

National Security

Demand-Side Financing for Critical Minerals

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SUMMARY

Critical minerals are a key upstream resource for building a competitive industrial base. However, Chinese oversupply, particularly in midstream processing of critical minerals, has created a volatile price environment that is difficult for American companies to compete in. Traditional industrial policy focuses on supply-side public capital to support the construction of mining and processing facilities. These tools are important, but do not address the fact that domestic processors are often unable to secure offtake of their products to domestic manufacturers. This proposal outlines how demand-side financing mechanisms can support offtake agreements between domestic processors and manufacturers, while reducing the amount of risk to taxpayer dollars.

PROBLEM

China's use of critical mineral export controls against the US-on gallium, germanium, graphite, rare earths, and antimony, for example-vividly illustrates its chokehold on the processing of critical minerals. For over half of the US Geological Survey's designated critical minerals, China holds the majority of global processing and refining capacity. China has achieved this chokehold over upstream critical minerals through government-encouraged over-subsidization, which has led to price volatility and prices below cost of production in certain markets. This market manipulation threatens the viability of a domestic critical mineral processing industry, as they struggle to sell their products into a market with deflated prices.

The US has already leveraged a number of offices, agencies, and authorities to support a domestic critical mineral processing industry, including the Department of Defense (DOD)'s Defense Production Act, the Department of Energy (DOE)'s Loan Program Office, 45X production tax credits for critical minerals, and grants for battery materials processing facilities. More can and should be done in this vein (see Dean Ball, "Regaining Control over Critical Minerals"). However, while this kind of federal support is necessary to support a nascent critical mineral industry, these tools are variations of supply-side capital that provides funding to support the construction of facilities to increase domestic capacity. But supply-side capital does not address the volatile market dynamics that make it difficult for domestic processors to sign offtake agreements with manufacturers and create a domestically integrated supply chain.

Supply-side capital solutions face several challenges. One of them is that even if a facility is successfully stood up and operationalized, it is unclear if its operating costs will be sufficiently competitive in a volatile price environment, or if it will be able to secure domestic offtake to feed into a broader supply chain. Demand-side financing tools, such as contract-for-differences and forward contracts, can help support the formation of a mature US critical mineral market.

SOLUTION

The US government can use public capital to support backstop offtake agreements between domestic critical mineral processing facilities and manufacturers, providing certainty for domestic manufacturers to buy American critical minerals while reducing their exposure to Chinese price manipulation. This flexible financing also reduces government risk and overhead. It is important to note that while demand-side financing can be complemented by broader tariff actions, demand-side financing also provides an important level of certainty and direct domestic support for a nascent critical mineral industry.

The Department of Energy and the White House

DOE has approximately \$725 million in remaining grant funding for battery manufacturing and battery materials processing. DOE should leverage these funds to support demand-side financing, either through a grant-based funding opportunity or by using DOE's more flexible Other Transaction Authority (OTA). DOE has already used an OTA to create a hydrogen demand-side consortium, which could be repurposed for critical minerals as well. Germany has pioneered a similar demand financing approach to hydrogen, which has helped shift its industrial energy sector away from Russian-sourced natural gas.

DOE has several different kinds of tools to provide demand-side financing support. For instance, DOE could backstop a contract-for-difference between a domestic critical mineral processor and a domestic manufacturer. The contract for difference would include an agreed-upon offtake contract price, benchmarked against a given market index. If the index price floats above the market index price, the offtaker would pay the higher market index price. If the index price drops below the offtake contract price, DOE would make up the difference between the contract price and the index price. Alternatively, a forward price contract would effectively set a price floor at which DOE would accept offtake from critical mineral processors. The price floor could be based on spot price indices or through reverse auctions from domestic critical mineral processors. While this scheme could be used to support the National Defense Stockpile, DOE could also act as a "virtual offtaker" and simply resell critical minerals to domestic manufacturers, which would significantly reduce the logistical burden.

The White House National Security Council (NSC) can also play an important coordinating role in building an integrated critical mineral supply chain with robust domestic offtake agreements. NSC can set the priorities for various federal critical mineral funding streams to ensure coverage of support for domestic critical mineral processing supply. Relevant programs could include, but are not limited to, DOE battery grants, DOE loan program office, DOD Defense Production Act for critical minerals, State Mineral Security Partnership, and Commerce CHIPS funding. In addition, the NSC can use the White House's "bully pulpit" to present the national security case for sourcing offtake domestically to auto and defense manufacturers.

Congress

Congress should pass the bipartisan Critical Minerals Future Act, which authorizes a pilot program for DOE to use innovative financing tools, such as Other Transaction Authority, Contracts for Difference, Forward Contracts, and Advanced Market Commitments, for critical minerals. These proposed actions for the executive branch, which repurpose existing funding and use existing grant structures, complements the proposed legislation, which authorizes additional new funding and explicitly allows for the use of a full suite of flexible financing tools.

These efforts should focus on mineral markets where the US has a viable technological path to market competitiveness. While long-term support may be necessary to counteract Chinese subsidies, this program is not necessarily suited for that purpose. Instead, DOE should award developers on the basis of competitive domestic pricing and innovative critical mineral processing technology with a path to global competitiveness. Similarly, awards should be sufficiently capitalized to provide full coverage of downside price volatility risk for projects, which may limit the number of markets or projects this program is able to cover.

JUSTIFICATION

There is an increasing recognition that supply-side capital, such as grants, are important but blunt instruments for industrial policy, and that more flexible financing tools that directly address price volatility are needed. The bipartisan House Select Committee on CCP Critical Mineral Policy Working Group published a report in December 2024 recommending further exploration of flexible financing price support mechanisms. The Biden administration considered a potential critical mineral price support program in the closing days of the administration. Other nations have also started experimenting with flexible financing to support liftoff of nascent industries, such as Germany's demand-side contract-for-difference market mechanism for hydrogen production for heavy industries. The United States must take action and use new demand-side tools to support the critical mineral industry, or risk the continued vulnerability of dependence on China.

FURTHER RESOURCES

- Department of Energy, Office of Manufacturing and Energy Supply Chains, "Preliminary Results from DOE's Critical Materials Market Dynamics Request for Information," 2024
- John Jacobs, "Resilient Resource Reserve: A Plan to Catalyze the American Critical Mineral Processing Industry," Bipartisan Policy Center, 2024
- Arnab Datta, Alex Williams and Skanda Amarnath, "Contingent Supply: The SPR in The Current Moment," Employ America, 2022

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