



Securing American leadership on critical minerals

Expanding partnerships between the mining and carbon removal industries can help the U.S. meet its critical mineral goals

New measures to increase American mineral production

On March 20, 2025, President Trump issued an executive order titled [Immediate Measures to Increase American Mineral Production](#)¹ to boost domestic mineral production and reduce reliance on foreign sources of critical minerals. This executive order was issued against a backdrop of declining American production of critical minerals and leadership in the mining industry overall. In 2023, the Department of the Interior declared, “the United States [has] lost its position as the global leader in mining, both in terms of total production and the development of cutting-edge mining technologies.”² As the American mining industry has waned, the Chinese mining industry has boomed.³ China has increasingly used its critical mineral dominance as a political and trade tool — going so far as to halt critical mineral exports to the United States as retaliation for President Trump’s recent tariffs.⁴

AUTHOR:

Eli Cain

CONTRIBUTORS:

Giana Amador
Myron Lam

EDITOR:

Dan Frost

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FEATURED MEMBERS:



TRAVERTINE

America is ceding power to China, who leads the globe on critical mineral production.

By the numbers:

- **70%:** China is responsible for over 70% of the global production of rare earth metals ⁵
- **74%:** American companies import over 74% of all their rare earth metals from China ⁶
- **29 years:** It takes an average of nearly 29 years to build a new mine in the United States — the second longest timeline in the world ⁷

“Our national and economic security are now acutely threatened by our reliance upon hostile foreign powers’ mineral production.”⁸

Executive Order: Immediate Measures to Increase American Mineral Production

In light of the growing concerns over America’s waning position in the global mining sector, President Trump’s executive order presents a timely opportunity not only to reinvigorate the domestic mineral industry but also future proof the industry. Integrating innovative practices such as carbon removal into the mining sector can create new revenue streams and strengthen the United States’ competitiveness in the global market.

Carbon removal and mining

By focusing on carbon removal alongside the extraction and processing of key minerals, the U.S. can position itself as a leader in both resource development and mining innovation. This approach would:

- reduce reliance on foreign supply chains
- improve energy security
- promote a more efficient and profitable industrial base

Across the globe, the mining industry has begun partnering with and investing in carbon removal companies. These partnerships reflect the growing understanding that carbon removal can be effectively integrated into new, existing, and legacy mine sites — creating opportunities for new revenue streams and operational efficiencies.

HOW IT WORKS

OPERATIONAL EFFICIENCY & REVENUE OPPORTUNITIES

Carbon removal companies can leverage existing mining infrastructure to grind and process new minerals for their processes.



ENHANCED MINERAL EXTRACTION

Carbon removal companies can extract more critical minerals from mined materials, increasing yield and profits.



WASTE MANAGEMENT

Carbon removal companies can reduce the amount of waste material generated by mines and be an effective waste management technique for existing waste.



Many of the most commonly mined materials, including many mining waste products, are ideal feedstocks for carbon removal as they naturally react with atmospheric carbon dioxide. This reaction creates stable minerals that safely, securely, and measurably sequester carbon dioxide for thousands of years.

CASE STUDY

Winsome Resources

In January 2025, Winsome Resources, a lithium mining company based in Canada, announced plans to develop a “dual-use” mining site, combining lithium extraction with carbon removal projects. Winsome noted that this approach will “maximize the [mine’s] utility by leveraging existing and well-maintained infrastructure, repurposing processed materials currently stockpiled on site, and aligning environmental and economic goals.”⁹ As part of this project, Winsome announced strategic partnerships with several carbon removal companies, including [Arca](#), [Isometric](#), [Aquarry](#), and [Exterra](#).

Lithium, a critical mineral identified in President Trump’s executive order, is a crucial component of energy technologies such as batteries. In many ways, America’s energy dominance depends on increasing its lithium production.¹⁰ Although the United States has only one active lithium mine, it has the fourth-largest known lithium reserve and almost 120 lithium development projects in the works.^{11, 12, 13} The United States has the mining potential and carbon removal expertise to adopt and expand the “dual-use” lithium mine model started in Canada — doing so would meaningfully advance President Trump’s energy security agenda. Lithium represents just one of many critical mineral development opportunities in the U.S. that could increase economic productivity through on-site activities like carbon removal.



The Economic and strategic opportunity

Integrating carbon removal into mining operations creates significant economic opportunity for the mining industry:

- **New Revenue Opportunities:** By partnering with these carbon removal companies the mining industry can leverage the rapidly growing carbon removal market — a field that, by some estimates, will exceed \$130 billion by 2040 and employ up to 130,000 people by 2030.^{14, 15}

As [prices for critical minerals plummet](#), revenue from carbon removal is an opportunity to diversify mining revenue streams and boost profitability. The revenue potential from carbon removal activities just on mafic and ultramafic rock mines is roughly \$100 billion, even though these mines account for just 7% of the total value of annual metal and mineral mining.^{16, 17}

- **Enhanced Mineral Recovery:** Carbon removal efforts applied to mined materials can also improve the recovery of critical minerals such as nickel and cobalt, which were prioritized in an executive order by President Trump.^{18, 19} This is vital to protecting American competitiveness — the United States has roughly 20 times fewer deposits of rare earth metals than China.²⁰ Harnessing carbon removal innovation can maximize the yield of American mines in order to win the global minerals race and accomplish the goals of President Trump’s Executive Order.
- **Improved Operational Efficiency:** Working with carbon removal companies can reduce the amount of waste products produced in the mining process, and provide an effective waste management solution for legacy mine sites. This will lower the cost of waste treatment and management and improve the efficiency of mine operations.

Right now, other countries are reaping these economic and strategic benefits, not the United States. Australia and Canada have surged ahead in the race to deploy carbon removal on mine sites, despite the abundance of American companies looking to deploy domestically. President Trump’s executive order is an opportunity to develop effective federal policies that promote carbon removal in the mining sector, protecting American jobs and mineral security.

Policy recommendations for protecting and expanding the American mining industry

Recommendation 1:

The National Energy Dominance Council (NEDC) should recognize carbon removal as a waste management method and encourage mine operators to evaluate its potential on mine sites.

The executive order directs the chair of the NEDC to submit recommendations to the president clarifying the treatment of waste rock, tailings, and mine waste

disposal under the Mining Act of 1872. The Mining Act focuses on the right to explore and extract minerals on federal lands, but does not address the treatment or disposal of mine waste. This regulatory uncertainty leads to legal disputes, permitting delays, and discourages new investments from mining companies.

The need for clarification under the Mining Act partially stems from the emergence of modern waste management methods that did not exist when the framework was developed. Carbon removal offers a productive solution to the treatment of mine waste by repurposing it into a valuable revenue source, minimizing materials sent to waste streams, and enabling enhanced mineral recovery. In alignment with the goals of the executive order, the NEDC should recognize mining-related carbon removal as a valid treatment of mine waste under the Mining Act, and encourage mining operators to evaluate carbon removal as a waste management strategy and mineral extraction and recovery activity. This recommendation will help revitalize the American mining industry and bolster our international competitiveness.

Recommendation 2:

The NEDC should prioritize permits on federal lands for mine sites that integrate carbon removal.

The executive order instructs federal agencies to work with NEDC to expedite the permitting process for proposed mines on federal lands. It also requires that federal agencies prioritize mines that “have the greatest potential effect on the robustness of the domestic mineral supply chain.” Given the economic and strategic advantages that carbon removal brings to the domestic mining industry, including the ability to expand America’s critical mineral reserves, mining projects that have the capacity for carbon removal should be prioritized for expedited permitting and federal lands access.



Recommendation 3:

The Development Finance Corporation (DFC) should ensure mining-related carbon removal projects receive financial assistance authorized by this Executive Order.

The executive order grants the U.S. International Development Finance Corporation (DFC) the ability to provide subsidies, loan guarantees, offtake agreements, and other tools to projects that strengthen U.S. mineral production. These financial instruments must “create, maintain, protect, expand, or restore domestic mineral production.” As discussed, integrating carbon removal into mining activities protects these mining operators from volatile mineral prices by offering a new, stable source of revenue independent from international commodity markets. Additionally, the enhanced mineral recovery enabled by carbon removal will expand the amount of value each mining operator can extract from mines. It is clear that carbon removal projects integrated into mining operations should be eligible for the financial support outlined in the order.

Recommendation 4:

The NEDC should include phosphorus as a critical mineral for the purposes of the executive order.

The executive order limits eligible minerals to critical minerals (as defined by the U.S. Geological Survey), uranium, copper, potash, gold, and any other element as determined by the Chair of the NEDC. One mineral that NEDC should include in its eligibility determination is phosphorus. Phosphorus is an essential component of energy technologies such as batteries and is vital to the American agriculture industry in the form of phosphorus fertilizers.²¹ In fact, the demand for battery-grade phosphate is growing by 40 percent each year.²² Like other critical minerals, the phosphorus mining and refinement process also has significant potential for integrating carbon removal.²³ Carbon removal company Travertine has successfully integrated into the refinement process of phosphorus, delivering purified phosphoric acid and permanent carbon removal. Given its strategic importance to American energy dominance and its carbon removal potential, the NEDC should designate phosphorus as an eligible mineral for the purposes of the executive order.

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