AUGMENTING VALUE

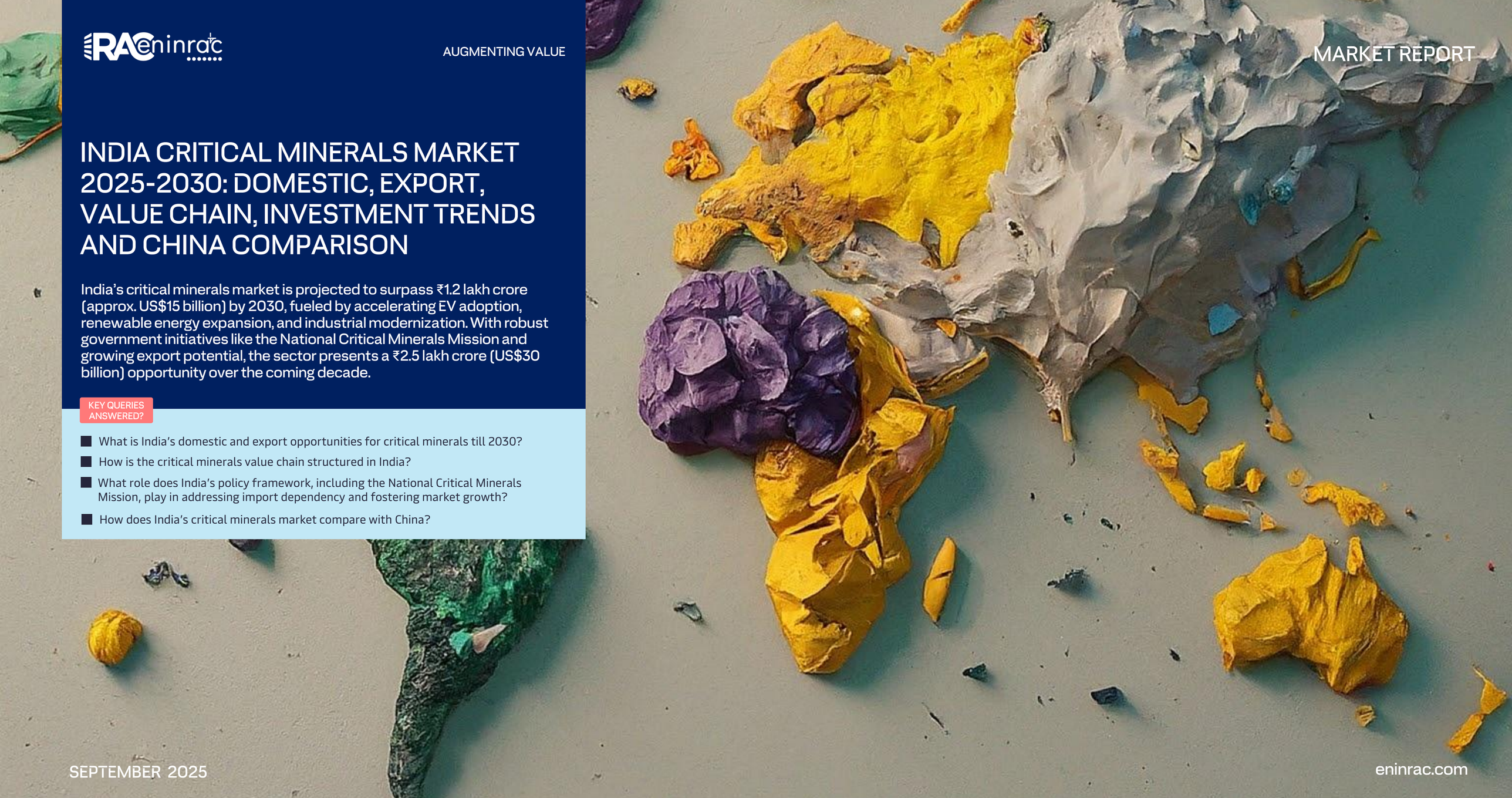
MARKET REPORT

INDIA CRITICAL MINERALS MARKET 2025-2030: DOMESTIC, EXPORT, VALUE CHAIN, INVESTMENT TRENDS AND CHINA COMPARISON

India's critical minerals market is projected to surpass ₹1.2 lakh crore (approx. US$15 billion) by 2030, fueled by accelerating EV adoption, renewable energy expansion, and industrial modernization. With robust government initiatives like the National Critical Minerals Mission and growing export potential, the sector presents a ₹2.5 lakh crore (US$30 billion) opportunity over the coming decade.

KEY QUERIES ANSWERED?

- What is India's domestic and export opportunities for critical minerals till 2030?
- How is the critical minerals value chain structured in India?
- What role does India's policy framework, including the National Critical Minerals Mission, play in addressing import dependency and fostering market growth?
- How does India's critical minerals market compare with China?



SEPTEMBER 2025

eninrac.com

CONTENTS

CONTENTS (CONTINUED)

CONTENTS (CONTINUED)

Market Research Report

Why is Eninrac's market research report on India's Critical Minerals Market Outlook 2025-2030 essential for uncovering multi-billion-dollar growth, analyzing domestic and export value chains, evaluating investment trends, and assessing India's strategic positioning against China in the global clean energy race?

Will India's critical minerals sector leverage policy reforms, domestic exploration, and global partnerships to achieve strategic autonomy, or will import dependence and technological gaps limit its growth and global competitiveness?

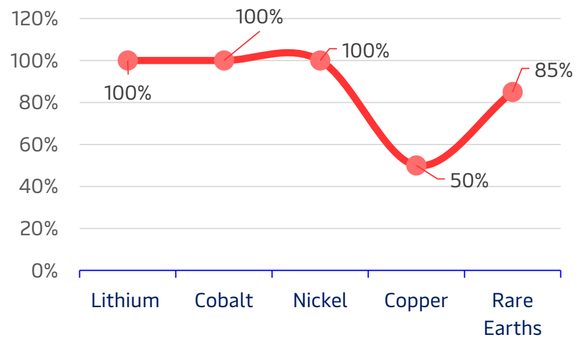
Why is a comprehensive assessment of India's critical minerals market dynamics essential for unlocking a **₹1.2 lakh crore (US$15 billion) growth opportunity by 2030**, addressing import dependency, investment trends, domestic and export value chains, and shaping strategic global competitiveness against China?

India has identified five critical minerals like Lithium, Cobalt, Nickel, Copper, and Rare Earth Elements and remains pivotal for driving its clean energy transition and achieving technological independence. The launch of the **National Critical Minerals Mission (NCMM) in 2025** marks a transformative initiative to secure domestic supply chains, boost exploration, and cut reliance on imports. With a **combined government and private investment outlay exceeding ₹34,000 crore for 2025-31, the mission aims to identify 1,200 deposits, scale recycling capacities**, and foster innovation through Centres of Excellence.

Despite these efforts, India continues to **face high import dependence, ranging between 70% and 100%, particularly for minerals like lithium, cobalt, and nickel that** are essential for battery manufacturing and EV production. This dependency underscores the strategic urgency to enhance domestic production capabilities and diversify sources internationally to reduce geopolitical risks and supply disruptions. The critical minerals prioritized underpin key sectors such as **electric vehicles, renewable energy, advanced electronics, and defense**. Lithium, cobalt, and nickel predominantly serve batteries and alloys, while copper is vital for power infrastructure and grid modernization. Rare earth elements, crucial for high-tech and defense applications, have a significant import footprint on India's supply chain, necessitating focused domestic capabilities. India's critical minerals sector faces significant import dependency risks, especially for lithium, cobalt, nickel, and rare earth elements, all crucial for the country's clean energy ambitions. **This heavy reliance underscores the urgency for domestic resource development and diversification of import sources.**

Exhibit 01 : India's Critical Minerals Landscape & Strategic Dependencies

Import Dependency



Source: eninrac consulting, NCMM 2025 & Industry Reports

EV/Batteries

Minerals Used: Lithium, Cobalt, Nickel

Industry Impact: Energy storage and electric vehicles demand these minerals for high-performance, durable batteries powering India's clean mobility transition.

Power/Grid

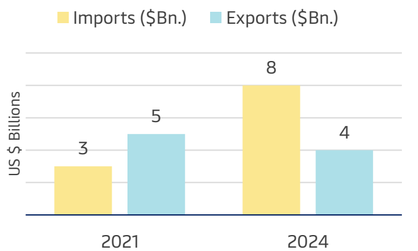
Minerals Used: Copper

Industry Impact: Copper underpins India's expansive power infrastructure and grid modernization, supporting electrification and renewable integration.

High Tech/Defense

Minerals Used: Rare Earth Minerals

Industry Impact: Rare earths enable advanced electronics, sensors, magnets, and key defense technologies essential for India's strategic and technological sovereignty.



NCMM Progress Snapshot

1 Government Outlay

Target Value - ₹16,300 Crore

Budget allocation for NCMM (2025-31)

2 PSU & Private Investments

Target Value - ₹18,000 Crore

Expected investments from PSUs and private sector

3 Mineral Deposit Target

1200 Deposits

Number of mineral deposits to be secured

4 Recycling Capacity Goal

270 kilotonnes (KT)

Target recycling capacity by 2031

Source: eninrac consulting, NCMM 2025 & Industry Reports

What are the key demand drivers fueling growth in India's critical minerals market, and how are they reshaping the outlook for 2025–2030 and beyond?

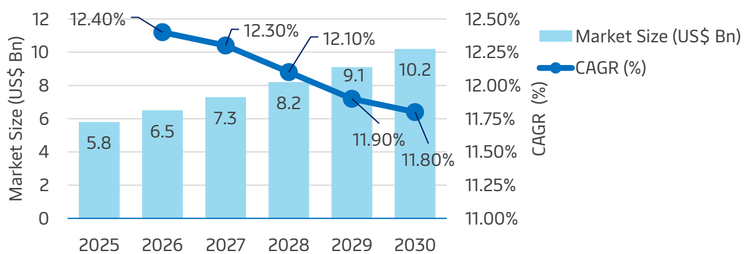
India's critical minerals market is set for robust growth, driven by structural and policy-driven demand dynamics. Structurally, the surge in electric vehicle adoption, renewable energy expansion, and advanced manufacturing are driving unprecedented demand for lithium, cobalt, nickel, copper, and rare earth elements. Policy initiatives such as the **National Critical Minerals Mission (NCMM) are enhancing domestic exploration and capacity building with a projected investment of ₹34,300 crore through 2031. Additionally, efforts to develop a 270-kilotonne** recycling capacity and foster innovation through multiple Centres of Excellence are expected to further strengthen the supply chain and reduce import dependency, positioning India for a multi-billion-dollar market opportunity by 2030.

Market Size, Demand Growth & Export Trends

India's **critical minerals market is projected to grow at a CAGR of 12%+, crossing $10B in value by 2030, driven by advanced manufacturing and renewable energy infrastructure.** India's critical minerals market is witnessing exponential growth, propelled by the rapid expansion of clean energy infrastructure and advanced manufacturing sectors. The nation's ambitious **renewable energy target of 500 GW by 2030 and the push for electric vehicle (EV) adoption** are driving demand for essential minerals like lithium, cobalt, nickel, copper, and rare earth elements. Specifically, lithium demand is projected to increase tenfold by 2030, while copper demand is expected to more than double, underscoring the centrality of these minerals in India's energy transition and industrial modernization

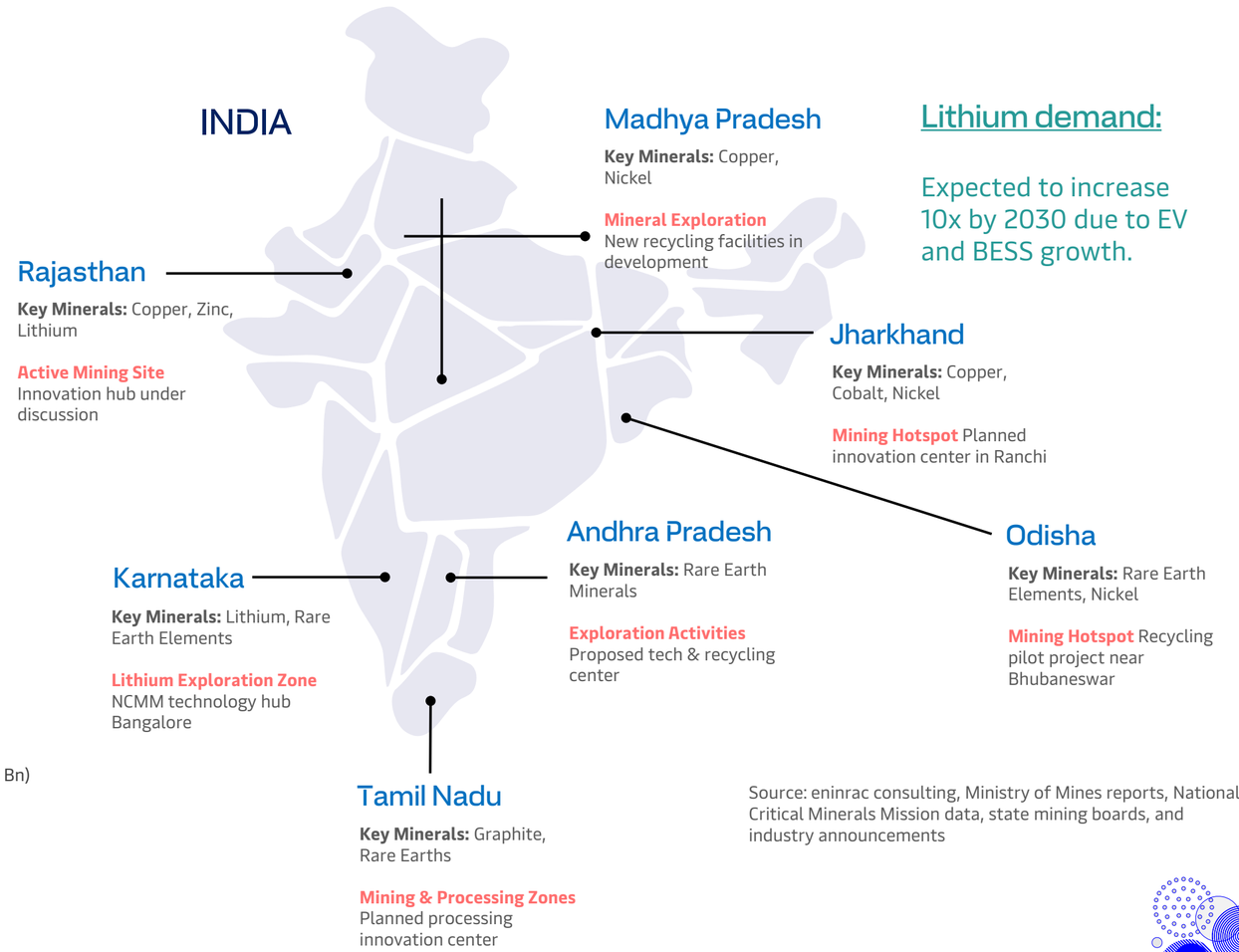
India's critical minerals market is projected to exceed **$10 billion by 2030, growing at a compound annual growth rate (CAGR) of over 12%.** This robust expansion is driven primarily by the nation's ambitious renewable energy target of 500 GW by 2030, rapid adoption of electric vehicles (EVs), and significant growth in advanced manufacturing sectors.

Exhibit 03 : Market Size – Critical Minerals India



Source: eninrac estimates

Exhibit 02 : Geographical Spread of India's Critical Mineral Landscape



Source: eninrac consulting, Ministry of Mines reports, National Critical Minerals Mission data, state mining boards, and industry announcements

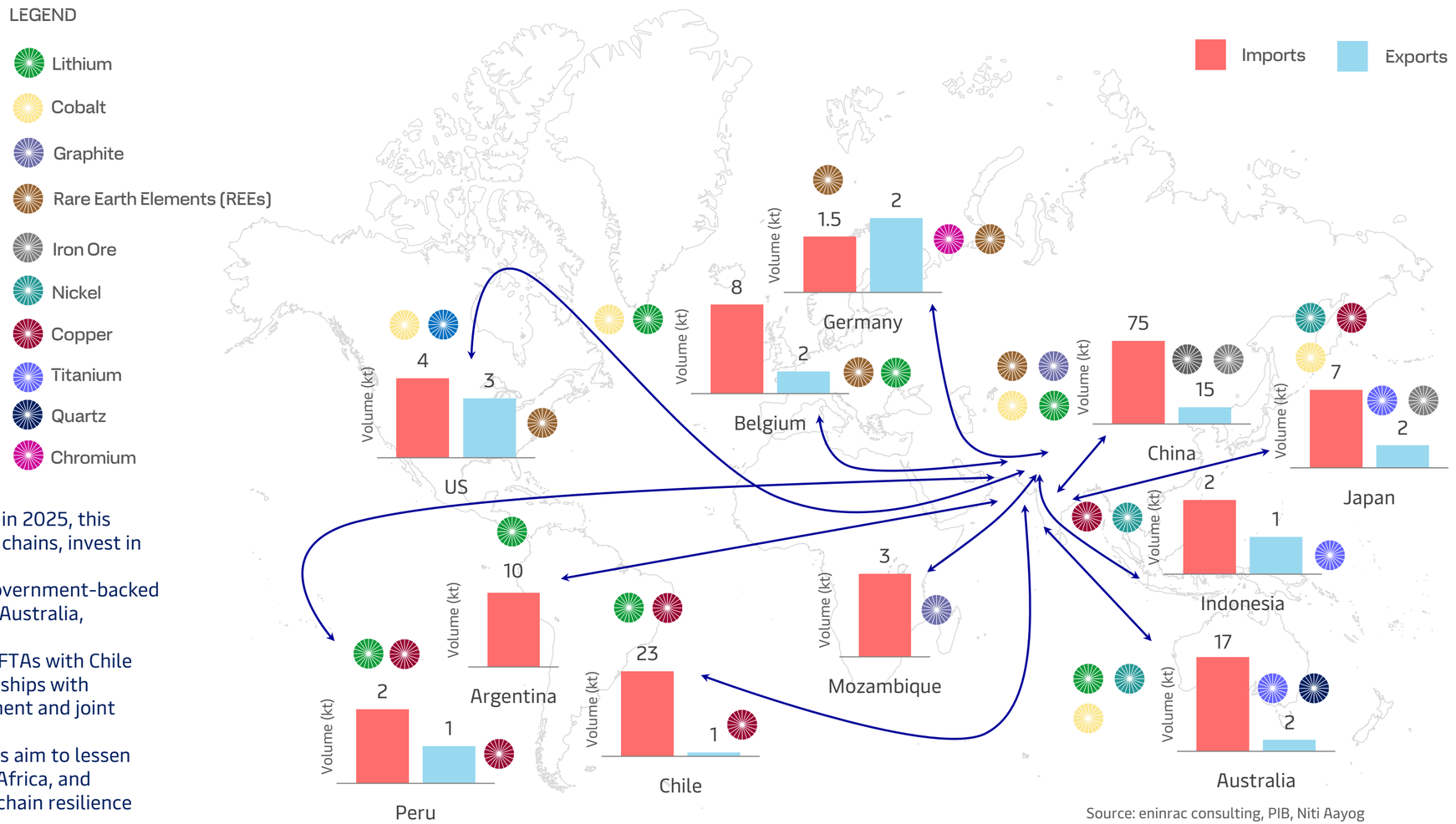
India's Critical Minerals Trade: Country-wise Import and Export Relationships

India's critical minerals trade landscape is shaped by its heavy reliance on imports, targeted international partnerships, and emerging export ambitions, especially in the context of green energy transition, advanced manufacturing, and national security. The nation's trade partners vary depending on the mineral, with country-wise relationships evolving rapidly due to global supply chain volatility, technological needs, and policy initiatives. India is **almost 100% import-dependent for lithium, cobalt, and several other minerals. China is the single largest supplier for most critical minerals** which notably are lithium, REEs, graphite, and cobalt holding substantial sway over India's supply chains. Emerging partnerships with Australia (lithium, cobalt), Peru, Chile, and Argentina (lithium, copper) reflect India's strategic efforts to diversify supply and reduce reliance on China.

Strategic Overview & Policy Landscape

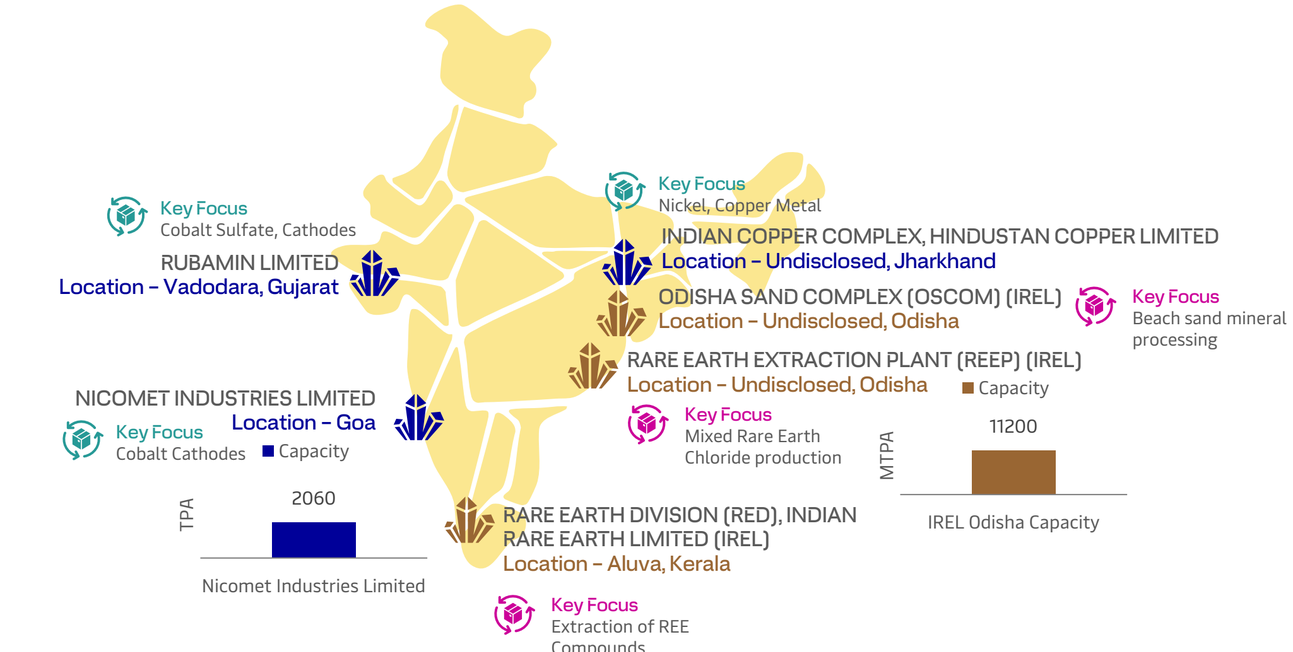
- **National Critical Mineral Mission (NCMM):** Launched in 2025, this mission aims to secure domestic and overseas supply chains, invest in joint ventures, and boost recycling.
- **KABIL Consortium (Khanij Bidesh India Limited):** A government-backed entity tasked with acquiring overseas mineral assets (Australia, Argentina, Africa) for sustained supply.
- **FTAs and Bilateral Partnerships:** India is negotiating FTAs with Chile and Peru to secure lithium and copper. Active partnerships with Australia and Argentina are focused on direct investment and joint exploration.
- **Import Diversification:** Recent policy and trade moves aim to lessen dependency on China, with a focus on Latin America, Africa, and Australia for strategic minerals and achieving supply chain resilience

Exhibit 03 : Trade Volumes of Critical Minerals – India & World (2024)



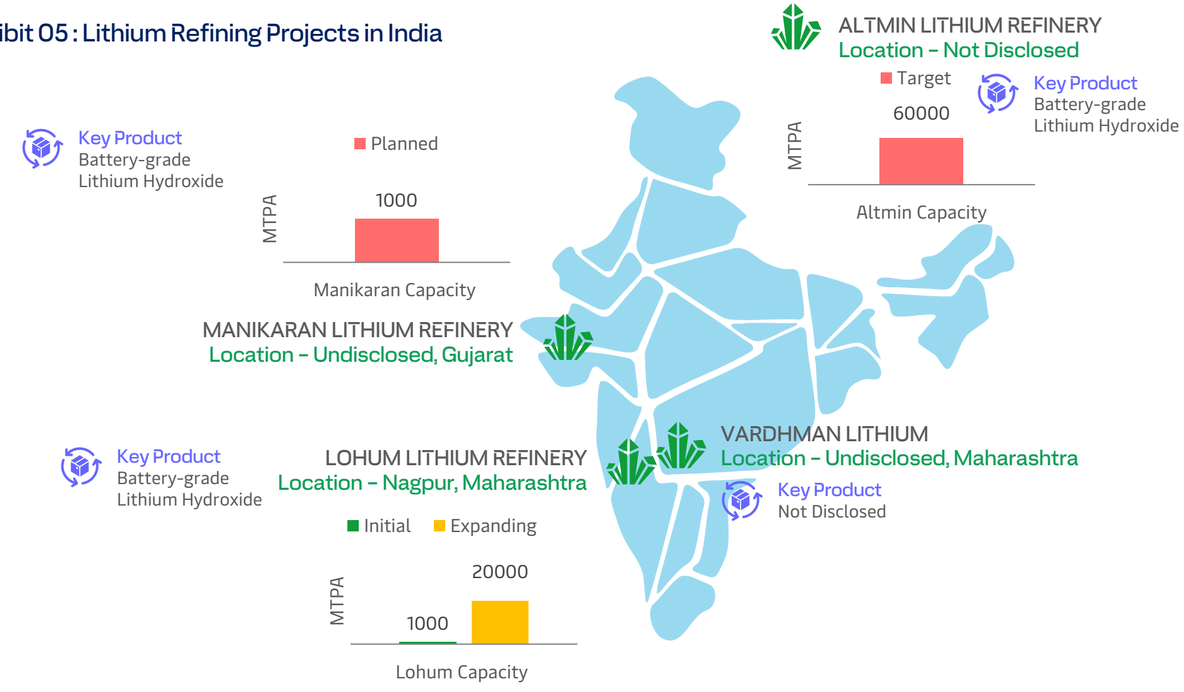
Source: eninrac consulting, PIB, Niti Aayog

Exhibit 04 : REE, Cobalt & Nickel Refining Capacity



Source: eninrac consulting, PIB, Niti Aayog

Exhibit 05 : Lithium Refining Projects in India



Source: eninrac consulting, PIB, Niti Aayog

Rare Earth Elements (REE) Processing

India benefits from established rare earth processing capabilities concentrated in public sector undertakings, aiming to scale up production of high-purity rare earth compounds.

- **India Rare Earths Limited (IREL):** IREL operates multiple units focused on rare earth extraction and refining techniques. The Rare Earths Division (RED) in Aluva, Kerala, processes monazite to extract lanthanum, cerium, neodymium, praseodymium, samarium, gadolinium, and yttrium compounds with purities >99%. The Odisha Sand Complex (OSCOM) is a major beneficiation and extraction site that processes beach sand minerals rich in REEs and associated heavy minerals.
- **Rare Earth Extraction Plant (REEP):** Located in Odisha, producing mixed rare earth chloride (MRCL) with a capacity of 11,200 tonnes per annum, feeding downstream pure rare earth oxides and compounds plants.

Cobalt and Nickel Refining

India currently imports most cobalt and nickel raw materials but has developed refining capacities to support domestic battery manufacturing.

- **Cobalt Refining Capacity:** Estimated at around 2,060 tonnes annually, with major refiners like Nicomet Industries Ltd. (Goa) and Rubamin Ltd. (Vadodara). Nicomet produces cobalt cathodes that meet London Metal Exchange (LME) specifications, serving growing battery and aerospace sectors.
- **Nickel Production and Recovery:** Hindustan Copper Limited (HCL) runs the Indian Copper Complex in Jharkhand, which includes the "Nickel, Copper and Acid Recovery Plant" producing LME-grade nickel metal from primary and secondary sources. Odisha holds considerable nickel resources (~175 million tons), fueling expected domestic market growth.

Emerging Developments & Policy Initiatives

- **National Critical Mineral Mission (NCMM)** aims at securing supply chains, boosting exploration, supporting processing infrastructure, and establishing mineral parks with modern facilities nationwide.
- **Recycling and Urban Mining:** Besides raw material supply, NCMM incentivizes recycling critical minerals from e-waste and spent batteries with ambitious targets to recover 40 kilotonnes annually, reduce import dependency, and create up to 70,000 jobs.
- **Technology & Collaboration:** India is promoting public-private partnerships to develop extraction technologies, refining capacities, and downstream manufacturing to reduce reliance on imports and China's processing dominance.

Key Signpost – Accelerating clean energy transition and strategic investments poised to drive India's critical minerals market to cross $10 billion by 2030, transforming supply chains and domestic processing capabilities by FY26.

Resilient, Sustainable, and Strategically Anchored – Next-Gen Critical Minerals Market to Power India's $10 Billion Clean Energy & Advanced Manufacturing Revolution by FY26.

Critical minerals form the core of India's clean energy and advanced manufacturing aspirations, enabling the development of electric vehicles, renewable power infrastructure, and defense technologies. As demand surges with accelerating energy transition goals and a push for domestic manufacturing, next-generation supply chains featuring secure sourcing, processing capabilities, and recycling technologies are becoming pivotal. With expanding exploration efforts, refining capacity ramp-ups, and strategic international partnerships, the critical minerals sector is poised to play a central role in supporting **India's $10+ billion market expansion and self-reliance drive by FY26.**

For Exploration & Mining Companies

- Government-backed initiatives such as the National Critical Mineral Mission (NCMM) have ramped up exploration incentives, mapping, and geophysical surveys targeted at lithium, cobalt, nickel, rare earth elements (REEs), and graphite reserves.
- Emerging frontier regions in Odisha, Jharkhand, Chhattisgarh, Rajasthan, and parts of Northeast India offer untapped mineral prospects for new mining projects.
- As India expands mineral processing, refining, and downstream battery manufacturing capacity, mining companies gain long-term off-take business opportunities.

For Manufacturing & Battery Material Producers

- With India targeting over 30% electric vehicle adoption by 2030 and rapidly expanding renewable energy capacity, demand for lithium-ion battery materials such as lithium hydroxide, nickel sulfate, cobalt sulfate, and graphite anode materials is expected to surge exponentially.
- This creates long-term growth opportunities for domestically located, technologically advanced materials producers to supply growing EV battery and energy storage manufacturers.

For Battery Manufacturers & EV OEMs

- **India's ambitious target to increase EV** penetration to 30% by 2030 is catalyzing massive demand for lithium-ion batteries, cobalt, nickel, and other critical minerals, creating a booming market for battery and EV makers
- .Increasing domestic availability of critical minerals and refined battery materials reduces dependency on imports, stabilizes raw material supply, and lowers overall costs for battery manufacturers.

For Recycling & Urban Mining Players

- **Critical minerals such as lithium, cobalt, nickel,** copper, and rare earth elements embedded in used batteries, electronics, and industrial scrap have high recovery value, providing profitable recycling business models.
- **Urban mining** factories can unlock secondary raw materials with lower environmental impact compared to virgin mining.
- Rapid growth in consumer electronics and electric vehicles is swelling volumes of lithium-ion batteries and e-waste available for recycling.
- India's e-waste generation is expected to cross 1 million tonnes annually by 2030, underscoring urgent needs and commercial potential for recycling infrastructure.

Must Buy For

- **Exploration & Mining Companies** (NALCO, Hindustan Zinc, Vedanta, IREL etc.)
- **Mineral Processing & Refining Units** (Nicomet, Lohum, Manikaran Lithium etc.)
- **Downstream Battery Material Producers & Chemical Minerals** (Tata Chemicals, Altmin etc.)
- **Battery Manufacturers & EV OEMs** (Exide Industries, Amara Raja, Tata Motors)
- **Recycling & Urban Players** (E-waste and Battery recycling for recovery of critical minerals)
- **Government & Regulatory Bodies** (Ministry of Mines, Ministry of New & Renewable Energy (MNRE), NITI Aayog, Bureau of Indian Standards (BIS).
- **Strategic Consortiums & SPVs** (Khanij Bidesh India Limited (KABIL))
- **Raw Material Suppliers & Equipment Providers** (Suppliers of mining equipment, processing chemicals, and technology vendors involved in extraction and refining processes)

Companies Mentioned

- India Rare Earths Limited (IREL)
- National Aluminium Company Limited (NALCO)
- Hindustan Zinc Limited (HZL)
- Vedanta Limited
- Lohum Clean Energy
- Manikaran Lithium Private Limited
- Altmin Lithium
- Nicomet Industries Ltd.
- Rubamin Limited
- Hindustan Copper Limited (HCL)
- Tata Chemicals Limited
- Exide Industries Limited
- Amara Raja Batteries Limited
- Tata Motors Limited (Electric Vehicle Division)
- Mahindra Electric Mobility Limited
- Khanij Bidesh India Limited (KABIL)
- Recykal (E-waste & Battery Recycling)
- E-Parisaraa (Urban Mining & E-waste Recycling)
- Tata Power Renewable Energy Limited (Battery Storage)
- Reliance New Energy Solar Ltd.

For Queries

Research : Write to: **connect@eninrac.com** and alternatively you may reach our team at **nsharma@eninrac.com**

Please call at +91 93190 48963/93190 47963 for any other queries

> **Discovery consists of seeing what everybody has seen and thinking what nobody has thought**

- Arthur Schopenhauer

About Eninrac

Eninrac Consulting is a global market research and advisory firm that specializes in providing comprehensive insights and strategic solutions across various industries. Our services are designed to help businesses navigate market complexities, identify growth opportunities, and achieve sustainable success.

Eninrac's USP lies in its ability to deliver pragmatic, data-driven solutions tailored to the unique needs of each client. By maintaining close collaboration and adopting a hands-on approach, they ensure that their insights are actionable and aligned with clients' strategic objectives. This personalized guidance through diverse markets and cultures sets them apart in the consulting landscape. By leveraging the services offered, Eninrac Consulting empowers businesses to improve processes, understand customers, and solve problems effectively, thereby driving growth and maintaining a competitive edge in their respective industries.

eninrac.com

Headquarters:

Eninrac Consulting
B-130, Sector 65, Noida, Uttar Pradesh, India

Tel: +91 93190 48963/47963
www.eninrac.com

eninrac
2019
2024
5

2024 marks our 5th anniversary as a performance leader, delivering superior research and advisory services.