Analysis of U.S.-China Rare Earth Competition

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Rare earths are indispensable strategic resources essential for high-tech sectors, including electric vehicles, wind power, semiconductors, and military hardware. As U.S.-China strategic competition intensifies, the rare earth supply chain has become highly politicized, shifting from an industrial concern to a tool for national security and geopolitics. China's long-standing dominance and the deep U.S. reliance on Chinese supply have turned rare earths into a critical vulnerability and a point of leverage in the bilateral contest.

China's advantage is the result of long-term state policy rather than natural market forces. Since the 1980s, China has funneled investment into rare earth research via major technology programs and designated these elements as strategically protected resources, building a highly concentrated industrial system through state-led enterprise consolidation. Recent industrial integration and the enactment of the Regulation on the Administration of Rare Earth have strengthened oversight across mining, smelting, distribution, and trade, solidifying institutional government control over the sector.

In terms of resource and capacity structure, China controls every stage of the supply chain—from upstream mining to midstream and downstream smelting, separation, processing, and manufacturing. As of 2025, China holds the world's largest rare-earth reserves and produces nearly 70% of the global supply. Its near-monopoly over heavy rare earths particularly enables it to influence global supply and pricing via export controls.

Beijing has repeatedly weaponized rare earths in diplomatic and economic negotiations. Following new U.S. tariff policies in 2025, China reimposed export controls on several heavy rare earth elements and extended these regulations to overseas products containing Chinese-sourced components. Although some measures were later suspended, the move underscores China's institutionalization of rare earths as an operational geopolitical tool.

U.S. dependence on China stems from decades of offshoring and policy decisions. Once a leading producer, the U.S. lost its primary mining and processing capabilities to environmental costs and Chinese price competition, leaving it almost entirely reliant on imports for separation, refining, and heavy rare earths. Despite recent efforts to restart domestic mining, structural constraints—including deficits in technology, talent, and industrial integration—make establishing a fully autonomous supply chain difficult in the short term.

Facing the risk of Chinese export restrictions, Washington has prioritized rare earth supply chain security, responding through three avenues: (1) accelerating industrial resurgence via government investment and public-private partnerships to rebuild domestic mining, separation, and magnet manufacturing; (2) promoting alternative materials and recycling to reduce long-term dependency; and (3) strengthening cooperation with allies to build a diversified, reliable, and “de-risked” international supply network.

Overall, China’s structural dominance in the rare earth sector remains unshakeable in the short term. However, the medium-to-long-term supply architecture is evolving toward diversification and “bloc-based” alignments. Rare earths are no longer merely economic resources. They have become central to the U.S.-China strategic rivalry and continue to shape global industrial footprints, technological competition, and the geopolitical landscape.