



What are Critical Minerals?

Context:

India and Australia have decided to strengthen their partnership in the field of projects and supply chains for critical minerals.

Relevance:

GS III- Indian Economy

Dimensions of the Article:

1. What are Critical Minerals?
2. Why is this resource critical?
3. What is China 'threat'?
4. What are countries around the world doing about it?

What are Critical Minerals?

- Critical minerals are elements that are the building blocks of essential modern-day technologies, and are at risk of supply chain disruptions.
- These minerals are now used everywhere from making mobile phones, computers to batteries, electric vehicles and green technologies like solar panels and wind turbines.
- Based on their individual needs and strategic considerations, different countries create their own lists.
- However, such lists mostly include graphite, lithium and cobalt, which are used for making EV batteries; rare earths that are used for making magnets and silicon which is a key mineral for making computer chips and solar panels.
- Aerospace, communications and defence industries also rely on several such minerals as they are used in manufacturing fighter jets, drones, radio sets and other critical



Why is this resource critical?

- As countries around the world scale up their transition towards clean energy and digital economy, these critical resources are key to the ecosystem that fuels this change.
- Any supply shock can severely imperil the economy and strategic autonomy of a country over-dependent on others to procure critical minerals.
- But these supply risks exist due to rare availability, growing demand and complex processing value chain.
- Many times the complex supply chain can be disrupted by hostile regimes, or due to politically unstable regions.
- They are critical as the world is fast shifting from a fossil fuel-intensive to a mineral-intensive energy system.

What is China 'threat'?

- China is the world's largest producer of 16 critical minerals.
- China alone is responsible for some 70% and 60% of global production of cobalt and rare earth elements, respectively, in 2019.
- The level of concentration is even higher for processing operations, where China has a strong presence across the board.
- China's share of refining is around 35% for nickel, 50-70% for lithium and cobalt, and nearly 90% for rare earth elements.
- It also controls cobalt mines in the Democratic Republic of Congo, from where 70% of this mineral is sourced.
- In 2010, China suspended rare earth exports to Japan for two months over a territorial dispute.

What are countries around the world doing about it?

- US has shifted its focus on expanding domestic mining, production, processing, and recycling of critical minerals and materials.
- India has set up KABIL or the Khanij Bidesh India Limited, a joint venture of three public sector companies, to "ensure a consistent supply of critical and strategic minerals to the Indian domestic market".



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- Australia's Critical Minerals Facilitation Office (CMFO) and KABIL had recently signed an MoU aimed at ensuring reliable supply of critical minerals to India.
 - The UK has unveiled its new Critical Minerals Intelligence Centre to study the future demand for and supply of these minerals.

-Source: Indian Express

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