

India's first critical mineral list a step towards supply-chain security: Experts

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New Delhi, 29 June

The release of the first list of critical minerals on Wednesday by India and the country's entry into the US-led Minerals Security Partnership (MSP) have boosted its prospects of securing a global supply chain for the items.

In April, in the first such partnership, the Indian and Australian governments decided to jointly invest \$3 million each in five critical mineral-exploration projects in Australia. Though India is ramping up its supply chain, it is still lagging behind China, which is one of the world's largest producers or processors of critical minerals.

China produces 60 per cent of the world's rare earth elements (REEs). Not just the minerals it produces, Beijing, by importing and processing, has taken the lead in controlling the critical minerals it does not produce. For example, Australia produces 52 per cent of the world's lithium, but China is the major importer and processor of 58 per cent of the global supply, according to a report of the Centre for Social and Economic Progress.

China's race for renewables and advanced technology started in

2001. In the past two decades, the country has created five of the top 10 battery manufacturers in the world. The country is among the top five producers of semiconductors and has around more than half the electric cars on the road worldwide.

India, on the other hand, despite having the fifth-largest reserves of rare earth minerals in the world, lags behind its peers due to a lack of private participation, stringent laws, and the absence of technology. Mines Secretary Vivek Bhardwaj, in a press conference this May, said India imported every year titanium dioxide worth \$1 billion because of technological inefficiencies and litigation. To unlock the mining sector's potential, Bharadwaj emphasised opening up the sector to private players, encouraging domestic exploration, and adopting efficient technologies.

Wake-up call?

The government's push to build a global supply chain came after the country's manufacturing sector faced a shortage of semiconductors and other essential components required for the electronics and auto industry during Covid-19 and the Russia-Ukraine war.

INDIA ENTERS TOP 10 LIST OF CRITICAL MINERAL PRODUCERS

WORLD RESERVES OF RARE EARTHS

(By principal countries)

(In '000 tonnes of REO equivalent content)

China	44,000,000
Vietnam	22,000,000
Brazil	21,000,000
Russia	21,000,000
INDIA	6,900,000

Source: USGS, Mineral Commodity Summaries, 2022/ Indian Minerals Yearbook 2021

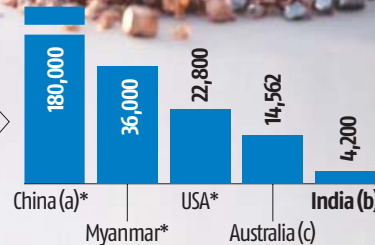
Note: REO: Rare-earth oxides. The rare-earth elements (REE) are a collection of 17 elements, namely, scandium, yttrium and lanthanides (15 elements in the periodic table with atomic numbers 57 to 71, namely, lanthanum (La), cerium (Ce), praseodymium (Pr), neodymium (Nd), promethium (Pm), samarium (Sm), europium (Eu), gadolinium (Gd), terbium (Tb), dysprosium (Dy), holmium (Ho), erbium (Er), thulium (Tm), ytterbium (Yb) and lutetium (Lu))

Though India is the first developing country from the Global South to find a place in the MSP, it has a long way to go before fully securing a global supply chain, experts say. Besides the US, the MSP

WORLD PRODUCTION OF RARE-EARTH OXIDES

(By principal countries)

In tonnes



(*) Estimated

a: Includes production from iron ore extraction, bastnaesite concentrates, and ion absorption clays; b: Year ending March 31;

c: Year ending June 30

Source: British Geological Survey 2016-20/ Indian Minerals Yearbook 2021

includes Australia, Canada, Finland, France, Germany, Japan, the Republic of Korea, Sweden, the UK, the European Commission, Italy, and now India.

"With an entry into the MSP,

India can strengthen its mineral supply chain but it has to develop processing and manufacturing technology," said Rishabh Jain, senior programme lead, Council on Energy, Environment, and Water.

Critical minerals refer to mineral resources, primary and processed, which are essential inputs in the production process and whose supplies could be disrupted. While some are inputs for traditional industries, many are crucial for the high-tech products required for clean energy, national defence, informational technology, aviation, and space research. "The list (released on Wednesday) provides clarity on what we need to do. Ten minerals are 100 per cent import-dependent, and the key issue is to ensure reliability in imports from different sources to meet India's net zero targets," said Tirthankar Mandal, head, Energy Policy, World Resources Institute, India.

Challenges

The US has declared 50 minerals critical in the light of their role in national security or economic development. Demand for critical minerals in India is expected to grow due to the government's increased thrust on "Make in India", "Smart City" programme, Aatmanirbhar Bharat, the 100-Gw target for renewable energy, the production-linked incentive schemes for the consumer electronics industry, accelerated

growth for electric vehicles, etc.

Steps taken

To do various jobs related to strategic minerals, a joint venture, Khanij Bidesh India Ltd (KABIL), of three public-sector undertakings — National Aluminium Company, Hindustan Copper, and Mineral Exploration Company — was announced in 2019, with a stake ratio of 40:30:30.

In mid-2020, India, through KABIL, signed an agreement with an Argentine firm to prospect for lithium. Besides this, it is exploring options in Chile and Bolivia.

The country is working on reforming laws to exploit the potential of India's untapped potential in critical mineral mining. The Ministry of Mines is reportedly working to develop a critical mineral policy. The central government is expected to complete the auction of the 5.9-million tonne (mt) lithium reserves discovered in Reasi district, Jammu & Kashmir, by the end of this calendar year. Bharadwaj had said in May. The government has asked Jammu and Kashmir to hold lithium auctions at the earliest, Union Minister Parliamentary Affairs, Coal and Mines Pralhad Joshi said.