



HOUSE COMMITTEE ON
NATURAL RESOURCES
CHAIRMAN BRUCE WESTERMAN

To: House Committee on Natural Resources Republican Members
From: Energy and Mineral Resources Subcommittee Staff, Rob MacGregor – Robert.MacGregor@mail.house.gov, x6-2466; Oversight and Investigations Subcommittee Staff, Michelle Lane – Michelle.Lane@mail.house.gov, x6-4137
Date: February 3, 2025
Subject: Oversight Hearing titled “*Now Ore Never: The Importance of Domestic Mining for U.S. National Security*”

The Subcommittee on Energy and Mineral Resources will hold an oversight hearing entitled “*Now Ore Never: The Importance of Domestic Mining for U.S. National Security*” on **Thursday, February 6, 2025, at 10:00 a.m. in 1324 Longworth House Office Building.**

Member offices are requested to notify Jacob Greenberg (Jacob.Greenberg@mail.house.gov) by 4:30 p.m. on Wednesday, February 5, 2025, if their Member intends to participate in the hearing.

I. KEY MESSAGES

- To ensure national security, the U.S. must ensure mineral security.
- The United States imports many critical minerals from China and other adversarial nations. This import reliance is a vulnerability that places America’s domestic supply chains at risk.
- While the U.S. has many mineral deposits within its borders, long permitting timelines and anti-mining policies advanced by previous administrations have stymied domestic mining activity.
- Encouraging a streamlined mining process from discovery to development for domestic mining projects and decoupling our reliance on foreign adversaries for any segment of the mineral supply chain will create economic certainty and security.
- China recently implemented export bans on critical minerals essential for defense purposes, like gallium, germanium, and antimony. China has also repeatedly used its mineral supply to flood markets and stifle foreign competition strategically, including U.S. attempts to establish secure domestic supply chains.

II. WITNESSES

- **Dr. Morgan Bazilian**, Director, Payne Institute for Public Policy, Colorado School of Mines, Golden, CO
- **Mr. Jeremy Harrell**, CEO, ClearPath Action, Washington, DC
- **Ms. McKinsey Lyon**, Vice President of External Affairs, Perpetua Resources, Donnelly, ID
- **Dr. Dustin Mulvaney**, Environmental Studies Professor, San Jose State University, San Jose, CA (*Minority Witness*)

III. BACKGROUND

Minerals are essential to the U.S. economy, and most are used in various civilian and military applications. Mineral materials consumed by downstream industries in the U.S. created an estimated value of \$3.84 trillion in 2023 and a 6 percent increase from 2022 levels.¹ Unfortunately, the U.S. is largely dependent on hostile nations for a significant amount of critical minerals, creating a significant threat to our national security. On December 20, 2017, President Trump issued Executive Order (EO) 13817, entitled “A Federal Strategy to Ensure Secure and Reliable Supplies of Critical Minerals,” which directed the Department of the Interior (DOI), in coordination with other agencies, to publish a list of minerals determined to be “critical,” also referred to as the Critical Minerals List (CML).²

The U.S. Geological Survey (USGS) publishes and updates the CML every three years, with the next iteration expected to be published early this year.³ The most recent list was published in 2022 and consists of 50 hardrock minerals.⁴ To be classified as “critical,” a mineral commodity must be: (1) a nonfuel mineral or mineral material essential to the economic and national security of the United States; (2) produced from a supply chain that is vulnerable to disruption; and (3) serving an essential function in the manufacturing of a product, the absence of which would have substantial consequences for the U.S. economy or national security.⁵ While the listed minerals were especially susceptible to supply chain shocks at the time of CML publication, policies that favor critical minerals exclusively rather than supporting *all* mineral development could inadvertently endanger unlisted mineral markets in the future. Furthermore, different federal agencies rely on their own mineral classification methods. For example, the Department of Energy’s (DOE) Critical Materials List focuses on commodities that are essential in energy technologies. In contrast, the Defense Logistics Agency (DLA) focuses on materials vital to defense applications and national security.^{6, 7}

On day one of his second term, President Trump further prioritized efforts to secure mineral supply chains by releasing EO 14154, entitled “Unleashing American Energy,” which directs federal agencies to revise and rescind agency actions that impose undue burdens on

¹ USGS, Mineral Commodity Summaries 2024, at 6, <https://pubs.usgs.gov/periodicals/mcs2024/mcs2024.pdf>.

² Exec. Order No. 13817, 82 Fed. Reg. 60835 (Dec. 20, 2017), <https://www.federalregister.gov/documents/2017/12/26/2017-27899/a-federal-strategy-to-ensure-secure-and-reliable-supplies-of-critical-minerals>.

³ CRS Reports, Critical Mineral Resources: National Policy and Critical Minerals List, [https://crsreports.congress.gov/product/pdf/R/R47982/1#:~:text=Section%207002\(c\)%20of%20the,it%20places%20on%20the%20CML](https://crsreports.congress.gov/product/pdf/R/R47982/1#:~:text=Section%207002(c)%20of%20the,it%20places%20on%20the%20CML).

⁴ The most recent list of critical minerals includes: aluminum, antimony, arsenic, barite, beryllium, bismuth, cerium, cesium, chromium, cobalt, dysprosium, erbium, europium, fluor spar, gadolinium, gallium, germanium, graphite, hafnium, holmium, indium, iridium, lanthanum, lithium, lutetium, magnesium, manganese, neodymium, nickel, niobium, palladium, platinum, praseodymium, rhodium, rubidium, ruthenium, samarium, scandium, tantalum, tellurium, terbium, thulium, tin, titanium, tungsten, vanadium, ytterbium, yttrium, zinc, and zirconium. Note that uranium, helium, and potash were removed from the original 2018 list. U.S. Dep’t of the Interior, U.S. Geological Survey, *2022 Final List of Critical Minerals*, 87 Fed. Reg. 10381 (Feb. 24, 2022), <https://www.federalregister.gov/documents/2022/02/24/2022-04027/2022-final-list-of-critical-minerals>.

⁵ 30 U.S.C. §1606.

⁶ Department of Energy, Notice of Final Determination on 2023 DOE Critical Materials List, <https://www.energy.gov/sites/default/files/2023-07/preprint-frn-2023-critical-materials-list.pdf>

⁷ Defense Logistics Agency, Strategic Materials, Materials of Interest, <https://www.dla.mil/Strategic-Materials/Materials/>

domestic mining and processing capacity and instructs the Secretary of the Interior to consider updating the CML, including the potential for listing uranium.⁸

IV. U.S. MINERAL PRODUCTION DIFFICULTIES

Mining is restricted to the location of deposits around the globe, the concentration of desired minerals in each deposit, and the economic feasibility of extraction. As such, no one country is fully self-sufficient in terms of the entire critical mineral supply chain. However, the U.S. severely lags behind competitors' mineral production and processing capabilities.

Despite the availability of multiple material deposits, the U.S. is disadvantaged by permitting delays and legislative restrictions that discourage domestic investment and restrict long-term mineral supply.⁹ A 2024 study by S&P Global found that U.S. critical mineral projects take an average of 29 years from discovery to production—the second-longest in the world.¹⁰ U.S.-based mining projects also lose over one-third of their value due to delays during the permitting process.¹¹ A June 21, 2021, White House review of President Biden's E.O. 14017 on America's Supply Chains stated of the American critical minerals supply chain, “[c]urrently, the United States has limited raw material production capacity and virtually no processing capacity. Without processing capacity, the United States exports the limited raw materials produced today to foreign markets...”¹² Without significant adjustments to this sector, the U.S. will continue to expose its resource supply chains to foreign influence and control.

During the 118th Congress, House Committee on Natural Resource Republicans warned that sustained reliance on adversarial nations, especially China, for various minerals rather than domestic sources jeopardizes U.S. supply chains and constitutes a pressing national security threat. To address these issues, House Republicans included an entire title on mining in H.R. 1, the Lower Energy Costs Act, which passed in March of 2023 by a vote of 225-204.¹³

V. FOREIGN IMPORT RELIANCE

In 2023, the U.S. was over 50 percent import-reliant on apparent consumption of 49 nonfuel mineral commodities and 100 percent net import-reliant for 15 of those commodities.¹⁴

⁸ White House, Executive Order, Unleashing American Energy, January 20, 2025, <https://www.whitehouse.gov/presidential-actions/2025/01/unleashing-american-energy/>

⁹ Wilson Center, Duncan Wood, *et al.*, *The Mosaic Approach: a Multidimensional Strategy for Strengthening America's Critical Minerals Supply Chain*, at 4, https://www.wilsoncenter.org/sites/default/files/media/uploads/documents/critical_minerals_supply_report.pdf.

¹⁰ Bonakdarpour *et al.*, *Mine development times: The US in perspective*, S&P Global (June 2024) https://cdn.ihsmarkit.com/www/pdf/0724/SPGlobal_NMA_DevelopmentTimesUSinPerspective_June_2024.pdf.

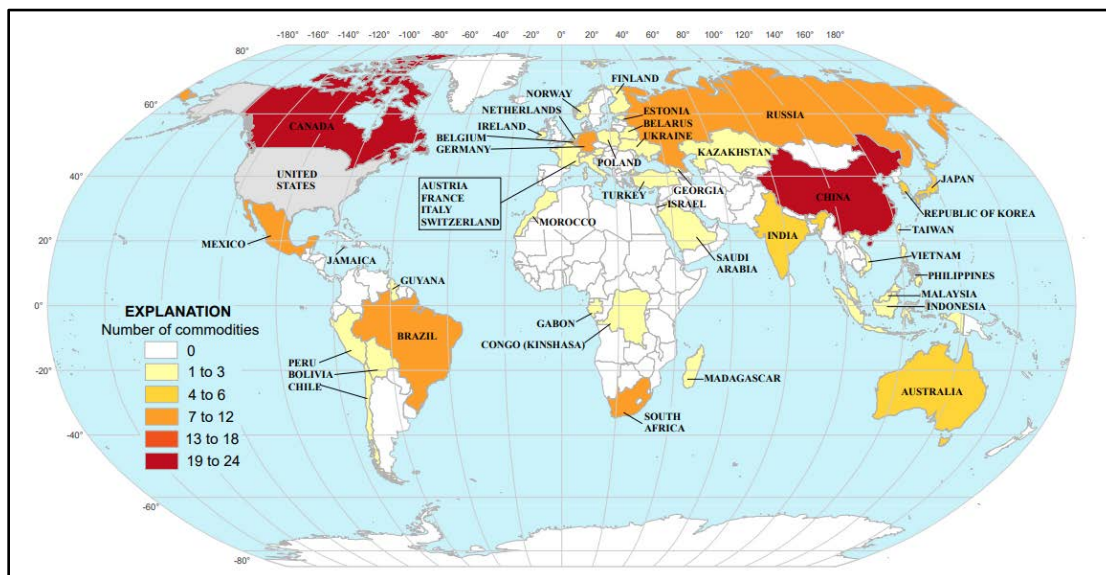
¹¹ *Id.*

¹² 100-Day Reviews under Executive Order 14017, The White House, *Building Resilient Supply Chains, Revitalizing American Manufacturing, and Fostering Broad-Based Growth* (June 2021), at 95, <https://www.whitehouse.gov/wp-content/uploads/2021/06/100-day-supply-chain-review-report.pdf>.

¹³ United States House of Representatives, Office of the Clerk, Roll Call 182 | Bill Number H.R. 1, <https://clerk.house.gov/Votes/2023182>.

¹⁴ USGS, Mineral Commodity Summaries 2024, at 6, <https://pubs.usgs.gov/periodicals/mcs2024/mcs2024.pdf>.

Figure 1: Leading Import Sources (2019-2022) of Nonfuel Mineral Commodities for Which the United States was Greater than 50% Net Import Reliant ¹⁵



Of the 50 minerals on the 2022 CML, the U.S. was over 50 percent import-reliant on 29 and 100 percent net import-reliant on 12.¹⁶

China and Canada supplied the most significant percentages of these mineral commodities, with China supplying 24 mineral commodities with greater than 50 percent net import reliance.¹⁷ Overall, China controls 60 percent of global production, an estimated 90 percent of processing, and over 75 percent of manufacturing of critical minerals.¹⁸ In terms of individual minerals, China refines 72 percent of the global refined cobalt, 98 percent of the global gallium, and 85 percent of the global refined rare earth elements (REEs).¹⁹

While China controls large portions of mid- and downstream operations, it lacks upstream reserves of multiple critical minerals. For example, 70 percent of global lithium is extracted in Australia and Chile, 70 percent of cobalt is extracted in the Democratic Republic of the Congo (DRC), 30 percent of nickel is extracted in Indonesia—the largest single source—and 40 percent of copper is extracted from Chile and Peru.²⁰ China is aggressively investing in global suppliers to offset its natural resource deficits. China owns the largest foreign stake in Indonesian

¹⁵ USGS, Mineral Commodity Summaries 2024, at 8, <https://pubs.usgs.gov/periodicals/mcs2024/mcs2024.pdf>.

¹⁶ *Id.*

¹⁷ USGS, Mineral Commodity Summaries 2024, at 6, <https://pubs.usgs.gov/periodicals/mcs2024/mcs2024.pdf>.

¹⁸ Rep. Kevin Stitt, *A Mineral Strategy for American Security*, WALL ST. J. (July 16, 2023), available at <https://www.wsj.com/articles/a-mineral-strategy-for-american-security-permitting-reform-oklahoma-china-8cb213f0>

¹⁹ Tessa De Grandi, *Visualized: The EV Mineral Shortage*, VISUAL CAPITALIST (Feb. 8, 2023), available at <https://www.visualcapitalist.com/sp/how-mineral-supply-will-change-ev-forecasts/>.

²⁰ Brookings Institution, Rodrigo Castillo and Caitlin Purdy, *China's Role in Supplying Critical Minerals for the Global Energy Transition: What could the future hold?* (Aug. 1, 2022), at 6-7, available at https://www.brookings.edu/wp-content/uploads/2022/08/LTRC_ChinaSupplyChain.pdf.

nickel, and Chinese companies finance 15 of 19 cobalt-producing mines in the DRC, giving them unprecedented control over the supply of these minerals.²¹

Chinese mining and processing operations abroad have consistently been linked to labor and human rights abuses, elevating concerns regarding the ethics and stability of mineral supply chains. According to the U.S. Department of Labor (DOL), there were over 5,000 documented cases of child labor in DRC mines between 2018 and 2022.²² However, the potential for underestimating these figures is high due to a lack of reliable monitoring systems.²³ Human rights organizations have also alleged that between 2018 and 2020, communities local to a copper and cobalt mine operated by a subsidiary of the Chinese multinational, Jinchuan Group, in the Congo “were deprived of their most basic rights, including the right to property, a decent home, food, water, a healthy environment, and even life.”²⁴ Similarly, in September, DOL added Indonesian nickel produced in Chinese-financed industrial parks to its extensive list of foreign products made using forced labor.²⁵ DOL reported that Indonesian workers face abuses like unsafe conditions, deceptive recruitment, unpaid wages, restricted movement, and even physical violence as a means of punishment.²⁶

While abusive labor practices abroad are well documented, a widespread lack of transparency across various stages of the mineral supply chain has obstructed accurate tracking of materials and end products made with poor labor standards. In response to these unjust practices and insufficient mineral traceability, President Trump’s EO 14154 directs the Secretaries of Commerce and Homeland Security to assess the inflow of minerals produced with forced labor into the United States and the national and economic security implications of relying on such imports.²⁷

VI. EXPORT BANS

In July 2023, China curbed gallium and germanium exports, followed by high-purity and high-quality graphite and REE mining, mineral processing, and smelting technology later in the year.²⁸ On August 14, 2024, China issued export restrictions on antimony, a mineral vital for the

²¹ Brookings Institution, Rodrigo Castillo and Caitlin Purdy, *China’s Role in Supplying Critical Minerals for the Global Energy Transition: What could the future hold?* (Aug. 1, 2022), at 6-7, available at https://www.brookings.edu/wp-content/uploads/2022/08/LTRC_ChinaSupplyChain.pdf.

²² Bureau of International Labor Affairs, Final Evaluation, Combatting Child Labor In The Democratic Republic Of The Congo’s Cobalt Industry (COTECCO), https://www.dol.gov/sites/dolgov/files/ILAB/evaluation_type/final_evaluation/DRC-COTECCO-Final-Evaluation-Report-NonPII.pdf

²³ *Id.*

²⁴ Mind the Gap, Strategies used by Ruashi Mining to avoid responsibility for human rights violations, <https://www.mindthegap.ngo/strategies-used-by-ruashi-mining-to-avoid-responsibility-for-human-rights-violations/>

²⁵ Department of Labor, 2024 List of Goods Produced by Child Labor or Forced Labor, https://www.dol.gov/sites/dolgov/files/ilab/child_labor_reports/tda2023/2024-tvpra-list-of-goods.pdf pg. 88

²⁶ *Id.*

²⁷ White House, Executive Order, Unleashing American Energy, January 20, 2025, <https://www.whitehouse.gov/presidential-actions/2025/01/unleashing-american-energy/>

²⁸ Gracelin Baskaran and Meredith Schwartz, China Imposes Its Most Stringent Critical Minerals Export Restrictions Yet Amidst Escalating U.S.-China Tech War, Center for Strategic & International Studies, Dec. 4, 2024, <https://www.csis.org/analysis/china-imposes-its-most-stringent-critical-minerals-export-restrictions-yet-amidst#:~:text=China%20banned%20shipments%20of%20gallium,be%20subject%20to%20greater%20scrutiny.>

defense industry.²⁹ On Tuesday, December 3, 2024, China announced export bans on “dual-use” technologies explicitly targeted at the U.S. after the U.S. took steps to limit exports of semiconductor and artificial intelligence (AI) technologies to China.³⁰ Chairman Westerman decried China’s December ban and the lack of the Biden administration’s lack of urgency predating the announcement, saying, “[d]espite the concerns of elected officials, national security experts, local communities and mineral producers, the Biden-Harris administration has made it more difficult to access the rich mineral resources here in America and ceded control of the global mineral supply chain to our adversaries.”³¹

Table 1: Recent Chinese Mineral Bans to U.S. and Common Uses

Mineral	Uses	U.S. Net Import Reliance as percentage of apparent consumption³²
Antimony	Bullets and shot; flame retardant in personal protective equipment (PPE), electronic devices, aircrafts, and automobiles; batteries; communication equipment; night vision goggles; explosives; submarines; warships; optics; laser sightings. ³³	82%
Germanium	Electronics and solar applications; fiber-optic systems; infrared optics; chemotherapy; metallurgy. ³⁴	> 50%
Gallium	Semiconductors; integrated circuits (ICs) including laser diodes, light emitting diodes (LEDs), photodetectors, and solar cells; aerospace applications; medical equipment; high-performance computers. ³⁵	100%
Graphite	Batteries, especially in lithium-ion batteries; brake linings; lubricants; powdered metals; refractory applications; steelmaking. ³⁶	100%

²⁹ China will limit exports of antimony, a mineral used in products from batteries to weapons, AP, Aug. 15, 2024, <https://apnews.com/article/china-antimony-export-controls-critical-material-2fcfe08912d20996e9aa87d1fb97dd6a>.

³⁰ *Id.*

³¹ Press Release, Westerman: China’s Actions and Biden’s Inaction Put U.S. National Security at Risk, Dec. 3, 2024, <https://naturalresources.house.gov/news/documentsingle.aspx?DocumentID=416731>.

³² USGS, Mineral Commodity Summaries 2024, <https://pubs.usgs.gov/periodicals/mcs2024/mcs2024.pdf>, data taken from 2023.

³³ Shane Lasley, Antimony is high on DOD mineral concerns, Metal Tech News, Oct. 2, 2024, <https://www.metaltechnews.com/story/2024/09/16/critical-minerals-alliances-2024/antimony-is-high-on-dod-mineral-concerns/1914.html>.

³⁴ USGS, Mineral Commodity Summaries 2024, at 81, <https://pubs.usgs.gov/periodicals/mcs2024/mcs2024.pdf>.

³⁵ USGS, Mineral Commodity Summaries 2024, at 74, <https://pubs.usgs.gov/periodicals/mcs2024/mcs2024.pdf>.

³⁶ USGS, Mineral Commodity Summaries 2024, at 84, <https://pubs.usgs.gov/periodicals/mcs2024/mcs2024.pdf>.

In addition to the military applications outlined in the graph above, the remainder of the minerals on the CML are also integral to ensuring our national security. For example, cobalt is used in smart bombs, aircraft, and precision-guided missiles,³⁷ nickel is used in superalloys for jet engines, and lanthanum is used in night vision goggles.³⁸ According to Department of Defense (DOD), each Virginia-class submarine requires 9,200 pounds of REEs, and a single Aegis destroyer contains 5,200 pounds of REEs.³⁹

Due to a recognition of the importance of resources for defense applications, the DOD's DLA Strategic Materials Office manages the National Defense Stockpile, comprised of 50 unique commodities stored in nine locations throughout the U.S.⁴⁰ DOD is so reliant on secure mineral sourcing that the Ukraine Supplemental Appropriations Act provided \$600 million to DOD to secure critical minerals for missiles and munitions.⁴¹ DOD is using these funds to issue grants to companies like Perpetua Resources to permit its Stibnite-Gold Project, currently the only domestic site that could produce antimony. Reliability in the critical mineral supply chain is imperative to the well-being of our national defense network, and without robust support for the domestic mining industry, the U.S. will continue to cede control of important resources to adversarial nations.

China has repeatedly used its mineral supply to strategically flood markets and stifle foreign competition, including U.S. attempts to establish secure domestic supply chains. In 2023, after new Chinese-backed production in the DRC drove a steep decline in cobalt prices, Idaho Cobalt Operations (ICO), America's only cobalt mine, was forced to suspend construction mere weeks before it came online.⁴² ICO would have supported over 250 good-paying jobs and supplied 1,915 metric tons of cobalt annually,⁴³ enough to meet about 23% of U.S. reported consumption in 2023.⁴⁴ Instead, the project remains idle today, waiting for cobalt prices to rebound from a near 20-year low.⁴⁵ Similarly, in 2015, California's Mountain Pass mine was driven into bankruptcy as a result of Chinese dumping practices, costing the U.S. its only domestic source of rare earth minerals.⁴⁶ Fortunately, the mine resumed operations in 2018 and has since received federal support under the Defense Production Act (DPA) to reshore rare earth processing capacity.⁴⁷

³⁷ Center for Strategic & Int'l Studies, Daniel F. Runde & Austin Hardman, *Elevating the Role of Critical Minerals for Development and Security* (Sep. 1, 2023), <https://www.csis.org/analysis/elevating-role-critical-minerals-development-and-security>.

³⁸ Texas Nat'l Security Review, War on the Rocks, Gregory Wischer and Jack Little, *The U.S. should stockpile more critical minerals* (Sep. 27, 2023), <https://warontherocks.com/2023/09/the-u-s-government-should-stockpile-more-critical-minerals/>.

³⁹ *Id.*

⁴⁰ Dep't of the Interior, U.S. Geological Survey, *Mineral Commodity Summaries 2024* (Jan. 31, 2024), at 6, <https://pubs.usgs.gov/periodicals/mcs2024/mcs2024.pdf>.

⁴¹ Additional Ukraine Supplemental Appropriations Act, Pub. L. No. 117-128 (May 21, 2022).

⁴² Reuters, Insight: Western miners push for higher metals prices to ward off Chinese rivals, <https://www.reuters.com/markets/commodities/western-miners-push-higher-metals-prices-ward-off-chinese-rivals-2024-07-22/>

⁴³ Jervois Global, Idaho Cobalt Operations Technical Report, Feasibility Study, November, 2020, https://jervoisglobal.com/wp-content/uploads/2021/06/190348_Idaho_Cobalt_13112020_NI_43_101_Technical_Report-FILED-r1.pdf

⁴⁴ Statista, Reported and apparent cobalt consumption in the United States from 2010 to 2023, <https://www.statista.com/statistics/339741/apparent-and-reported-cobalt-consumption-in-the-us/>

⁴⁵ Trading Economics, Cobalt Commodity, <https://tradingeconomics.com/commodity/cobalt>

⁴⁶ E&E News by Politico, 'Sick industry' struggles to take on China, <https://www.eenews.net/articles/sick-industry-struggles-to-take-on-china/>

⁴⁷ Department of Defense, DoD Awards \$35 Million to MP Materials to Build U.S. Heavy Rare Earth Separation Capacity, <https://www.defense.gov/News/Releases/Release/Article/2941793/dod-awards-35-million-to-mp-materials-to-build-us-heavy-rare-earth-separation-c/>

Foreign price manipulation has also had a severe impact on mineral supplies from allied nations, particularly Australia. Notably, BHP warned in July 2024 that “nearly two-thirds of Australia's nickel market is in danger of closing amid low market prices fueled by a 153% increase in Indonesia's nickel from 2020 through the end of last year,” much of which was backed by China.⁴⁸ With mineral demand poised to skyrocket in the coming years, the U.S. cannot afford to sit idly by and allow national security to be threatened as China continues to subsidize its production around the world, dump products onto the market, and make U.S. and allied reshoring efforts uneconomical. This is especially pressing for commodities such as cobalt and copper, where supply is projected to outstrip demand in the coming years.⁴⁹ ⁵⁰ To counter these concerning trends, President Trump’s recent EO 14154, Unleashing American Energy Dominance, directs the United States Trade Representative to assess whether exploitative practices and state-assisted mineral projects abroad are unlawful or unduly burden or restrict United States commerce and suggests comprehensive policy responses.⁵¹

⁴⁸ Reuters, Insight: Western miners push for higher metals prices to ward off Chinese rivals,

<https://www.reuters.com/markets/commodities/western-miners-push-higher-metals-prices-ward-off-chinese-rivals-2024-07-22/>

⁴⁹ Cobalt Institute, Cobalt Market Report 2023, May, 2024, https://www.cobaltinstitute.org/wp-content/uploads/2024/05/Cobalt-Market-Report-2023_FINAL.pdf

⁵⁰ International Energy Agency, Global Critical Minerals Outlook 2024, <https://iea.blob.core.windows.net/assets/ee01701d-1d5c-4ba8-9df6-abeec9de99a/GlobalCriticalMineralsOutlook2024.pdf>

⁵¹ White House, Executive Order, Unleashing American Energy, January 20, 2025, <https://www.whitehouse.gov/presidential-actions/2025/01/unleashing-american-energy/>