Rare Earth Export Restrictions One Year Later

By Gracelin Baskaran and Meredith Schwartz

APRIL 2026

THE ISSUE

China's April 2025 export restrictions on heavy rare earths and permanent magnets triggered rapid disruptions across allied defense and industrial supply chains, exposing the fragility of a system still heavily dependent on Beijing. In response, the Trump administration has mobilized the boldest domestic industrial policy in modern history—billions in financing across U.S. government agencies, price floors at $110 per kilogram, guaranteed government offtake, Project Vault, and new bilateral frameworks with Australia, Japan, Malaysia, and Saudi Arabia. This paper assesses whether the Trump-Xi trade truce restored reliable export flows, reviews the U.S. whole-of-government response, and evaluates emerging international partnerships. While the efforts of the past year have been significant, the central challenge now is execution. True resilience will be measured not by policy announcements or deployed capital, but by sustained output, diversified supply, and the ability to attract private investment. The strength of the U.S. defense industrial base and the security of the Indo-Pacific are at stake.

INTRODUCTION

In 2025, a wave of turbulent Chinese export restrictions on rare earth elements and magnets—triggered by the Trump administration's tariffs and semiconductor controls—laid bare a critical choke point across defense, semiconductor, and automotive supply chains. It started on April 4, when China **announced** its first round of export restrictions on heavy rare earth elements and permanent magnets, which sent global supply chains into a tailspin. Just weeks later, the auto industry in the United States, Europe, and Japan reported supply **disruptions** that threatened to bring domestic manufacturing to a halt. The Trump administration swiftly mobilized to negotiate a **90-day truce** to restart exports.

As the 90-day truce came to a close in October 2025, China reimposed even stricter restrictions, asserting leverage just days before a planned meeting between President Trump and Chinese President Xi Jinping in South Korea. **The expanded restrictions** included a new strict foreign direct product rule, preventing the sale of foreign-made products with even trace amounts of Chinese-sourced rare earth materials without Chinese government approval. China also placed an embargo on the outflow of skilled Chinese nationals and proprietary technology to foreign projects. At the end of the month, Trump and Xi finally reached an agreement to suspend export restrictions for one year, with Trump asserting, "**All of the rare earth has been settled.**"

The U.S. response has been unprecedented. However, the rare earth supply chain will remain exposed to geopolitical disruption until the United States and its allies build fully integrated, mine-to-magnet supply chains outside of

China. Building this capacity from the ground up will take years, not months, and require strong political will, large amounts of capital, and allied coordination. One year later, this report takes a look at what has been accomplished so far, what work remains, and how geopolitical risks are reshaping global supply chains.

THE STATUS OF SUPPLY CHAINS AND EXPORT FLOWS

Although China's exports of rare earths and rare earth magnets have resumed, the flow of materials has been highly volatile from month to month, and export licensing has been uneven, granting certain countries a more stable supply than others. U.S. companies have reported greater disruption than European manufacturers, as European imports have rebounded while U.S. imports have never recovered to the pre-restriction levels seen in 2024. As China eased export restrictions in November 2025, magnet exports surged **13 percent**. Still, while shipments to Europe jumped **60 percent** year over year, U.S. imports fell **11 percent** in November.

Furthermore, export flows can vary by commodity. For example, Chinese customs data show that China exported just **17 tons** of yttrium to the United States in the eight months between April 2025 and December 2025, compared to 333 tons exported in the eight months prior to export restrictions. In February 2026, exports increased moderately to **20 tons**, still well below January 2025 levels of over **66 tons**. Manufacturers in the **aerospace industry**, who use yttrium as a thermal coating material on engines to prevent melting, have raised the alarm that they are facing shortages and rationing material and may need to **pause production** of certain products if exports do not rise to previous levels.

These export patterns show that even if China continues to suspend its export restrictions going into 2027, it is not a reliable export partner to the United States during times of heightened geopolitical tensions. Diversifying rare earth supply chains is therefore a national security imperative to ensure defense, semiconductor, automotive, and aerospace industries are not persistently exposed to disruption.

THE U.S. GOVERNMENT STRATEGY

The United States has adopted a whole-of-government approach to rebuilding domestic rare earth mining, processing, and magnet manufacturing capacity. Over the past year, agencies including the Departments of Defense, Commerce, and Energy, alongside the International Development Finance Corporation and the Export-Import Bank of the United States (EXIM), have deployed financing across the rare earth supply chain. At the same time, the State Department has negotiated dozens of critical minerals agreements—many centered on rare earths—to strengthen supply chain security and deepen international partnerships.

The United States has pursued a dual-track strategy to strengthen rare earth security: Use foreign policy to secure global supplies while also advancing an assertive domestic industrial policy to build out mining, processing, and permanent magnet manufacturing capacity in the United States. The administration has moved well beyond traditional diplomacy. According to CSIS analysis, the Trump administration has committed over $7.3 billion in capital to accelerate the development of these capabilities from five U.S. government departments and agencies (see Table 1).

The United States has undertaken the boldest domestic industrial policy in modern history. The **industrial policy tool kit** has included direct equity investments, concessional financing, and public procurement commitments to support domestic production. It has also advanced stockpiling efforts through mechanisms such as an additional **$2 billion** for the National Defense Stockpile and initiatives such as Project Vault to advance an economic security stockpile, while using price floors to stabilize revenues and incentivize private sector investment. Together, these measures reflect a more comprehensive market-shaping approach to building resilient and commercially viable rare earth supply chains.

The first big investment came within months of the first round of export restrictions. In July 2025, within months of the restrictions, the Department of Defense (DOD, now called the Department of War) entered into a **landmark agreement** to invest $400 million in equity in MP Materials, becoming the company's largest shareholder. The deal included a 10-year price floor of $110 per kilogram for MP Materials' neodymium-praseodymium output, helping shield the company from depressed prices driven by Chinese overproduction. In parallel, the DOD Office of Strategic Capital provided a **$150 million loan** to expand MP Materials' Mountain Pass facility in California, including the addition of heavy rare earth separation capabilities to bolster domestic processing. MP Materials also announced plans for a second U.S. magnet manufacturing site—the **10X Facility**—with the DOD committing to a 10-year offtake

agreement covering 100 percent of its magnet output.

The DOD committed **$620 million** in debt financing for a domestic rare earths magnet project through Vulcan Elements, **$18.4 million** to Ucore Rare Metals for separation capacity in Louisiana, and **$10 million** to NioCorp's Elk Creek project in Nebraska. Separately, USA Rare Earth secured a letter of intent from the Department of Commerce's CHIPS Program for a **$1.6 billion** debt-and-equity package to fund development of its Round Top Mountain mine in Texas and a permanent magnet manufacturing facility in Oklahoma. EXIM has issued letters of intent (LOIs) for **$92 million** to HyProMag's new rare earth recycling and magnet production facility in Texas and **$553 million** to Rare Element Resources for its Bear Lodge project in Wyoming.

On the international front, the DOD announced a **49 percent equity stake** in a new Saudi Arabian refinery in partnership with Maaden. The Development Finance Corporation pledged **$565 million** to support both heavy and light rare earth extraction in Brazil's Serra Verde Pela Ema mine. The project is now set to be **acquired** by USA Rare Earths in a $2.8 billion deal, aimed at building a Western Hemisphere–based, vertically integrated supply chain.

Table 1: U.S. Government Investments in Rare Earths and Permanent Magnets

Project (company)	Country of project	Sum (USD millions)	Agency	Status
Nolans Project (Arafura Rare Earths)	Australia	300	EXIM	LOI
Tronox	Australia	600	EXIM	LOI
North Stanmore Project (Victory Metals)	Australia	190	EXIM	LOI
Browns Range (Northern Minerals)	Australia	230	EXIM	LOI
Goschen (VHM)	Australia	200	EXIM	LOI
Copi Project (RZ Resources)	Australia	550	EXIM	Indicative term sheet
Syerston Scandium (Sunrise Energy Metals)	Australia	67	EXIM	LOI
Cowboy State Mine (American Rare Earths)	United States	456	EXIM	LOI
REalloys	Canada	200	EXIM	LOI
Tanbreez (Critical Metals Corp.)	Greenland	120	EXIM	LOI
Monte Muambe (Altona Rare Earths)	Mozambique	1.875	USTDA	Grant
Bear Lodge (Rare Element Resources)	United States	553	EXIM	LOI
Ucore Rare Metals	United States	18.4	DOD	Award
HyProMag	United States	92	EXIM	LOI
Elk Creek (Elk Creek Resources)	United States	10	DOD	Award
ReElement	United States	80	DOD	Loan
Mojave Project (Locksley Resources)	United States	191	EXIM	LOI
Longonjo (Pensana)	Angola	160	EXIM	LOI
MP Materials	United States	550	DOD	Loan and equity
Vulcan Elements	United States	620	DOD	Loan
USA Rare Earth	United States	1600	Commerce	LOI
Pela Ema (Serra Verde)	Brazil	565	DFC	Loan
Maaden	Saudi Arabia	49% (no sum available)	DOD	Equity stake

Source: EXIM, Department of Defense, Department of Commerce, U.S. Trade and Development Agency, Development Finance Corporation announcements.

EXIM has also issued LOIs for rare earths projects across several countries. In Australia, it has committed to **$300 million** to Arafura Rare Earths, **$600 million** to Tronox in Australia (in partnership with Export Finance Australia), **$190 million** to Victory Metals, **$230 million** to Northern Minerals (in cooperation with Export Finance Australia), **$200 million** to VHM, **$550 million** to RZ Resources, **$67 million** to Sunrise Energy Metals, **$456 million** to American Rare Earths. It has also issued LOIs for **$200 million** to REalloys in Canada, **$120 million** to Tanbreez in Greenland, and **$160 million** to Pensana's Longonjo project in Angola. Meanwhile, the U.S. Trade and Development Agency has supported early-stage project development through a **$1.875 million** grant to Altona Rare Earths for a prefeasibility study in Mozambique.

While these measures represent a meaningful step toward rebuilding resilient supply chains, scaling them to commercially viable levels will take time. In the near term, supply chains remain heavily dependent on China, which continues to dominate processing, refining, and downstream manufacturing. As a result, China retains significant leverage over critical mineral supply chains.

A NEW AXIS OF RARE EARTH COOPERATION

China's use of export controls has backfired—catalyzing unprecedented international coordination to build supply chains that bypass it entirely. Rare earths have emerged as the central axis of global economic and strategic cooperation. The Trump administration has discussed rare earth cooperation in the context of Australia, Brazil, Greenland, Japan, Kazakhstan, Malaysia, Saudi Arabia, Thailand, Ukraine, and even Pakistan. However, not all jurisdictions are positioned to be near-term suppliers of rare earth materials and magnets. Greenland faces fundamental economic viability challenges, with deposits constrained by ice cover and limited infrastructure, while Ukraine's resources sit in the active conflict zone of the Russia-Ukraine war. Even so, a smaller group of countries is beginning to emerge as the first credible entrants in an ex-China rare earth supply chain.

AUSTRALIA

In October 2025, the United States and Australia signed a **Critical Minerals Framework** focused on leveraging both countries' existing mining and processing capacity while expanding new capacity coming online in 2026. Australia is the most important U.S. partner in countering China's dominance in rare earths. In 2024, it attracted **$64 million**, about 45 percent of global rare earth exploration investment, five times more than Brazil. It hosts **89 active projects**, far ahead of Canada (18), Brazil (13), and the United States (12). Australia is currently the world's fourth-largest producer, and is now scaling midstream capacity, including a **$1.25 billion** government-backed loan to Iluka Resources to build a refinery tied to allied offtake.

Momentum is translating into real supply chain breakthroughs. In May 2025, Lynas Rare Earths became the first company outside China to produce commercial quantities of dysprosium oxide at its Malaysia facility, using feedstock from the Australian Mount Weld mine, one of the world's highest-grade deposits.

SAUDI ARABIA

In November 2025, the United States and Saudi Arabia signed a **Strategic Framework for Cooperation** to secure uranium, critical minerals, permanent magnets, and broader supply chains. According to **estimates** from Saudi Arabia's Ministry of Industry and Mineral Resources, the Jabal Sayid deposit ranks among the world's most valuable rare earth reserves. It contains an estimated **552,000 tons** of heavy rare earths, including dysprosium and terbium, and an additional 355,000 tons of light rare earths such as neodymium and praseodymium.

Saudi Arabia is rapidly positioning itself as the rare earth hub for the Middle East and Africa. The DOD announced plans to finance a **49 percent** equity stake in a new rare earths refinery in Saudi Arabia. The country is also set to become the nearest rare earths processing hub for 5 of the 10 countries that attracted the largest share of rare earth exploration investment in 2024—Malawi, Namibia, South Africa, Uganda, and Saudi Arabia itself– repositioning the kingdom from a resource holder to a central processing hub in the emerging ex-China supply chain. The partnership between the DOD, Maaden, and MP Materials will be pivotal in building credible alternative supply of separated heavy rare earths outside China.

JAPAN

Japan has long faced particularly high exposure to Chinese export controls due to its geopolitically contentious relationship with its Indo-Pacific neighbor, as well as its own sophisticated rare earth magnet manufacturing industry,

accounting for **15 percent** of the global market. Since 2010, Japan has grappled with the impacts of Chinese export restrictions. As such, it has been an early and consistent actor in addressing its rare earth supply chain vulnerabilities. Japan's meaningful progress in mobilizing capital and investing in technological capabilities make it a natural partner to the United States in building the future of rare earth supply chains outside China.

Since 2011, Japan has invested in rare earth projects around the world, from Namibia to France to, most pivotally, Australia. Over a decade before the U.S. government took the plunge, the Japan Organization for Metals and Energy Security, a government financing agency, invested **$250 million** in Lynas Rare Earths to mine heavy rare earths at Mount Weld and later refine the world's first ex-China dysprosium in Malaysia. In this manner, Japan acts as a crucial financing joint-venture partner to integrate rare earth supply chains in the Indo-Pacific and beyond. These investments abroad have been bolstered by technological development and research initiatives at home focused on **urban mining and recycling**, **new magnet technologies**, and **deep-sea resource extraction**.

In the past year, the United States has solidified Japan as a key rare earth supply chain partner. The partnership has taken shape through a October 2025 bilateral critical minerals framework to identify strategic projects for coinvestment, a February 2026 **action plan** to work toward border-adjusted price floors and trade policy coordination, and a March 2026 deep-sea mining **memorandum of cooperation** to share research efforts, including on extraction of Japan's rare earth muds off the island of Minamitorishima. While Japan may not be a resource-rich country, its long-standing political commitment to building ex-China supply chains, combined with its downstream magnet manufacturing capacity, demand-driving offtake structure, and technological know-how, positions it as a key node in future rare earth supply chains and as a crucial partner to the United States.

MALAYSIA

In 2025, Malaysia emerged as a key player in rare earth supply chains. It became the first country outside China to produce dysprosium oxide, a key heavy rare earth for the defense industry. The year also marked closer bilateral diplomacy between the United States and Malaysia. The two countries **entered** a critical minerals MOU and reciprocal trade agreement, in which Malaysia committed to refrain from imposing rare earth export bans or quotas on the United States—an important step in creating an enabling regulatory environment for investment. The U.S. government, for its part, has committed to purchasing rare earth oxides from Lynas at a supportive price floor of **$110 per kilogram**. Much of the material is expected to come from the Malaysian facility. Together, these measures position Malaysia as a trusted U.S. sourcing partner for refined rare earth materials and as a hub of refining capacity.

Malaysia also holds the potential to be a major source of heavy rare earth feedstock from large ionic clay deposits. Malaysia's rare earth deposits are estimated to be **16.1 million metric tons**, the **third** largest rare earth reserves in the world after China (44 million) and Brazil (21 million). This significant source of feedstock will become only more strategic as Malaysia increases its refining capacity over the next several years.

MEASURING THE SUCCESS OF U.S. STRATEGY

The United States has laid an important foundation over the last year for a rare earth industry to proliferate outside of China. However, announcements take years to translate into production, and not all projects will reach commercial scale given the nascency of the technology and the economic complexities of the industry. Therefore, the true success of the strategy is measured not in announcements or investment dollars but in metric tons of production. A stronger, more resilient U.S. rare earth supply chain should be characterized by (1) greatly reduced or eliminated import reliance on China, (2) no single points of failure, and (3) flows of private capital that are buoyed by, but not reliant on, positive government signals.

To address Chinese import reliance, the United States is making numerous investments in strategic projects while signing long-term purchasing agreements to ensure future supply is sourced from domestic producers and trusted international partners. In 2025, the United States produced its greatest volumes of rare earth compounds and metals in decades at Mountain Pass, California, at **8,900 tons**. But domestic production accounted for only one-third of U.S. consumption, with the **remaining 18,100 tons** imported from China (71 percent), Malaysia (13 percent), Japan (5 percent), and Estonia (5 percent). The United States has signed purchasing agreements with MP Materials and Lynas

Rare Earths for rare earth oxides and magnets. While these projects are expected to meet a **considerable portion** of U.S. defense needs by the end of the decade, it is unclear if commercial industry demand can be met, especially for heavy rare earth materials.

The diverse U.S. rare earth investment portfolio is also working to eliminate single points of failure in the supply chain, where the suspension of a single asset or facility can have far-reaching implications for the downstream manufacturers relying on its feedstock and input materials. Addressing these single points of failure was heavily emphasized in the latest iteration of the Department of the Interior's **2025 U.S. List of Critical Minerals**. Any commodity with an identified single point of failure is automatically included on the list. Four of the five minerals rated the highest risk are rare earths. However, single points of failure remain throughout the rare earth supply chain, especially for heavy rare earth feedstock, until additional capacity comes online.

A successful U.S. critical minerals strategy must do more than mobilize public funding–it must unlock private capital in one of the hardest sectors to finance. The U.S. government's investment in MP Materials did exactly that: The company subsequently secured **$1 billion** in private financing from J.P. Morgan and Goldman Sachs, signaling growing market confidence in the profitability of building supply chains outside China.

THE HIGH STAKES OF REDUCING RELIANCE ON CHINA

Establishing rare earth magnet supply chains capable of meeting both defense and commercial industry needs presents a watershed moment for U.S. national security and the balance of power between the United States and China. Breaking China's dominance over these supply chains is pivotal to stabilizing the U.S. defense industrial base, fortifying the U.S. arsenal of economic weapons, and strengthening the U.S. position in the event of escalation in the Taiwan Strait.

First, the U.S. defense industrial base requires a variety of rare earth magnets for numerous applications, including munitions and weapons systems, satellites and air defense mechanisms, and aerospace vehicles. The DOD has set strict **sourcing requirements** for its defense manufacturers, barring the use of rare earth materials and magnets from China, Russia, Iran, and North Korea by January 1, 2027. However, unless significantly more capacity comes online in the next eight months, adhering to this requirement may not be feasible. A defense industrial base reliant on tightly controlled Chinese imports is an inherently weak and vulnerable industrial base. As the United States races to replace **depleted munition stockpiles** from the conflict in Iran, the defense industrial base cannot afford any additional shocks to its supply chains.

Second, the United States would have greater optionality to leverage its own economic instruments without heavy reliance on China's rare earth exports. The United States relies on several economic policy tools: tariffs, sanctions, blacklists, and export controls that protect U.S. industries from predatory Chinese practices, safeguard intellectual property, and prevent the most cutting-edge technologies in semiconductors and artificial intelligence from being exploited by the People's Liberation Army. But U.S. ability to leverage these tools has been repeatedly restrained by China's imposition of rare earth export controls and the need to come to the negotiating table. Eliminating this vulnerability better positions the United States to leverage economic instruments and mitigates China's ability to retaliate and escalate.

Finally, resolving the rare earths crisis substantially strengthens the U.S. position in the event of a Taiwan Strait crisis. China is highly likely to cut off rare earth exports to the United States and its allies in the event of escalating conflict in the Indo-Pacific. China has already leveraged rare earth **export restrictions** against Japan in 2026 to deter support for Taiwan in the event of military intervention toward reunification. Securing independent rare earth supply chains before a confrontation materializes would deny Beijing one of its most potent coercive levers, ensuring that U.S. and allied military capacity remains intact precisely when it is needed most.

THE CHALLENGE OF SCALABILITY

Despite a surge in innovation, the commercial scalability of several rare earth extraction and processing technologies remains uncertain. Many emerging approaches have shown promise at the pilot or demonstration stage but have yet to prove they can operate reliably and cost-effectively at an industrial scale. Challenges around throughput, reagent costs, recovery rates, and the complexity of separating

chemically similar elements—especially heavy rare earths—continue to constrain viability. In many cases, technologies that perform well under controlled conditions face significant hurdles when exposed to the variability of real ore bodies and the demands of continuous production.

For example, some companies have turned to chromatography. Chromatography can be used for rare earth separation, but it is generally **not considered commercially scalable** for primary, large-volume production. The challenge stems from the intrinsic chemistry of rare earth elements, which are highly similar and difficult to separate. Chromatographic methods, such as ion exchange or solvent-impregnated resins, can achieve exceptionally high purity and precise separation, making them well suited for laboratory use and niche high-value applications. However, scaling these techniques presents significant hurdles. Throughput is constrained, as chromatography typically operates in batch or semicontinuous modes with relatively **low flow rates**, limiting its ability to process large volumes. Costs are also elevated due to expensive resins, frequent regeneration cycles, and operational complexity. In addition, the need to manage hundreds or thousands of separation cycles across multiple elements becomes increasingly burdensome at an industrial scale. As a result, **conventional solvent extraction**, despite being chemical intensive, remains far more scalable and continues to dominate commercial rare earth processing globally, particularly in China.

Another company has turned to high-acid leaching. The Round Top Mountain mine operated by USA Rare Earth in Texas will extract through **heap leaching**. Round Top is a rhyolite-hosted deposit with highly unusual mineralogy, making it atypical relative to most rare earth heap leach operations. This process allows for the extraction of rare earth elements from very low-grade, complex ores that would otherwise be uneconomic. However, the process is highly reagent intensive, requiring significant volumes of acid, which raises operating costs and introduces waste management and environmental handling challenges. Moreover, there remains uncertainty around the technology's ability to scale efficiently to commercial production while maintaining consistent recovery rates and cost competitiveness.

Nonetheless, if the United States is serious about building resilient rare earth supply chains, it will need to place strategic bets on a range of emerging processing technologies, even with the understanding that not all will succeed. Many of the most promising approaches, from alternative separation methods to novel refining pathways, remain unproven at commercial scale. But waiting for certainty risks ceding ground in a market where incumbents already dominate. A portfolio approach that backs multiple technologies across different stages of development can accelerate learning, surface viable pathways, and reduce long-term dependence, even if some investments fail. In this context, failure is not a flaw but a feature of investing in innovation, as it reflects the cost of identifying what works at scale.

THE LONG ROAD TO SELF-SUFFICIENCY

When assessing progress, it is useful to distinguish between distance and displacement. Distance reflects how much ground has been covered, whereas displacement captures how far one has moved from the starting point. It is entirely possible to travel a significant distance without meaningfully changing one's position.

The United States has traveled a considerable distance to bolster rare earth and permanent magnet security. Over the past year, it has mobilized financing and announced new projects across the rare earth supply chain, including mining, processing, and permanent magnet manufacturing, spanning partners at home and in Australia, Brazil, and Saudi Arabia. However, mining and processing are industries defined by long lead times. EXIM has emerged as a major source of government financing for strategic mineral investments, issuing a wave of letters of intent across the rare earths supply chain totaling nearly $4 billion dollars. While momentum is real, translating these announcements into production takes years. As a result, displacement, measured in actual rare earth and magnet output, remains modest relative to last year. Nevertheless, the distance that has been traveled will contribute to a more resilient future. New magnet manufacturing capacity coming online in the summer of 2026 will begin to reduce reliance on China, but self-sufficiency remains a long road.

The events of 2025 underscored a hard truth: Supply chain resilience is not optional. China's rare earth export restrictions exposed—and amplified—critical vulnerabilities across U.S. national, economic, and energy security. Yet this outcome was not inevitable. Until the 1980s, the United States was the world's leading producer of rare earths. But through years of **neglect and strategic miscalculation**, it

became heavily dependent on China—an overreliance that has now been weaponized. The 2010 China rare earth export restrictions placed Japan on permanent alert, prompting sustained and disciplined efforts to diversify Japan's supply chains. The United States should draw a similar lesson: Durable resilience will require a consistent long-term policy approach instead of the historical pattern of ramping up during crises only to scale back in periods of calm. ■

Dr. Gracelin Baskaran *is director of the Critical Minerals Security Program at the Center for Strategic and International Studies (CSIS) in Washington, D.C.* ***Meredith Schwartz*** *is an associate fellow for the Critical Minerals Security Program at CSIS.*

This report is made possible by general support to CSIS. No direct sponsorship contributed to this report.