



Critical Minerals Alliance

For Prelims: Critical Minerals, Minerals Security Partnership

For Mains: Application of critical minerals, Significance of International groupings

Why in News?

There is growing concern in the Government over India not finding a place in the **Minerals Security Partnership**.

- Minerals Security Partnership is an **ambitious new US-led partnership** to secure supply chains of **critical minerals**, aimed at reducing dependency on China.
- **Demand for critical minerals**, which are essential for **clean energy** and other technologies is projected to **expand significantly in the coming decades**.

What are Critical Minerals?

- **About:**
 - 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.
- **Major Critical Minerals:**
 - **Graphite, Lithium and Cobalt** are used for making EV batteries.
 - **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 equipment.
 - While **Cobalt, Nickel and Lithium** are required for batteries used in electric vehicles, rare earth minerals are critical, in trace amounts, in the **semiconductors** and **high-end electronics manufacturing**.
- **Significance:**
 - 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.

What is Minerals Security Partnership (MSP)?

- **About:**
 - It is an initiative by the United States to bolster critical mineral supply chains.
- **Partners:**
 - Australia, Canada, Finland, France, Germany, Japan, the Republic of Korea, Sweden, the United Kingdom, the United States, and the European Commission.
- **Objective:**

- The goal of the MSP is to ensure that **critical minerals are produced, processed, and recycled** in a manner that supports the ability of countries to **realize the full economic development benefit of their geological endowments**.
- **Focus** would be on the supply chains of minerals such as **Cobalt, Nickel, Lithium** and also the 17 “rare earth” minerals.
- **Significance:**
 - The MSP will help **catalyze investment from governments** and the **private sector** for strategic opportunities across the full value chain that adhere to the highest **environmental, social, and governance standards**.

Why Exclusion from MSP is a Concern for India?

- **Supply of Critical Minerals:**
 - One of the key elements of India’s growth strategy is powered by an **ambitious shift in the mobility space** through the conversion of a large part of public and private transport to electric vehicles.
 - This, alongside a **concerted electronics manufacturing push**, underlines the **need to secure the supply of critical minerals**.
- **Dependency on Other Countries:**
 - Rare earth comprises seventeen elements and are classified as **light RE elements (LREE)** and **heavy RE elements (HREE)**.
 - **Some RE are available in India** such as Lanthanum, Cerium, Neodymium, Praseodymium and Samarium, while others such as Dysprosium, Terbium, Europium that are classified as HREE **are not available in Indian deposits** in extractable quantity.
 - India would require **supply support for such elements**.
- **Technology Status:**
 - Industry watchers say that one reason India would not have found a place in the grouping is because the **country does not bring much expertise to the table**.
 - In the group, countries like **Australia and Canada** have reserves and also technology to extract them and countries like Japan have the technology to process them.

What has India done regarding Critical Minerals?

- **Lithium Agreement:**
 - In mid-2020, India, through a newly floated state-owned company, **had signed an agreement with an Argentinian firm** to jointly **prospect lithium in the South American country** that has the third largest reserves of the metal in the world.
- **India-Australia Critical Minerals Investment Partnership:**
 - India and Australia decided to strengthen their partnership in the field of **projects and supply chains for critical minerals**.
 - **Australia has the resources** to help India fulfil its ambitions to **lower emissions** and meet the **growing demand for critical minerals** to help **India’s space and defence industries, and the manufacture of solar panels, batteries and electric vehicles**.

UPSC Civil Services Examination, Previous Year Questions (PYQs)

Q. Recently, there has been a concern over the short supply of a group of elements called ‘rare earth metals’. Why? (2012)

1. China, which is the largest producer of these elements, has imposed some restrictions on their export.
2. Other than China, Australia, Canada and Chile, these elements are not found in any country.
3. Rare earth metals are essential for the manufacture of various kinds of electronic items and there is a growing demand for these elements.

Which of the statements given above is/are correct?

- (a)** 1 only
- (b)** 2 and 3 only
- (c)** 1 and 3 only
- (d)** 1, 2 and 3

Ans: (c)

Explanation:

- Rare earth elements, also known as rare earths, are comprised of 17 elements in the periodic table. Of these, 15 are from the lanthanide group of elements from the 'f' block of the periodic table. Yttrium and scandium, while not part of the lanthanide group, are also considered rare earths because they share similar chemical properties. Rare earths are divided into two distinct groups: heavy rare earth elements (HREEs) and light rare earth elements (LREEs).
- Rare earth metals play a key role in our daily lives because of their broad application in cleaner technologies, computing, automotive, entertainment, medical and military fields. In many cases, there is no alternative to rare earths in manufacturing these products. Hence, statement 3 is correct.
- China is the major supplier of rare earths, providing between 90-95% of the global market supply. India and the US, once leading global suppliers, still produce some rare earth products, but their contributions are now dwarfed by China's huge hold over the market. Hence, statement 2 is not correct.
- In 2010, China significantly restricted their rare earth exports. That was done to ensure a supply of rare earths for domestic manufacturing and for environmental reasons. This shift by China triggered panic buying and some rare earth prices shot up exponentially. In addition, Japan, the United States, and the European Union complained to the World Trade Organization about China's restrictive rare earth trade policies. Hence, statement 1 is correct.
- Therefore, option (c) is the correct answer.

Source: IE

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