**Testimony of Katie Sweeney**
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**before the**
**U.S. House of Representatives**
**Committee on Energy & Commerce**
**Subcommittee on Oversight & Investigations**

**"Examining Ways to Enhance Our Domestic Critical Mineral Supply Chains."**

**May 21, 2025**

Good morning members of the subcommittee. I am Katie Sweeney, Executive Vice President and Chief Operating Officer of the National Mining Association (NMA).

America's mining industry supplies the essential materials necessary for nearly every sector of our economy – from technology and healthcare to energy, transportation, infrastructure and national security. The NMA is the only national trade organization that serves as the voice of the U.S. mining industry and the hundreds of thousands of American workers it employs before Congress, the federal agencies, the judiciary and the media, advocating for public policies that will help America fully and responsibly utilize its vast natural resources. We work to ensure America has secure and reliable supply chains, abundant and affordable energy, and the American-sourced materials necessary for U.S. manufacturing, national security and economic security, all delivered under world-leading environmental, safety and labor standards.

The NMA has a membership of more than 250 companies and organizations working in the U.S. to mine or explore for minerals, with many also refining or processing mined minerals, or with plans to do so. As such, I am pleased to testify this morning on the need to decouple and derisk U.S. mineral supply chains from geopolitical adversaries.

## Mineral Demand Outlook

The NMA appreciates the administration's and this congress's support of our nation's mining industries and we agree that reestablishing the U.S. as an industrial

powerhouse begins in U.S. mines.  We can only fully and reliably feed our supply chains, maintain America's global competitive edge and underpin our national security by prioritizing sourcing materials here at home. Demand for minerals and derivative products is expected to increase dramatically. According to the International Energy Agency (IEA), demand for minerals experienced strong growth in 2023, with lithium demand rising by 30 percent while demand for nickel, cobalt, graphite and rare earth elements all saw increases ranging from 8 percent to 15 percent. Overall, IEA predicts mineral demand for key energy technologies doubles between 2024 and 2030.[1] Increased electrification is a growing driver of demand. Looking at copper alone, total U.S. demand is expected to grow more than 41 percent over the next decade, with a substantial portion of that demand coming from critical infrastructure applications such as electrical utilities and data centers.

**Reliance on Foreign Sources**

Due to the lack of a fully integrated domestic production supply chain, the U.S. relies heavily on imports of critical minerals and their derivative products that are essential for the manufacturing, energy, transportation and national security sectors. Unfortunately, for some of these minerals, the U.S. is dependent on a small group of countries – both allies and geopolitical adversaries. This presents considerable risk in supply chain disruptions for many reasons including: natural disasters, labor strikes, logistical bottlenecks, geopolitical instability, trade tensions and foreign government policies creating outright competitive disadvantages for U.S. companies.

The U.S. Geological Survey's (USGS) annual Mineral Commodity Summaries (MCS) report provides critically important data on net import reliance and leading import sources for a wide swath of minerals. The report's long-running annual publication sheds valuable insights on—and paints an unsettling picture of–U.S. import reliance over time.

As of the USGS MCS' January publication, the U.S. continues to be 100 percent import reliant for 15 minerals and is reliant on imports for more than one-half of the U.S. apparent consumption of 46 nonfuel mineral commodities. This MCS net import reliance chart highlights our nation's overwhelming reliance on foreign sources, especially from geopolitical adversaries like China and Russia.

[1] International Energy Agency, Global Critical Minerals Outlook 2024.

| Commodity | Net import reliance as a percentage of apparent consumption in 2024 | Leading import sources (2020–23)[2] |
|---|---|---|
| ARSENIC, all forms | 100 | China,[3] Morocco, Malaysia, Belgium |
| ASBESTOS | 100 | Brazil, Russia |
| CESIUM | 100 | Germany, China |
| FLUORSPAR | 100 | Mexico, Vietnam, South Africa, China[3] |
| GALLIUM, metal | 100 | Japan, China, Germany, Canada |
| GRAPHITE (NATURAL) | 100 | China,[3] Canada, Mexico, Mozambique |
| INDIUM | 100 | Republic of Korea, Japan, Canada, Belgium |
| MANGANESE | 100 | Gabon, South Africa, Australia, Malaysia |
| MICA (NATURAL), sheet | 100 | China, Brazil, India |
| NIOBIUM (COLUMBIUM) | 100 | Brazil, Canada |
| RUBIDIUM | 100 | China, Germany, Russia |
| SCANDIUM | 100 | Japan, China, Philippines |
| STRONTIUM | 100 | Mexico, Germany |
| TANTALUM | 100 | China,[3] Australia, Germany, Indonesia |
| YTTRIUM, compounds | 100 | China,[3] Germany |
| GEMSTONES | 99 | India, Israel, Belgium, South Africa |
| ABRASIVES, fused aluminum oxide | >95 | China,[3] Canada, Brazil, Austria |
| NEPHELINE SYENITE | >95 | Canada |
| TITANIUM, sponge metal | >95 | Japan, Kazakhstan, Saudi Arabia |
| POTASH | 93 | Canada, Russia, Belarus, Israel |
| BISMUTH, metal, alloys, and scrap | 89 | China,[3] Republic of Korea |
| IRON OXIDE PIGMENTS, natural and synthetic | 87 | China,[3] Germany, Brazil, Canada |
| TITANIUM MINERAL CONCENTRATES | 86 | South Africa, Madagascar, Canada, Australia |
| ANTIMONY, metal and oxide | 85 | China,[3] Belgium, India, Bolivia |
| PLATINUM | 85 | South Africa, Belgium, Germany, Italy |
| STONE (DIMENSION) | 83 | Brazil, China,[3] Italy, Turkey |
| DIAMOND (INDUSTRIAL), stones | 81 | India, South Africa, Russia, Australia |
| RARE EARTHS,[4] compounds and metals | 80 | China,[3] Malaysia, Japan, Estonia |
| PEAT | 78 | Canada |
| CHROMIUM, all forms | 77 | South Africa, Kazakhstan, Canada, Finland |
| COBALT, metal, oxides, and salts | 76 | Norway, Finland, Japan, Canada |
| BARITE | >75 | India, China,[3] Morocco, Mexico |
| BAUXITE | >75 | Jamaica, Turkey, Guyana, Australia |
| MAGNESIUM METAL | >75 | Israel, Canada, Turkey, Czechia |
| TIN, refined | 73 | Peru, Bolivia, Indonesia, Brazil |
| ZINC, refined | 73 | Canada, Mexico, Republic of Korea, Peru |
| ABRASIVES, silicon carbide | 69 | China,[3] Brazil, Canada |
| RHENIUM | 65 | Chile, Canada, Germany, Poland |
| SILVER | 64 | Mexico, Canada, Republic of Korea, Poland |
| ALUMINA | 59 | Brazil, Jamaica, Australia, Canada |
| MAGNESIUM COMPOUNDS | 52 | China,[3] Israel, Brazil, Canada |
| GERMANIUM | >50 | Belgium, Canada, China, Germany |
| IODINE | >50 | Chile, Japan |
| LITHIUM | >50 | Chile, Argentina |
| SELENIUM, metal | >50 | Philippines, Mexico, Canada, Poland |
| TUNGSTEN | >50 | China,[3] Germany, Bolivia, Vietnam |
| SILICON, metal and ferrosilicon | <50 | Brazil, Russia, Canada, Malaysia |
| GARNET (INDUSTRIAL) | 48 | South Africa, Australia, India, China[3] |
| NICKEL | 48 | Canada, Norway, Australia, Brazil |
| ALUMINUM | 47 | Canada, United Arab Emirates, Bahrain, China[3] |
| DIAMOND (INDUSTRIAL), bort, grit, and dust and powder | 47 | China,[3] Republic of Korea, Ireland, Russia |
| COPPER, refined | 45 | Chile, Canada, Mexico, Peru |
| MICA (NATURAL), scrap and flake | 41 | China, Canada, India, Finland |
| VANADIUM | 40 | Canada, Brazil, Austria, South Africa |
| PALLADIUM | 36 | Russia, South Africa, Belgium, Italy |
| VERMICULITE | 34 | South Africa, Brazil, Zimbabwe |
| FELDSPAR | 33 | Turkey, Mexico |
| LEAD, refined | 28 | Canada, Republic of Korea, Mexico, Australia |
| PERLITE | 26 | Greece, China |
| BROMINE | <25 | Israel, Jordan, China[3] |
| TELLURIUM | <25 | Canada, Philippines, Japan, Germany |
| ZIRCONIUM, ores and concentrates | <25 | South Africa, Australia, Senegal |
| SALT | 24 | Canada, Chile, Mexico, Egypt |
| CEMENT | 22 | Turkey, Canada, Vietnam, Greece |

Source: U.S. Geological Survey.[2]

This perilous situation has dire implications for our national security. Given security sensitivities, precise mineral demand and reliance numbers for military applications are not readily available. The foundational role of minerals in defense systems is a factor that must be considered when evaluating mineral supply chains. A recent report evaluating defense use of minerals, estimates that the U.S. is more than 50 percent reliant on imports for 18 minerals needed for infrared goggles, jets, tanks, missiles and global positioning systems.[3] That same report comes to a terrifying conclusion, "today, the United States is analogous to Russia during World War I—mineral rich but unprepared for wartime demands and foreign supply restrictions."[4]

Speculation that our nation's growing mineral import reliance results from a lack of domestic mineral endowment is unfounded. The U.S. is home to vast mineral resources that could be developed on U.S. soil, under world-leading environmental

[2] U.S. Geological Survey, 2025, Mineral commodity summaries 2025 (ver. 1.2, March 2025), p. 7, *available at* https://doi.org/10.3133/mcs2025.
[3] Gregory D. Wischer, "The U.S. Military Risks Mineral Shortages in a U.S.-China War Lessons from World War I, World War II, and the Korean War," Military Review: The Professional Journal of the U.S. Army, Army University Press, January-February 2025.
[4] *Id.*

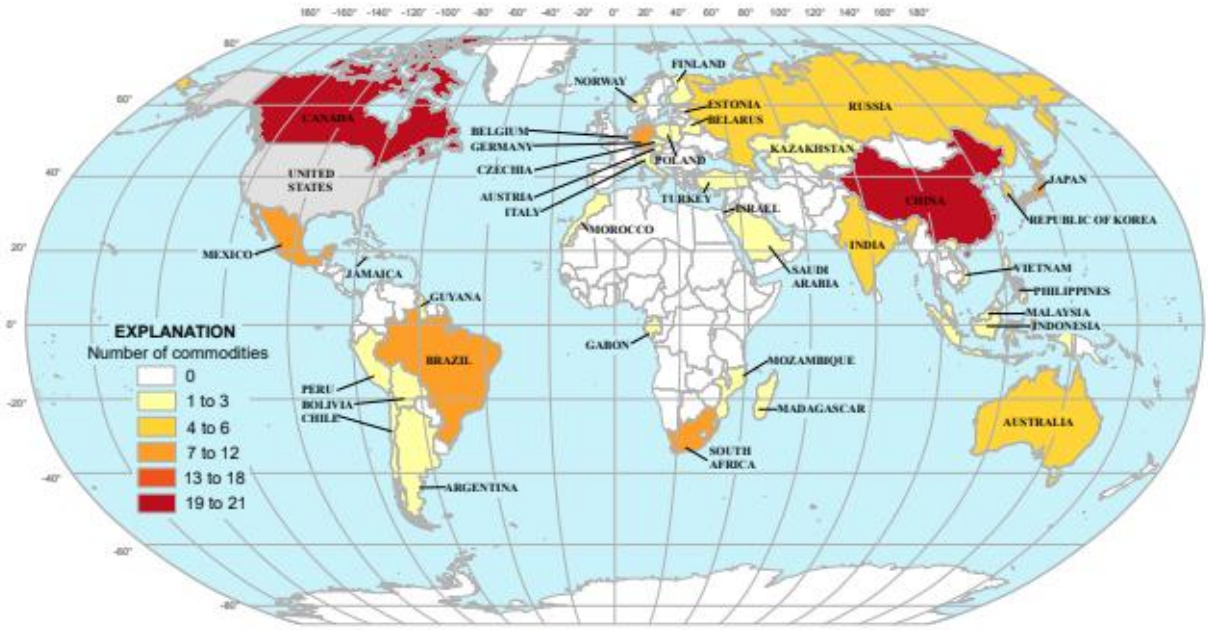
and labor standards. According to USGS, when it comes to key minerals in the U.S., what is left to be discovered is almost as much as what is already found. And with today's advanced mapping techniques, there is no doubt that we can pinpoint these domestic resources faster and with more precision than in the past.

In 2023, the USGS released a map of potential critical mineral resources in the U.S. that identified more than 800 new focus areas of interest. With over $6 trillion worth of known domestic mineral resources, it is not a question of whether we could source more of our needs at home but whether we have the right policies to unlock these resources and process them here at home.

## China's Control of Global Mineral Supply Chains

Through China's long-term global mineral strategy, they have become a leading supplier of processed critical minerals. Moreover, according to USGS, production concentration has increased markedly over the past few decades for many mineral commodities with the most notable global shift being the increasing production of mineral commodities in China.[5]

**Figure 3.—Leading Import Sources* (2020–23) of Nonfuel Mineral Commodities for Which the United States Was Greater Than 50% Net Import Reliant**

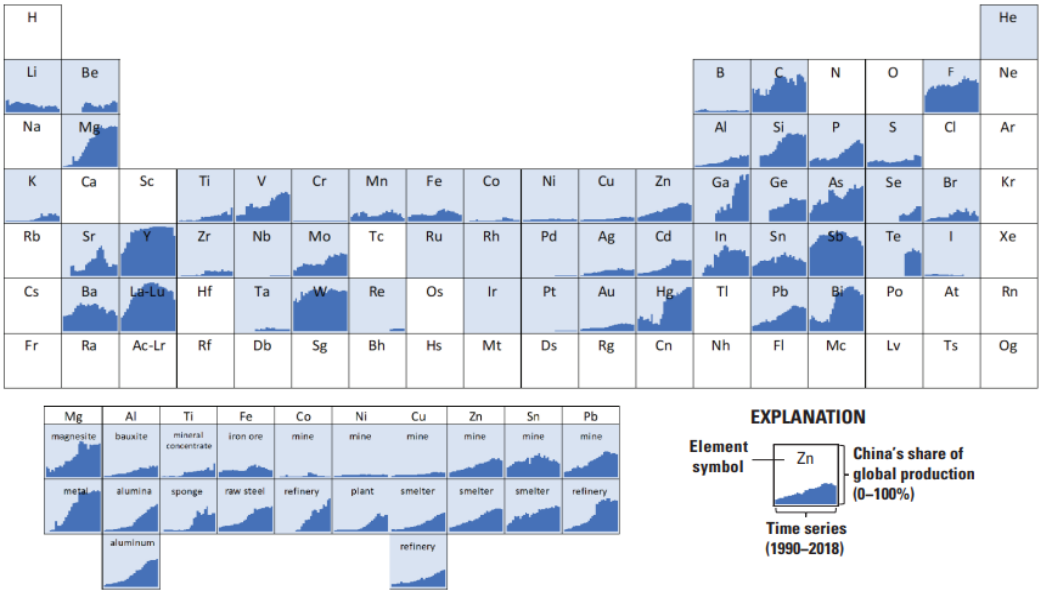



[5] Nassar, N.T., Alonso, E., and Brainard, J.L., 2020, Investigation of U.S. Foreign Reliance on Critical Minerals—U.S. Geological Survey Technical Input Document in Response to Executive Order No. 13953 Signed September 30, 2020 (Ver. 1.1, December 7, 2020): U.S. Geological Survey Open-File Report 2020–1127, p. 4.
https://pubs.usgs.gov/of/2020/1127/ofr20201127.pdf

This is no accident, but rather the continuation of the country's "Going Global" initiative from the late 1990s, whose goal was to secure raw materials and internationalize their activities, which later grew into the "Belt and Road Initiative" (BRI).[6] Since that time, China "systematically extended its control over critical minerals essential for the global energy transition and net-zero emissions, using a network of at least 26 state-backed financial institutions over the past two decades…" providing nearly $57 billion in loans between 2000 and 2021.[7]

Even when China may not be a major source of imports for a particular commodity, it is deliberately growing its influence. China's strong supply chain position does not result from an inherent advantage in reserves for most materials, but rather from heavy non-market activities, market manipulation, government subsidization and from investments in mining, processing and manufacturing industries. As a result, China's share of global mineral production and processing has grown markedly since 1990 for many mineral commodities, including cobalt, gallium, rare earths, titanium, vanadium and zinc.

**China's Share of Global Primary Mineral Commodity Production (1990-2018)**[8]




[6] Reddy, K.R., China's Going Global Policy: A Prelude to the BRI (January 16, 2023): Organization for Research on China and Asia, https://orcasia.org/chinas-going-global-policy-a-prelude-to-the-bri#:~:text=The%20Going%20Global%20or%20Going,integration%20into%20the%20global%20economy.

[7] Jamasmie, C. (2025, January 29). "China funnelled $57 billion to control critical mineral supply chain." Mining.Com, Retrieved from https://www.mining.com/china-funnelled-57-billion-to-control-critical-mineral-supply-chain/

[8] For selected elements of the periodic table, the figure displays a time series of China's estimated share of global production for various associated mineral commodities for the

As examples of this exponential growth, China currently refines 73 percent of the world's cobalt, 59 percent of lithium and 68 percent of nickel and controls 85 percent of rare earth element processing capacity. For cobalt alone, China's 2024 announced increases in refinery capacity nearly doubled its 2023 capacity. Similarly, China has rapidly grown its copper smelting and refining industry and priced competitors out of business.

These distortive and unfair market practices employed by countries like China, including providing subsidies to its domestic industries, create significant challenges for U.S. producers and destabilize global critical minerals supply chains. These subsidies take various forms, including direct financial support to domestic processing facilities, energy subsidies that lower electricity and operational costs, and tax incentives coupled with preferential loan programs. Consequently, Chinese producers can export critical minerals and downstream products, at artificially low prices, making it increasingly difficult for U.S. manufacturers to compete in both domestic and international markets.

Furthermore, global overcapacity, particularly as strategically manipulated by China, has led to a surplus of critical minerals. This overproduction drives down global prices. Lower prices resulting from overcapacity may discourage investment in U.S. mining and processing infrastructure, thereby further increasing dependence on foreign imports to meet future U.S. demand.

A striking example of China's nonmarket behavior is its artificial manipulation of prices for lithium carbonate and hydroxide achieved through its monopoly over the processing of lithium ore into lithium carbonate and hydroxide. This market manipulation has had significant impact on the capitalization and economics of the only permitted lithium-boron mining and processing plant in the U.S. This mine and plant, owned by a NMA member company, is projected to process/refine enough lithium carbonate to meet 100 percent of U.S. domestic demand within five years. The achievability of this goal, however, depends on the ability to sell its processed lithium at prices that incentivizes the capital investment required to begin and expand its production capacity for processing lithium domestically.

Similar stories exist across the NMA's hardrock membership with China not hesitating to employ market manipulation to flood key commodity markets, such as cobalt. One NMA member company who was poised to begin production at the only permitted primary cobalt domestic mine in the U.S. was forced to close due to plummeting cobalt prices orchestrated by China.

If the U.S. or its allies attempt to fight back against these unfair trade practices, Beijing responds by simply restricting or banning the export of minerals needed for

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years 1990–2018. In the periodic table, production refers to primary production or mine production. In the subfigure below the periodic table, multiple supply chain stages or forms are displayed for each mineral commodity. Elements not assessed are white. For a few mineral commodities (gallium, germanium, indium, selenium, silicon, strontium, and tellurium), data are not available for all years in the time series.

America's economy and defense industrial base. The use of this geopolitical leverage was on full display in December 2024, when China banned exports of gallium, germanium and antimony to the U.S., which have widespread military applications.

## Barriers to Domestic Mineral Processing

Geology alone does not dictate whether a deposit can be economically mined or ore economically processed. Changes in price, demand and technology also factor into the calculation. The mining industry has a proven track record of technological advancements to optimize both mining and processing of conventional and nonconventional feedstocks.

For example, one NMA member company has developed a new metal extraction process that significantly enhances their recoveries from a variety of feedstocks and is commissioning a new hydrometallurgical extraction plant that will increase the value extracted from existing operations and reduce mine complexity, thereby further reducing operating costs and increasing reserve value. Products will include copper metal, cobalt sulphate, nickel sulphate, or cobalt and nickel metal and alloys for the domestic market. This process will significantly reduce mining costs and increase the overall resource base.

This and other technological advancements, with the right support, can create a step-change for business and the recovery of minerals from other sources, including mineral wastes sources. This would enable a domestic supply of minerals, contributing to mineral independence and supply chain security. Development of this, and other, technologies will benefit the U.S. supply chain.

## Recommendations to Enhance Domestic Mineral Supply Chains

The NMA encourages robust bipartisan measures (legislative and administrative) to promote efficient permitting to move mineral production (including mining and processing) projects forward. One of the U.S.' biggest self-imposed policy bottlenecks is our outdated, inefficient and prolonged permitting system, which impairs investment in U.S. projects and prevents the domestic mining sector from performing to its full potential and supplying the products and resources essential to manufacturing, energy, transportation and national security sectors.

The NMA urges Congress and the administration to consider federal investments and incentives that will accelerate U.S. efforts to break free of China's hold on the minerals supply chain. This includes accelerating private and public capital investment in domestic mineral production projects, including use of the National Security Capital Forum, additional use of Defense Production Act funds, leveraging of Export-Import Bank programs, preferred loans, incentives for domestic sales, and set-aside quotas for domestic consumption.

Similarly, bolstering investment in domestic refining capacity is crucial as extraction and refining must scale together to create a secure supply chain. Increasing both

primary and secondary refining and smelting capacity can be achieved through dedicated federal investment and an overhaul of regulatory and permitting processes. Federal incentives such as grants, tax credits, preferred loans, R&D funding, incentives for domestic sales, and set-aside quotas for domestic consumption should be offered to spur private investment in U.S. to build or upgrade processing, refining and smelting facilities. Further, programs and investments at the Department of Energy's National Laboratories to develop new extraction, separation and processing technologies will support and leverage ongoing investments in the private sector. Finally, workforce development is vital to ensure safe and responsible mineral production and processing. As such, implementing educational grant programs to support mining and trade schools, alongside training and development initiatives, will enhance U.S. mineral supply chains.

## Conclusion

The U.S. has all the ingredients necessary to create our own mineral supply chain dominance. That said, there can be no mineral and supply chain security — no meeting the enormous mineral demand at our doorstep — without fundamental recognition that we need more domestic mining and processing, combined with responsible policies to achieve it. With the right policies, the U.S. could reduce reliance on China and other foreign sources, increase our global competitiveness and create high-paying American jobs that provide our manufacturing and defense sectors with a stable supply of the minerals and materials they need.

Solutions to meet anticipated mineral demand, while simultaneously rebuilding our domestic supply chains, must be comprehensive. A government-wide approach will be necessary to achieve the administration's laudable objective of securing the U.S. critical minerals supply chain. The U.S. needs a single government entity with the authority to coordinate the full complement of tools needed to fully address supply chains. The NMA believes that the National Energy Dominance Council serves this function and should continue to be strengthened.

As the clarity of U.S. mineral import vulnerabilities come into focus, it is important to remember that our current, self-imposed state of affairs does not need to be permanent. It will take difficult decisions, time and political will to gain what we have lost. The path to achieving a strong mineral supply chain that supports U.S. economic and national security is only one step away, but we must be willing to take the first step together.

The mining industry looks forward to working with this committee in a bipartisan way and come together to find solutions that secure mineral supply chains for generations to come. Thank you for the opportunity to testify before you today and I would be pleased to answer any questions you may have.