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Forging a New Critical Minerals Reality

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I. Introduction

Secure critical minerals supply chains are essential to American safety and prosperity. Minerals such as rare earth elements, lithium, cobalt, graphite, and gallium underpin advanced weapons systems, semiconductors, energy infrastructure, and next-generation technologies. Yet global supply chains for these materials remain heavily concentrated in the People's Republic of China (PRC), particularly at the processing and refining stages, where strategic leverage is greatest.

Through decades of state subsidies, coordinated industrial policy, and vertically integrated supply chains, Beijing has built dominant positions across the critical minerals ecosystem.[1] This market concentration creates both economic distortions and geopolitical vulnerabilities that China has proven willing to exploit.

China's Weaponization of Critical Minerals:

Gallium and germanium (2023-2024): Beijing imposed export controls on these minerals, which are vital for advanced semiconductors and military systems, including radar, missile seekers, and night-vision equipment.[2] Controls were tightened again in 2024.[3]

Heavy rare earth elements (2025): In April 2025, Beijing restricted exports of seven heavy rare earths — including dysprosium and terbium, essential for high-performance permanent magnets in electric vehicles, wind turbines, and defense systems.[4] These restrictions triggered production shutdowns at automotive manufacturers across the United States and Europe, exposing the

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[1] Jonathan Evans, Matthew Sloustcher, and Jonathan Rowntree, "Predatory Pricing: How the Chinese Communist Party Manipulates Global Mineral Prices to Maintain Its Dominance," *Testimony before the House Select Committee on the Strategic Competition Between the United States and the Chinese Communist Party*, November 19, 2025. (https://www.congress.gov/event/119th-congress/house-event/118668); Tae-Yoon Kim, Shobhan Dhir, Amrita Dasgupta, and Alessio Scanzani, "With new export controls on critical minerals, supply concentration risks become reality," *International Energy Agency,* October 23, 2025. (https://www.iea.org/commentaries/with-new-export-controls-on-critical-minerals-supply-concentration-risks-become-reality); "Global Critical Minerals Outlook 2025," *International Energy Agency*, May 21, 2025. (https://www.iea.org/reports/global-critical-minerals-outlook-2025)

[2] Aidan Powers-Riggs, Brian Hart, Matthew Funaiole, Scott Thomsett, Simon Zieleniewski, and Tim Rose, "Beyond Rare Earths: China's Growing Threat to Gallium Supply Chains," *Center for Strategic and International Studies*, July 17, 2025. (https://www.csis.org/analysis/beyond-rare-earths-chinas-growing-threat-gallium-supply-chains)

[3] Elaine Kurtenbach, "China bans exports to US of gallium, germanium, antimony in response to chip sanctions," *Associated Press*, December 3, 2024. (https://apnews.com/article/china-us-tech-semiconductor-chip-gallium-6b4216551e200fb719caa6a6cc67e2a4)

[4] Joseph Sopcisak, "China Imposes Export Controls on Medium and Heavy Rare Earth Materials," *Holland & Knight LLP*, April 4, 2025. (https://www.hklaw.com/en/insights/publications/2025/04/china-imposes-export-controls-on-medium-and-heavy-rare-earth-materials); "Critical Minerals and Defence Technologies," *SFA Oxford)* (UK), accessed March 12, 2026. (https://www.sfa-oxford.com/knowledge-and-insights/critical-minerals-in-low-carbon-and-future-technologies/critical-minerals-in-defence-and-national-security)

vulnerability Beijing had engineered.[5] Six months later, China added five more rare earths to the export control list, bringing the total to 12 of 17 rare earth elements.[6]

These restrictions — often framed as routine regulatory measures — demonstrate China's willingness to weaponize critical minerals dominance. Reducing this vulnerability requires coordinated action among market economies to develop alternative supply chains capable of competing with China's state-backed system.[7] A pluralistic agreement on critical minerals could achieve this, but success depends on addressing the structural dynamics that enabled China's dominance.

The questions in this RFI concerning market distortions, supply chain resilience, and enforcement point toward a central challenge: traditional trade monitoring and enforcement tools alone cannot diversify critical mineral supply chains. New approaches are required.

II. Structural Market Distortions

Critical mineral markets are defined by abnormally low prices. This dynamic does not result from a traditional market failure but rather is the consequence of a Chinese strategy of maintaining pricing control, blocking competitors, and expanding state-directed firm profits.

Chinese producers benefit from subsidized capital, state-directed investment, preferential regulatory treatment, and vertically integrated structures that allow them to sustain prolonged periods of depressed prices. As FDD's monograph *Unplugging Beijing* documents, this reflects active predation, not passive advantage.[8]

Nickel: Chinese market intervention has imposed unsustainable cost structures on Western producers that cannot absorb losses as state-backed firms can.[9]

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[5] Giann Liguid, "Auto Industry Takes Hit as China's Rare Earths Export Controls Impact Supply Chains," *Investing News Network* (Canada), June 5, 2025. (https://investingnews.com/auto-industry-china-rare-earths); Brett Foote, "Ford Explorer Production Temporarily Paused Over Rare Earth Magnet Shortage," *Ford Authority*, May 30, 2025. (https://fordauthority.com/2025/05/ford-explorer-production-temporarily-paused-over-rare-earth-magnet-shortage)

[6] Tae-Yoon Kim, Shobhan Dhir, Amrita Dasgupta, and Alessio Scanziani, "With new export controls on critical minerals, supply concentration risks become reality," *International Energy Agency*, October 23, 2025. (https://www.iea.org/commentaries/with-new-export-controls-on-critical-minerals-supply-concentration-risks-become-reality); "China expands rare earth restrictions, targets defense, semiconductor users," *Reuters*, October 10, 2025. (https://www.reuters.com/world/china/china-tightens-rare-earth-export-controls-2025-10-09)

[7] Elaine Dezenski, "Economic Statecraft and Advancing US Interests Abroad: Modernizing U.S. Economic Statecraft," *Testimony before the House Foreign Affairs Committee*, May 14, 2025. (https://www.fdd.org/wp-content/uploads/2025/05/5.14.25-Elaine-Dezenski-Testimony.pdf)

[8] Elaine Dezenski and Josh Birenbaum, "Unplugging Beijing: A Playbook to Reclaim America's Advanced Battery Supply Chain," *Foundation for Defense of Democracies*, July 2025. (https://www.fdd.org/wp-content/uploads/2025/07/fdd-monograph-unplugging-beijing.pdf)

[9] Ibid.

Graphite: China controls more than 95 percent of global battery-grade processing — a chokehold built through subsidized overproduction and price suppression that eliminated rivals before they could scale.[10]

Cobalt: China controls approximately 85 percent of battery-grade processing through similar tactics.[11]

The result is a self-reinforcing cycle: Chinese state banks finance projects at noncommercial terms, Chinese firms flood markets to collapse prices when competitors emerge, and each iteration entrenches China's monopoly while raising barriers to Western entry.[12] This is not market dominance — it is a deliberate exclusion strategy that traditional commercial investment cannot overcome.

Traditional commercial banks will not finance even promising projects when market unpredictability prevents guaranteed loan repayment. This bars new, non-Chinese competitors — who must meet normal profitability requirements — from entering markets. Addressing these distortions requires policy tools that stabilize investment conditions for alternative suppliers.

Coordinated Procurement: An Allied Buyers' Framework

Coordinated government procurement represents one of the most effective tools for catalyzing investment in alternative critical mineral supply chains. Participating governments could establish a coordinated procurement framework — a buyers' club — committing to long-term purchase agreements from trusted, non-Chinese sources. Once the agreement defines "trusted sources," these commitments provide predictable demand signals that enable private financing of new mining, refining, and processing projects.

Government procurement has long-shaped strategic industries from aerospace to defense production. Extending this approach to critical minerals addresses a central market failure limiting supply diversification: the absence of reliable demand signals for non-Chinese production. Procurement could be direct or supported through export-import banks, where applicable.

Coordinated procurement also resolves collective action problems. Acting alone, countries may hesitate to support new supply chains, fearing disproportionate financial burdens or isolation

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[10] Solomon Cefai, "CRMA 'toothless' to support European graphite producers; China, US abandon level playing field – Vianode CEO," *Fastmarkets*, June 13, 2024. (https://www.fastmarkets.com/insights/crma-toothless-to-support-european-graphite-producers-china-us-abandon-level-playing-field-vianode-ceo);
Andrew L. Gulley, "The Development of China's Monopoly Over Cobalt Battery Materials," *U.S. Geological Survey*, June 10, 2024. (https://www.usgs.gov/publications/development-chinas-monopoly-over-cobalt-battery-materials)

[11] Andrew L. Gulley, "The Development of China's Monopoly Over Cobalt Battery Materials," *U.S. Geological Survey*, June 10, 2024. (https://www.usgs.gov/publications/development-chinas-monopoly-over-cobalt-battery-materials)

[12] Elaine Dezenski and Josh Birenbaum, "Examining the Threats to America's Critical Minerals Supply Chain," *Foundation for Defense of Democracies*, May 16, 2025. (https://www.fdd.org/analysis/2025/05/16/examining-the-threats-to-americas-critical-minerals-supply-chain)

against China. Acting collectively, allied countries create markets large enough to sustain multiple new producers while sharing risks.

Strategic Stockpiles and Price Stabilization

The RFI asks how governments might reduce price volatility while strengthening supply resilience. Strategic stockpiling provides a practical mechanism for both objectives.

The United States already maintains strategic petroleum and national defense stockpiles.[13] Project Vault — envisioning a modernized critical minerals reserve anchored by buyer commitments — offers a compelling model for strengthening supply resilience while stabilizing markets. As FDD has argued previously, breaking China's hold on critical minerals requires strategic demand-side interventions, not tariffs alone.[14]

Reframing price floors: The agreement's minimum price need not be imposed through complex enforcement mechanisms. Instead, it can be built directly into demand structures through forward purchase commitments, including existing purchase commitments.

When large off-takers commit to purchasing specified minerals at agreed volumes and prices — as under Project Vault — those commitments establish the price floor contractually. The floor is not externally imposed and enforced; it is built into the demand structure. Producers have guaranteed buyers at known prices regardless of Chinese spot market manipulation. That certainty unlocks private financing.

A new trade agreement should incorporate a private-sector forward purchase commitment mechanism, thereby extending Project Vault's architecture to allied governments. Large end-users in partner countries would commit to purchasing defined volumes of covered minerals from trusted, market-economy producers at prices reflecting genuine production costs plus risk-adjusted returns. The purchase agreements could apply to any stage of production, including mining, refining, and processing.

Coordinated tariffs remain important as complementary tools, preventing imports from undercutting committed prices and closing arbitrage opportunities. However, in this architecture, tariffs shield the floor — they are not the floor itself. Private-sector purchase commitments establish the floor price.

Investment Screening and Supply Chain Integrity

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[13] U.S. Department of Energy, Office of Petroleum Reserves, "Strategic Petroleum Reserve," accessed March 12, 2026. (https://www.energy.gov/hgeo/opr/strategic-petroleum-reserve); Cameron M. Keys, "Emergency Access to Strategic and Critical Materials: The National Defense Stockpile," *Congressional Research Service,* November 14, 2023. (https://www.congress.gov/crs-product/R47833)

[14] Elaine Dezenski and Daniel Swift, "Breaking China's Hold on Critical Minerals Requires More Than Tariffs," *The National Interest*, February 19, 2026. (https://nationalinterest.org/blog/techland/breaking-chinas-hold-on-critical-minerals-requires-more-than-tariffs)

A plurilateral critical minerals agreement will deliver lasting resilience only if it addresses not merely who buys and sells minerals but also who owns the assets producing them. Chinese state-linked capital has flowed into critical mineral projects across potential partner countries — mining concessions in South America, processing facilities in Southeast Asia, and refining capacity in Africa — extending Beijing's control into allied territory even as those countries seek diversification.[15] Pricing frameworks and buyers' clubs built atop supply chains with Chinese ownership stakes cannot deliver promised supply security.

Coordinated investment screening: FDD recommends incorporating coordinated investment screening as a core membership commitment. Current patchwork allied screening regimes create regulatory arbitrage that hostile actors exploit: Chinese-linked investors blocked under CFIUS can route capital through partner countries with weaker review mechanisms and achieve identical strategic results.

All parties should maintain minimum screening standards for critical mineral assets, share information on flagged or rejected transactions, and establish mutual recognition mechanisms granting expedited review to pre-vetted trusted investors across member jurisdictions.[16] The objective is to screen out problematic investments while accelerating beneficial investment.

Addressing existing Chinese ownership: The agreement must confront existing Chinese ownership stakes in member-territory assets. Chinese state-linked entities hold significant positions in Chilean and Australian lithium operations, Democratic Republic of Congo cobalt processing, and Indonesian nickel refining.[17] Despite location — and often legal domicile — in non-Chinese jurisdictions, these projects benefit from Chinese nonmarket advantages and respond to Chinese government demand signals, including subsidies, price manipulation, and vertical supply chain integration. Raw materials from these mining operations frequently flow to China for processing or refining.[18]

Simply excluding Chinese-owned assets from coverage would create immediate gaps in the agreement. FDD recommends that assets with nonparty ownership above a defined threshold qualify for agreement benefits only under time-bound, independently verified divestiture plans.

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[15] Gregory Wischer and Juan Pablo Villasmil, "China's Critical Mineral Model in Latin America," *New Security Beat,* July 24, 2023. (https://www.newsecuritybeat.org/2023/07/chinas-critical-mineral-model-latin-america/); "Refining Power," *C4ADS*, February 4, 2025. (https://c4ads.org/commentary/refining-power/); Zahra Khan, "Congo's cobalt conundrum," *Chemistry World*, June 19, 2025. (https://www.chemistryworld.com/news/congos-cobalt-conundrum/4021696.article)

[16] Request for Information Pertaining to the CFIUS Known Investor Program and Streamlining the Foreign Investment Review Process, U.S. Department of the Treasury, Office of Investment Security, 91 Federal Register 5694, February 9, 2026, page 5695. (https://www.federalregister.gov/documents/2026/02/09/2026-02481/request-for-information-pertaining-to-the-cfius-known-investor-program-and-streamlining-the-foreign)

[17] Brooke Escobar, Ammar A. Malik, Sheng Zhang, Katherine Walsh, Alexandra Joosse, Bradley C. Parks, Jacqueline Zimmerman, and Rory Fedorochko, "Power Playbook: Beijing's Bid to Secure Overseas Transition Minerals," *AIDDATA*, January 2025. (https://docs.aiddata.org/reports/china-transition-minerals-2025/FULL_REPORT_Power_Playbook.pdf); "Lithium Joint Venture," *IGO Limited*, accessed March 12, 2026. (https://www.igo.com.au/site/operations/lithium-holdco-joint-venture)

[18] Muflih Hidayat, "China's Critical Minerals Dominance Threatens Global Supply Chain Security," *Discovery Alert*, December 30, 2025. (https://discoveryalert.com.au/chinas-critical-minerals-dominance-processing-control-2025)

Concessional financing and allied investment support should be conditioned on demonstrable divestiture progress, with clear timelines and verification mechanisms to prevent indefinite deferrals.

Enforcement Mechanisms and Collective Response

A plurilateral trade agreement's strength depends on its monitoring and enforcement mechanisms. Coordinated critical mineral tariffs implementing price floors will create incentives for lax enforcement. The risk is that countries facing short-term economic pressures may be tempted to accept discounted supply from subsidized producers to boost domestic manufacturing, undermining the collective framework. Strong monitoring and enforcement mechanisms are therefore essential.

Congressional backing: The U.S. Trade Representative should ensure any pluralistic critical minerals agreement receives firm congressional support and statutory grounding. This creates the credibility and durability essential for long-term investment and signals to markets that investments will be secure. Congressional partnership also ensures the executive branch has the requisite authority to impose penalties — such as tariffs — on countries or firms violating agreement terms. Confirmed authority demonstrates a unified U.S. government commitment to potential partners while emphasizing severe consequences for violations.

USMCA as structural template: The United States-Mexico-Canada Agreement offers a useful model. USMCA's rigorous rules of origin and content requirements demonstrate how trade agreements can precisely define which supply chains qualify for preferential treatment — directly applicable to defining "trusted sources" for critical minerals. USMCA's built-in review process allows participating governments to update terms as conditions change without triggering full renegotiation instability. A critical minerals agreement incorporating clear sourcing criteria and structured review mechanisms would better adapt to China's evolving tactics while providing private investors the regulatory certainty needed for capital commitments.

Grim trigger for noncompliance: Game theory offers a useful enforcement concept — the "grim trigger," where a single violation triggers permanent retaliation. Under this framework, any member gaining manufacturing advantages by importing Chinese minerals below agreed price caps would face swift and permanent tariff penalties from all members. The severity and permanence of consequences deter defection from collective commitments.

Critical Minerals Article 5: NATO's Article 5 collective defense principle — an attack on one is an attack on all — provides another valuable model. Under a critical minerals framework, participating countries would coordinate responses when a member faces coercive export control restrictions. Responses could include coordinated stockpile releases, emergency procurement arrangements, or temporary tariff measures punishing the coercer. Coordinated response frameworks increase the costs for China to engage in targeted export controls, strengthening deterrence.

III. Conclusion

Global competition over critical mineral supply chains is already underway. China has spent decades consolidating positions through subsidies, industrial policy, and strategic investments across market segments — and now deploys this dominance as economic coercion, threatening U.S. and allied security.

A pluralistic agreement on critical minerals offers an opportunity for the United States and partners to correct this imbalance and reduce China's accumulated leverage. Success depends on addressing the structural dynamics that enable China's dominance. Incremental adjustments will not suffice — fundamental restructuring is required.

Coordinated procurement among allied governments could provide demand signals and market stability to unlock private investment in new supply chains. Strategic stockpiling models like Project Vault, extended to partners, can stabilize demand and establish price floors. Collective-response frameworks — a "critical minerals Article 5" — can raise costs for Chinese weaponization of mineral supplies. Together, these tools enable participating countries to reshape global mineral markets, gradually building diversified, resilient systems anchored in trusted partnerships.

The geopolitical landscape is evolving rapidly, with economic power increasingly central to strategic competition. Critical minerals underpin technologies defining future economic growth, military capabilities, and geopolitical influence. Ensuring secure, resilient supply chains for these materials is not merely trade policy — it is a central challenge of 21st-century economic statecraft.