 18% of lithium and 12% of graphite demand by 2030, but it requires 160–180 collection centres, refurbishment hubs, and large-scale recycling plants. Second-life markets for refurbished batteries for e-mobility and stationary storage could be worth ₹77,000–81,000 crore annually by 2040.

To safeguard manufacturers against global market fluctuations, India could establish emergency reserves covering 25% of annual battery-grade mineral demand by 2030 (90 kTPA), using public or public-private models inspired by the nation's petroleum reserves and Japan's or South Korea's rare metals programme.

The next three to five years are critical. As the global energy transition accelerates, the demand for rare-earth magnets is only set to rise. The Bharat Climate Forum, a multi-stakeholder platform, is developing pathways for the indigenisation of upstream raw materials needed for manufacturing solar, wind, battery, electric vehicles, green hydrogen, and high-voltage transmission lines. Such efforts would support effective implementation of the Critical Minerals Mission and the National Manufacturing Mission, announced in the Union Budget 2025.

With early moves from established mining players like Hindustan Zinc, proactive policy interventions under the Critical Minerals Mission, and growing interest from the manufacturing ecosystem, India is finally laying the foundation for long-term magnet security. In doing so, it is not just responding to a global crisis but carving out its place in the next frontier of industrial leadership.

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