Technology Metals Report (10.18.2024): Biden-Harris Administration Commits $900 Million to SMRs, While LG Energy's $9.5 Billion Deal with Ford Boosts EV Market

written by Tracy Hughes | October 18, 2024

Welcome to the latest issue of the **Technology Metals Report (TMR)**, brought to you by the **Critical Minerals Institute (CMI)**. In this edition, we compile the most impactful stories shared by our CMI Directors over the past week, reflecting the dynamic and evolving nature of the critical minerals and technology metals industry. Among the key stories featured in this report are the new critical minerals strategy in New South Wales to attract clean energy investments, Apple's secret collaboration with BYD on EV batteries, and the U.S. Energy Department's latest contracts for high-assay low-enriched uranium production, signaling major shifts in the global critical minerals landscape.

This week's TMR also highlights several other important developments shaping the critical minerals sector. Türkiye has signed a significant partnership with China to advance rare earth mining, which is poised to accelerate both countries' strategic influence in the global energy transition. General Motors has committed to a $625 million joint venture with Lithium Americas to develop the Thacker Pass lithium project in Nevada, underscoring the growing race among automakers to secure battery materials for electric vehicle production. Meanwhile,

the Biden-Harris Administration has announced up to $900 million in funding for small modular reactors (SMRs), which are seen as a vital part of the future energy mix. Amazon is also making waves, investing over $500 million into SMR development as part of its strategy to achieve net-zero carbon emissions and meet the increasing power demands of its data centers.

Additionally, this edition dives into how the U.S. is challenging China's control over cobalt production, a crucial element in green energy technologies, and the increasing difficulties in sourcing heavy rare earth elements outside of China. Finally, we explore how LG Energy's $9.5 billion deal to supply batteries for Ford's electric commercial vehicles is set to enhance the EV market. If you're in Toronto on Thursday, October 24th, we invite you to join us at the **National Club from 9:30 to 11 AM for a special InvestorTalk event**. Please reach out to me at tracy@criticalmineralsinstitute.com if you'd like to attend. To become a CMI member and stay at the forefront of industry developments, click here: Join CMI.

New critical minerals strategy to attract clean energy investment and create thousands of jobs (October 18, 2024, Source) – The New South Wales (NSW) Government has introduced a Critical Minerals and High-Tech Metals Strategy to establish NSW as a global leader in critical minerals. This includes a $250 million royalty deferral for qualifying projects and a streamlined assessment framework to facilitate mining operations. The strategy aims to activate 12 investment-ready projects needing $7.6 billion, potentially creating 4,600 construction and 2,700 permanent jobs. NSW, rich in globally significant resources like rare earths and cobalt essential for clean energy technologies, aims to extend its role beyond extraction to include refining and manufacturing. Key strategy pillars include promoting exploration, enhancing production environments, and building resilient supply chains. The royalty

deferral, targeting projects starting between 2025 and 2030, is designed to attract significant investment and spur economic growth.

Apple secretly worked with China's BYD on long-range EV battery (October 17, 2024, Source) – Apple Inc. (NASDAQ: AAPL) collaborated secretly with Chinese automaker BYD Co. to develop advanced long-range EV batteries as part of a since-abandoned car project, sources reveal. The partnership, which began around 2017, focused on creating a battery system utilizing lithium iron phosphate (LFP) cells, aiming for increased safety and longer range compared to existing technologies. Despite investing approximately $1 billion annually over a decade, Apple discontinued the car project earlier this year. The technology, though not owned by Apple, influenced BYD's current Blade battery system, now a hallmark in their vehicles. The collaboration combined Apple's expertise in battery design and thermal management with BYD's manufacturing prowess, significantly impacting BYD's product development and leading them to become a top EV seller globally.

US awards contracts for making higher enriched uranium for new reactors (October 17, 2024, Source) – The U.S. Energy Department has awarded initial contracts to four companies to produce high-assay low-enriched uranium (HALEU), a new fuel type for future high-tech reactors. Currently, only Russia produces HALEU commercially. The companies selected include Centrus Energy Corp.'s (NYSE American: LEU) American Centrifuge Operating, Urenco USA, Orano USA, and General Matter. Urenco's contract spans 10 years for an indefinite quantity of HALEU. The Biden administration views nuclear power as crucial for combating climate change and meeting increased energy demands from sectors like artificial intelligence. Contracts are slated to last up to 10 years, with each company guaranteed a minimum of $2 million and a potential combined total of $2.7 billion, contingent on

funding availability. HALEU is enriched between 5% and 20%, offering greater efficiency for new reactors but raising concerns about weapons proliferation risks. Critics suggest capping enrichment at 10% to 12% to mitigate safety risks.

Türkiye inks deal with China on rare earth elements, mining co-op (October 16, 2024, Source) – Türkiye and China have entered a significant partnership with the signing of a memorandum of understanding (MoU) to collaborate in mining and the development of rare earth elements, critical to the global energy transition. The agreement, forged between Energy and Natural Resources Minister Alparslan Bayraktar and his Chinese counterpart Wang Guanghua, aims to enhance bilateral mining efforts, encourage technological advancement, and digitization in the sector. This cooperation extends to identifying opportunities in third countries and is seen as a milestone that could propel concrete mining projects. Highlighted during discussions were Türkiye's recent discovery of critical mineral reserves and their open invitation for Chinese investment in these resources. The partnership, endorsed by high-level talks between President Recep Tayyip Erdoğan and Chinese President Xi Jinping, underscores a mutual commitment to developing a sustainable and profitable mining framework that could significantly impact the energy landscape.

General Motors to contribute $625 million to new JV with Lithium Americas (October 16, 2024, Source) – General Motors Company (NYSE: GM) is set to invest $625 million in a joint venture with Canadian mining company Lithium Americas Corp. (TSX: LAC | NYSE: LAC) to develop the Thacker Pass lithium project in Nevada, aiming to boost electric vehicle (EV) production and decrease reliance on China for battery materials. This investment gives GM a 38% stake in the project, including $430 million in direct cash for construction and a $195 million credit facility. The deal updates an earlier $330 million commitment. Lithium

Americas' shares surged by 16.5% following the announcement. Additionally, GM will secure up to 38% of the project's phase 2 lithium output through a 20-year offtake agreement. Construction began in March 2023 after overcoming significant legal challenges, with the Department of Energy potentially lending $2.26 billion to support the Thacker Pass lithium project.

Biden-Harris Administration Announces $900 Million to Build and Deploy Next-generation Nuclear Technologies (October 16, 2024, Source) – The Biden-Harris Administration, under the Investing in America agenda, announced the availability of up to $900 million in funding from the Department of Energy (DOE) to facilitate the initial domestic deployment of Generation III+ small modular reactor (SMR) technologies. This initiative, fueled by the Bipartisan Infrastructure Law, aims to promote the safe and sustainable expansion of advanced nuclear reactor technologies throughout the U.S. The funding is structured into two tiers: up to $800 million for first mover teams and up to $100 million to address gaps hindering nuclear advancements. This move supports the U.S. in maintaining its nuclear leadership, creating quality jobs, and fulfilling climate goals by enhancing carbon-free, reliable, and affordable energy production. This effort is also part of the Justice40 Initiative, ensuring that 40% of the benefits from federal investments reach disadvantaged communities.

Amazon goes nuclear, to invest more than $500 million to develop small modular reactors (October 16, 2024, Source) – Amazon Web Services (AWS) is committing over $500 million to the development of small modular nuclear reactors (SMRs) across the United States, including Virginia and Washington state. This initiative, part of Amazon's (NASDAQ: AMZN) broader strategy to achieve net-zero carbon emissions, aims to meet the escalating power demands of its data centers, especially as it delves deeper into generative AI technologies. AWS has teamed up with

Dominion Energy, Inc. (NYSE: D) to explore setting up an SMR near the North Anna nuclear station in Virginia. SMRs, known for their compact size and quicker build times, are deemed vital for delivering substantial clean energy swiftly. Amazon's move mirrors actions by other tech giants like Google and Microsoft, highlighting a growing industry trend towards nuclear energy to support massive digital infrastructures. Additionally, the Biden administration's increased funding for SMRs underscores federal support for clean energy advancements crucial for powering high-demand data centers in the U.S.

How the U.S. Is Trying to Challenge China's Cobalt Chokehold (October 15, 2024, Source) – The U.S. is actively seeking to undermine China's dominance in the cobalt market, integral to the green-energy sector, by considering the acquisition of Chemaf, a major cobalt producer in the Democratic Republic of Congo. This move is part of a broader strategy to secure vital minerals essential for modern technologies, including electric vehicle batteries and military hardware. China has secured a formidable position by investing heavily in Congolese cobalt resources, controlling about 75% of the global supply. In response, the Biden administration is investing in infrastructure projects in Africa and encouraging U.S. firms to invest in Congo despite challenges such as poor infrastructure and corruption. Recent U.S. efforts involve discussions with firms like KoBold Metals and First Quantum Minerals Ltd. (TSX: FM) to facilitate a deal for Chemaf, signaling a renewed commitment to diversifying global mineral supply chains and reducing reliance on Chinese resources.

What are the problems in sourcing heavy rare earths, and why do they matter (October 15, 2024, Source) – The sourcing of heavy rare earths like dysprosium and terbium, essential for manufacturing high-coercivity rare earth permanent magnets, is fraught with challenges, particularly outside of China. These

elements are crucial for magnets that operate effectively across various temperature regimes in electric motors. Currently, China controls 99% of these elements, enforcing stringent export bans on both the materials and the associated technologies. The unique ionic adsorption clays (IACs) from which these elements are extracted have only been commercially processed in China, which has over twenty-five years of experience in this field. No other country has managed to process these elements on a commercial scale, and efforts to do so have been hampered by a lack of experience, environmental concerns, high costs, and technological gaps. This has left a significant gap in knowledge and capability in the production of heavy rare earths outside of China, posing a strategic and economic challenge to other nations.

LG Energy to supply batteries for Ford's electric commercial vehicles (October 15, 2024, Source) – LG Energy Solution Ltd., the world's third-largest EV battery manufacturer, has secured a deal to supply battery cells and modules worth approximately $9.5 billion to Ford Motor Co. (NYSE: F) until 2032. The agreement involves the production of 109 gigawatt-hours of batteries for Ford's electric commercial vehicles, with production split across contracts from 2026 to 2032. LG Energy will manufacture these batteries in Poland and Michigan, expecting to enhance their production efficiency and competitiveness in the EV market. The deal also anticipates the supply of over 1 million E-Transit vans, indicating a significant boost for LG Energy amid a sluggish eco-friendly vehicle market. Moreover, this partnership is poised to strengthen LG Energy's position in the European electric commercial vehicle market, banking on advanced battery technology and local production capabilities.

China September rare earth exports curbed by rising domestic demand, prices (October 14, 2024, Source) – In September,

China’s rare earth exports decreased by 11.5% from August to 4,181 tonnes, as higher domestic demand and rising prices encouraged local sales. Customs data indicated a significant drop compared to 4,723 tonnes shipped in August and 3,935 tonnes in September 2023. Analyst Yang Jiawen from Shanghai Metals Market noted that a price surge due to tight supply and increased demand led exporters to favor the domestic market. New regulatory measures and limited mining output further strained supplies, boosting prices. Although monthly exports fell, there was a 6.4% year-over-year increase for the first three quarters of 2024. Meanwhile, rare earth imports in September plummeted by 32% year-over-year, with a 23.7% decline from January to September.

For Critical Minerals: Capability must precede Capacity (October 14, 2024, Source) – Jack Lifton argues that American policies on critical minerals are misguided, stressing that a thorough inquiry into domestic critical mineral processing capabilities should precede capacity expansion. He criticizes the Western OEM automotive industry’s heavy investments in EV battery production and critical minerals, which are largely influenced by policy rather than market demands. This approach, Lifton suggests, may degrade the American standard of living. He also highlights a general lack of real-world understanding among policymakers, bureaucrats, and academics, who rely on projections from consultants rather than practical experience. This scenario results in financial waste and poor planning. Ultimately, Lifton calls for more competent, experienced, and technically skilled management in transitioning from fossil fuels to newer technologies, contrasting American efforts with China’s proactive and methodical strategy that spans generations.

Australian Aluminium Council renews call for inclusion of Bauxite, Alumina, and Aluminium on Critical Minerals listing (October 10, 2024, Source) – The Australian Aluminium Council

has reiterated its call to add bauxite, alumina, and aluminium to Australia's Critical Minerals list, highlighting a new report that underscores escalating risks in the sector due to geopolitical tensions, rising costs, and lengthy regulatory processes. The report, "Vulnerabilities & Opportunities in Australia's Upstream Aluminium Sectors," suggests that listing these materials as critical minerals would bolster Australian industry and international trade relations while emphasizing Australia's commitment to a sustainable, low-carbon future. Council CEO Marghanita Johnson criticized the current placement of aluminium on the Strategic Mineral List as insufficient, noting it lacks the necessary policy support. She stressed the urgency of government action to prevent the aluminium industry from facing disruptions similar to those experienced by other critical minerals. The Council also advocates for streamlined regulatory approvals to enhance competitiveness and address cost increases anticipated from environmental approval delays.

Teck CEO Says Canada Must Spend More to Erode China's Critical Minerals Dominance (October 10, 2024, Source) – Teck Resources Ltd. (TSX: TECK.A | TSX: TECK.B | NYSE: TECK) CEO Jonathan Price urged the Canadian government to enhance support for the critical minerals sector to reduce China's dominance. Speaking in Ottawa, Price highlighted that while North America focuses on electric-vehicle and battery manufacturing, it neglects necessary support for mining and mineral processing. He contrasted this with countries like China and Saudi Arabia, which invest heavily in these areas. Price criticized Canada's slow regulatory processes and called for more ambitious government incentives to boost competitiveness and attract investments in mining. He also noted that Canada's commitment of C$4 billion over eight years is insufficient compared to China's C$20 billion spent in just one year.

Investor.News Media Highlights:

- October 15, 2024 – What are the problems in sourcing heavy rare earths, and why do they matter https://bit.ly/3zWthqv
- October 14, 2024 – For Critical Minerals: Capability must precede Capacity https://bit.ly/3BSRn5Q

Investor.News Video Highlights:

- October 14, 2024 – NEO Battery Materials' Danny Huh on the Recent Signing of a Joint Development Agreement with a Fortune Global 500 Chemical Materials Company https://youtu.be/Vg2OBT4bgzI

Investor.News Member News:

- October 18, 2024 – Power Nickel Announces Execution of Arrangement Agreement for Spin-Out of Golden Ivan Property and Chilean Assets https://bit.ly/3YsH8ht
- October 17, 2024 – Appia Announces the Commencement of an Airborne Gravity Gradiometer and Magnetic Survey over Its Otherside Uranium Prospect, Athabasca Basin, Saskatchewan, Canada https://bit.ly/4eOPohx
- October 17, 2024 – Voyageur Announces Proposed Private Placement https://bit.ly/40bfdnE
- October 17, 2024 – Panther Metals PLC – Dotted Lake: Diamond Drilling Mobilisation https://bit.ly/3Y8Lid3
- October 17, 2024 – Energy Fuels Announces Q3-2024 Earnings Call Details https://bit.ly/3YsEPv8
- October 17, 2024 – Extended Drilling Program Completed at Halleck Creek https://bit.ly/4f7VFF6
- October 16, 2024 – F3 Announces Revised Pricing of Bought

Deal Private Placement for Gross Proceeds of C$7.0 Million https://bit.ly/4dSKwa1

- October 15, 2024 – Western Uranium & Vanadium Closes Property Acquisition https://bit.ly/4dRxsl8
- October 15, 2024 – Godolphin Resources Appoints Chris Gibbs to Board Following Strategic Investment by American Rare Earths https://bit.ly/4h3IKpk
- October 15, 2024 – ASM awarded A$5M Federal Government grant for Dubbo Project https://bit.ly/3A2jjUp