

QUAD CRITICAL MINERALS INITIATIVE – ECONOMY

NEWS: Recently, the Quad Critical Minerals Initiative was launched at the Quad foreign ministers meeting.

WHAT'S IN THE NEWS?

Second Quad Foreign Ministers' Meeting: Strengthening Indo-Pacific Diplomacy

- **Meeting Venue and Participants:** The second Quad Foreign Ministers' Meeting was held in **Washington, DC** and attended by India's **External Affairs Minister Dr. S. Jaishankar**, **US Secretary of State Marco Rubio**, **Australian Foreign Minister Penny Wong**, and **Japanese Foreign Minister Takeshi Iwaya**.
- **Unified Condemnation of Terrorism:** The ministers jointly **condemned the terrorist attack in Pahalgam, India**, and demanded that **those responsible—including perpetrators, organisers, and financiers—be brought to justice without delay**.
- **Call for International Cooperation:** They urged all **United Nations member states** to cooperate with relevant authorities under **international legal frameworks** to combat terrorism and prevent safe havens for terrorists.



New Quad Initiatives Announced in 2025

- **Launch of the Quad Critical Minerals Initiative:** The ministers launched a new initiative aimed at **creating reliable, transparent, and diversified global supply chains for critical minerals**, essential for clean energy, defence, and advanced technology.
- **Quad Indo-Pacific Logistics Network Exercise:** Plans were announced to conduct the **first field training exercise under the Quad Indo-Pacific Logistics Network** to improve logistics coordination and interoperability among member countries.

- **Ports of the Future Partnership in Mumbai: The Quad Ports of the Future Partnership**, to be launched in Mumbai, will focus on developing **resilient, digitally integrated, and green port infrastructure** in the Indo-Pacific.

Quad's Strategic Focus Areas for Long-Term Impact

- **Identified Four Key Domains:**
 1. **Maritime and Transnational Security** – Strengthening regional maritime domain awareness and securing sea lanes.
 2. **Economic Prosperity and Security** – Enhancing trade, investment, and financial resilience in the Indo-Pacific.
 3. **Critical and Emerging Technologies** – Coordinating innovation and technological standard-setting to counter authoritarian influence.
 4. **Humanitarian Assistance and Emergency Response (HADR)** – Collaborating for timely disaster relief and resilience building in vulnerable regions.

Supply Chain Vulnerabilities and Strategic Risks Identified

- **Concerns Over Supply Chain Disruptions:** The joint statement flagged growing risks from **abrupt disruptions in global supply chains**, particularly for critical minerals that are integral to manufacturing and energy systems.
- **Critique of Non-Market Practices:** The Quad expressed concern about the use of **non-transparent, state-backed policies** (e.g., export controls, subsidies, artificial pricing) by some countries to dominate mineral markets.
- **Economic and National Security Threat:** Over-reliance on any single country for processing critical minerals can lead to **coercive economic practices, manipulated pricing, and national security vulnerabilities**.

Importance of Critical Minerals in the Global Technological Shift

- **Pillars of Energy Transition and Digital Economy:** Critical minerals like **lithium, cobalt, nickel, rare earths, and graphite** are essential for manufacturing **batteries, semiconductors, EVs, solar panels, and wind turbines**.
- **IEA's Assessment:** The **International Energy Agency (IEA)** states that critical minerals are indispensable to achieving global energy transition and carbon neutrality goals.
- **Dhiraj Nayyar's Viewpoint:** As per **Dhiraj Nayyar**, the 21st century will be the “**Critical Minerals Age**,” replacing coal (19th century) and oil (20th century) as the primary driver of industrial and economic growth.

China's Dominance Over the Critical Minerals Landscape

- **Unmatched Processing Capacity:**
 - China handles **over 90% of global rare earths processing**, despite producing around two-thirds of rare earths.

- For **nickel, lithium, and cobalt**, China controls between **35% to 70%** of refining capacity.
- **Strategic Leverage Through Reserves:**
 - China holds the **largest rare earth reserves** globally (44 million metric tons), significantly ahead of Brazil (21 million) and India (6.9 million).
- **Threat of Global Supply Disruption:**
 - China's dominance allows it to **weaponise supply chains**, with the ability to disrupt the **global EV and green tech industries** through export restrictions or price manipulation.

India's National Critical Minerals Mission (NCMM), 2025

- **Launch and Objectives:**
 - Launched in **January 2025** with an outlay of **₹16,300 crore**, the NCMM aims to **promote domestic and offshore exploration, reduce import dependence, and build strategic reserves**.
- **Fast-Track Policy for Mining Approvals:**
 - The Mission proposes a **streamlined regulatory framework** to reduce approval delays for exploration and mining of critical minerals.
- **Alignment with Net Zero Goals:**
 - The Mission supports India's goal of achieving **Net Zero by 2070** by enabling a secure, self-reliant ecosystem for renewable energy technologies and battery storage systems.

India's Growing Demand and Existing Challenges

- **Rapidly Rising Demand:**
 - As per a 2024 report by **IEEFA**, India's demand for critical minerals will **more than double by 2030**, driven by the expansion of EVs, solar energy, and semiconductor manufacturing.
- **Slow Development of Domestic Mines:**
 - However, the report cautions that most of **India's critical mineral production will not materialize before 2035**, due to long lead times in mine development.
- **Vulnerability in Graphite Supply:**
 - India is **highly dependent on China for synthetic and natural graphite**, both of which are vital for battery production.

Diversifying Supply: Global Cooperation and African Engagement

- **Need for Alternative Partners:**

- India is advised to **diversify its critical mineral imports** by engaging with countries like **Mozambique, Madagascar, Brazil, and Tanzania**, which are leading producers of graphite and rare earths.
- **South-South Cooperation in Mining:**
 - Such partnerships can ensure more **equitable global access** and reduce strategic vulnerabilities by shifting away from China-centric supply routes.

India in the Minerals Security Partnership (MSP)

- **MSP Membership (2023):**
 - India joined the **US-led Minerals Security Partnership (MSP)** in June 2023. The MSP includes 14 member countries plus the European Union.
- **Collective Focus on Resilient Supply Chains:**
 - MSP promotes **investment in ethical and sustainable mining, joint exploration projects, and co-development of mineral processing technologies.**
- **Alternative to China's Dominance:**
 - The initiative aims to **counterbalance China's monopoly**, particularly in Africa and Latin America where China holds significant mining concessions.

Minerals Security Finance Network (MSFN)

- **Purpose of MSFN:**
 - India is also part of the **MSFN**, which complements the MSP by offering **financial support, investment insurance, and public-private partnership models** for mining and refining projects.
- **Global Coordination Platform:**
 - The MSFN helps participating nations **pool resources, share risk, and ensure long-term strategic access** to vital minerals and materials needed for high-tech industries.

Strategic and Geopolitical Implications for India and the Quad

- **Critical Minerals as Geostrategic Assets:**
 - Control over critical minerals is now a key lever of **geopolitical power**, as nations aim to secure resources critical for economic resilience and defence production.
- **Quad's Role in Ensuring Supply Chain Security:**
 - The **Quad Critical Minerals Initiative** reinforces collaborative efforts to **secure mineral supply chains, support manufacturing** in member nations, and **defend against economic coercion.**
- **India's Twin Track Strategy:**

- India is pursuing both **domestic capacity-building through NCMM** and **global cooperation through MSP/MSFN**, to create a **self-reliant and secure ecosystem** for future technologies.

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