

Rare Earth Magnet Scheme to Build Domestic Supply Chain

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Rare Earth Magnet Latest News

- The Union Cabinet has approved a Rs. 7,280-crore scheme to establish India's first integrated manufacturing ecosystem for Sintered Rare Earth Permanent Magnets (REPMs).

Rationale for the Rare Earth Magnet Scheme

- India currently imports almost all the rare earth permanent magnets it uses, around 900 tonnes annually, despite having the world's 5th largest rare earth reserves.
- These magnets are among the strongest permanent magnets and are indispensable to high-tech systems:
 - EV traction motors, power steering, wiper motors, braking systems,
 - Wind turbine generators,
 - Consumer electronics and industrial equipment,
 - Aerospace and defence applications.

- Demand is expected to double by 2030, driven primarily by the EV and renewable energy sectors.
- The disruptions caused by Chinese export controls in 2024-25 further underlined the need for India to develop secure, domestic REPM capabilities.

Key Features of the Approved Scheme

- **Rs. 7,280-Crore Outlay with Dual Incentive Structure**

- As detailed across the three reports, the financial structure includes:
 - Rs. 6,450 crore in *sales-linked incentives* (spread over five years),
 - Rs. 750 crore in *capital subsidy* for setting up facilities.
 - This is part of a seven-year scheme period, two years for plant establishment and five years for incentive disbursement.

- **5 Beneficiaries via Global Competitive Bidding**

- The total capacity of 6,000 million tonnes per annum (MTPA) will be allocated to five selected manufacturers, each eligible for up to 1,200 MTPA.
- Applicants will be chosen through a transparent international bidding process.

- **End-to-End Integrated Manufacturing**

- Beneficiaries must build full-stack facilities capable of converting:
 - **rare earth oxides > metals > alloys > finished magnets.**
- This integration is central to reducing India's reliance not only on finished REPMs but also on upstream value chains currently controlled by foreign markets.

Strategic Importance for India's Clean-Tech and Defence Ecosystem

- **Boosting Electric Mobility & Renewable Energy**

- REPMs, especially Neodymium-Iron-Boron (NdFeB) magnets, are crucial for efficient and powerful EV motors.
- The auto sector welcomed the scheme as a major step toward a stable, localised component supply chain, reducing risks of shortages and preventing EV price escalation.

- **Strengthening Defence and Aerospace Capabilities**

- Magnets are critical in precision-guided munitions, unmanned systems, avionics, and radar technologies. Local manufacturing enhances India's defence security and reduces dependence on geopolitically sensitive supply chains.

- **Alignment with Net Zero and Critical Minerals Strategy**

- The scheme aligns with India's target of **Net Zero by 2070** and builds on the **National Critical Minerals Mission**, which identifies REPMs as strategic components for energy transition and advanced manufacturing.
- Experts highlighted that this initiative will catalyse mining, processing, alloying, and high-value materials research.

Industry Response and Global Context

- **Automobile & Component Manufacturers**

- Automotive bodies termed the decision *pivotal* for India's long-term competitiveness and integration into global value chains. They emphasised that local REPM production would:
 - reduce import dependence,
 - protect manufacturers from Chinese export restrictions,
 - unlock investments in advanced mobility technologies.
- **China's Dominance and Supply Chain Constraints**
 - Globally, China controls over 80% of REPM processing and has increasingly tightened export controls, impacting EV and electronics manufacturers worldwide.
 - Indian automakers faced procurement delays due to prolonged Chinese approval procedures requiring end-user licences and bureaucratic clearance.
 - This backdrop makes India's initiative not merely economic but geostrategic, ensuring insulation from external shocks.

Implementation Challenges and Considerations

- Experts caution that success depends on:
 - securing advanced technologies for processing and sintering,
 - building high-purity oxide-to-metal conversion capabilities,
 - maintaining ESG standards, responsible mining, and sustainable extraction,
 - ensuring disciplined execution and adherence to global quality benchmarks.
- These are essential for India to eventually compete in the global REPM market.

Source: **TH** | **IE**

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