

Securing India's Energy Security: *Critical Mineral Stockpiling*

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Introduction

Context

This discussion paper builds on the foreign policy team's two blogs on critical mineral stockpiling.

It has also been informed by ongoing research on for the paper titled “*Strengthening India's Critical Minerals Ecosystem: International Partnerships with the US, UK, and EU for Technology and Policy Collaboration*”



The Role of Critical Minerals Stockpiles in India's Energy and National Security

Noel Therattil

December 26, 2025



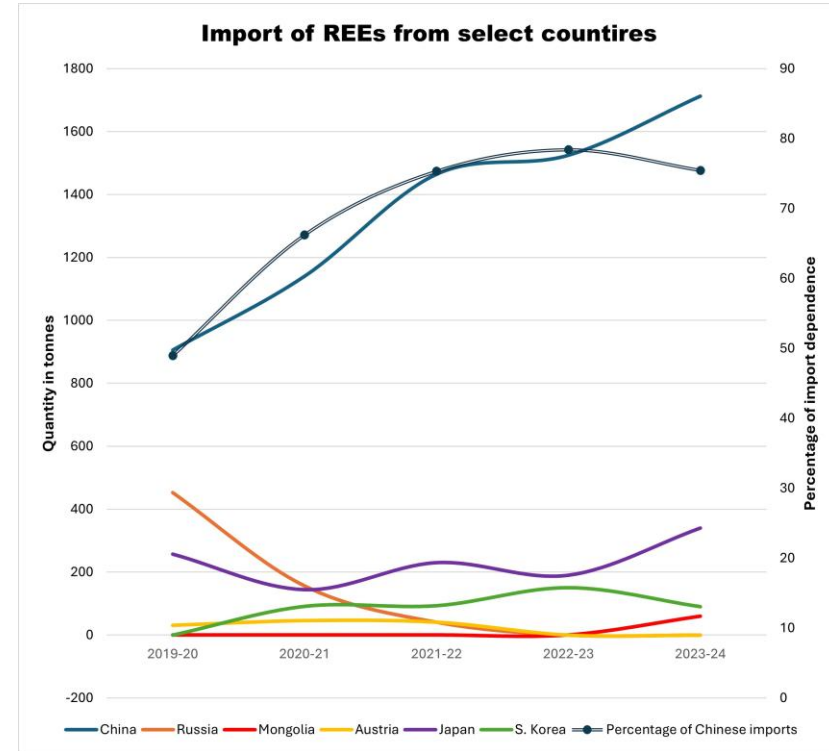
Critical Mineral Stockpiling: Global Approaches and India's Strategy

Noel Therattil

April 9, 2026

Introduction: The need for stockpiles

- India remains **100% dependent for at least 10 of 30** critical minerals (CM).
- ~75%** of India's imports of REE are sourced from China (**1700 tonnes** in 2024)
- China's export restrictions initiated since 2021 have affected global CM supply chains, including in India.
- CMs have high price volatility
- Stockpiles may serve as a buffer against supply disruptions, economic risks, and national security risks.



Imports of rare earth elements, scandium and yttrium, and compounds of rare earth metals from major import sources between 2019 and 2024. **Source:** Noel Therattil, *The Role of Critical Minerals Stockpiles in India's Energy and National Security*, Centre for Social and Economic Progress, 26 December 2025.

Proposed stockpiling in India

- A stockpile is understood as a strategic reserve maintained to ensure an uninterrupted supply of critical minerals.
- India has allocated **US\$57.5 million** to establish critical mineral stockpiles.
- Under the NCMM, the **central PSU will partner with private companies** to institutionalise a Stockpile Programme.
- Reports indicate that the government may create a **60 day stockpile** of REE and specific critical minerals.

Structure and Timeline

Research Question

1. What constitutes a critical mineral stockpile for India?
2. What should be the extent and institutional structure of India's critical mineral stockpiles?
3. What learnings from domestic and global stockpiling programmes can the government adopt?

Methodology

1. Secondary sources
2. Interviews with both Government and private stakeholders in India, RoK, and US.

Interviews planned with Japanese and European stakeholders
3. Case study-based approach: Oil, Food, and medical supplies stockpiling
4. Country comparison

Structure

1. Introduction to the discussion paper
2. History of Stockpiling in India: Focus on Oil and Food
4. Comparison of critical mineral stockpiling strategies: US, RoK, EU, Japan, China
5. Opportunities and challenges of stockpiling
6. Conclusion

Timeline

Area of work	Timeline
Literature Review	July – August 2026
Brown Bag	Mid August 2026
Identification of stakeholders and Interviews	August - September 2026
Writing the paper	October – November 2026
First draft	December 2026
Review Process	January – February 2027
Final Paper	March 2027
Dissemination	March 2027

Preliminary findings

How other countries compare

Country	Stockpiling Agency	Size of Stockpile (in Volume, Value, Days)	Purpose (Civil / Military)	Key Feature
Japan	JOGMEC	60 Days (flexible) / Worth US\$ 389.7 million.	C&M	Public-private model. Targets are adjusted based on geo-economic significance
US	National Defence Stockpile – DoD	Worth US\$ 1 billion.	M	Government-owned and managed stockpile that can be used only for defence purposes .
	US Strategic Critical Mineral Reserve – Independent body to be formed	Unknown	C*	Public-Private model where industries pay a commitment fee to access stockpiles.
South Korea	PPS and KOMIR	100 days for rare metals. 60 days for non-ferrous metals	C&M	Public-Private model with statutory stockpiling obligations .
EU	European Critical Raw Materials Centre	8.6 million Tonnes / Inventory worth US\$ 28.1 billion	C&M	Public-Private model with coordination between national stockpiles of member states.
China	National Food and Strategic Reserves Administration	40,000 Tonnes – 100,000 Tonnes	C&M	Centralised state management; stockpiles across extraction and processing stages

Types of Stockpiles

Type of Stockpiling	Advantages	Disadvantages
Public: Government owns and manages the stockpile, either directly or through a public agency.	Provides close monitoring and control over stockpiling inventories. Useful for maintaining strategic stockpiles for national security.	Requires increased fiscal and administrative capacity from the government.
Private: Companies store government-mandated minimum inventory levels in addition to their existing commercial inventories.	Being decentralised inventories, they tend to be sector-specific and reflect the risk exposure of individual industries. Integrated within operational supply chains, enabling the faster and more targeted release of stocks.	Stockpiles do not meet the requirements of the broader economy or the military.
Market-based: Metal exchanges and financial intermediaries maintain minimum reserves.	Promptly addresses commodity price fluctuations. Expertise and assets of commodity traders can be leveraged to manage stockpiles more efficiently.	Some critical minerals are not traded on exchanges. Stockpiles may reflect regional dynamics rather than broader global trends.

Challenges associated with Stockpiling

Storage Logistics	Trade and Demand	Compatibility with domestic assets	Processing	Geopolitical considerations
Vulnerability to chemical degradation	Frequency with which material is currently traded, shipped, or stockpiled	Availability and composition of geologic resources in the stockpiling country	Degree of additional processing required to synthesise final products	Allied strategic convergence on the use of stockpiles
Risk of contamination during storage	Import dependency and supply chain overconcentration	Domestic extraction, processing, and refining capacity of the stockpiling country	Versatility for serving multiple end-use markets and applications.	General and sector-specific location of stockpile
Vulnerability to physical attacks and cyber-attacks	Price discovery of the commodity			Protection of critical mineral trade routes during conflict
Probability and severity of chemical incidents	Potential to support byproduct recovery of other critical minerals			
Form of storage, including volume and density of substance	Relevance for technologies with salient economic and/or national security value			Requirements for defence stockpiles
Type of ownership of stockpile (Public or private)				

Challenges and Questions

Challenges

1. Lack of literature on CM stockpiles especially with respect to India
2. Access to mineral Stockpile data is limited and often vague.
3. Government stakeholders are unable to provide direction /inputs as the matter is being considered and consensus may not have been arrived at.
4. Understanding stockpiling in different countries requires reading through fragmented legislations.
5. No country with a known stockpile shares similarity with India's unique circumstances – high geopolitical risk combined with a nascent industrial base.

Questions

1. What constitutes a CM stockpile?
2. Does India need a CM stockpile?
3. Which other existing stockpiles can serve as a reference for understanding challenges and risks of stockpiling?
4. Are best practices from Japan, South Korea, and EU applicable to the Indian context? How should the country comparison be approached?
5. What institutional systems for managing stockpiles should be explored? What should be the role of the government?



THANK YOU