

Technology Metals Report (12.06.2024): China's Export Ban Disrupts Critical Minerals Supply Chains, Niger Uranium Seizure Sparks Supply Concerns, and CMI Strengthens Leadership for 2025

written by Tracy Hughes | December 6, 2024

This week, the critical minerals market was dominated by China's implementation of an export ban on gallium, germanium, and antimony to the U.S., escalating trade tensions and spotlighting vulnerabilities in American supply chains. The [ban](#), which could reduce U.S. GDP by \$3.4 billion, underscores China's strategic dominance in critical minerals essential for semiconductors, renewable energy, and defense technologies. The move has been described by [Critical Minerals Institute \(CMI\)](#) Co-chair [Jack Lifton](#) as a "War for Critical Minerals Supplies," prompting the U.S. to intensify efforts to diversify its mineral sources and invest in domestic production. This development coincided with the U.S. Defense Department [invoking](#) the Defense Production Act to enhance the domestic production of graphite and other critical minerals to reduce dependence on China, signaling a broader push to secure resilient supply chains.

In Australia, the government [allocated](#) an additional A\$400 million to Iluka Resources Limited's (ASX: ILU) rare-earth refinery project in Western Australia, addressing construction cost increases for the A\$1.8 billion facility. This refinery

will process minerals vital for renewable energy technologies and defense applications, bolstering Australia's efforts to reduce reliance on China. Meanwhile, in Canada, E-One Moli Energy postponed its \$1 billion lithium-ion battery factory expansion in British Columbia due to declining global demand for electrification projects and difficulties securing long-term customers. These contrasting developments reflect the challenges and opportunities faced by countries seeking to position themselves in the critical minerals supply chain amid global economic and geopolitical uncertainties.

Uranium emerged as a key resource this week, with Niger's military junta seizing control of Orano's uranium mining operations, disrupting one of the world's largest uranium deposits. The decision exacerbates global uranium supply concerns, as Niger accounts for about 5% of global production. Additionally, a new blockchain-based marketplace was launched, enabling small investors to purchase tokenized physical uranium. This [innovation](#), supported by Canadian producer Cameco Corp. (TSX: CCO | NYSE: CCJ), democratizes access to uranium and addresses growing demand driven by nuclear energy projects and AI-driven energy needs.

The week also saw organizational advancements in the critical minerals sector. The **Critical Minerals Institute (CMI)** appointed [Kevin Ernst](#) to its Board of Directors, adding over 30 years of financial expertise to guide its strategies in navigating the evolving market landscape. Furthermore, [Neil Lock](#) was announced as the Event Coordinator for the [International Critical Minerals Expo & CMI Summit IV](#), scheduled for May 14–15, 2025, in Pasadena, California. These events, alongside geopolitical and market dynamics, underscore the complexity and high stakes of the critical minerals market as nations and industries grapple with securing the resources vital to global technological and economic growth.

The following stories were selected by the **Critical Minerals Institute (CMI) [Board of Directors](#)** for the weekly **Technology Metals Report (TMR)** prepared for the CMI Membership. To become a member, [click here](#)

China's Critical Minerals Export Ban Escalates Trade Tensions with the U.S. (December 4, 2024, [Source](#)) – On December 3, 2024, China banned exporting gallium, germanium, and antimony to the U.S., intensifying trade tensions following American restrictions on advanced technology sales. These minerals are vital for semiconductors, defense, and green technologies, with China dominating their global production. The move exposes U.S. supply chain vulnerabilities, potentially reducing its GDP by \$3.4 billion. [Jack Lifton](#) from the [Critical Minerals Institute](#) (CMI), calls this a “War for Critical Minerals Supplies,” underscoring that resource control can serve as a geopolitical weapon. In response, the U.S. seeks to diversify sources, boost domestic production, and reduce reliance on China.

Australia boosts loan for rare-earths refinery in bid to break China's dominance (December 4, 2024, [Source](#)) – The Australian government has increased its loan by A\$400 million to [Iluka Resources Limited](#) (ASX: ILU) to support the construction of Australia's first rare earths refinery, aiming to diminish China's dominance in the critical minerals supply chain. Originally agreed upon in 2022, the funding was adjusted to bridge a financial gap caused by rising construction costs, now estimated at A\$1.8 billion. This refinery in Western Australia will process minerals used in power generation for wind turbines, electric vehicles, and military applications. Amid rising geopolitical tensions highlighted by China's recent export bans on strategic minerals to the US, Australia's move is part of a broader strategy to secure and expand its position in the global critical minerals market, including further

investments in local projects and partnerships with the US.

\$1 billion expansion of B.C. lithium-ion battery factory on hold (December 4, 2024, [Source](#)) – E-One Moli Energy (Canada) Ltd., a subsidiary of Taiwan Cement Corp., has postponed its \$1 billion expansion of the Maple Ridge lithium-ion battery factory in British Columbia, impacting the creation of 350 jobs. The expansion was initially celebrated by leaders including Premier David Eby and Prime Minister Justin Trudeau, supported by significant federal and provincial funds to enhance clean technology. However, declining global interest in electrification projects and an inability to secure a major customer led to this decision. The factory, currently producing 24 million battery cells annually, intended to increase its output significantly. This delay reflects broader global economic shifts affecting green technology investments and underscores the vulnerability of such projects to market and policy fluctuations.

DOD Leverages Defense Production Act to Galvanize Critical Supply Chains (December 4, 2024, [Source](#)) – The U.S. Defense Department is utilizing the Defense Production Act to bolster critical supply chains, focusing on domestic graphite production essential for lithium-ion batteries used in military and commercial technologies. This initiative, spotlighting projects like Alabama's BamaStar Graphite Project and Alaska's Graphite Creek, aims to reduce dependency on foreign graphite, primarily sourced from China. With China controlling a significant portion of the graphite market, the U.S. seeks to mitigate supply chain vulnerabilities heightened by geopolitical tensions and China's recent export restrictions. This strategy is part of a broader move towards a resilient defense industrial base, emphasized in the 2022 Defense Department report and propelled by Biden's Executive Order on supply chain review. Investments are underway to develop a vertically integrated graphite supply chain,

including advanced manufacturing and recycling, ensuring long-term security and resilience.

Niger junta takes control of French uranium mine (December 4, 2024, [Source](#)) – The military junta in Niger has seized control of French nuclear firm Orano’s uranium mining operations, marking a significant shift in the country’s governance of its natural resources. Since a coup in July last year, Niger’s rulers have been revising foreign company regulations for raw material extraction. Recently, they revoked Orano’s mining permit, one of the largest uranium deposits globally, and halted production. This action is part of deteriorating relations between Niger and France, evidenced further by the expulsion of French troops and ongoing disputes over mining licenses. Despite accounting for about 5% of global uranium production, Niger has struggled with exporting uranium due to security-related border closures. Orano reported 1,150 tonnes of uranium, worth approximately \$210 million, stuck due to these issues. The company plans to defend its rights and seeks a stable operational framework, while Niger’s leadership expresses discontent with previous foreign dealings and hints at potential new partnerships with Russian and Turkish firms.

If Trump relaxes regulations, GM may offer fewer hybrids, EVs, CFO says (December 4, 2024, [Source](#)) – General Motors (GM) may modify its electric vehicle (EV) and hybrid offerings if the Trump administration eases environmental regulations, according to GM CFO Paul Jacobson. Speaking at the UBS Global Industrials and Transportation Conference, Jacobson explained that while GM aims to transition to an all-electric lineup within a decade, changes in regulations could adjust their near-term product portfolio. Although Trump has criticized EVs and may remove the federal tax credit aiding EV adoption, GM anticipates maintaining its short-term EV targets. Jacobson highlighted GM’s strong EV sales, with plans for significant profit improvements

by 2025. He also noted that potential regulatory rollbacks could lead GM to focus more on its profitable gasoline-powered vehicles, although EVs remain the strategic long-term goal.

Biden meets African leaders in Angola to advance Lobito railway project (December 4, 2024, [Source](#)) – U.S. President Joe Biden met with African leaders in Angola to promote the Lobito railway project, aiming to facilitate the transportation of critical minerals from Congo and Zambia to Western markets. The initiative seeks to refurbish and extend an existing railway through Angola to Congo, with a future phase planned to connect to Zambia and Tanzania. This \$550 million U.S.-funded project is seen as a strategic move to counter China's dominance in Congo's mineral-rich mining sector. At a summit in Lobito, Biden, alongside the leaders of Angola, Congo, Zambia, and Tanzania's vice president, reiterated their commitment to regional investment and development without the burden of unsustainable debt. The project, which includes a corridor extending to Tanzania's Indian Ocean port, is backed by Western entities but faces skepticism regarding its completion timeline and potential rivalry with Chinese routes.

The Great Chinese Headfake (December 3, 2024, [Source](#)) – China has strategically dominated the critical minerals sector, controlling substantial global reserves and processing capacities for essential minerals like cobalt and rare earth elements. Its Belt and Road Initiative further consolidates this control, particularly in Africa's cobalt mines. By imposing export restrictions on key minerals, China wields significant political leverage, compelling other nations to invest heavily in diversifying their supply chains. This scenario mirrors past geopolitical competitions, such as the space race, where nations diverted vast resources for national prestige with limited scientific return. The hypothesis suggests China may be positioning itself to advantageously navigate future global

changes by leading other countries to focus on climate change mitigation, potentially at the expense of more immediate adaptive strategies.

China's Trade Reprisals May Extend to Minerals Like Rare Earths (December 3, 2024, [Source](#)) – China has intensified its trade tensions with the US by imposing a ban on the sales of critical minerals including gallium, germanium, antimony, and by tightening controls on graphite. This action is seen as an initial step in a series of potential export controls on various niche materials, in response to US curbs on the sale of high-end memory chips to China. These measures are part of Beijing's strategy to safeguard national security and its pivotal role in the global supply of these minerals, which are crucial for high-tech and military applications. Citic Securities Co. has identified several other minerals like tungsten, molybdenum, and rare earths as potential candidates for future export restrictions. The escalation in trade disputes could prompt the US and its allies to reduce their reliance on China for these strategic resources, thereby diminishing the effectiveness of China's trade barriers.

UK government to publish new critical minerals strategy in 2025 (December 3, 2024, [Source](#)) – In 2025, the UK government will launch a new critical minerals strategy and an industrial strategy to strengthen supply chains and support key industries. Announced at various 2024 conferences, these strategies aim to enhance the UK's car, tech, and renewable energy sectors. Industry Minister Sarah Jones highlighted the importance of resilient mineral supply chains for the next decade and beyond, emphasizing job creation, business support, and international collaboration. The strategy will involve working with global partners and leveraging UK university expertise in critical minerals. Additionally, the government plans to foster clean energy and other growth sectors, supported by the National

Wealth Fund. New initiatives include bilateral agreements with multiple countries and involvement in the Minerals Security Partnership to promote sustainable mining and critical mineral projects globally.

Firms launch physical uranium buying for small investors using blockchain (December 3, 2024, [Source](#)) – A blockchain platform and uranium trading company introduced a marketplace enabling small investors to purchase physical uranium, aiming to enhance liquidity in this specialized commodity market. This initiative comes amid heightened interest in uranium due to reduced mining outputs and increased demand from nuclear power sectors, driven partly by the growing energy needs of AI data centers. Previously, small investors accessed uranium through mining company stocks or uranium-holding funds. The new marketplace allows direct purchase of tokenized physical uranium in small quantities, stored securely and represented by blockchain tokens. This approach democratizes access to uranium, traditionally sold in large minimum lots unaffordable to most individuals. The storage facilities are provided by Canadian producer Cameco Corp. (TSX: CC0 | NYSE: CCJ), leveraging blockchain technology from Tezos.

Meta seeks nuclear power developers for reactors to start in early 2030s (December 3, 2024, [Source](#)) – Meta Platforms, Inc. (NASDAQ: META) announced its plan to solicit proposals from nuclear power developers, aiming to start generating 1 to 4 gigawatts of new nuclear capacity in the early 2030s to support its AI and environmental objectives. This move reflects the tech industry's growing interest in nuclear energy due to the anticipated surge in electricity demand, particularly for data centers, which are projected to need 47 gigawatts of additional capacity by 2030 according to Goldman Sachs. Meta's focus includes the potential use of small modular reactors or conventional large reactors. The company highlights the

challenges such as regulatory hurdles, fuel supply issues, and community opposition. This initiative follows similar nuclear engagements by Microsoft Corp. (NASDAQ: MSFT) and Amazon.com Inc. (NASDAQ: AMZN), underscoring a significant tech pivot toward atomic power as a sustainable energy solution. Submissions for proposals are open until February 7, 2025.

Chile aims to invest \$83 bln in mining through 2033, newspaper says (December 3, 2024, [Source](#)) – Chile is set to invest approximately \$83.18 billion in its mining sector through 2033, as reported by the state-run agency Cochilco and cited by Diario Financiero. This figure marks a 27% increase from the previous year's forecast and does not include BHP Group Limited's (NYSE: BHP | ASX: BHP | LSE: BHP) \$14 billion expansion plan, potentially raising the total to nearly \$100 billion. The Cochilco report, due to be presented, will detail 51 projects in Chile, the leading global copper producer and the second-largest lithium producer. The increase in investment is attributed to 11 new projects worth about \$15.66 billion, including expansions and improvements by major mining firms like Freeport-McMoRan Inc. (NYSE: FCX), Anglo American PLC (LSE: AAL), and the state-owned Codelco. Notably, over half of the projected spending, totaling \$42.96 billion, is scheduled between 2024 and 2026.

US proposes \$7.54 billion loan to Stellantis, Samsung SDI battery joint venture (December 2, 2024, [Source](#)) – The U.S. Energy Department has announced plans to provide a \$7.54 billion loan to the StarPlus Energy joint venture between Stellantis NV (NYSE: STLA) and Samsung SDI. This funding aims to support the construction of two electric vehicle lithium-ion battery plants in Kokomo, Indiana. The proposed loan includes \$6.85 billion in principal and \$688 million in capitalized interest. Once operational, these facilities will produce around 67 GWh of batteries annually, sufficient to equip approximately 670,000 vehicles each year. However, there is uncertainty about

finalizing this government-subsidized loan before the incoming President-elect Donald Trump, who has criticized similar EV initiatives, takes office on January 20. Additionally, Stellantis plans to open a gigafactory in Canada in partnership with South Korea's LG Energy Solution.

Critical Minerals Institute (CMI) Announces the Appointment of Kevin Ernst to its Board of Directors, Strengthening Its Expertise in Global Financial Strategies for the Critical Minerals Sector (December 1, 2024, [Source](#)) – The [Critical Minerals Institute](#) (CMI) has appointed [Kevin Ernst](#) to its Board of Directors, bolstering its expertise in global financial strategies within the critical minerals sector. Kevin Ernst brings over 30 years of experience in financial markets, investment banking, and corporate strategy from his roles at major institutions like Merrill Lynch, UBS, and NYSE American LLC. His previous contributions include leading the ultra-high-net-worth division at Merrill Lynch and managing national advisory services for institutional clients at UBS. Additionally, Ernst revitalized the Canadian market presence at the American Stock Exchange through dual-listing initiatives and later focused on international market expansions in Asia. Currently, as Managing Director at Kingswood U.S. and Chief Investment Officer for a Canadian family office, Ernst's global financial acumen is set to advance CMI's efforts in sustainable critical minerals development. His appointment is well-received by CMI, anticipating significant contributions to navigating the evolving landscape of critical minerals.

Investor.News Media Highlights:

- December 05, 2024 – Please God just give us one more bull market, I promise not to blow it this time <https://bit.ly/3VoFTxW>

- December 04, 2024 – China’s Critical Minerals Export Ban Escalates Trade Tensions with the U.S. <https://bit.ly/41fuMLt>
- December 03, 2024 – The Great Chinese Headfake <https://bit.ly/4fUELuo>
- December 03, 2024 – F3 Uranium Reports High-Grade Results at JR Zone, Highlighting Growth Potential in the Athabasca Basin <https://bit.ly/3Zyx0oa>
- December 01, 2024 – Critical Minerals Institute (CMI) Announces the Appointment of Kevin Ernst to its Board of Directors, Strengthening Its Expertise in Global Financial Strategies for the Critical Minerals Sector <https://bit.ly/41c3SnW>

Investor.News Member News:

- December 5, 2024 – Energy Fuels and Madagascar Government Execute Memorandum of Understanding to Further Advance Toliara Critical Mineral Project in Madagascar <https://bit.ly/3B4z2TD>
- December 5, 2024 – Appia Mobilizes for Drilling Campaign to Test Promising Drill Targets Obtained from Recently Completed Airborne Gravity Gradiometer Survey over Alces Lake Project, Saskatchewan <https://bit.ly/49mtZug>
- December 5, 2024 – Power Nickel Announces Shareholder Approval and Court Approval of Spin-Out of Golden Ivan Property and Chilean Assets <https://bit.ly/3Zo4Nij>
- December 4, 2024 – First Phosphate Announces Positive Results of Preliminary Economic Assessment at its Begin-Lamarche Property in Saguenay-Lac-Saint-Jean, Quebec, Canada <https://bit.ly/3ZAxBWo>
- December 4, 2024 – Ucore Secures Strategic Advantage with Louisiana Foreign Trade Zone Amid Proposed U.S. Trade

Policies <https://bit.ly/4imK7ju>

- December 4, 2024 – Nano One Provides Progress Update on Its Alliance with Worley and Cost Comparison Demonstrating the Case for One-Pot(TM) Enabled LFP Cathode Production <https://bit.ly/4f081hZ>
- December 3, 2024 – Voyageur Announces Closing of First Tranche of Private Placement <https://bit.ly/3ZgDp65>
- December 3, 2024 – Ucore Provides Corporate Update <https://bit.ly/49kr5Go>
- December 3, 2024 – NEO Battery Materials Confirms Stable and Unaffected Operations Amid South Korea's Declaration of Emergency Martial Law <https://bit.ly/4fV2PNx>
- December 3, 2024 – NEO Battery Materials Announces Director Resignation and Updates to Upcoming Corporate Webinar <https://bit.ly/41fA2i8>
- December 3, 2024 – F3 Hits 4.5m of 50.1% U308 Within 30.9% Over 7.5m at JR <https://bit.ly/41ffQw0>
- December 2, 2024 – Panther Metals PLC: Resourcing Tomorrow and Presentation <https://bit.ly/3CWDaWg>
- December 2, 2024 – Nord Precious Metals Aligns with Ontario's New Mining Strategy to Fast-Track Silver Recovery <https://bit.ly/30zhzFN>
- December 2, 2024 – First Phosphate Corp. Signs License Agreement with Prayon SA, Global Leader in MGA Phosphoric Acid Technology <https://bit.ly/4iu8Tyv>

- December 2, 2024 – Power Nickel Completes Hole 80 Stepping Out an Additional 150 Meters Along Strike West from the Lion Zone at the Nisk Project <https://bit.ly/3Bb3L00>