Securing American Mineral Future:
From Dependence to Dominance

Testimony Before

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Committee Chairman Westerman, Ranking Member Huffman, Subcommittee Chairman Gosar, Ranking Member Dexter, and distinguished Members of the Committee, thank you for the opportunity to share my views on the potential of deep-sea mining to expand American production. Deep-sea mining in the high seas is an industry that has been sixty years in the making and is now at an inflection point where it can enable America, the original pioneer of this industry, to reclaim its leadership of the industry and transform its dangerous mineral dependence on foreign adversaries into dominance in a matter of years. My views have been shaped by 25 years of experience in deep-sea minerals, with the last 7 years as Chairman & CEO of The Metals Company, a Nasdaq-listed explorer of polymetallic nodules in the East Pacific Ocean off the western seaboard of the United States.

To appreciate the potential of this industry, the maturity of the regulatory regime and the state of knowledge about its risks, we must rise above the noise of campaign slogans that are disconnected from history, disconnected from the reality of terrestrial mines and processing plants and disinterested in the trade-offs involved in the making of the physical world around us. This testimony is structured around five key messages:

1. America's mineral dependence is reversible.
2. America is reclaiming leadership of the industry it pioneered.
3. America's foresight to invest in the national regulatory regime and not surrender decision-making powers to an intergovernmental organization are a competitive advantage.
4. Better resource and better technology produce better metals.
5. Real-world data dispels every catastrophizing claim made by environmental activists.

1. America's mineral dependence is reversible.

U.S. Faces Critical Mineral Crisis as China Dominates Global Supply Chain. China's Halt of Critical Minerals Poses Risk to U.S. Tech and Defense Industries. U.S. Faces Uphill Battle to Secure Critical Minerals Supply Chains Amid Global Tensions.

Against the backdrop of alarming headlines, it may be hard to recall that once upon a time—starting in the 1880s and until 1970—the United States was a mining and processing powerhouse, supplying Europe, Asia and Latin America with many base metals including copper, lead, zinc, aluminum and nickel. The U.S. had a positive trade balance for base metals from 1896 to 1970 (USGS 2016; Northrup 2003).

Since then, domestic production of base metals has declined significantly, leaving the United States with a persistent deficit and dangerous dependence on foreign adversaries. We can change this. Having invested the last 14 years in the exploration and development of deep seabed mineral resources off the western seaboard of the United States, I believe it is possible to make America a mining and processing powerhouse again. It is possible to reverse mineral dependence and even establish dominance in critical minerals like nickel, cobalt and manganese. It is possible to accomplish this without asking people to give up their land, sacrifice their way of life or allow their remaining natural landscapes to be defaced. It is possible without asking anyone in the United States to accept a mine into their backyard or asking people in a developing country on a different continent to do so.

It takes about 4-5 days of sailing from San Diego to reach the vast fields of polymetallic nodules sitting on the abyssal seafloor at over 2.5 miles depths in the area known as the Clarion-Clipperton Zone (CCZ). All four base metals contained in these nodules—nickel, cobalt, copper and manganese—are on the United States critical minerals and materials lists. No comparable terrestrial resource exists and it would take *three* separate mines to produce this combination of base metals on land. The CCZ is estimated to host over 20 billion tonnes of nodules containing more nickel, cobalt and manganese than all terrestrial reserves combined (Morgan 1999, ISA 2010). This resource can offer mineral security for many generations. To give you a sense of scale—at current levels of American consumption—a one-billion-tonne nodule resource contains 450+ years of manganese, 150+ years of cobalt and 80+ years of nickel (USGS 2024).

If a one-billion-tonne resource were developed over 20 years, it could generate an order of magnitude of 100,000+ jobs and $300+ billion in GDP (TMC 2024). Imagine revitalized shipyards building and repairing a fleet of U.S. flagged production, survey, supply and transport vessels. Imagine a new generation of American mariners, offshore production engineers and operators as well as deep-sea scientists. Imagine a new era in offshore innovation in survey, monitoring and production technology—even nuclear-powered production vessels. Cast your eyes back to shore and imagine new deep-water terminals and new nodule processing and refining industry producing feedstocks for domestic manufacturing of steel and special alloys, battery precursors and battery cells. No more need for nickel, manganese and cobalt imports. Imagine reversing the trade balance and exporting manganese alloys, steel and battery-powered goods to the rest of the world.

This type of transformation is not unprecedented. At the start of the 20th century, as oil explorers were venturing into the shallow water, few could imagine that one day ~30% of American oil production would come from offshore—yet by 2010 it was a simple fact of life (EIA 2011). I believe 100% of American demand for manganese, nickel and cobalt and some copper could come from offshore. We will not need to wait a century: offshore production could start within two years and ramp up within a decade.

2. America is reclaiming leadership of the industry it pioneered.

The Brits may have discovered polymetallic nodules in the CCZ some 150 years ago, but it was an American geologist, John Mero, who in the 1960s imagined turning vast fields of polymetallic nodules into a new source of base metals for the United States (Mero 1965). It was US-based consortia who successfully tested nodule mining technology in the 1970s (NOAA 1981a). These were the times when the United States could put a man on the moon and build technology to recover polymetallic nodules from the abyss in the middle of the Pacific Ocean.

Alongside pioneers of industry, the National Oceanic and Atmospheric Administration (NOAA) was a pioneer in its own right. Under its Deep Ocean Mining Environmental Studies (DOMES) program running from 1975 to 1981, NOAA completed several environmental research cruises and developed a Programmatic Environmental Impact Statement (PEIS) for the DOMES area that included the CCZ. 25 people across government agencies and universities were listed as preparers of this impressive 300+page volume that was shared widely—with key Senate and House Committees, 40 federal departments and agencies, 10 states, 9 embassies of foreign countries, 57 special interest groups and 359 individuals. The development of this volume was a public affair with 28 public meetings and workshops held over a period of 6 years and involving Federal and State government, academia, environmental and public groups, industry and private individuals (NOAA 1981a).

NOAA also produced a Technical Guidance Document to inform nodule explorers' efforts to collect environmental information for site-specific EISs (NOAA 1981b) and went to develop the total of five such site specific EISs as part of its process to grant exploration licenses (NOAA 1984abcd, 1994). Starting in 1981 and until 1995, NOAA has been regularly reporting on Deep Seabed Mining to Congress, producing the total of 7 reports. In its last report in 1995, NOAA stated that in the 1990s its environmental research efforts had focused on determining the biological effects of the increased sedimentation on the seafloor (i.e., seafloor plumes) that would result from deep seabed mining operations. NOAA's 1975-80 DOMES Project had basically eliminated virtually all other environmental concerns which were raised about deep seabed mining, pending verification during monitoring of further at-sea mining system tests. To address the issue of seafloor plumes, NOAA developed a Benthic Impact Experiment program and, after an initially less successful device, commissioned an American company Sound Ocean Systems Inc (now Okeanus) to build a better machine to simulate benthic disturbance. The machine came to be known as the Disturber 2.0, and as the name suggests was designed to maximize sediment disturbance to study worst case scenarios. It was used not just by NOAA but was borrowed—along with the NOAA team for consistency of use—by several other governments around the world including Japan, India and a group of Eastern European countries to conduct disturbance experiments of their own (NOAA 1995).

The question that loomed large from the beginning of these efforts was who should regulate the exploration and commercial recovery of seabed minerals in international waters.

3. America's foresight to invest in the national regulatory regime and not surrender decision-making powers to an intergovernmental organization are a competitive advantage.

Efforts to regulate the sea go back centuries, with the 17th-century concept of "freedom of the seas" by Hugo Grotius (Grotius 1609) and early 20th-century attempts by the League of Nations (Hudson 1930). The United Nations turned its focus to regulating seabed minerals in 1967 when the UN General Assembly established the Committee on the Peaceful Uses of the Seabed and the Ocean Floor beyond the Limits of National Jurisdiction (Seabed Committee; UNGA 1967). The committee laid the groundwork for UNCLOS III, which officially started its first session in New York in December 1973. The U.S. was an active participant and leader in those negotiations from the beginning. This process has been going on for so long, most diplomats who worked on this issue back then are long since retired or no longer living.

As U.S.-based consortia successfully completed their mining tests and NOAA made great progress on their environmental impact assessment, the U.S. Congress passed the Deep Seabed Hard Minerals Resources Act in 1980 (DSHMRA). Originally intended as an interim measure in anticipation of the eventual international regime that would be ratified and come into effect with regard to the United States, the Act created a legal framework to enable U.S. citizens to explore and recover seabed minerals in the high seas and authorized NOAA to develop implementing regulations. NOAA delivered implementing regulations for exploration licenses in 1981 (NOAA 1981c) and proceeded to issue four exploration licenses, known as USA-1, USA-2, USA-3 and USA-4. NOAA then invested over six years in the development of implementing regulations for commercial recovery permits, with multiple iterations and several rounds of public hearings and comments. Final regulations came into force in 1989 (NOAA 1989). Under the authority vested with NOAA under DSHMRA, NOAA kept delivering its bi-annual reports to Congress on Deep Seabed Mining until 1995. These U.S. regulatory developments between 1975-1995 spanned five different administrations—three Republican (Ford, Reagan and Bush) and two Democratic (Carter and Clinton). It is worth remembering that the 1970s was the decade of hallmark statutes on environmental protection: the National Environmental Policy Act of 1970, Clean Water Act of 1972, Marine Mammal Protection Act of 1972, Endangered Species Act of 1973 and Magnuson Fishery Conservation and Management Act of 1976 were all explicitly referenced in DSHMRA and implementing regulations. By 1989, America had developed a robust regulatory regime for deep-seabed mining in the high seas that was fully consistent with international law, commercially viable, and environmentally responsible.

The same could not be said about the parallel efforts at the United Nations. The UNCLOS III conference culminated in the adoption of the UNCLOS treaty on April 30, 1982, where Part XI dealing with seabed mining and establishing an intergovernmental regulator the International Seabed Authority (ISA) was so unworkable that several industrialized nations refused to sign or ratify the convention. The United States, under President Reagan, led the opposition including countries like the United Kingdom, Italy and West Germany—objecting to anti-competitive and restrictive provisions including production controls and mandatory transfers of technology. An effort to cajole industrialized nations into ratifying UNCLOS took another twelve years and a new implementing agreement modifying the contents of Part XI of UNCLOS—including changing the structure of the ISA and removing mandatory technology transfers—was agreed in 1994. The Democrat administration at the time was of the view that the 1994 Agreement could potentially meet the objections to the treaty outlined by President Reagan in 1982 and might therefore provide a basis for the United States to join the treaty. Most of those on the other side of the aisle did not have such confidence. Despite President Clinton signing this agreement, U.S. Senate voted against the ratification of UNCLOS and the 1994 agreement due to several concerns that could be generalized to unwillingness to surrender U.S. sovereign power to global bureaucrats. In its 1995 report to Congress, NOAA reported that investment from the U.S.-based consortia had dropped partly because of the regulatory uncertainty posed by the prospect of the U.S. ratification of UNCLOS and the 1994 Implementation Agreement. NOAA also stated that “while the specific concerns among the licensees differ[ed] somewhat, the licensees essentially viewed the new regime as presenting economic and political risks that they do not face under [DSHMRA].”

The ISA started in earnest in 1996 and adopted its exploration regulations for polymetallic nodules in 2000 (ISA 2013). These were largely based on equivalent provisions under DSHMRA and NOAA implementing regulations since, until 1997, the U.S., as a provisional member of the ISA, had a presence and influence on the development of the regulations. ISA did not start working on the exploitation regulations until 2014 when Fiji raised the issue (ISA 2014). Having been an active participant in the ISA proceedings in Kingston, Jamaica since 2009, I can report that the reservations expressed by the Senate and the original American licensees have unfortunately proven to be valid. As a company, we were committed to the grand vision of a regulatory regime that would set a new international benchmark for regulating seabed activities and protecting the marine environment while making sure that developing nations benefit from the development of seabed minerals. What we learned over the years is that a consensus-driven multi-lateral organization is not a construct that can produce a viable mining code or act as a regulator. If a committee entrusted with the task of designing a horse could at least be expected to produce a camel, an intergovernmental committee can only produce years of workshops, formal meetings, informal meetings and informal informals (sic!) but no final regulations. Despite taking the fully developed NOAA regulations as their starting point, the ISA failed to deliver on its goal to adopt the final mining code in 2020, 2023 and will almost certainly fail again in 2025. Lockheed Martin, a U.S. exploration licensee who hedged their bets by securing the ISA contracts under the UK sponsorship, saw the writing on the wall several years before me when they distributed a memorandum to ISA delegates in Kingston stating that unless real progress was made on the mining code, Lockheed would exit the industry. They were out in March 2023 (Reuters 2023).

It would be easy to jump to the conclusion that the ISA's indefinite drift is a function of incompetence. It is not. Delay, delay, delay is a strategy—a deliberate, self-proclaimed "Fabian military strategy" adopted by the environmental activists who allied themselves with countries that have significant domestic land mining interests and/or the greens in their coalition governments (Vescovo 2022). Their tactics to wear down the industry proponents and scare Member States focused on delivering on the ISA mandate would make the Roman general Quintus Fabius Maximus Verrucosus proud: they include catastrophizing claims, demonizing of key players (including the ISA itself), relentless harrassment of all industry stakeholders and systematic disruption of all industry events (including a "mostly peaceful" and "completely safe" at-sea disruption of an environmental research campaign by Greenpeace). While effective in destroying commercial industry, these tactics are no match for China whose five ISA exploration contracts make it the largest holder of seabed mineral rights and who has been arguing for positions that would eventually make the mining code work for its State-Owned Enterprises…and no private companies. Indeed, the current ISA draft exploitation regulations take us right back to 1982: they reflect an over-bureaucratic, statist, anti-competitive approach to seabed mining; one in which private enterprise is penalized and the exercise of sovereign rights by nation states is subjected to scrutiny by an international body dominated by countries that do not share the values of the United States. Having balked at this approach in 1982, President Reagan would have been even more shocked by the state of affairs in 2025.

The United States have participated in the ISA proceedings as an Observer since the beginning of this would-be-regulator but have not been able to undo draft regulations detrimental to U.S. interests (e.g., draft regulations that prohibit the use of U.S. ports or U.S. flagged vessels which would make transporting CCZ nodules directly to America for processing impossible). There have been four distinct attempts (1994, 2004, 2007, 2012) where UNCLOS ratification was seriously considered by the Senate or its committees but failed to reach a full floor vote. Despite continued advocacy (resolutions in 2018, 2021, 2023), there have been no formal ratification attempts in years. I have come to view this as the competitive advantage of the United States—deep seabed mining is a freedom of the high seas and America already has a robust regulatory regime to regulate U.S. citizens willing to pursue it. America now also has the President willing to put this regime to good use (Trump 2025).

4. Better resource and better technology produce better metals.

Resource, resource, resource—it all starts with the quality of the resource. It is well understood in the mining world, that no amount of operational innovation and excellence can fix your mining project if your starting point is a low-grade resource with toxic levels of deleterious elements. The many advantages of the CCZ polymetallic nodule resource were obvious not only to industry but to NOAA already back in 1981 (NOAA 1981a). The resource is abundant and high-grade—1.4% nickel, 1.1% copper, 0.2% cobalt and 29% manganese—or over 3% in nickel equivalent compared to the average grade of terrestrial nickel deposits that are now trending at half that. CCZ nodules do not contain toxic levels of deleterious elements which makes it possible to turn all of nodule mass into products (TMC 2021).

In its 1981 PEIS for the DOMES area, NOAA compared the environmental impacts of nodule mining to land mining and arrived at the conclusion that "impacts due to land mining would be substantially reduced." We have come a long way since then, both in offshore mining and onshore processing technology. Robot miners tested in the 1970s sank into the sediment, leaving behind 50-80 cm-deep tracks in the seafloor (Jones 2025). With better buoyancy and precision hydraulic nodule pickup, our robot miner tested in 2022 only entrains just the top 3 cm of sediment, dramatically reducing the scale of disturbance. In the 1970s, it was difficult to measure exactly how much seafloor mud ("sediment") was suspended by the robots during mining and sediment that made it to the mining vessel along with nodules, was separated and discharged at the surface. Today, we have several methods to measure how much sediment we disturb; more than 90% of entrained sediment is separated inside our machines and discharged back to the seafloor in a tight footprint due to better discharge head design that maximizes the natural tendency of the plume particles to stick together ("flocculate") and create a gravity-current that resettles within hours to days. The amount of sediment that is lifted to the surface is limited (<8% of total entrained mass) and it is no longer discharged at the surface but returned at 2,000 meters-depth ("midwater plume") where any returned sediment does not interact with the food webs of fisheries (TMC 2025).

When it comes to onshore operations, we can now deliver a quiet revolution. Back in 1981, as U.S.-based consortia were in the early stages of developing and testing various nodule processing flowsheets, NOAA contemplated a situation where only three metals would be produced with waste streams containing manganese stockpiled for potential future use. While many mineral processing operations today extract as little as a few kilograms of metal from 1,000 kilograms of ore and spend considerable effort on managing massive waste streams and toxic tailings, we have been able to extract all four metals and productize all of nodule mass, leaving almost no solid waste for us to manage (TMC 2021).

Multiple academic and commercial studies have been published assessing the lifecycle impacts of modern nodule mining, processing and refining operations and comparing them to conventional production routes. NOAA's conclusion stands—impacts are considerably lower (TMC – lifecycle 2025).

5. Real-world data dispels every catastrophizing claim made by environmental activists.

We know more about the moon than the deep sea. The first written record of this argument goes back to 1954 (Deacon 1954). For over seventy years, it's been consistently repeated by oceanographers and deep-sea biologists looking for research funding and by environmental activists looking to delay deep seabed mining. There have been 300 offshore research campaigns focused on deep-sea minerals in the high seas, including at least 10 mining tests and 5 benthic impact experiments; almost 150,000 research papers have been published on polymetallic nodules. Yet, according to the anti-deep-sea-mining (anti-DSM) campaign, we still don't know enough and we are also unlikely to arrive at this sufficient-knowledge-nirvana in the foreseeable future.

As a CEO of a company that over the last 14 years has:

- Invested over $600M in polymetallic nodule exploration and development;
- Completed 22 successful offshore environmental research campaigns together with 20+ of the world's leading deep-sea research institutions and contractors;
- Together with our partner Allseas, delivered the first successful pilot of integrated nodule collection technology since the 1970s while closely monitoring its environmental impacts with our research partners;
- Together with our partners in the United States, Canada and Japan, completed bench, pilot and industrial scale processing pilots and smaller scale refining tests;
- Amassed over a petabyte of environmental data (more than all other deep-sea minerals explorers combined and starting to get closer to the likes of the Library of Congress who manages over 20 petabytes of digital data…)

As the CEO of that company, I can tell you with some pride and confidence that we know enough to get started. We know enough to understand the environmental risks and how to manage them. We also have enough real-world data to take on every catastrophizing claim made by environmental NGOs against the polymetallic nodule industry in the CCZ. And that is saying something as over the last 5 years, as the anti-DSM campaign ramped up to stop this industry before it begins, we have seen a Cambrian explosion in claims, with pressure groups like Greenpeace deploying considerable creativity to scare policy makers and the public. Picking nodules from the abyssal seafloor has been rumored to:

- Strip-mine the oceans triggering catastrophic biodiversity loss in animals not known to science;
- Turn pristine deep-sea "rainforests" into wasteland that will never recover or will take millions of years to do so;

- Generate clouds of seafloor mud ("seafloor plumes") that will travel for thousands of kilometers, smothering all filter-feeding animals in their path;
- Generate midwater plumes that will also travel for thousands of kilometers, forcing tuna to have toxic sediment for breakfast and eventually end up as toxic-metal laden tuna meals on your plate;
- Generate noise levels that will destroy marine mammals across the vast expanses of the Pacific Ocean;
- Make climate change worse by disrupting the planet's largest carbon sink;
- Poison marine life and humans with radioactivity;
- End nodule production of dark oxygen, a newly imagined source of oxygen that may or may not be responsible for the origin of life on Earth and possibly other planets;
- Be the single worst thing to ever happen to our stressed oceans;
- And, to top it off, violate sacred ocean spaces that are central to Pacific Indigenous cosmologies and cultural heritage.

At this point, I think nothing would surprise me. What could however surprise members of the esteemed Committee who may have been exposed to the controversial coverage of deep-sea mining in the media, is what we know with a reasonably high level of confidence because we have decades of research, field tests and validated models to support these statements:

- **Scale**: the entire area currently under exploration in the CCZ accounts for 0.3% of the global oceans. There is more area under protection than under exploration. If even half of the exploration area were to be developed over 30 years, the resulting annual footprint would be less than 10,000 square miles. For comparison, trawling is estimated to impact around 2,000,000 square miles every year.
- **Environment**: Contrary to the creative illustrations and misleading images of coral reefs often accompanying deep-sea mining articles, the best terrestrial comparison for the abyssal seafloor is not a rainforest but a desert. There are no plants. The living biomass is measured in 10s of grams per square meter, not 15,000-30,000 grams measured in the rainforests. Non-microbial species richness in measured in 1,000s, not millions like in the rainforests.
- **Biodiversity loss**: We expect to leave half the nodules unpicked in our areas, leaving plenty of habitat for animals who need nodule surfaces to live. That's in addition to all the areas that have been set aside for protection.
- **Seafloor plume:** Will not travel for 1,000s of kilometers. 95% of disturbed sediment resettles within 1 kilometer of origin within hours to days.
- **Midwater plume**: Will also not travel for 1,000s of kilometers. The midwater plume takes the form of a pancake that rapidly dilutes to the range of natural background variation within kilometers horizontally and within 10s-100s of meters vertically. The cut-off selected for mid-water plume modelling is the upper limit of natural range of Total Suspended Solids (TSS) variation of 0.07 mg/l or more than 7,000 times more conservative than the permissible TSS in drinking water as per U.S. guidelines of 500 mg/l. Dissolved metals from the midwater plume

dilute to background levels within 1.5 km of discharge. Any bioaccumulation in tuna fisheries is highly unlikely due to discharge at 2,000 m depths where the physical interaction between the plume and the food web of fish stocks is limited. Both tuna's breakfasts and yours are safe.

- **Noise**: The loudest source of noise in our operations is the surface production vessel. Using behavioral thresholds from NOAA, our operations will generate noise that can impact the behavior of marine mammals within a 3.8 km radius from the production vessel. This is typical of drill ships used around the world. We will have observers onboard to spot mammals and halt operations if necessary.
- **Climate change**: While the oceans are our planet's largest carbon sink, most carbon is dissolved in water. Deep-sea sediments in the abyssal plains and rises are so carbon poor that they store less than 0.1% of total oceanic carbon despite covering almost 90% of the seafloor area. With our current technology, we would not be able to make climate change worse even if we tried.
- **Recovery**: When a UK-funded research campaign revisited the 1979 mining site of one of the U.S.-based consortia (then OMCO, now Lockheed Martin) 44 years later, they returned with plenty of good news: plumes had "no detectable or slightly positive biological impacts;" full recovery of sediment macrofauna and foraminifera in the tracks and areas covered by plumes; the return of structural complexity to the ecosystem; and megafauna attached to the nodules that were left behind (Jones 2025). When my team revisited our own 2022 mining test site just a year after, we could already measure material recovery. We expect better technology will lead to faster recovery.
- **Radioactivity**: Nodules are less radioactive than the granite in the walls of the Capitol building. Basic PPE (Protective Personal Equipment like gloves and masks), good ventilation of nodule storage spaces and resisting the temptation to swallow a nodule is what it takes to address any health concerns of human workers.
- **Dark oxygen**: Landers that measure oxygen fluxes at the seafloor are finnicky devices. The most likely explanation for the errant oxygen measurements that contradict over a decade of consistent measurements of oxygen consumption in CCZ nodule fields is poor protocol in deploying these devices. The paper that posited the controversial hypothesis that CCZ nodules produce "dark oxygen" has so fa attracted an unprecedented five rebuttals.
- **Cultural heritage**: We have commissioned cultural heritage specialists to carry out detailed baseline studies of both tangible and intangible cultural heritage (TCH/ICH) - the first ever for a deep-sea minerals project in international waters, consistent with international good practice (such as the International Finance Corporation's Performance Standards). Some have suggested that our exploration area is part of the sacred deep-sea creation space and should be considered critical cultural heritage. Baseline research, however, did not identify evidence to support this claim. While some perspectives hold that the deep sea as a whole is sacred, we understand this to reflect a broader cosmological worldview rather than a documented instance of traditional use as defined under IFC standards.

I do not want to leave you with the impression that picking up nodules from the abyss in the CCZ is an environmental free lunch. The activity has measurable negative impacts on the receiving environment. But we have gone to great lengths to improve our nodule collection technology and should we be allowed to proceed, plan to monitor the impacts closely and adapt our operations to minimize our impacts further.

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In closing, I would like to impress on you that the potential in front of us is not to merely *expand* American mineral production.

- The potential in front of us is to eliminate American dependence on foreign sources of supply for three critical minerals—nickel, cobalt and manganese—and expand domestic production of copper.

- The potential in front of us is to turn the United States into the world's leading exporter of manganese, be it as alloy or steel or any of the downstream products the world needs and America is willing to manufacture.

- The potential in front of us is to put American regulatory advantage to good use and demonstrate to the world that America still has what it takes to venture into the new frontiers with eyes wide open and putting the lessons learned from regulating extractive industries of the past to good use.

- The potential in front of us is to re-energize American deep-sea scientific community and inspire a new generation of oceanographers and marine biologists to join the offshore environmental exploration, management and monitoring programs.

- The potential in front of us is to reshore the long-lost mineral processing and refining industry and, with the help of American allies like Japan and South Korea, bring back the cleaner, safer and more automated version of that industry and keep using that infrastructure for recycling the same metals for generations to come, eventually ramping down offshore production as we build out our recyclable metal stocks.

- The potential in front of us is to create 100,000+ American jobs and $300B+ in GDP.

As evidenced by President Trump's Executive Order *Unleashing America's Offshore Critical Minerals and Resources* signed on April 24, 2025, this administration recognizes the historic opportunity before us and will not to let this potential go to waste.

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