CAPES CONSORTIUM FOR ASIA PACIFIC & EURASIAN STUDIES

No. 06/2025 Dated:14 November 2025

Pakistan's Emerging Role in the Critical Minerals Economy: Challenges and Opportunities in U.S. Economic Cooperation

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SYNOPSIS

Pakistan's first-ever shipment of rare-earth minerals to the United States in October 2025 marked a symbolic turning point in the country's economic diplomacy. This brief examines the global context of critical minerals competition, outlines the United States' economic cooperation agenda, and analyzes Pakistan's opportunities and constraints in leveraging its resource endowment. It argues that Pakistan's success will depend on a shift from resource extraction to resource strategy, anchored in transparent governance, midstream processing, and balanced diplomacy with both Washington and Beijing.

On 2 October 2025, Pakistan dispatched its first batch of rare-earth and critical minerals to the United States under a $500 million agreement. While the physical scale of the export was modest, its timing and symbolism were significant. For the first time, Pakistan entered a domain previously dominated by major powers and resource economies: critical minerals.

The event came amid a reshuffling of global supply chains, with the U.S. and its partners seeking to reduce dependence on Chinese processing of rare earths, lithium, and other minerals essential to green technologies. For Pakistan, the export signaled a deliberate move toward economic diversification and an attempt to redefine its role within the broader Asia-Pacific geo-economic landscape.

This brief situates Pakistan's rare-earth export within the global race for critical minerals, examines U.S. cooperation mechanisms, and explores how Islamabad can transform symbolic engagement into a coherent strategy for national development.

Global Context: The Geoeconomics of Critical Minerals

Critical minerals have become the backbone of the twenty-first-century industrial economy. They underpin the energy transition, defense manufacturing, and digital infrastructure. Yet, their supply chains are among the most concentrated and fragile in the world.

It is estimated that by 2024, the top three refining countries controlled roughly 86 percent of global processing capacity for key minerals such as nickel, cobalt, lithium, and rare earths. By some estimates, China dominates nearly every stage of this value chain, from extraction to refining to magnet production, holding 70 percent of rare-earth processing and nearly 60 percent of lithium refining. Indonesia and Russia hold regional advantages in nickel and palladium, while the United States remains heavily import-dependent.

This concentration has created strategic vulnerabilities. When Beijing imposed export controls on gallium and germanium in 2023, followed by new restrictions on graphite in 2024, global markets were reminded that critical minerals could become instruments of geopolitical leverage, much as oil was in the twentieth century.

As the energy transition accelerates, competition over mineral access has intensified. The International Energy Agency (IEA) projects that global demand for lithium will increase sevenfold by 2030, while copper demand could outpace supply by 30 percent by 2035. The minerals race is not only about extraction; it is about who controls the midstream: refining, separation, and value addition.

The U.S. Strategy: From Dependence to Diversification

Washington's response has evolved from policy awareness to industrial action. The Inflation Reduction Act (IRA), the Defense Production Act (DPA), and the Minerals Security Partnership (MSP) form the backbone of U.S. strategy to secure mineral supply chains.

The MSP, launched in 2022 with partners including the EU, Japan, Australia, and Canada, focuses on financing responsible mining and refining projects in friendly nations. Bilateral agreements like the U.S.-Japan Critical Minerals Agreement (2023) and negotiations with the U.K. and EU aim to extend tax-credit eligibility for minerals processed in partner states.

Domestically, the U.S. is investing in new refining and separation projects, for example, Energy Fuels' White Mesa Mill in Utah is already producing pilot-scale heavy rare-earth oxides, and Lynas Rare Earths' proposed Texas facility (Seadrift) remains under development and subject to

commercial and offtake uncertainties. At the same time, U.S. policy is increasingly described by analysts as being about 'de-risking' critical-minerals supply chains away from excessive reliance on China.

For the U.S., cooperation with emerging partners is both a strategic necessity and a geopolitical instrument. By sourcing critical minerals from nations beyond its traditional allies, Washington reduces concentration risks and gains diplomatic leverage in regions historically influenced by Beijing.

Pakistan's Entry Point: A Case of Strategic Symbolism

Against this backdrop, Pakistan's October 2025 shipment of rare-earth ore to the United States was a geopolitical signal. It coincided with the arrival of Pakistan's first crude oil cargo from Houston, representing a broader pivot in U.S.-Pakistan engagement toward economic rather than military cooperation. After decades of a security-dominated relationship, this shift toward trade and investment carries strategic weight.

For Washington, engaging Pakistan offers three advantages:

1. Geographic leverage: Pakistan sits at the intersection of South, Central, and West Asia, bordering resource-rich Afghanistan and maritime routes through Gwadar and Karachi.
2. Strategic diversification: Pakistan's entry provides symbolic proof that the U.S. can expand its resource network beyond allies like Australia or Canada.
3. Regional balancing: Engagement with Pakistan provides Washington an alternative presence in a region increasingly shaped by Chinese infrastructure and Gulf capital.

For Islamabad, the export offered visibility, access to U.S. technical expertise, and the potential to attract foreign investment into its underdeveloped mining sector.

Pakistan's Critical Minerals Landscape

Pakistan possesses a rich but underutilized mineral base. Notable resources include:

- Rare Earth Elements (REEs): Found in Balochistan and parts of Khyber Pakhtunkhwa.
- Copper and Gold: The Reko Diq deposit remains one of the world's largest undeveloped copper-gold reserves.
- Lithium: Traces identified in the Gilgit-Baltistan region and northern mountain ranges.
- Chromite, Antimony, and Graphite: Present in scattered deposits but poorly surveyed.

However, the sector faces chronic structural issues:

- Limited exploration data and outdated geological surveys.
- Fragmented governance, with provinces controlling mineral licensing under the 18th Amendment.
- Weak infrastructure, roads, ports, and energy supply remain insufficient for large-scale mining.
- Absence of midstream capacity, forcing reliance on raw ore exports.

Without targeted investment and regulatory reform, Pakistan risks remaining a supplier of unprocessed minerals, forfeiting most of the value-added potential.

Constraints to Effective Cooperation

While Pakistan's mineral wealth offers potential, four constraints must be acknowledged before meaningful cooperation with the U.S. or other partners can succeed:

1. Technology and capital deficits: Pakistan lacks refining and metallurgical capacity. Foreign partners, including U.S. or Japanese firms, could bridge this gap, but only within a predictable legal and tax environment.
2. Policy inconsistency: Overlapping jurisdictions and abrupt regulatory changes undermine investor confidence. The absence of a single national minerals framework discourages long-term commitments.
3. Infrastructure bottlenecks: The logistics network linking mining areas to export ports remains inadequate, and energy shortages raise production costs.
4. Geopolitical balancing: Pakistan must avoid framing economic cooperation with the U.S. as anti-China. Its success will depend on demonstrating complementarity, using Western technology and Chinese-built infrastructure in a mutually reinforcing way.

Opportunities for Pakistan

Despite these challenges, Pakistan stands at a unique inflection point. Three developments create a window of opportunity:

1. Shifting global supply chains

As Western economies seek new suppliers, Pakistan can position itself as a credible partner by aligning exploration, environmental, and export standards with international norms. A transparent, rules-based mining framework would attract responsible capital.

2. Regional connectivity

Pakistan's geography allows it to serve as a corridor linking Central Asian mineral producers (Afghanistan, Kazakhstan) with Arabian Sea ports. Integration of logistics under the CPEC and CASA-1000 frameworks could amplify this advantage.

3. Resource diplomacy

Pakistan can use critical minerals cooperation to rebalance its external relations, broadening engagement with the U.S., Gulf investors, and multilateral lenders, while sustaining its strategic partnership with China. By reframing itself as a bridge state, rather than a frontline or client state, Pakistan could anchor a regional critical-minerals network that benefits all partners.

Policy Recommendations

To convert this moment of visibility into a sustainable strategy, Pakistan should adopt a structured national approach:

1. Establish a National Critical Minerals Policy Framework

- Create a unified policy that consolidates provincial data and sets national priorities for exploration, licensing, and export.
- Mandate geological re-surveys using satellite and AI-based mapping in partnership with the U.S. Geological Survey, Japan's JOGMEC, or China Geological Survey.
- Establish a central database of critical mineral reserves and production statistics.

2. Develop Midstream Capacity

- Launch joint ventures for refining and processing facilities with partners offering technology transfer.
- Prioritize tax incentives for value-added operations: metallurgy, magnet fabrication, and battery component manufacturing, over raw exports.
- Establish industrial zones near Gwadar or Hub with dedicated power supply and transport access for mineral processing.

3. Build Governance and ESG Standards

- Implement a transparent licensing regime aligned with international environmental, social, and governance (ESG) frameworks to attract responsible investment.
- Join global initiatives such as the Extractive Industries Transparency Initiative (EITI) to enhance credibility.

4. Balance Diplomatic Engagement

- Frame cooperation with the United States as complementary to CPEC, not competitive.
- Encourage triangular cooperation, e.g., U.S. capital, Chinese infrastructure, Pakistani resources, to reduce dependency on any single partner.

5. Foster Human Capital and R&D

- Establish mining and materials science programs in collaboration with U.S. and Chinese universities.
- Offer scholarships and industry internships to develop metallurgical engineering capacity.

Conclusion

Pakistan's dispatch of rare-earth minerals to the United States in October 2025 may appear modest in scale but profound in implication. It represents a pivot from transactional aid to strategic trade, an attempt to carve economic relevance in an era defined by technological rivalry and resource competition. As global supply chains reorganize around critical minerals, Pakistan has an opportunity to position itself as a credible, balanced, and responsible supplier. Doing so will require consistent policy, institutional coherence, and a long-term vision that links economic development with foreign policy. The competition for critical minerals is not a zero-sum game. A stable, transparent, and investment-friendly Pakistan benefits both Washington and Beijing, and, most importantly, its own people. The challenge now is to convert a single shipment into a sustained strategy, transforming Pakistan's mineral wealth into national strength.

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