

REE Supply Chains Pt. II: The U.S. Searches for Supplies Outside of China

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Recent policy initiatives in the United States and beyond have called for decreasing reliance on China for rare earth elements (REEs). While the [first briefing](#) on this subject detailed the current state of REE supply chains, this second briefing discusses some of the major initiatives that have been put forth in recent years to reduce U.S. and global dependence on REEs from China.

Overview of the Current State of REE Supply Chains: Concerns over China’s substantial position in the REE supply chain in recent years has contributed to U.S. and other country efforts to search elsewhere for REE resources and processing capacity. While China’s reputation as an unreliable trade partner for REEs has played a large role in these concerns, the global COVID-19 pandemic also serves as a pertinent example of why the current concentration in supply chains for REEs can be problematic.¹ The spread of the virus in late 2019 and early 2020 and related quarantine measures led to significant disruptions in production and processing in China, causing worries about supply chain disruptions for electric vehicle producers and other downstream users of REEs.

U.S. Government Initiatives: Since 2017, the U.S. government has pursued a variety of programs to ensure and expand REE supplies (table 1). For example, a June 2019 Department of Commerce report on safeguarding critical minerals called for enhancing international trade and cooperation with current suppliers – primarily China in this case. Given recent trade frictions between the United States and China, this call to action carries added significance. The January 2020 Phase 1 trade deal signed by President Trump and China’s President Xi Jinping included an agreement for China to import and process two rare earths from the United States – scandium and yttrium. Although the United States does not currently supply these elements, U.S. production is expected in the coming years.

Table 1: Timeline of U.S. Federal Government Efforts to Address Supply Chain Issues, 2017–20

December 2017	May 2018	June 2019	July 2019	September 2020	November 2020
President Trump signs executive order to ensure and secure reliable supplies of critical minerals.	Dept. of Interior releases definitive list of critical minerals including all REEs.	Dept. of Commerce publishes report on critical minerals citing 24 goals to safeguard American access.	President Trump determines domestic production of REEs is critical to national defense under the Defense Act of 1950, giving Pentagon access to funding for domestic development.	Dept. of Interior authorized to use Defense Production Act to fund domestic mineral processing for critical minerals.	Dept. of Defense begins awarding funds to bolster domestic processing production capacity.

Other goals of the Department of Commerce report focused on encouraging collaboration with established trading partners beyond China to support development of each other’s rare earth supplies. The following table depicts the most recent of these partnerships (table 2).

¹ For example, China banned REE exports to Japan in 2010 amid rising political tensions between the countries.

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Table 2: U.S. and Foreign Partnerships - REE initiatives, type, date, objectives

Name of Initiative	Type	Date Established	Details/Objectives
Energy Resources Governance Initiative	Trade and Technology Sharing Initiative	June 2019	Support supply chain diversity and facilitate trade of critical energy inputs, including REEs. Currently includes the United States, Australia, Brazil, Botswana, Canada, Democratic Republic of Congo, Namibia, Peru, the Philippines, and Zambia.
Partnership with Australia	Production Expansion	November 2019	The USGS and its Australian counterpart established a partnership to expand each country's critical mineral assets. The partnership will focus on assessments and mapping of critical mineral reserves in both countries.
Partnership with Canada	Memorandum of Understanding	December 2019	Partnership to protect critical mineral supply chains.
Private Sector Joint Venture	Production Expansion	December 2019	U.S.-based Blue Line Corp and Australia's Lynas Group partnered to fund a REE processing plant in Texas. Japan's Japan Oil Gas and Metals National Corporation has also indicated possible interest in the venture.

Recent and Ongoing U.S. Supply Developments: Currently, there is only one U.S. source of REEs— the Mountain Pass Mine, owned by MP Materials, in southern California. REEs extracted from this mine are currently shipped to China for processing, due to a lack of domestic processing capacity (MP Materials expects to have a heavy rare earths separation facility running by 2022). To continue broadening the processing capacities at Mountain Pass, the Department of Defense (DOD) will provide \$9.6 million to MP Materials to help add light rare earth processing and separation capabilities. The DOD also awarded \$30.4 million to fund the construction of Lynas' new processing facility in Hondo, Texas. The U.S. government is also interested in funding research on recovering REEs from coal and coal byproducts. A study conducted by the Department of Energy in 2017 determined that the United States has the required coal-based reserves but will need to improve the separation techniques for the process to be economically feasible. Meanwhile, private firms, such as Canadian-owned UCORE are continuing to search for new sources of REE reserves in places like Alaska.

Looking Ahead: As the United States and other countries seek to expand REE production and processing capacity to reduce over-reliance on China, more research on new sources of minable reserves is needed to inform policymakers. In February 2021, the Biden administration continued the push for strengthening and diversifying U.S. REE supply chains with its executive order requiring the DOD to submit a report identifying risks in the supply chain for critical minerals and other strategic materials, including rare earth elements and policy recommendations to address these risks.

Sources: Oil & Gas 360, "[Canada Rare Earth Focusing on Six Potential Locations for a Rare Earth Refinery.](#)" International Energy Agency, "[Clean energy progress after the Covid-19 crisis will need reliable supplies of critical minerals.](#)" DOD, "[DOD Announces Rare Earth Element Awards to Strengthen Domestic Industrial Base.](#)" Dept. of State, "[Energy Resource Governance Initiative.](#)" Hanafusa, "[Japan to Pour Investments into Non-China Rare Earths Projects.](#)" Jamasmie, "[Lynas Close to Securing Funding for Rare Earths Plant in the U.S.](#)" Scheyder, "[China to Buy Rare Earths from U.S. as Part of Trade Pact.](#)" White House, "[President Trump Is Protecting Our Domestic Mining Industry and Critical Minerals Supply Chains.](#)" DOE, "[Report on Rare Earth Elements from Coal and Coal Byproducts.](#)" DOI, "[The United States and Australia Formalize Partnership on Critical Minerals.](#)" Dept. of State, "[United States and Canada Sign Memorandum of Understanding on Critical Energy Minerals.](#)" Dept. of State, "[US Convenes Multilateral Meeting on ERGI.](#)" Vinoski, "[The U.S. Needs China For Rare Earth Minerals? Not For Long, Thanks To This Mountain.](#)" White House, "[Executive Order on America's Supply Chains.](#)" Barrett, "[U.S. Takes Another Step to Break China's Stranglehold on REEs.](#)"

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