

In search of Critical Minerals: How It is Reshaping International Politics

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Introduction

The transformative international political landscape is being reshaped because of the competition for critical minerals (CM). The Rare Earth Elements (REE), along with lithium, cobalt, and gallium, are used in the defense sector and high-tech energy.² That is why critical minerals are being transformed into a strategically important resource for global competition for positioning and repositioning the great power footprint.³ Midstream capacity plays a fundamental role here in controlling the supply chain and the risk of disruption. So, great powers are competing by enhancing refining, processing, and logistical capacity to overcome geological constraints.⁴ While the US is trying to overcome geological constraints by expanding midstream capacity, China is becoming a centre of global supply chains through its advanced midstream capacity.

The extreme processing and refining capacities are the key to China's geographical concentration of midstream capacity. Though the country dominates the critical mineral refining but has vulnerabilities in its own supply. By portraying this lens, Chinese domination in critical minerals exposes the need for looking beyond the geopolitical lens to explore the country's critical mineral strategies.⁵ But geopolitical tensions control the supply chain. This is evident in Chinese economic pressures on Australia and Lithuania, along with the restrictions on Japan regarding REE supply. But a cooperative posture is also evident as the country is not targeting a particular economy in terms of the reduction of REE export levels.⁶

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² Wison Center. 2023. "The Changing Geopolitics of Critical Minerals and the Future of the Clean Energy Transition | Wilson Center." March 9. <https://www.wilsoncenter.org/event/changing-geopolitics-critical-minerals-and-future-clean-energy-transition>.

³ McCallion, Christopher. 2024. "Semiconductors Are Not a Reason to Defend Taiwan." Defense Priorities, June 18. <https://www.defensepriorities.org/explainers/semiconductors-are-not-a-reason-to-defend-taiwan/>.

⁴ Anania, Jessica. 2025. "What the Critical Minerals Race Means for Women." Foreign Policy, November 17. <https://foreignpolicy.com/2025/07/10/women-critical-minerals-mining/>.

⁵ Zhou, Jiayi, and André MånbergerSIPRI. 2024. Critical Minerals and Great Power Competition.

⁶ Palit, Amitendu. 2014. "Critical Minerals and Geopolitics: The Quest for Global Supremacy." Lee Kuan Yew School of Public Policy at the National University of Singapore.

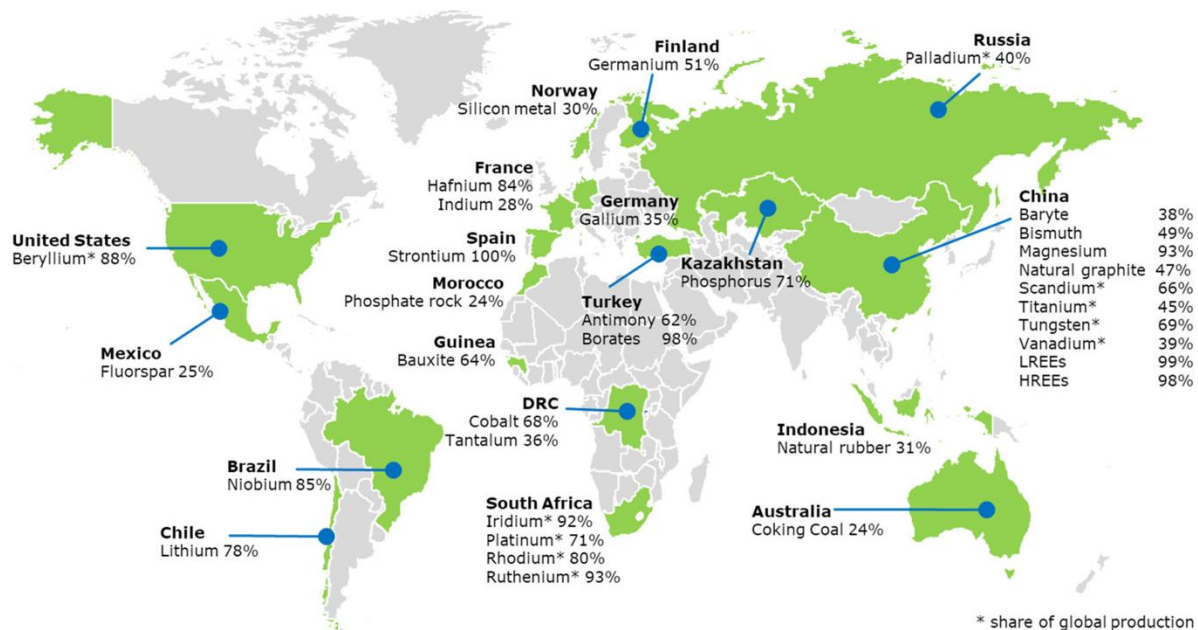


Figure 1⁷

However, the Chinese excessive geographical concentration in midstream capacity and the rest of the world's dependency on CM contribute to an imbalanced power relation. The rest of the world is trying to compete with China, as the US is prone to advancing its refining capacity, and the EU's initiative to increase the production and recycling capacity of CM.⁸ At the same time, several initiatives are taken by the resource-rich economies to enhance local processing facilities through nationalization and export restrictions. But these initiatives taken by the rest of the world are not practical to exclude China but to cooperate with the country, as it holds over 90% of the total share.⁹

Within this scenario, China is using this leverage to revise the geopolitical calculations. In many cases, this leverage works as a deterrent to Western actions. The country has already restricted gallium, germanium, and graphite, which are vital for semiconductors and defence equipment like missiles and the production of F-35 jets. In this way, China is compelling the West to sit at the negotiation table.¹⁰ In contrast, the West is responding with industrial policies aiming to foster a resilient supply chain that can reduce market dependency.

⁷ Encyclopedia.pub

⁸ Runganga, Desire, Peta Ashworth, and Bishal Bhadraraj. 2025. "Towards Advancing the Global South's Understanding of Mineral Criticality: Implications of the North-South Geopolitical Confrontations on Critical Minerals." *The Extractive Industries and Society* 23 (September): 101680. <https://doi.org/10.1016/j.exis.2025.101680>.

⁹ Muzinich, Justin G., Gina M. Raimondo, James D. Taiclet, Jonathan E. Hillman, and Anya Schmemmann. 2025. "U.S. Economic Security | Council on Foreign Relations." October 15. <https://www.cfr.org/task-force-report/us-economic-security>.

¹⁰ Wajid, Asna. 2025. "The Geopolitics of the Gulf States' Push for Critical Minerals." IISS. <https://www.iiss.org/online-analysis/charting-middle-east/2025/07/the-geopolitics-of-the-gulf-states-push-for-critical-minerals/>.

Therefore, this article intends to explore how the quest for CM is shaping global alliance structure, redefining investment flows, and harvesting trade diplomacy-that is going to reshape the geopolitical calculations in the upcoming decades.

A Paradigm Shift from Petro-Geopolitics

The way the world is shifting, it's not a sudden lurch but is shaped by the constant struggle of the actors and the shifting geopolitical trends. Growing technological advancement and the dependency of high-tech energies on the critical minerals foster a new paradigm. It is critical because nations' security and economy are dependent on it, as its supply chain is vulnerable to disruption, and its opportunity cost is too high that make it unreplaceable.¹¹ Accordingly, the CM's usability in the circular economy makes it necessary for a sustainable and efficient use of energy. That is how the trend in geopolitics is shifting from petro-geopolitics to electro-geopolitics.

However, the electro-geopolitics is not replacing the energy-geopolitics but rather acts as a determining factor, as global high-tech energy supply depends on the midstream supply chain. So, initiatives are taking place by the competing powers to control the supply chain and reduce dependency on it. Australia's large share of lithium and cooperation with the US and allies is considered a threat to Chinese control over the supply chain.¹² Again, the US's broader plan to enhance midstream capacity is largely centered on the concentrated critical minerals of Greenland, as it contains 39 of 50 major critical minerals. Europe is also contributing to reducing the market dependency of REE and producing a significant share of lithium.¹³ For example, Europe's largest reserve of lithium and titanium is possessed by Ukraine, but the critical locations are now in control of Russian hands. India also contains the world's third-largest REE reserves but contributes only 1% of the global share.¹⁴ This is why Chinese control over the supply chain is increasing, as the others are not competing sufficiently.

So, why are the trends of geopolitics moving from petro-geopolitics to electro-geopolitics? It's best answered through the energy-efficient countries' ambition for the electric vehicle industry and battery-production reliance on lithium, nickel, and REE. Gulf states are hedging with the US and China in terms of capacity building in producing and refining CM.¹⁵ As they focus on

¹¹ Lu, Christina. 2025a. "Chinese Rare Earths Help Power U.S. Defense, Military." https://foreignpolicy.com/2025/08/11/china-rare-earth-us-defense-military-pentagon-supply-chain/?tpcc=recirc_featured_horizontal051524.

¹² Runganga, Desire, Peta Ashworth, and Bishal Bharadwaj. 2025. "Towards Advancing the Global South's Understanding of Mineral Criticality: Implications of the North-South Geopolitical Confrontations on Critical Minerals." *The Extractive Industries and Society* 23 (September): 101680. <https://doi.org/10.1016/j.exis.2025.101680>.

¹³ Schröder, Patrick. 2025. "Rich Countries Stockpiling Critical Minerals Is Not a Plan." *Foreign Policy*, November 17. <https://foreignpolicy.com/2025/07/15/critical-minerals-governance-body-treaty/>.

¹⁴ Burke, Sharon E. Burke, Llewelyn Hughes, Phung Quoc Huy, and Kristin Vekasi. 2022. *Critical Minerals: Global Supply Chains and Indo-Pacific Geopolitics* | The National

¹⁵ Schröder, Patrick. 2025. "Rich Countries Stockpiling Critical Minerals Is Not a Plan." *Foreign Policy*, November 17. <https://foreignpolicy.com/2025/07/15/critical-minerals-governance-body-treaty/>.

diversifying their economy by advancing the EV and battery industries, they need to enhance their midstream capacity. The technology and expertise that are necessary, with China's help, they are trying to build their capacity; on the other hand, the West is perceiving the resource-enriched Gulf states as an alternative to Chinese-controlled supply chain.¹⁶ So, along with the growing necessity of the critical minerals across the industries, energy-enriched countries are also taking initiatives to diversify their economies, which portrays a paradigm shift of global concern to electro-geopolitics. That means geopolitics is being reshaped through the growing importance of electro-tech countries that are CM-enriched and striving to enhance their midstream capacity.

The Global South's Stake

The possession of mineral resources leverages the global south to claim its stake in global politics. In other words, their possession of CM often facilitates subtle changes in geopolitical trends. This contributes to their internal balancing capacity building, which helps them to deal with the great powers' pressures.

The countries of the Global South are the leading producers of many CM that are in the leading position of market demand. Indonesia, Brazil, Peru, India, South Africa, Congo, and many more Global South countries contain huge reserves of different CM that are crucial for high-tech energies.¹⁷ For example, Peru produces almost 46% Arsenic, which is crucial for the making of semiconductors and alloys.¹⁸ Again, Indonesia is the world's largest Nickel producer, which is used in stainless steel and super alloys.¹⁹ This country also produces a huge amount of lithium, which is how the country is matching up with the world's growing demand for lithium-ion batteries. The world's largest production of Manganese and Platinum, which are crucial for bio-medical technologies and the steel industries, is led by South Africa.²⁰ Similarly, Congo is the largest producer of Tantalum and possesses many other crucial CM. India, on the other hand, produces the world's 33% share of Barite, which is important for the

¹⁶ US News. 2025. "US, Indo-Pacific Partners Agree to Strengthen Maritime, Critical Minerals Cooperation." <https://www.usnews.com/news/politics/articles/2025-07-01/us-indo-pacific-partners-agree-to-strengthen-maritime-critical-minerals-cooperation>.

¹⁷ Wilson Center. 2023. "The Changing Geopolitics of Critical Minerals and the Future of the Clean Energy Transition | Wilson Center." March 9. <https://www.wilsoncenter.org/event/changing-geopolitics-critical-minerals-and-future-clean-energy-transition>.

¹⁸ Zhou, Weihuan. 2024. "China's Strategy on Critical Minerals Surpasses Geopolitics." World Economic Forum, November 19. <https://www.weforum.org/stories/2024/11/china-critical-mineral-strategy-beyond-geopolitics/>.

¹⁹ Kim, Kijin. 2025. Advancing Resilient and Sustainable Development of Critical Minerals in Asia and the Pacific. no. 339. Asian Development Bank. <https://www.adb.org/publications/development-critical-minerals-asia-pacific>.

²⁰ Lu, Christina. 2025a. "Chinese Rare Earths Help Power U.S. Defense, Military." https://foreignpolicy.com/2025/08/11/china-rare-earths-us-defense-military-pentagon-supply-chain/?tpcc=recirc_featured_horizontal051524.

oil and gas industries. Within this calculation, China is leading the Global South in producing, refining, and possessing control over the supply chain of many CM.

But most of the countries are not well-equipped for extracting, processing, and refining CM. That illustrates their vulnerabilities in midstream capacity. For Instance, Congo is highly dependent on China for its midstream processing and manufacturing, and almost 80% of the country's Cobalt export destination is to China.²¹ Likewise, many other countries are also dependent on high technologies and expertise that they lack. That is why, though many countries of the Global South possess the maximum share of CM production, they are dependent on their lack of refining and processing capacity.²² On the contrary, countries like Indonesia are advancing their capacity and becoming influential players in this game. Almost 10-12% of the GDP share of Indonesia is coming from the country's mining sector.²³ Another example is Brazil, where the mining sector is contributing almost 4% of the country's GDP. There are other Global South countries whose GDPs are becoming dependent on the mining sector. Therefore, the internal balancing capabilities of the Global South countries are enhancing as they are prone to advancing their mining sectors.

This leverage on CM helps the Global South to claim its position in global politics. But the struggle of the weaker mineral-exporting countries of the Global South and the mineral-consuming Global South is playing a critical role, along with their struggle with the Global North. So, weaker mineral-exporting countries are struggling with two fronts at a time.²⁴ This struggle is between the raw material producers and the advanced technology and expertise possessors. However, the dependency is mutual with varied perspectives from different countries. As some of the weaker Global North countries are enhancing their midstream capacity, their internal balancing capacity is strengthening. This provides them with the confidence and bargaining flexibility at the negotiation table while dealing with their sovereign issues. For instance, Indonesia's flexibility in dealing with its sovereign issues depends on multiple sectors, but its mining sector's possession of approximately 12% of GDP significantly emphasizes why effective possession of CM enhances its advantage in global politics.²⁵

Therefore, weaker Global South countries are becoming influential actors in global politics that help them mitigate the challenges they face in upholding their autonomy. And resource-

²¹ Zhou, Jiayi, and André Månberger. 2024. Critical Minerals and Great Power Competition.

²² Wajid, Asna. 2025. "The Geopolitics of the Gulf States' Push for Critical Minerals." IISS. <https://www.iiss.org/online-analysis/charting-middle-east/2025/07/the-geopolitics-of-the-gulf-states-push-for-critical-minerals/>.

²³ Temaj, Granit. 2025. "Rebuilding U.S. Midstream Capacity for Critical Minerals." M2i-Global, July 21. <https://www.m2i.global/news/rebuilding-us-midstream-capacity-for-critical-minerals/>.

²⁴ Santos, Edmarverson A. 2025. "The Geopolitics of Critical Minerals." Diplomacy and Law, June 19. <https://www.diplomacyandlaw.com/post/the-geopolitics-of-critical-minerals>.

²⁵ Schröder, Patrick. 2025. "Rich Countries Stockpiling Critical Minerals Is Not a Plan." Foreign Policy, November 17. <https://foreignpolicy.com/2025/07/15/critical-minerals-governance-body-treaty/>.

consuming global south are becoming dominant players as they tend to preserve dominance in their region because of their strong contribution to the CM supply chain.

The Great Power Contestation for CM Supply Chain

The great power politics is undergoing paramount changes because of the contestation for CM. Though Chinese control of the CM supply chain demonstrates its monopoly in mining, refining, and magnet processing capacity, the West is trying to reduce its dependency on the Chinese-controlled CM market and the initiatives taken to enhance its capacity. The contestation has two geopolitical aspects that are responsible for reshaping global politics. First, CMs are critical as they are crucial for circular clean energy, and second, their importance in the high-tech energy and defense industries.

The major challenge for the West is the Global South's nationalization initiatives, from which the West usually gets the raw materials. Another challenge is that most of the mineral-enriched countries' dependent on China for mining and refining.²⁶ The West is also having trouble because of the cost of the refined renewable energy production protocol and the rapid nationalization and industrialization initiatives of the Global South.²⁷ That necessitates the Global North to cooperate with the Global South and take coordinated initiatives.

The West's coordinated initiatives involved the EU's Critical Raw Materials Act (CRMA) and Net Zero Industry Act, which are intended to reduce dependence on the current supply chain by targeting REE-enriched countries in Latin America and Africa for raw materials.²⁸ Britain's initiative to include the Commonwealth nations, along with Mongolia and Greenland, resembles its intention to reduce the raw material crisis. The US, on the other hand, is focusing on domestic mining and the allied supply chain through the Inflation Reduction Act and MSP.²⁹ Meanwhile, Australia's National Critical Mineral Strategy and Canada's Mineral Strategy are aimed at focusing on export expansion and defense partnerships, and bilateral deals with industry support, respectively.

Amid these taken strategies, their import dependency is aimed to be reduced. The US is reliant on China for 21 of the 50 minerals. In 2023, over 90 percent of import dependency on gallium,

²⁶ Runganga, Desire, Peta Ashworth, and Bishal Bharadwaj. 2025. "Towards Advancing the Global South's Understanding of Mineral Criticality: Implications of the North–South Geopolitical Confrontations on Critical Minerals." *The Extractive Industries and Society* 23 (September): 101680. <https://doi.org/10.1016/j.exis.2025.101680>.

²⁷ Lu, Christina. 2025b. "Trump's Chaotic Agenda Has a Critical Through Line." *Foreign Policy*, November 17. <https://foreignpolicy.com/2025/02/26/trump-rare-earth-critical-mineral-resource-ukraine-greenland-canada/>.

²⁸ Muzinich, Justin G., Gina M. Raimondo, James D. Taiclet, Jonathan E. Hillman, and Anya Schmemmann. 2025. "U.S. Economic Security | Council on Foreign Relations." October 15. <https://www.cfr.org/task-force-report/us-economic-security>.

²⁹ Shattuck, Thomas J. 2021. "Stuck in the Middle: Taiwan's Semiconductor Industry, the U.S.-China Tech Fight, and Cross-Strait Stability." *Orbis* 65 (1): 101–17. <https://doi.org/10.1016/j.orbis.2020.11.005>.

graphite, indium, and bismuth illustrates the US's vulnerability in its midstream capacity.³⁰ Accordingly, Europe's 71% import reliance on gallium and 45% germanium illustrates the Chinese dependency that is not going to be minimized overnight.³¹ However, initiatives are taken, for instance, targeting the Gulf countries for the raw materials and the refined ones. But the Gulf countries are also dependent on China for mining and refining.³² Here, the Western strategy is to reduce direct dependency on China, but this process increases the cost.

Along with that, Taiwan's ability to manufacture advanced semiconductors is making it the bone of geopolitical contestation.³³ So the geoeconomic importance of Taiwan fosters the contestation between the US and China. Though Taiwan has been one of the contested issues between the two great powers, its geopolitical importance is heightened because of the geoeconomic importance it possesses due to its semiconductor manufacturing ability.

That illustrates that critical minerals are critical as they foster the geopolitical importance of a particular geography. So the great power contestation is not limited to their midstream capacity building but is also taking advantage of the critical geographies that have crucial geoeconomic importance. That's how the Indo-Pacific countries' possession of CM strengthens their stake in global politics, as they are crucial for great power contestation in the region.

Conclusion

The world is not running within a fixed equation; rather, the rules are flexible and mutating over time. It is the dependency of the global economy that determines the trend of geopolitics. The growing reliance on advanced, efficient, and low-cost technologies in the military sector, along with reliance on efficient tech products, fosters economic dependence on semiconductors, which in turn highlights the importance of CM. While petro-geopolitics continues to influence, the dependency on advanced technologies is driving this paradigm shift.

To sum up, it is the low-cost, energy-efficient, renewable, and environmentally friendly technologies, along with the high opportunity cost, that are vulnerable to replacement in the forthcoming decades—which decides the importance of CM in shaping geo-politics. Therefore,

³⁰ Temaj, Granit. 2025. "Rebuilding U.S. Midstream Capacity for Critical Minerals." M2i-Global, July 21. <https://www.m2i.global/news/rebuilding-us-midstream-capacity-for-critical-minerals/>.

³¹ Cho, Hyun Soo, and Jane Nakano. 2025. "The Minerals Security Partnership Under the South Korean Leadership." <https://www.csis.org/analysis/minerals-security-partnership-under-south-korean-leadership>.

³² Gupta, Chaintanya. 2025. "Critical Minerals Explained: Why They Matter for Geopolitics, Clean Energy & Tech | The Belfer Center for Science and International Affairs." October 30. <https://www.belfercenter.org/explainer-what-are-critical-minerals>.

³³ Burke, Sharon E. Burke, Llewelyn Hughes, Phung Quoc Huy, and Kristin Vekasi. 2022. Critical Minerals: Global Supply Chains and Indo-Pacific Geopolitics | The National Bureau of Asian Research (NBR). <https://www.nbr.org/publication/critical-minerals-global-supply-chains-and-indo-pacific-geopolitics/>.

it is the possession of the raw minerals and the advanced midstream capacity that will decide the future of global politics.