China’s Critical Minerals Export Ban Escalates Trade Tensions with the U.S.

written by Tracy Hughes | December 4, 2024

> *“China has struck the first blow in the War for Critical Minerals Supplies. This is not just an economic maneuver; it is a geopolitical power play. China knows the U.S. depends on germanium, gallium, antimony, graphite, and rare earths—resources they dominate—to rebuild a secure electronics manufacturing base. This is a message to Trump: negotiate or face the consequences. The dollar-based trade regime created at Bretton Woods is now being challenged by a powerful China. The question remains—can Washington rise to the challenge? For now, our quality of life and standard of living hang in Trump’s hands.” – Jack Lifton, Co-Chair, Critical Minerals Institute (CMI)*

On December 3, 2024, China announced an immediate ban on the export of gallium, germanium, and antimony to the United States, citing national security concerns. This decision, a response to expanded U.S. restrictions on advanced technology sales to China, intensifies the ongoing trade tensions between the two nations. It also underscores the strategic importance of critical minerals in global supply chains and national security.

The Critical Minerals in Question

Gallium, germanium, and antimony are indispensable to modern technology and defense industries, making their availability crucial for national and economic security:

- Gallium is a key component in semiconductors, infrared applications, and solar panels, with China controlling an overwhelming 98.8% of global refined production. According to Critical Minerals Institute (CMI) Director Alastair Neill, “Gallium’s role in next-generation semiconductors and green technologies cannot be overstated, and China’s near-total control puts global supply chains at significant risk.”
- Germanium is essential for fiber optics and infrared technologies, with China producing 59.2% of the global supply. “Germanium’s applications in telecommunications and military optics make it a cornerstone of modern infrastructure, and any disruption would ripple through multiple industries,” says Neill.
- Antimony is widely used in munitions, flame retardants, and industrial processes, with China accounting for 48% of global mining output. Neill adds, “Antimony is critical to defense and safety applications, and China’s significant market share gives it strategic leverage in geopolitical negotiations.”

China’s dominance in these materials underscores its strategic control over industries that rely on secure and steady supplies. This control highlights the urgency for the U.S. and its allies to diversify sources and reduce dependency on a single supplier. Check out the CMI Resource Center to learn more, click here.

Impact on the U.S. Economy and Industry

The export ban threatens to disrupt critical U.S. industries, including semiconductor manufacturing and defense. According to a U.S. Geological Survey report, a prolonged ban on gallium and

germanium alone could lead to a $3.4 billion reduction in the U.S. GDP. The ban adds urgency to efforts aimed at securing alternative sources of these minerals.

Industries reliant on these materials now face significant challenges. For semiconductor manufacturers and defense contractors, the inability to access key materials may lead to supply chain bottlenecks, production slowdowns, and higher costs, all of which could reverberate through the broader economy.

Geopolitical and Strategic Context

China's export ban is a strategic countermeasure to U.S. restrictions on advanced semiconductor technologies, highlighting the intertwined nature of global trade and geopolitics. This "critical minerals nationalism" is an emerging form of economic statecraft, where resource control is weaponized to gain geopolitical leverage.

Jack Lifton Co-Chair for the **Critical Minerals Institute** **(CMI)** describes this escalation as a "War for Critical Minerals Supplies," emphasizing the gravity of China's move and its potential to undermine the industrial and technological foundations of the United States. This act serves as a stark reminder of the vulnerabilities inherent in globalized supply chains.

Industry and Government Response

This development has spurred renewed calls for reducing dependence on Chinese critical minerals. Leading voices in the mining and resource sector emphasize the need to accelerate domestic production and secure supplies from allied nations. The U.S. government has taken significant steps to address

vulnerabilities in critical mineral supply chains by supporting key industry players:

MP Materials Corp. (NYSE: MP): As the operator of the Mountain Pass mine in California—the only integrated rare earth mining and processing facility in North America—MP Materials has secured multiple government awards to enhance domestic rare earth production. In February 2022, the Department of Defense (DoD) awarded the company a $35 million contract to design and build a heavy rare earth element processing facility at Mountain Pass, aiming to reduce reliance on foreign suppliers and support critical industries such as defense, technology, and renewable energy. In April 2024, MP Materials further bolstered its efforts by receiving a $58.5 million tax credit under the Section 48C Advanced Energy Project from the Internal Revenue Service and the Department of Energy. This funding supports the construction of America's first fully integrated rare earth magnet manufacturing facility in Fort Worth, Texas, which will produce neodymium-iron-boron magnets essential for electric vehicles, wind turbines, and defense systems. These strategic investments are pivotal in strengthening U.S. supply chain resilience and reducing dependence on foreign rare earth sources.

Lynas Rare Earths Ltd. (ASX: LYC): As the world's largest non-Chinese producer of separated rare earth elements, Lynas, through its U.S. subsidiary Lynas USA LLC, has secured significant support to enhance the U.S. rare earth supply chain. In June 2022, the U.S. Department of Defense (DoD) awarded Lynas a $120 million contract to establish a commercial heavy rare earths separation facility in Texas, which was increased to approximately $258 million in August 2023 to cover additional construction costs, emphasizing its strategic importance. The Texas facility will process critical elements like dysprosium and terbium, vital for advanced defense and renewable energy

applications, thereby diversifying and securing the U.S. rare earth supply chain. Additionally, in July 2021, Lynas received a $14.8 million grant from the Australian Government's Modern Manufacturing Initiative to commercialize an innovative rare earth carbonate refining process, further strengthening its global operations.

Australian Strategic Materials Ltd. (ASX: ASM): ASM is advancing the Dubbo Project in New South Wales, a critical minerals and rare earth initiative aimed at supplying zirconium, niobium, hafnium, and rare earth elements, with substantial support from both Australian and U.S. governments. In October 2024, ASM was awarded a A$5 million grant under the Australian Federal Government's International Partnerships in Critical Minerals Program to explore cost-effective pathways to rare earth production at Dubbo. Earlier, in March 2024, the U.S. Export-Import Bank issued a non-binding Letter of Interest for up to US$600 million (A$923 million) in debt funding to support the project's construction phase. Additionally, ASM operates a metals plant in Korea, producing high-purity metals for advanced technologies. These initiatives position ASM as a significant contributor to the global critical minerals supply chain, reducing reliance on China and supporting industries such as defense, electronics, and renewable energy.

American Rare Earths Limited (ASX: ARR | OTCQX: ARRNF): American Rare Earths is focused on developing rare earth resources within the United States, advancing exploration projects in Wyoming and Arizona. The company has secured significant funding, including a US$7.1 million grant from the State of Wyoming and a non-binding Letter of Interest for up to US$456 million in debt financing from the Export-Import Bank of the United States (EXIM). These resources will enable American Rare Earths to propel its development efforts and contribute to a secure, independent North American supply chain for critical minerals,

aligning with government priorities to reduce reliance on China.

Ucore Rare Metals Inc. (TSXV: UCU | OTCQX: UURAF) is advancing its role in establishing a North American rare earth supply chain through significant projects and funding. The company secured a $4.28 million non-repayable contribution from the Canadian government to demonstrate its RapidSX™ Rare Earth Element Separation Technology at its Kingston, Ontario, facility, which will process mixed rare earth carbonates and oxides from Canadian and U.S. feedstock sources. Simultaneously, Ucore is developing the Louisiana Strategic Metals Complex (SMC) in Alexandria, Louisiana, to process both heavy and light rare earth elements, supported by approximately $20 million in financial incentives from the State of Louisiana, including tax breaks, payroll rebates, and infrastructure enhancements. These initiatives underscore Ucore's commitment to reducing North American reliance on foreign rare earth supplies while strengthening the region's processing capabilities.

Energy Fuels Inc. (NYSE American: UUUU | TSX: EFR): Energy Fuels is a cornerstone of the U.S. critical minerals and rare earth industry, strategically positioned as the only company in North America currently producing both uranium and a high-purity mixed rare earth carbonate. Leveraging its White Mesa Mill in Utah—the most advanced facility of its kind in the Western Hemisphere—the company processes monazite sands to extract critical rare earth elements like neodymium and praseodymium, essential for electric vehicles, wind turbines, and other advanced technologies. In addition to its rare earth operations, Energy Fuels is a leading producer of uranium, a key element for clean energy and national security. Notably, the company has achieved these advancements independently, without direct government funding, demonstrating its unparalleled technical capabilities and leadership in establishing a domestic supply chain for critical minerals. By reducing reliance on foreign sources, particularly China, Energy

Fuels plays an indispensable role in strengthening the U.S. industrial and energy sectors.

Appia Rare Earths & Uranium Corp. (CSE: API | OTCQX: APAAF): Appia Rare Earths & Uranium is advancing its position as a critical minerals leader through the exploration and development of its flagship Alces Lake Project in Saskatchewan, Canada. Hosting high-grade monazite mineralization, the project is rich in neodymium, praseodymium, dysprosium, and terbium—materials essential for green energy technologies and advanced defense applications. While the company has not yet received direct government funding, Appia is actively engaged in collaborations and research initiatives to refine rare earth processing technologies. These efforts underscore Appia's commitment to bolstering North America's rare earth supply chain and reducing reliance on foreign sources.

These initiatives are complemented by policy measures such as the announcement of tariffs on rare earth magnets imported from China, set to take effect in 2026. This marks a strategic shift in U.S. trade policy, directly targeting critical minerals to encourage domestic production and sourcing from allied nations. Collectively, these efforts represent a comprehensive strategy to bolster U.S. competitiveness, reduce reliance on China, and secure vital resources for national security and economic stability.

These measures represent a growing recognition of the need to align national security and economic resilience with supply chain strategies.

Conclusion

China's export ban on gallium, germanium, and antimony is a pivotal moment in the U.S.-China trade relationship, reflecting

the critical role of strategic minerals in global power dynamics. For the U.S., it is a wake-up call to accelerate efforts to diversify and secure supply chains, reduce dependencies, and invest in domestic capabilities. As the global geopolitical landscape evolves, access to critical minerals will be a decisive factor in shaping economic and strategic influence in the 21st century.

The upcoming **CMI Summit IV**, themed *The War for Critical Minerals and Capital Resources*, is scheduled to take place in Toronto, Ontario, on May 13-14, 2025. The CMI Summit aims to foster strategic partnerships and develop actionable solutions that support the growing demand for critical minerals, crucial for the advancement of clean energy, technology, and national security.

To secure a **CMI Membership**, click here or to secure a **CMI Summit IV** 2-day Delegates Pass, click here