



GreenMet

WRITTEN TESTIMONY BEFORE THE
HOUSE SCIENCE, SPACE, AND TECHNOLOGY
U.S. HOUSE OF REPRESENTATIVES

FULL COMMITTEE HEARING ON
“THE ROLE OF FEDERAL RESEARCH IN ESTABLISHING A ROBUST U.S. SUPPLY
CHAIN OF CRITICAL MINERALS AND MATERIALS”

DREW HORN
FOUNDER, PRESIDENT & CEO
GREENMET

November 30, 2023

Chairman Lucas, Ranking Member Lofgren, Members of the Committee: Thank you for the opportunity to testify today on this important topic of leveraging Federal research dollars to achieve a robust American supply chain for critical minerals.

My name is Drew Horn, and I am founder, president and CEO of GreenMet - a private company working to develop American critical mineral and green energy supply chains. Our efforts serve to reduce U.S. over-reliance on foreign imports of critical minerals and metals - particularly from our adversaries - thereby strengthening U.S. national security. In other words, Mr. Chairman, **America’s critical mineral security is our national security.**

I am also a former U.S. Army Special Forces officer and a Marine officer who served this country for over 10 years in uniform. During my time as an officer, I successfully completed three combat deployments to Afghanistan as a Green Beret, and one to Iraq as a Marine. After my military service I had the privilege to serve as a senior policy executive at the Departments of Defense and Energy, the Office of the Vice President, and the Office of the Director of National Intelligence.

Our GreenMet team is made up of decorated veterans, former public servants, and industry experts. GreenMet was founded in 2021 to build U.S.-based technical solutions to mining, processing, and metallurgy for critical minerals that are more cost-efficient and environmentally responsible than those practiced in the same trade space that is dominated by U.S. adversaries. As the conduit between private capital and critical mineral innovation, GreenMet has the unique privilege of representing the complete private sector policy interests that support and sustain reliable and uninterrupted U.S. supply chains for critical minerals from mine through manufacturing.

GreenMet is currently involved in multiple mineral resource projects that will strengthen domestic critical mineral supply chains. GreenMet is focused on developing the required infrastructure for sustainable and uninterrupted critical mineral supply chains which can meet U.S. and North American energy and technological needs. Our approach is predicated on the belief that good, comprehensive critical mineral policy begins with good public-private partnership to tackle much needed innovative research and development in the minerals resource arena. This approach helps incubate, accelerate, and scale innovations in all segments of the mineral supply chains from mining to manufacturing.

Our GreenMet team works to demonstrate that the U.S. can produce domestic energy in a cleaner and more technologically superior way than the current status quo practiced by our foreign adversaries. Our nation's 21st century mining and metalmaking practices are governed by the world's highest and best standards. Hence, as the U.S. unleashes its domestic energy production according to these high standards, sustainable and uninterrupted supplies will result.

As the U.S. rebuilds its mineral supply chains, we need to place the greatest emphasis on minerals and metals that make our energy independence possible, including our energy systems and especially our energy grid. Not all minerals or elements are of equal priority to our national agenda.

For example, we absolutely need the rare earth metal *neodymium* to produce rare earth magnets. However, only magnets containing added *dysprosium* and *terbium* can resist extreme temperatures required for essential military and civilian uses. Magnets without heavy rare earth *dysprosium* and *terbium* are only useful for low-temperature application as in commercial electronics, appliances, and toys. Our adversaries in China and Russia recognize this and restrict access to heavy rare earths wherever and whenever they can as our trade history with them has demonstrated in the last 15 years.

While the CHIPS Act touches fabrication and other supply chain links, Federal research funding needs to directly support (i.e. "applied research") those identified innovative methods and technologies needed to successfully re-shore U.S. capabilities in mining, mineral processing, metal and alloy refining (metallurgy), and manufacturing. Given the interdependent nature of our economic and national security priorities, we believe the inclusion of funding for these mineral projects will propel the advancement of a domestic supply chain and meet our current and future defense needs.

The Inflation Reduction Act and its advanced manufacturing tax credits that include critical minerals was a step in the right direction. However, to facilitate the hand off from Federally supported R&D to commercial viability, future funding must be targeted further upstream in the critical mineral supply chain. We cannot build the house from the roof down, nor can we only incent a single step in the supply chain. If we do, then all our efforts are for naught, and we are still relying on China for the rest.

The first crucial step in the complex challenge of fortifying U.S. critical mineral supply chains will require Federal applied research funding tailored to prioritize advancements in technology resulting in better environmental standards while enabling robust U.S. competition in the global

market, especially against countries that don't subscribe to our economic and environmental standards and rules. By directing applied research funds further upstream, the U.S. can continue to bolster its capabilities in mining, processing, refining, and metallurgy – all the steps that lead to TRUE domestic manufacturing.

A good recent example of prioritizing upstream funding is The Defense Production Act Title III in the Inflation Reduction Act (Public Law 117-169) that is intended to fund critical domestic projects based on the latest R&D. Two projects well suited for this type of funding are the Wyoming-based “Bear Lodge Rare Earth Project,” and the Missouri-based Caldera tailings reclamation project at Pea Ridge, between which we can meet all domestic heavy rare earth demand without looking outside our borders. GreenMet is proud to support both as they seek to provide the U.S. government with the most cost-effective and practical path to a secure and uninterrupted supply chain for heavy rare earths, from mine to separated rare earth oxides or “REOs.” These REOs are critically necessary to produce high-strength permanent magnets required for defense, offshore wind turbines, and electric vehicles, and innumerable uses in clean technology.

To help ensure R&D efforts and national labs are pursuing and advancing innovations that meet our national priorities, the U.S. also needs increased centralized oversight by the White House and at the headquarters-level of appropriate agencies. The most effective way to ensure proper and coordinated funding and policy oversight for the critical mineral sector is to establish an interagency taskforce under the Executive Office of the President.

To reiterate, mineral security is national security. The window of opportunity is fleeting, and delay increases our already severe mineral vulnerabilities. By fast-tracking the deployment of projects arising from federal research projects, we can accelerate them towards commercialization. Conflicts in Ukraine have drawn down our nation's munitions. Our National Defense Stockpile of critical minerals is at an all-time low, only about 4% of what it used to be at its peak. America is vulnerable, but we have begun to tackle the challenge. You, the esteemed members of this committee, can help us change course by investing federal research dollars into all levels of the mineral supply chain, especially the ones most dominated by our adversaries such as mineral extraction, refining, and processing.

Successful research grants should both facilitate break-through developments and incubate those new methods to the point of a viable commercial hand off. From minerals in American mines to their end products in American manufacturing plants, our industries really benefit from Federally funded R&D that goes beyond laboratory and demonstration projects, with an eye toward achieving full commercialization as rapidly as possible.

To that end, projects developed through Federal R&D dollars must automatically qualify for fast-tracking of any follow-on permitting required to commercialize. Expedited permitting for critical mineral projects here at home will bring us closer to a carbon neutral economy, decrease our dependence on China, and increase our energy and national security.

Mr. Chairman, inaction regarding the utilization of America's mineral wealth to sustain our national security and protect our economic stability is far beyond extremely serious, it is

dangerous given our wild over-reliance on critical mineral imports from China and other adversaries. America is behind the curve reshoring our mineral supply chains.

Our country is blessed with mineral deposits beyond belief and geologists are still far from completing mapping of the U.S. Now we desperately need the national will to leverage our mineral wealth. This can be achieved through successful public-private partnerships with our great mining and metallurgical industries, and the elimination of the permitting labyrinth and frivolous lawsuits that stymie our progress toward mineral independence.

The time for bold, transformative bi-partisan Congressional action is now. In summary, we need your support for investing federal research dollars across the entire mineral supply chain to enable America to be secure and self-reliant. Furthermore, when allocating those precious taxpayer dollars, we must be expeditious in moving innovations through the entire project development lifecycle.

Mr. Chairman, I thank you for permitting me to testify today regarding the importance of fueling American ingenuity to fully realize the potential of our domestic mineral wealth.