Technology Metals Report (04.12.2024): Gina Rinehart Steps into the Critical Minerals Ring, while Copper Prepares for a Bull Ride

written by Tracy Weslosky | April 12, 2024 Welcome to the latest issue of the Technology Metals Report (TMR), brought to you by the <u>Critical Minerals Institute</u> (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 surging success of Vulcan Energy Resources Ltd. (ASX: VUL), backed by Gina Rinehart, in lithium production, signaling a significant advancement in battery technology. Additionally, we explore the implications of <u>copper's c</u>limb to a 2024 high, heralded by Citi analysts as the start of the metal's second bull market this century, amidst concerns about sustainability and market dynamics. We also delve into the ramifications of Chinese car manufacturing in Italy on Stellantis and the challenges faced by Volkswagen amidst a resurgence in petrol car demand in Europe, among other crucial developments shaping the industry landscape.

This week's TMR Report also highlights the strategic moves of influential figures like Gina Rinehart, whose <u>investments</u> in the U.S. rare earths sector and Brazil hint at potential industry mergers and reshaping of the global rare earths supply chain. Furthermore, we discuss the imperative for the United States to strengthen its commercial ties with African nations to secure key minerals, aiming to reduce dependency on China. Amidst fluctuating rare earths prices in China and U.S. efforts to bolster domestic mining projects, we explore the intersection of environmental concerns with mining practices, exemplified by Australian billionaire Andrew Forrest's call for <u>greener nickel</u> production. Lastly, we examine Canada's risk of losing its position as a major mining capital due to government opacity surrounding Chinese investments in the critical minerals sector, highlighting the broader implications of uncertain investment policies on the industry's strategic positioning.

To become a CMI member and stay informed on these and other topics, <u>click here</u>

Gina Rinehart-Backed Lithium Hopeful Surges After Demo Batch: (April 11, 2024, <u>Source</u>) - <u>Vulcan Energy Resources Ltd.</u> (ASX: VUL), an Australia-listed lithium developer, experienced a surge of nearly 40% in its stock value after announcing the successful production of a demo batch of lithium chloride using directextraction technology (DLE) at its demonstration plant in Landau, Germany. This marks a significant advancement in lithium production for batteries, showcasing the potential of DLE to streamline the production process. Vulcan, backed by Australia's wealthiest individual Gina Rinehart, has established supply agreements with major European car manufacturers like Stellantis, Renault SA, and Volkswagen AG. The company's achievement was hailed as a validation of Vulcan's efforts and the viability of DLE in the lithium supply chain. Vulcan aims to commence commercial production in 2026, targeting an annual output sufficient to support half a million electric vehicles, while still seeking necessary funding. The project promises reduced carbon emissions by utilizing geothermal energy.

Copper prices climb to 2024 high as Citi calls the start of the

metal's second bull market this century: (April 10, 2024, <u>Source</u>) – Copper prices have surged to their highest levels since June 2022, with May delivery trading at \$4.323 per pound in New York and three-month prices on the London Metal Exchange rising to \$9,477 per metric ton. This increase reflects growing demand for copper, seen as an indicator of economic health and a vital component of the energy transition, including electric vehicles, power grids, and wind turbines. Citi analysts herald the start of copper's second secular bull market of the century, predicting prices could average \$10,000 per metric ton by year's end and potentially rise to \$15,000 in a bullish scenario. However, concerns exist about the sustainability of these price levels, with some analysts warning that high prices could dampen demand through substitution or demand destruction, emphasizing the self-regulating nature of commodity markets.

Chinese car manufacturing in Italy could force tough decisions, says Stellantis CEO: (April 10, 2024, <u>Source</u>) – Stellantis N.V. (NYSE: STLA) CEO Carlos Tavares warned of tough decisions, including potential plant closures, as Chinese car manufacturing in Italy could introduce new competition, notably from automakers like Cherv Auto. The Italian government's negotiations with Tesla Inc. (NASDAQ: TSLA) and Chinese companies aim to boost Italy's automotive production. Tavares emphasized the pressure on Stellantis, Italy's only major automaker, could lead to efforts to increase productivity to stay competitive, potentially affecting market share and necessitating a reduction in the number of plants. Despite rumors, Tavares confirmed Stellantis's commitment to Italy, highlighting investments such as the extension of Fiat Panda's production until 2030 and the inauguration of a facility for electrified transmissions at Mirafiori. He dismissed speculation about divesting from Italy as "fake news."

Volkswagen electric car sales plunge as Europe returns to

petrol: (April 10, 2024, Source) - Volkswagen's electric vehicle (EV) sales in Europe plummeted by nearly a quarter in the first guarter of the year, amid a resurgence in petrol car demand, driven by high inflation and rising energy costs. This decline contrasts with a modest 3% global dip in all-electric sales and a 4% rise in combustion engine vehicle sales. The shift comes as governments reevaluate EV subsidies and emissions targets, with the UK delaying its ban on new petrol and diesel sales from 2030 to 2035, and the EU considering allowances for synthetic fuels. This backdrop of diminishing government support and increased competition from more affordably priced Chinese EVs, such as those from BYD, has pressured Volkswagen's sales. Despite these challenges, Volkswagen experienced a significant 91% surge in EV sales in China, underscoring the regional disparities in EV adoption trends. Other manufacturers like BMW and Tesla also report varying EV sales performance, highlighting the evolving and competitive landscape of the global electric vehicle market.

China's Tiangi Lithium's \$4bn bet on Chile at risk of backfiring: (April 9, 2024, <u>Source</u>) – In 2018, Tianqi Lithium, a major Chinese lithium producer, invested \$4 billion to acquire a significant stake in Chile's SQM, a move aimed at securing a strong position in the global lithium market, essential for electric vehicles. This investment in the heart of the "lithium triangle" (Argentina, Bolivia, and Chile) now faces challenges due to Chile's government seeking greater control over lithium resources, particularly in the Atacama Desert where SQM SQM's agreement with Codelco, a state-owned operates. enterprise, to form a joint venture aligns with Chilean policies public-private partnerships in strategic sectors, for potentially diminishing Tiangi's influence and future prospects in SQM's lithium venture. This development is part of a broader trend where countries are reclaiming control over critical

minerals for the green transition, affecting companies like Tianqi, whose profitability and market position are under pressure from changing regulations, market dynamics, and operational challenges, both in Chile and globally.

Rinehart's MP Buy Could Trigger Rare Earths Mining Mega Merger: (April 9, 2024, Source) – Gina Rinehart, Australia's wealthiest person and iron ore magnate, has made a significant move into the U.S. rare earths sector by acquiring a 5.3% stake in MP Materials Corp. (NYSE: MP), which owns the Mountain Pass mine in California. This purchase has led to a 20% increase in MP's share price within five days. Rinehart's investment extends beyond MP to a 10% stake in Arafura Rare Earths Limited (ASX: ARU), an Australian rare earth producer, and 5.8% in a Brazilian company. Amidst growing competition with China and threats to "weaponize" its dominance in rare earths essential for modern technologies, Rinehart's actions hint at potential for a major merger, particularly between MP and Australia's Lynas Rare Earths Ltd. (ASX: LYC), aiming to create a significant non-Chinese rare earth supply. This development could signal strategic shifts in global rare earths production, with potential large-scale industry consolidation on the horizon.

China's EV export boom fuels surge in demand for new carcarrying ships: (April 9, 2024, <u>Source</u>) – Amidst a burgeoning demand for electric vehicles (EVs), Chinese automakers and shippers are investing heavily in a fleet expansion, ordering a record number of car-carrying ships. This surge places China on a trajectory to possess the world's fourth-largest car-carrying fleet by 2028, ascending from its current eighth position. Major corporations like SAIC Motor, Chery Automobile, and EV titan BYD, along with shippers such as COSCO and China Merchants, are spearheading this initiative, accounting for a quarter of global orders. This influx primarily benefits Chinese shipyards, capturing 82% of the global orders. The expansion into foreign markets, buoyed by a cost-efficient supply chain, has been crucial for Chinese automakers facing domestic challenges like price competition and a slow economy. Notably, China has surpassed Japan as the premier auto exporter, with significant contributions from companies like BYD. However, this export growth has raised concerns in the U.S. and EU about market oversaturation with low-priced goods, though China rebuts, highlighting innovation and downplaying state support's role.

US must boost Africa ties to secure key minerals, report says: (April 9, 2024, <u>Source</u>) – To secure vital minerals critical for sectors ranging from electric vehicle production to defense, the United States must strengthen its commercial relationships with African nations, a report from the United States Institute of Peace emphasizes. This is to reduce dependency on China, which currently dominates the supply of these critical minerals. The U.S.'s near-total reliance on foreign sources, especially China, for these materials poses significant economic and national security risks. The report highlights the lag of Western mining companies behind Chinese counterparts in tapping into Africa's rich mineral resources. It suggests enhanced U.S. commercial diplomacy, particularly with leading mineral suppliers like the Democratic Republic of Congo and Zambia. Additionally, it points out the competition from Middle East firms and proposes measures like increasing project financing and reopening the U.S. consulate in Lubumbashi to facilitate U.S. investment. Despite challenges, the report argues for a more vigorous approach to match China's influence in Africa's mining sector.

Rare earths prices in China hit 7-week high on post-holiday restocking: (April 9, 2024, <u>Source</u>) – Rare earths prices in China, the world's leading producer, reached a seven-week peak on April 8 due to increased post-holiday restocking, before slightly declining the following day. With China dominating 70% of mining and 90% of the refined rare earths market, notable increases were observed in praseodymium oxide and terbium oxide prices, highlighting the country's significant influence on the market. The demand surge, particularly after the QingMing Festival, led to a depletion of in-plant stocks among magnetic materials producers, who then turned to the spot market for replenishment. Additionally, the use of ore cargoes as collateral by some to alleviate financial pressures contributed to the price hike. The start of the rainy season in Myanmar, a major supplier, is expected to reduce ore availability, potentially increasing market volatility as companies rely more on spot market purchases, impacting long-term contract stability. Consequently, shares in China Northern Rare Earth (Group) High-Tech saw a 4.3% increase.

Perpetua Resources gets nod to seek \$1.8 bln US loan for antimony mine: (April 8, 2024, Source) - Perpetua Resources Corp. (NASDAQ: PPTA | TSX: PPTA) has received preliminary approval from the U.S. Export-Import Bank (EXIM) for a \$1.8 billion loan to develop an antimony and gold mine in northern Idaho, aligning with efforts to reduce China's dominance in critical minerals. This potential loan marks one of the largest U.S. investments in the mining sector, reflecting the Biden administration's strategy of using federal funds to support projects that compete with Chinese firms. In addition to this loan, Perpetua will seek extra equity funding. The Stibnite mine aims to become the only U.S. source of antimony, vital for military hardware and electric vehicle batteries, while also harboring substantial gold reserves. This venture is part of a broader U.S. initiative to secure domestic supplies of essential minerals and counter China's market influence.

Mining billionaire Forrest urges China to demand greener nickel: (April 7, 2024, <u>Source</u>) – Australian mining billionaire Andrew Forrest has publicly called for China to implement and enforce higher environmental standards within its global supply chains, especially focusing on nickel processing in Indonesia, citing severe environmental damage. In a Financial Times interview, Forrest, who is the chair and largest shareholder of Fortescue Ltd. (ASX: FMG), criticized the extraction of Indonesian nickel for its extensive environmental degradation and urged electric vehicle manufacturers to be cautious when sourcing nickel from Indonesia. Forrest highlighted that China's increasing control over Indonesia's nickel production, vital for electric car batteries and steelmaking, comes with significant environmental concerns, including deforestation, mining waste pollution, and high carbon emissions from coal power. Despite shutting down his nickel mines in Western Australia due to price drops influenced by Indonesian nickel, Forrest remains vocal about the need for a "green premium" for sustainably produced nickel and criticizes the lack of differentiation in the market. The call comes amid rising environmental scrutiny and the potential for marketdriven adjustments to reflect the environmental cost of production.

Canada risks losing mining capital because of government opacity around Chinese investment in critical minerals sector: (April 5, 2024, <u>Source</u>) – The opacity of the Canadian government regarding Chinese investment in the critical minerals sector is leading to investor uncertainty and risking Canada's position as a major capital source for mining. Despite Ottawa's late 2022 announcement allowing Chinese investments only under "exceptional circumstances" without defining them, transactions continue, confusing the market. For instance, Shenghe Resources acquired a 10% stake in Vital Metals Ltd. (ASX: VML), owner of Canada's only operating rare earths mine, even purchasing a significant stockpile of rare earths mined in Canada. Critics, including those from the Macdonald-Laurier Institute, find it problematic, especially given China's dominance in the rare earths market. The unclear stance and handling of investments, such as the blocked financing deal for SRG Mining Inc. (TSXV: SRG)., reflect a broader uncertainty and potential discouragement of future critical minerals companies from basing in Canada, fearing the government's unpredictable investment policies. This situation may drive new companies to other countries, impacting Canada's mining capital and strategic positioning in critical minerals.

Investor.News Critical Minerals Videos:

 April 12, 2024 – Defense Metals Dr. Moreno on the Wicheeda Project Poised to Become North America's Next Rare Earth Mine <u>https://bit.ly/3TXs7kh</u>

Critical Minerals IN8.Pro Member News Releases:

- April 10, 2024 American Rare Earths' Assay Results Expand Rare Earth Enrichment Within the Cowboy State Mine Area at Halleck Creek, Wyoming <u>https://bit.ly/3JecWOT</u>
- April 10, 2024 Critical Metals PLC: Issue of Convertible Loan Notes and Corporate Update <u>https://bit.ly/4aLZ75P</u>
- April 10, 2024 Mount Squires Project Option Agreement to unlock potential further rare earth supply <u>https://bit.ly/440rco4</u>
- April 09, 2024 Pekuakamiulnuatsh First Nation and First Phosphate Announce Collaboration Agreement <u>https://bit.ly/4d2nH4C</u>

Albemarle Lithium Auction offers a bold move forward in pricing transparency in the critical minerals market

written by InvestorNews | April 12, 2024 In a notable development within the lithium industry, <u>Albemarle</u> <u>Corporation</u> (NYSE: ALB), the world's largest producer of lithium, has announced its plan to host an auction for a significant quantity of lithium on March 26. This move marks a strategic attempt to address the persistent issue of price discovery in a market characterized by its lack of transparency and high volatility. Jack Lifton, Co-founder of the <u>Critical</u> <u>Minerals Institute</u> (CMI), offers insightful commentary on the implications of this event, tying it to the broader challenges facing the lithium market today.

The auction by Albemarle, according to a <u>news story</u> published on Reuters yesterday is a response to the dramatic shifts witnessed in the lithium sector, propelled by the electric vehicle (EV) revolution. Since 2007, lithium production has surged from less than 4,000 tons to 186,000 tons, underscoring the metal's critical role in the transition towards electrification. Despite this growth, the industry has struggled with establishing a clear and stable pricing mechanism, a challenge that Lifton identifies as a major impediment to investment and development within the sector.

Historically, the pricing of lithium has been opaque, often

negotiated privately between producers and buyers. This lack of clarity has been further complicated by the introduction of lithium contracts on Chinese exchanges, which, despite their potential, have failed to provide a global benchmark due to issues of transparency and accessibility for international market participants. Western attempts to establish futures trading for lithium, such as those by the London Metal Exchange (LME) and the Chicago Mercantile Exchange (CME), have also seen limited success, highlighting the disconnect between traditional commodity trading mechanisms and the unique dynamics of the lithium market.

Albemarle's upcoming auction represents an innovative approach to tackling these pricing challenges. By opening up the sale of a substantial quantity of lithium to competitive bidding, the company aims to foster greater transparency and provide a more accurate reflection of current market valuations. This initiative not only seeks to bridge the gap in price discovery but also serves as a potential model for future transactions in the industry.

Lifton emphasizes the importance of this auction in the context of the lithium market's evolution. The shift towards digital auctions and the potential for establishing more transparent pricing indices reflect the industry's adaptability and its search for solutions that align with the realities of global lithium supply and demand. However, he also cautions that while this auction may offer valuable insights, it is not a definitive solution to the market's overarching issues of volatility and unpredictability.

In conclusion, Albemarle's decision to host an auction for its lithium products is a significant step towards addressing the critical challenge of price discovery in the lithium market. As Lifton notes, this approach represents a move away from traditional pricing mechanisms and towards a more transparent and dynamic model. While the long-term impact of this and similar initiatives remains to be seen, they underscore the lithium industry's ongoing efforts to adapt to the complexities of a rapidly evolving global market.

World Renowned Critical Minerals Expert Constantine Karayannopoulos is Bullish on Lithium

written by InvestorNews | April 12, 2024 In an insightful interview with Tracy Weslosky of InvestorNews, Constantine Karayannopoulos, a renowned expert in the field of critical minerals, shared his perspectives on the current state and future prospects of the critical minerals market. Karayannopoulos highlighted the pivotal role of critical minerals such as rare earths, lithium, and nickel in the burgeoning sectors of battery technology and electric vehicles (EVs), underscoring the global buzz around these resources. He noted the current challenges faced by small companies in raising funds and the general market sentiment. Despite these hurdles, he expressed optimism, suggesting that the downturn in valuations and financing is temporary. "We're at close to or at the bottom of the cycle with a lot of these commodities," he stated, advising resilience for these firms in anticipation of a market rebound fueled by sustained demand for technologies reliant on critical minerals.

Karayannopoulos offered insightful commentary on the critical minerals market, particularly focusing on lithium and rare earths. With a bullish stance on lithium, he reminisced about the industry's past pricing projections and observed the current market's resilience despite recent price drops. "Lithium still is the workhorse in the battery space... for the next decade, lithium will be the workhorse of the EV battery," he affirmed, advocating for strategic investments in this area during market lows. His observations extended to the rare earths market. noting its sensitivity to Chinese economic dynamics and the potential for price stabilization in the near term. Highlighting Brazil's emerging role in diversifying the global supply of heavy rare earths, he emphasized the importance of exploring favorable mineralogy and environmental practices in new geographies. This strategic diversification, he argued, is crucial for addressing the geopolitical and social concerns associated with current heavy rare earths sourcing, primarily from Myanmar.

To access the complete interview, <u>click here</u>

Don't miss other InvestorNews interviews. Subscribe to the InvestorNews YouTube channel by <u>clicking here</u>

Technology Metals Report (03.15.2024): U.S. Makes a

\$2.6B Lithium Loan while Australia Invests \$840M into Rare Earths

written by Tracy Weslosky | April 12, 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 Biden administration's massive \$2.26 billion loan to Lithium Americas Corp. for the Thacker Pass mine in Nevada, aiming to boost domestic lithium production for electric vehicles; the Australian government's significant A\$840 million investment in Arafura Rare Earths Limited to secure a sovereign supply of rare earth elements; and the Canadian federal government's investment in Saskatoon's Saskatchewan Research Council to enhance its Rare Earth Processing Facility. These developments underscore a global effort to secure critical mineral supplies, reduce dependence on foreign sources, and advance the transition towards cleaner energy and technology.

This week's TMR Report also highlights several other important developments in the critical minerals sector. Notable stories include the criticism from the Canadian Automobile Dealers Association regarding Quebec's decision to phase out electric vehicle purchase incentives, adjustments in electric vehicle strategies by major automakers amid shifting market dynamics, and the UK's trade pact with Texas aimed at boosting the green industry. Additionally, the report covers POSCO International's significant deals to supply rare earth permanent magnets to North American and European automakers, signs of recovery in the global lithium market after a massive downturn, geopolitical competition for the Democratic Republic of the Congo's mineral wealth, Greece's emergence as a significant source of critical minerals, the U.S. Department of Defense's initiative to establish a "mine-to-magnet" supply chain, challenges and opportunities in Canada's mining industry, and the call by global miners for the London Metal Exchange to introduce a green premium for nickel. These stories provide a comprehensive overview of the current state and future prospects of the critical minerals and technology metals industry, reflecting its importance to technological advancement, national security, and the global transition to green energy. To become a CMI member, click here (https://criticalmineralsinstitute.com/join)

Biden Jump-Starts Electric-Vehicle Push With Massive Lithium Loan (March 14, 2024, <u>Source</u>) - The Biden administration is energizing the U.S. electric vehicle (EV) sector with a \$2.26 billion loan to Lithium Americas Corp. (TSX: LAC | NYSE: LAC) for its Thacker Pass mine in Nevada, aiming to fortify domestic lithium production for EV batteries. This investment, part of a broader initiative to secure half of new vehicle sales as EVs by 2030, will fund a refining plant critical for producing batterygrade lithium. Despite a recent slowdown in EV sales and a plunge in lithium prices, the project seeks to reduce U.S. dependence on foreign battery minerals, notably from China. Expected to start in 2027, the Thacker Pass mine will significantly contribute to the domestic EV industry, promising to supply lithium for up to 800,000 EVs annually. This move aligns with efforts to transition towards cleaner energy and reduce reliance on international sources.

The Australian Government Steps into the Critical Minerals Supply Chain Ring (March 14, 2024, <u>Source</u>) – The Australian government's backing of Arafura Rare Earths Limited (ASX: ARU) with A\$840 million underscores a strategic push to lessen reliance on Chinese critical mineral sources, aiming to secure a sovereign supply of rare earth elements vital for electric vehicles and renewable technologies. This investment signals Australia's intent to lead in the global rare earth market, enhancing private sector confidence as evidenced by rising values in related investments, including those by Gina Rinehart's Hancock Prospecting. The move highlights Australia's ambition to not only overcome immediate financial challenges in the mining sector but also to establish itself as a crucial player in renewable energy technology, fostering global supply chain resilience and advancing the green energy transition.

Ottawa invests \$6M in Saskatoon rare earth processing facility (March 14, 2024, <u>Source</u>) - The Canadian federal government is investing \$6 million in Saskatoon's Saskatchewan Research Council to boost its Rare Earth Processing Facility, marking a significant step in processing critical minerals for high-tech uses like electric vehicle batteries and wind turbines. This funding will commercialize a process for extracting rare earth oxides from waste and develop an automated smelting process for commercial-quality metals, aiming to enhance sustainable and efficient production. The investment reflects a collaboration between federal and provincial governments, highlighting the national importance of establishing a domestic rare earth supply chain. It promises economic growth and job creation, positioning Saskatoon as a key player in meeting global demand for critical minerals and supporting the transition towards a greener economy.

A Step Backwards for Quebec's Automotive Electric Transition (March 13, 2024, <u>Source</u>) – The Canadian Automobile Dealers Association (CADA) criticizes the Quebec government's 2024 Budget decision to phase out electric vehicle (EV) purchase incentives amid an affordability crisis. This move is seen as detrimental to Quebec's leading position in EV adoption, fueled by an effective incentive program. CADA refutes the government's claim of a narrowing price gap between EVs and traditional vehicles, highlighting that price parity is not expected until 2033. The association warns that removing incentives could slow EV adoption, contrasting with the successful examples of Quebec and British Columbia, which offer substantial financial incentives. CADA urges the government to reconsider, emphasizing the importance of incentives in achieving environmental goals and maintaining affordability for Quebecers.

EV euphoria is dead. Automakers are scaling back or delaying their electric vehicle plans (March 13, 2024, Source) -Automakers are adjusting their electric vehicle (EV) strategies amid fading EV euphoria, scaling back or delaying plans despite initial optimism. Industry giants like Ford, General Motors, Mercedes-Benz, Volkswagen, Jaguar Land Rover, and Aston Martin are shifting towards a more balanced vehicle offering, incorporating gas-powered, hybrid, and electric vehicles. This approach reflects a slower transition to an all-electric future, diverging from previous ambitious EV growth targets. Despite a reduction in growth expectations, the demand for EVs continues to rise, albeit at a slower pace, with sales still predicted to increase significantly. The industry acknowledges the necessity of hybrid models to bridge the transition to electrification and meet emission standards. This recalibration underscores the automotive sector's response to less-than-expected consumer uptake of EVs and the reality of current market conditions, suggesting a more gradual shift towards electrification.

UK Signs Trade Pact With Texas in Effort to Boost Green Industry (March 12, 2024, <u>Source</u>) – The UK has signed a trade pact with Texas to enhance cooperation in green energy, aerospace, and advanced technologies, marking the eighth non-binding memorandum of understanding (MoU) with a US state since Brexit. This agreement aims to boost the collective GDP of these states to \$6.8 trillion, a quarter of the US economy. It includes mutual recognition of engineering qualifications to facilitate talent exchange for infrastructure projects. The pact also focuses on making business easier in sectors like hydrogen and carbon capture. Despite not being the comprehensive Free Trade Agreement that Brexit supporters hoped for, this deal reflects the UK's strategy of forming state-level agreements in the US. Texas, the UK's ninth largest trade partner, exchanged £14.7 billion in goods with the UK in 2023. However, some critics argue these MoUs do little to reduce tariffs and aren't sufficiently promoted.

POSCO International signs deal for permanent magnet supply with US, European automakers (March 12, 2024, Source) - POSCO International has inked deals worth 1.16 trillion won (\$885 million) to supply rare earth permanent magnets, essential for electric vehicle (EV) motors, to North American and European automakers. These contracts aim to diversify the supply chain away from China, utilizing materials from the US, Australia, and Vietnam. The company's U.S. subsidiary will supply a North American carmaker with magnets worth 900 billion won from 2026 to 2031, while its German subsidiary will provide a European brand with magnets valued at 260 billion won from 2025 to 2034. Star Group, Korea's exclusive rare earth magnet producer, will handle production. This marks a strategic entry into markets dominated by China, reflecting POSCO's efforts to expand its global footprint and secure additional orders with car and motor manufacturers.

After Massive Bust, Global Lithium Market Shows Signs of Life (March 12, 2024, Source) – The global lithium market, vital for electric vehicle batteries, is witnessing a cautious revival after a drastic downturn. Prices for lithium carbonate in China have surged to a post-December high following an over 80% fall in 2023, with futures contracts also seeing significant gains. This rebound is amidst a global supply glut that previously tanked prices. Leading producers remain hopeful, with giants like Albemarle Corporation (NYSE: ALB) and Sociedad Química y Minera de Chile S.A. ("SQM") (NYSE: SQM) continuing expansions despite the market's volatility. Efforts to rebalance include production cutbacks by some firms. However, analysts warn that the recovery could be fragile, with environmental regulations in China and a persistent supply surplus posing challenges to a sustained rally. Skepticism remains regarding the end of the bear market amidst these tentative gains.

The (Bidding?) War For the DRC (March 12, 2024, Source) – The Democratic Republic of the Congo (DRC) is a focal point for global powers due to its rich deposits of critical minerals essential for modern technologies and green economies. China, Saudi Arabia, the United Arab Emirates, and Russia are the main players, each with distinct strategies and impacts. China has a controversial history in DRC's mining sector, while Saudi Arabia's investment approach fosters a positive development model. The UAE's agreement aims to enhance artisanal mining, and Russia's involvement hints at a Cold War-style influence game. In contrast, US and European engagement in securing these vital resources has been relatively minimal. These dynamics underscore the geopolitical competition over the DRC's mineral wealth, pivotal for technological advancement and climate change mitigation.

Critically important metals are found (March 11, 2024, Source) – Greece is emerging as a significant potential source of critical minerals essential for the clean energy transition, attracting investor interest. The Ministry of Environment and Energy, bolstered by Rockfire Resources PLC's positive findings in Molaoi, southern Greece, indicates substantial deposits of germanium, gallium, lead, silver, and zinc. Germanium's uses span fiber-optics to solar panels, while gallium, extractable from Greece's abundant bauxite, is vital for electronics. The EU has noted Mytilineos' pilot project for gallium extraction from bauxite, potentially satisfying European demand. Additionally, Mytilineos explores scandium production, beneficial in aerospace and electric vehicles, forecasting a significant demand increase. Rockfire Resources plans further exploration and a viability study post-summer. Greece's untapped resources, including antimonite in Chios and bismuth near Xanthi, underscore its strategic position in supporting Europe's energy transition and reducing reliance on imports, especially from China.

DOD Looks to Establish 'Mine-to-Magnet' Supply Chain for Rare Earth Materials (March 11, 2024, Source) - The Defense Department is actively pursuing the establishment of a domestic "mine-to-magnet" supply chain for rare earth materials, crucial for manufacturing permanent magnets used in significant U.S. military systems and commercial applications. Recognizing the vulnerability of relying on foreign sources, notably China, for these materials, the DOD aims to enhance national security through self-reliance. It has allocated over \$439 million since 2020 to develop this supply chain, covering mining, separation, refining, and manufacturing processes within the U.S. This initiative is guided by the National Defense Industrial Strategy and seeks to achieve a resilient, domestic supply chain capable of meeting all U.S. defense requirements by 2027. Critical defense systems, such as the F-35 Lightning II aircraft, Virginia and Columbia class submarines, and various missile and radar systems, depend heavily on these rare earth materials. The DOD's strategy includes significant investments in U.S.-based companies and technologies to ensure the country's selfsufficiency in rare earth element production and magnet manufacturing, aiming to eliminate dependency on foreign sources and secure the future needs of both defense and commercial sectors.

Critical minerals mining industry requires more of everything if Canada to be a global player (March 11, 2024, Source) - The KPMG in Canada survey reveals optimism among Canadian mining leaders regarding the potential for Canada to be a global leader in critical minerals. However, they acknowledge significant obstacles, including the need for more investment, government support, and favorable tax policies. Challenges like decarbonization, lack of domestic refining capacity, raising capital, environmental, social, and governance risks, cost reduction, and regulatory hurdles are highlighted. The survey indicates that only a minority of companies have committed to comprehensive carbon emission reductions by 2050, with many still planning or not having a strategy for emission reduction. Furthermore, the Critical Mineral Exploration Tax Credit (CMETC) has boosted exploration activities but is seen as complex and limited in scope. Respondents call for broader and more innovative tax policies to encourage investment and development in the sector.

Global miners call on LME to introduce green premium for nickel (March 5, 2024, Source) – Global mining giants, including BHP Group (ASX: BHP | NYSE: BHP) and Wyloo Metals, have urged the London Metal Exchange (LME) to create a green premium for sustainably produced nickel amidst concerns over environmental damage caused by "dirty" nickel, particularly from Indonesia. Indonesia, a major player in the nickel industry, has been criticized for deforestation, pollution, and high carbon emissions due to its reliance on coal-fired power. The LME, however, responded that the market for green nickel isn't yet large enough to support a dedicated futures contract. BHP and others argue for differentiating between green and dirty nickel, highlighting the environmental impact differences. The LME supports trading low carbon nickel but cites the need for more development in identifying a credible green premium. Meanwhile, Indonesia's low-cost nickel production is poised to dominate the global market, raising concerns over environmental standards and the need for responsible sourcing guidelines that include emissions metrics.

Investor.News Critical Minerals Media Coverage:

- March 14, 2024 The Australian Government Steps into the Critical Minerals Supply Chain Ring <u>https://bit.ly/3Vm9NDR</u>
- March 12, 2024 The (Bidding?) War For the DRC <u>https://bit.ly/4aaKMz0</u>

Investor.News Critical Minerals Videos:

- March 14, 2024 Neo Performance's Rahim Suleman on being 'the most vertically integrated rare earth magnetics company in the world.' <u>https://bit.ly/3PkS8IY</u>
- March 14, 2024 Darren Hazelwood on Panther Metals' VMS Project Scale and the Graphite Potential Near Thunder Bay <u>https://bit.ly/4920z0M</u>
- March 14, 2024 Codemge's CEO on Leveraging Minas Gerais' Position as Brazil's Niobium Mining Powerhouse <u>https://bit.ly/48Pfo8U</u>
- March 13, 2024 Chris Berlet on the benefit of MineralPrices' real-time pricing information <u>https://bit.ly/3TA1i60</u>
- March 11, 2024 Power Nickel's Terry Lynch on "the least expensive high-grade nickel sulfide exploration play in the world" <u>https://bit.ly/3VgWdBF</u>
- March 11, 2024 Tom Drivas Explores the Initial Rare Earth Mineral Resource Estimate from Appia's PCH Ionic Adsorption Clay Project in Brazil <u>https://bit.ly/3VdU9KL</u>

- March 11, 2024 Chad Clovis on Real Environmental Benefits through the Karbon-X Carbon Credit App <u>https://bit.ly/3Tt6jy6</u>
- March 11, 2024 Stephen Burega on Romios Gold's Recent Strides Forward in High-Grade Copper Exploration in Nevada <u>https://bit.ly/4a9HA7E</u>
- March 11, 2024 Sean Cleary on Strategic's plans to revitalize former producer of 10% of the world's vanadium <u>https://bit.ly/3IwVZP9</u>

Critical Minerals IN8.Pro Member News Releases:

- March 14, 2024 Technology Advancement: NEO Battery Expands Production Yield and Capacity with Manufacturing Innovation <u>https://bit.ly/43f7Efj</u>
- March 13, 2024 Voyageur Achieves Milestone with Rain Cage Royalty Agreement for Sustainable Carbon Drug Development <u>https://bit.ly/3TzarN0</u>
- March 13, 2024 First Phosphate and Groupe Goyette Sign MOU for Logistics Footprint at the Hebertville-Station Intermodal Facility in the Saguenay-Lac-St-Jean Region of Quebec, Canada <u>https://bit.ly/3PlqXxL</u>
- March 13, 2024 Fathom Announces Completion of Drilling at Albert Lake Project and Commencement of Drilling at the Gochager Lake Project <u>https://bit.ly/3wPQFnA</u>
- March 12, 2024 American Clean Resources Group Enters Well Water Purchase Agreement with Road and Highway Builders LLC <u>https://bit.ly/3w0X2aT</u>
- March 11, 2024 Critical Metals PLC Appointment of Non-Executive Director <u>https://bit.ly/43cATiI</u>

Neo Performance's Rahim Suleman on being 'the most vertically integrated rare earth magnetics company in the world.'

written by InvestorNews | April 12, 2024 During an engaging interview at PDAC 2024 with Critical Minerals Institute (CMI) Co-Chairman Jack Lifton, Rahim Suleman, President, CEO, and Director of Neo Performance Materials Inc. (TSX: NEO), shed light on the company's strategic endeavors and its unique positioning in the rare earth materials sector. Suleman emphasized Neo's role as a pivotal player in the rare earth magnetics market, underlining the critical importance of these materials in driving the energy transition and their explosive demand growth. He highlighted Neo's existing vertical integration in the rare earth magnet sector and its innovative dual supply chain strategy that provides a robust solution to the market's over-reliance on China, which dominates the extraction, processing, and magnet production of rare earth materials. "We are the most vertically integrated rare earth magnetics company in the world," Suleman remarked, illustrating Neo's commitment to mitigating concentration risks and fostering resilience in the supply chain.

Suleman further detailed Neo's significant investments in expanding its operational footprint, particularly mentioning the development of a sintered magnet facility in Estonia, which is

poised to serve both the North American and European markets starting in 2025. This ambitious project, heralded as a landmark move to diversify the global rare earth magnet production landscape, underscores Neo's proactive approach to addressing the critical shortage of rare earth permanent magnet manufacturing capacity outside China. With plans to extend its manufacturing capabilities to North America and ongoing support from the European Union, Neo is strategically positioning itself to meet the burgeoning demand for rare earth magnets essential for electric vehicles and other green technologies. "We're in the process of investing in phase one... but we would immediately follow it with phase two and then immediately follow that and probably even concurrent to that do a large phase in North America as well," Suleman shared, highlighting Neo's comprehensive strategy to fulfill European and American EV Motor OEMs' demand for domestic sourcing of rare earth magnets.

To access the complete interview, <u>click here</u>

Don't miss other InvestorNews interviews. Subscribe to the InvestorNews YouTube channel by <u>clicking here</u>

About Neo Performance Materials Inc.

Neo manufactures the building blocks of many modern technologies that enhance efficiency and sustainability. Neo's advanced industrial materials – magnetic powders and magnets, specialty chemicals, metals, and alloys – are critical to the performance of many everyday products and emerging technologies. Neo's products help to deliver the technologies of tomorrow to consumers today. The business of Neo is organized along three segments: Magnequench, Chemicals & Oxides and Rare Metals. Neo is headquartered in Toronto, Ontario, Canada; with corporate offices in Greenwood Village, Colorado, United States; Singapore; and Beijing, China. Neo has a global platform that includes ten manufacturing facilities located in Canada, China, Estonia, Germany, Thailand, the United Kingdom, and the United States, as well as one dedicated research and development centre in Singapore.

To learn more about Neo Performance Materials Inc., click here

Disclaimer: Neo Performance Materials Inc. is an advertorial member of InvestorNews Inc.

This interview, which was produced by InvestorNews Inc. ("InvestorNews"), does not contain, nor does it purport to contain, a summary of all material information concerning the Company, including important disclosure and risk factors associated with the Company, its business and an investment in its securities. InvestorNews offers no representations or warranties that any of the information contained in this interview is accurate or complete.

This interview and any transcriptions or reproductions thereof (collectively, this "presentation") does not constitute, or form part of, any offer or invitation to sell or issue, or any solicitation of any offer to subscribe for or purchase any securities in the Company. The information in this presentation is provided for informational purposes only and may be subject to updating, completion or revision, and except as may be required by applicable securities laws, the Company disclaims any intent or obligation to update any information herein. This presentation may contain "forward-looking statements" within the meaning of applicable Canadian securities legislation. Forwardlooking statements are based on the opinions and assumptions of the management of the Company as of the date made. They are inherently susceptible to uncertainty and other factors that could cause actual events/results to differ materially from these forward-looking statements. Additional risks and

uncertainties, including those that the Company does not know about now or that it currently deems immaterial, may also adversely affect the Company's business or any investment therein.

Any projections given are principally intended for use as objectives and are not intended, and should not be taken, as assurances that the projected results will be obtained by the Company. The assumptions used may not prove to be accurate and a potential decline in the Company's financial condition or results of operations may negatively impact the value of its securities. This presentation should not be considered as the giving of investment advice by the Company or any of its directors, officers, agents, employees or advisors. Each person to whom this presentation is made available must make its own independent assessment of the Company after making such investigations and taking such advice as may be deemed necessary. Prospective investors are urged to review the Company's profile on <u>SedarPlus.ca</u> and to carry out independent investigations in order to determine their interest in investing in the Company.

Revolutionizing Energy Storage with NEO Battery Materials' Strategic Advances in Silicon

Anode Technology

written by InvestorNews | April 12, 2024 <u>NEO Battery Materials Ltd.</u> (TSXV: NBM | OTCQB: NBMFF), a leader in the development of low-cost silicon anode materials, is at the forefront of a technological revolution that promises to redefine the lithium-ion battery landscape. As the demand for electric vehicles (EVs) and renewable energy storage solutions grows, the quest for more efficient and cost-effective batteries has become more critical than ever. NEO's strategic initiatives and recent achievements reflect its commitment to driving innovation in this space, amidst a broader industry shift towards silicon anodes over traditional graphite.

Since the commercial debut of lithium-ion batteries three decades ago, the technology has seen vast advancements, including a significant drop in price and improvements mostly on the cathode side. However, the graphite anodes used in these batteries have seen little innovation, until now. Silicon, capable of holding up to 10 times as many lithium ions by weight as graphite, has emerged as a promising alternative, despite its initial challenges, including volume expansion and material fracture.

NEO's recent strategic moves, including <u>increasing its ownership</u> in its South Korean subsidiary, NBM Korea, and filing its <u>9th</u> <u>patent</u> for a major silicon anode manufacturing innovation, underscore its role in this evolving market. The company's efforts to overcome silicon's historical challenges signify a major leap towards the commercialization of silicon anodes, which are essential for the next generation of lithium-ion batteries. These batteries promise longer ranges, faster charging times, and reduced costs for EVs, positioning silicon as a critical material in the global push towards electrification.

The significance of NEO's advancements cannot be overstated in the context of the broader industry's pivot towards silicon anodes. Companies like General Motors are already integrating silicon anodes into their products, signaling a market ready for change. Furthermore, the recent influx of nearly half a billion dollars in investments towards commercializing silicon anode materials, including significant contributions from the U.S. Department of Energy, highlights the strategic importance of this technology.

Silicon anodes not only offer the potential for longer-range and faster-charging EVs but also promise to alleviate supply chain constraints associated with graphite anodes, nearly all of which are processed in China. By reducing reliance on overseas graphite and leveraging silicon, the most abundant metal in Earth's crust, companies like NEO are paving the way for a more sustainable and efficient future for batteries.

In its comprehensive strategy for 2024, NEO Battery Materials outlines a multi-faceted approach to commercialization, emphasizing operational execution, capital efficiency, and risk mitigation. The company's vision extends beyond mere technological innovation; it aims to optimize the electrochemical performance and cost competitiveness of its silicon anode material, NBMSiDE®, to establish advanced commercial agreements and expand its global supply chain network.

As NEO and other industry players continue to advance silicon anode technology, the promise of more affordable, efficient, and sustainable lithium-ion batteries becomes increasingly tangible. This shift not only supports the growing demand for EVs but also contributes to the global effort to transition to renewable energy sources, marking a significant milestone in the quest for greener and more sustainable energy solutions.

The <u>NEO Battery Materials Ltd.</u> (TSXV: NBM | OTCQB: NBMFF) market cap for Thursday, February 22, 2024 is CAD\$28.70M.

Technology Metals Report (02.11.2024): Constantine Karayannopoulos Resurfaces, Landmark \$18.8 Billion Cathode Supply Deal in Tennessee, and Canada Invests in Ucore

written by Tracy Weslosky | April 12, 2024

Welcome to the latest Technology Metals Report (TMR) where we highlight the top news stories that members of the <u>Critical</u> <u>Minerals Institute</u> (CMI) have forwarded to us in the last week. Key highlights in this Technology Metals Report include significant developments such as Appia Rare Earths & Uranium Corp. enriching its advisory committee with the appointment of industry veteran Constantine Karayannopoulos, a move poised to strengthen its strategic capabilities in the critical minerals sector. Additionally, stories highlighted last week include Ford Motor Company's substantial \$4.7 billion loss in its electric vehicle (EV) segment for 2023, a figure that underscores the economic challenges facing companies transitioning to electric

mobility.

Moreover, this edition of the TMR delves into Bora Mining Services' strategic acquisition in the Steenkampskraal Monazite Mine and the landmark \$18.8 billion cathode supply deal between General Motors and LG Chem, both of which underscore the strategic efforts to secure critical materials for the burgeoning EV market. The report also examines Hitachi Construction Machinery's innovations with its all-electric dump truck prototype, signaling a push towards sustainability in mining operations. Commentary on the EV market by industry expert Jack Lifton highlights the sector's challenges and misalignments with consumer preferences. Furthermore, Canada's advancement over China in the BloombergNEF Global Lithium-Ion Battery Supply Chain Ranking and the discontinuation of merger talks between Lynas Rare Earths and MP Materials are highlighted, reflecting the dynamic nature and strategic maneuvers within the global critical minerals and electric vehicle sectors.

Appia Appoints Constantine Karayannopoulos as New Member to Its Critical Minerals Advisory Committee (February 9, 2024, Source) – Appia Rare Earths & Uranium Corp. (CSE: API | OTCQX: APAAF) announced the appointment of Constantine Karayannopoulos to its Advisory Committee, alongside rare earths experts Jack Lifton and Don Hains. Karayannopoulos, with a 30-year career in the rare earth and critical minerals sectors, including as President and CEO of Neo Performance Materials Inc. (TSX: NEO), brings significant expertise to Appia. His background includes pivotal roles in the industry, such as leading the first foreign company in China's Rare Earth industry and co-founding Neo Lithium Corp. His appointment, starting February 1, 2024, is set to enhance Appia's strategic capabilities in the critical minerals sector, supported by his consulting company, Kloni Inc. Appia has granted 300,000 options to Kloni Inc. as part of this agreement. Rare Earths Discovery Near Wheatland So Big It Could Be World Leader (February 7, 2024, <u>Source</u>) – American Rare Earths Limited (ASX: ARR | OTCQB: ARRNF) has made a groundbreaking discovery near Wheatland, Wyoming, revealing 2.34 billion metric tons of rare earth minerals, significantly surpassing initial estimates and other local discoveries. This positions Wyoming as a key player in reducing reliance on China's rare earth market, vital for green energy technologies. With only 25% of their land explored, the potential for further discoveries is immense. The company, part of an Australian enterprise, plans scalable mining operations to meet the high global demand. This development, along with other explorations in Wyoming, could transform the U.S. into a major source of rare earth minerals, essential for a range of advanced technologies. Further economic and development projections are anticipated, underlining Wyoming's emerging significance in the global rare earth industry.

Ford Lost \$4.7B On EVs Last Year, Or About \$64,731 For Every EV It Sold (February 7, 2024, Source) - Ford Motor Company's venture into electric vehicles (EVs) in 2023 resulted in a significant financial loss, overshadowing its overall profits for the year. The company experienced an operating loss of \$4.7 billion from its EV business, termed as "Model e," despite achieving a net income of \$4.3 billion on \$176 billion revenue. This loss equates to approximately \$64,731 for each of the 72,608 EVs sold last year, demonstrating the financial challenge of transitioning to electric mobility. The loss was attributed to competitive pricing, strategic investments in new EV development, and exceeded Ford's initial projections. The automotive giant's commitment to EVs, which includes a \$50 billion investment plan, has been guestioned in light of these results. Additionally, Ford's EV production adjustments and the broader automotive industry's challenges with EV demand and profitability highlight the difficulties in achieving widespread EV adoption. This situation reflects broader market trends and concerns over the viability and appeal of EVs, particularly in markets dominated by conventional vehicles and specific demographic niches.

Bora Mining Acquires Share in Steenkampskraal Monazite Mine (February 7, 2024, <u>Source</u>) - Bora Mining Services (BMS) has acquired a share in Steenkampskraal Monazite Mine (SMM), a highgrade rare earths and thorium mine, to commence operations in early 2024. With a significant investment, including a R1 billion infrastructure, BMS aims to refurbish and develop the mine, leveraging its expertise in mining operations. The mine boasts an impressive 14.5% average grade of total rare earth oxides, with potential for resource expansion. The partnership focuses on producing monazite concentrate initially, with plans to extend production to mixed rare earth carbonate and thorium. The project has received positive feedback from regulatory bodies and has a dynamic growth strategy across three phases, eventually aiming to produce individual rare earth oxides. The initiative is expected to cater to global rare earth demands, with thorium also highlighted for its safety and potential in cancer therapy.

South Korea's LG Chem signs \$19 bln cathode supply deal with General Motors (February 7, 2024, Source) – General Motors (GM) and South Korea's LG Chem have signed a \$18.8 billion deal for cathode material supply, enhancing GM's electric vehicle (EV) production chain from 2026 to 2035. This partnership aims to support the production of 5 million high-performance EVs, with LG Chem's Tennessee plant serving as a cornerstone for a localized supply chain. The agreement, building on a prior commitment for over 950,000 tons of Cathode Active Material, signifies a major step towards sustainable EV production. The Tennessee facility, set to be America's largest cathode plant, will primarily supply Ultium Cells LLC, a GM and LG Energy Solutions joint venture, potentially extending to other GM EV projects. This move aligns with U.S. Inflation Reduction Act criteria, emphasizing local supply chain benefits.

Hitachi launches final tests of its electric dump truck (February 6, 2024, Source) – Hitachi Construction Machinery has introduced a prototype of its all-electric dump truck, which is now undergoing final testing at a copper-gold mine in Zambia. Based on the EH4000AC-3 model with a 221-tonne payload, this electric version includes ABB's battery technology and converters. Unlike its diesel counterpart, it operates on internal batteries on level ground and external trolley power uphill, while regenerative braking recharges the battery downhill. Performance details are pending, but the combustion engine model's specs offer insight. This initiative, started in 2021 by Hitachi and ABB, aims to meet electric dump truck demand in mining and reduce emissions, highlighting a shift towards electrification in heavy machinery and contributing to environmental sustainability.

Riding the EV Revolution Rollercoaster Amid the West's Electric Car Climbdown (February 5, 2024, Source) – Jack Lifton's critique on the electric vehicle (EV) industry highlights the clash between government strategies and market dynamics, alongside the competitive pressure from Chinese manufacturers. He points out major manufacturers like Renault and Volvo retreating from ambitious EV projects due to mismatches in market demand and production costs. Jack also observes a consumer shift back to petrol models, suggesting a misalignment between EV production and consumer preferences. Advocating for hybrids, he emphasizes the need for adaptability, innovation, and market responsiveness. His insights stress the importance of aligning visionary goals with practical market demands and competitive challenges, underlining the complexity of navigating the evolving EV landscape with agility and foresight. South African platinum industry could shed up to 7,000 jobs to cut costs (February 5, 2024, <u>Source</u>) – The South African platinum industry, responsible for about 70% of the world's mined platinum, may cut 4,000 to 7,000 jobs due to restructuring amid high costs and declining prices. The Minerals Council highlighted this at the Investing in African Mining Indaba conference in Cape Town, noting the impact of the shift towards electric vehicles and the falling demand for platinum group metals (PGMs) used in traditional combustion engines. High electricity and labor costs, along with a 40% and 15% drop in palladium and platinum prices respectively, have pressured miners. Major companies like Anglo American Platinum and Sibanye Stillwater are considering operation restructuring and job cuts to reduce expenses, facing challenges from lower ore grades and rising input costs.

China Drops to Second in BloombergNEF's Global Lithium-Ion Battery Supply Chain Ranking as Canada Comes Out on Top (February 5, 2024, <u>Source</u>) - Canada has taken the top spot in BloombergNEF's Global Lithium-Ion Battery Supply Chain Ranking, outpacing China due to its ample raw materials, policy support, and strong ties with the US auto industry. This represents a significant shift, emphasizing the increasing importance of sustainability and ESG practices in the sector. North America shines in the rankings, with policy initiatives like the US Inflation Reduction Act bolstering the region's standing. Mexico notably rose nine spots, benefiting from its industrial base and potential US policy impacts. Global investment in clean energy supply chains hit \$135 billion, highlighting the sector's growth and the evolving dynamics of trade relations. The ranking assesses countries on raw materials, manufacturing, demand, ESG, and innovation, reflecting the global push towards sustainable energy solutions.

Australia's Lynas Rare Earths quits tie-up talks with MP

Materials (February 5, 2024, Source) – Australia's Lynas Rare Earths and U.S.-based MP Materials terminated merger discussions amid valuation disagreements and strategic considerations. The potential union aimed to bolster supply chain diversification for critical minerals outside China, which commands the rare earth market. The talks' cessation reflects the complexities of consolidating operations within the global rare earths industry, crucial for technology and defense sectors. Despite the strategic intent to reduce reliance on Chinese rare earths, both companies faced hurdles, including technological challenges and anti-trust regulations. Lynas, with significant projects across Australia, Malaysia, and the U.S., and MP Materials, which relies on Chinese refining, concluded that the merger lacked sufficient synergies to proceed, underscoring the intricate dynamics of international rare earths commerce.

Canada Announces Over \$4 million to Support Critical Minerals Value Chains and Create Good Jobs in Ontario (February 5, 2024, **Source**) – Canada is investing \$4.2 million in Ucore Rare Metals Inc. through the Critical Minerals Research, Development, and Demonstration (CMRDD) program to enhance the country's capabilities in producing critical minerals essential for the green and digital economy. This investment, announced by Mark Gerretsen, aims to scale up Ucore's rare earth element separation technology, pivotal for electric vehicle motors and renewable energy technologies. It promotes domestic processing, reducing reliance on foreign separation and bolstering Canada's electric vehicle value chain. This initiative will create employment, including for Indigenous communities, and support Canadian technological advancements in sustainable practices. It aligns with Canada's commitment to a cleaner, low-carbon economy by fostering competitive value chains and economic growth.

Germany's dream of 15 million electric vehicles is fading away (February 3, 2024, <u>Source</u>) – At a Berlin auto industry event,

BMW CEO Oliver Zipse and Transport Minister Volker Wissing highlighted the slowdown in electric vehicle (EV) adoption in Germany. Despite previous optimism, challenges such as a saturated high-end market, lack of affordable options, dwindling government incentives, and inadequate charging infrastructure have emerged. With EV sales projected to drop and the ambitious goal of 15 million EVs by 2030 now looking unrealistic, the industry faces a pivotal moment. The need for diversified vehicle power solutions, including combustion, hybrid, and hydrogen vehicles, becomes apparent. Analysts are skeptical about meeting emissions targets without further subsidies, pointing to a broader slowdown that could impact investment and long-term environmental goals.

Special thanks to the <u>Critical Minerals Institute – Leading the</u> <u>Critical Minerals Sector</u>, for more information or to send us a highlighted industry story you think we need to include in our weekly Technology Metals Report, please send to Raj Shah – my co-editor, at raj@investornews.com. Thank you.

Investor.News Critical Minerals Media Coverage:

- February 6, 2024 Global Winds: Opening the Door for a New Middle Eastern Hegemon <u>https://bit.ly/492BPbH</u>
- February 5, 2024 Riding the EV Revolution Rollercoaster Amid the West's Electric Car Climbdown <u>https://bit.ly/42oLYNn</u>
- February 4, 2024 Empowering Canadian Resource Exploration: The Strategic Role of Flow-Through Shares, and the Power of PDAC <u>https://bit.ly/3uv4pm0</u>

Investor.News Critical Minerals Videos:

• February 8, 2024 – Jack Lifton and Panther Metals Darren

Hazelwood on the "greenstone belt for VMS deposits" in Canada https://bit.ly/42zDzqv

- February 8, 2024 Fathom's Ian Fraser on Rising Market Interest in Albert Lake and Nickel as a Critical Mineral <u>https://bit.ly/49uxFcu</u>
- February 5, 2024 Tawana Bain and ACRG's Drive for a Sustainable American Supply Chain through Net-Zero Mineral Production <u>https://bit.ly/4bnBcLg</u>
- February 5, 2024 Terry Lynch on Power Nickel's Ambitious 2024 Drilling Program at the Nisk Project in Nemaska <u>https://bit.ly/49i70Ei</u>
- February 5, 2024 Voyageur Pharmaceutical's Brent Willis on Revolutionizing the Medical Imaging Industry, plus SmoothX <u>https://bit.ly/3SsrlLt</u>

Critical Minerals IN8.Pro Member News Releases:

- February 9, 2024 Ucore Announces Closing of Final Tranche of Upsized Debenture Offering <u>https://bit.ly/49007Na</u>
- February 9, 2024 Appia Appoints Constantine Karayannopoulos as New Member to Its Critical Minerals Advisory Committee <u>https://bit.ly/30CnNVL</u>
- February 9, 2024 American Rare Earths Limited: Appointment of Chairman – Richard Hudson <u>https://bit.ly/3HU47Ji</u>
- February 8, 2024 Auxico Announces Sampling Results From a Geological Report on the Minastyc Property <u>https://bit.ly/3UAtsj3</u>
- February 8, 2024 Fathom Announces Start of Drilling at Albert Lake Project <u>https://bit.ly/499VW7K</u>
- February 8, 2024 Appia Announces Outstanding Re-Assayed Diamond Drill Results Including 100 Metres Averaging 3,577
 PPM TREO at Its PCH Ionic Clay Project, Brazil

https://bit.ly/48dXQTs

- February 7, 2024 American Rare Earths Resource Estimate Increased by 64% <u>https://bit.ly/3SuhAfU</u>
- February 7, 2024 Imperial Mining Announces Shareholder Approval of Name Change to Scandium Canada Ltd. and Results of its 2024 Annual and Special Meeting <u>https://bit.ly/49nEltY</u>
- February 5, 2024 Ucore Welcomes Canadian Government Officials to its Kingston Ontario CDF for an NRCan Funding Announcement <u>https://bit.ly/495cTA3</u>
- February 5, 2024 Nano One Provides Shareholder Update with Key Objectives for 2024 <u>https://bit.ly/49mNgut</u>

The Critical Minerals Institute Report (01.25.2024): U.S. government bans Pentagon battery purchases from major Chinese companies starting October 2027

written by Matt Bohlsen | April 12, 2024 Welcome to the January 2024 <u>Critical Minerals Institute</u> (CMI) report, designed to keep you up to date on all the latest major news across the critical minerals markets. Here is the CMI List of <u>Critical Minerals</u> or visit the <u>CMI Library</u>.

Global macro view

January 2024 saw a slight rise in U.S. inflation <u>reported</u> from 3.1%pa in November to 3.4%pa in December 2023. This has led market commentators to suggest the proposed 2024 interest rate <u>reductions</u> may be pushed out to H2, 2024, or be smaller in nature.

The next U.S. Fed rates announcement is due on January 31, 2024, and no changes in rates are expected. Year to date, as of January 21, 2024, the <u>S&P 500</u> is up 2.04%. U.S. GDP looks set to slow in Q4, 2023 (<u>announcement</u> due 25 January 2024) with <u>forecasts</u> for 2% annualized growth, which would result in a <u>2023</u> <u>GDP</u> of ~2.7%. 2024 U.S. GDP is <u>forecast</u> to be ~2.2%. The U.S. consumer remains resilient with U.S. employment <u>very strong</u>.

China continues its property led slowdown with 2023 GDP recently reported at 5.2% annualized. China's December new home prices fell at the fastest pace in almost 9 years. Despite this the Chinese Central Bank left rates unchanged, defying expectations for a 0.1% cut.

The Russia-Ukraine war continues as does the Hamas-Israel war which last month spread to include the U.S. and UK forces <u>bombing</u> Iran-backed Houthis over their attacks in the Red Sea. The Middle East is a hotbed ready to explode.

Global plugin electric vehicle ("EV") update

December 2023 saw the usual seasonal upswing in global plugin electric car sales reaching a record ~ 1.5 million. China led the way with a stellar result of <u>1.191 million units</u>, up <u>46% YoY</u>.

Global plugin electric car sales ended 2023 at 13.6 million

<u>units</u> (~16% market share), for a growth rate of <u>31% YoY</u> (a significant slowdown from the ~60% growth rate in 2022).

- Trend Investing <u>forecast</u> for 2024 is 17 million units (20% market share), for a growth rate of 25% YoY.
- BloombergNEF <u>forecast</u> for 2024 is 16.7 million units (~20% market share), for a growth rate of 21% YoY.

We are still at the very early stage of the EV boom.



Trend Investing's global plugin electric car sales forecast to 2024 (green bars)

In early January, news was released that <u>a reco</u>rd 1.2 million EVs were sold in the U.S. in 2023, according to estimates from Kelley Blue Book. The report noted that U.S. market share <u>reached 7.6%</u> in 2023 and that 55% of EV sales were attributable to Tesla (NASDAQ: TSLA). The UK announced that their Zero Emission Vehicle (ZEV) <u>mandate</u> to increase electric car sales has become law. Key rules include:

- "ZEV Mandate demands makers up share of electric car sales to 22% in 2024.
- Electric vehicles currently make up around just 18% of all registrations in the UK.
- Mandate thresholds rise annually to an 80% share in 2030 and 100% by 2035.
- Failure to meet the ZEV mandate sales targets can result in huge fines for auto makers of £15,000 per model below the required threshold."

EV battery news

The U.S. government continues to tighten the screws towards developing their own EV supply chain independent of Foreign Entities Of Concern ("FEOC"). On January 20 Bloomberg <u>rep</u>orted: "US to ban Pentagon battery purchases from China's CATL, BYD". The ban will commence from October 2027 and include 4 other Chinese battery makers (Envision Energy Ltd., EVE Energy Co., Gotion High Tech Co., and Hithium Energy Storage Technology Co).

Global critical minerals update

There is an enormous amount of doom and gloom surrounding the EV and battery metals sector as we commence 2024. A key theme in recent months has been very depressed prices for many of the critical minerals, especially those related to the EV segment. A combination of the slowing EV growth rate in 2023 from ~60% in 2022 to ~31% in 2023, combined with an excess of battery inventory from 2022 and new EV metals supply has left most EV metal markets in surplus with prices collapsing.



MarketsCommodities

Battery Metal Price Plunge Is Closing Mines and Stalling Deals

Prices for lithium, nickel and cobalt have tumbled from peaks Source: <u>Bloomberg article</u>, January 10, 2024

Lithium

China lithium carbonate <u>spot prices were flat</u> the past month, with the price now at <u>CNY 95,500/t</u> (USD 13,275/t). After an ~80% fall from the high, lithium prices appear to have finally stabilized. This is logical given that prices are now at or below the marginal cost of production, especially for the higher cost China lepidolite producers.

Industry participants have been calling for a price bottom in recent months, with China Futures Co. analyst, Zhang Weixin, forecasting lithium prices to bottom out between CNY = 80-90,000/t and average CNY 100,000/t in 2024.

The other key recent trend in the lithium sector has been several announcements from lithium producers either stopping production or reducing their expansion plans. Core Lithium (ASX: CXO) announced on January 5, 2024 it will <u>temporarily suspend</u> mining operations. Then on January 17, 2024, Albemarle Corporation (NYSE: ALB) <u>anno</u>unced "actions to preserve growth, reduce costs, and optimize cash flow". This includes deferring plans to build a fourth lithium hydroxide processing train at their Kemerton LiOH facility.

The China lithium carbonate spot price has stabilized near the marginal cost of production



Source: <u>Trading Economics</u> On the topic of when we might see some recovery in lithium prices. On January 19 Fastmarkets put out a report <u>stating</u>: "…We expect orders to start flowing upstream again either towards the end of the first quarter or early in the second quarter." If this proves correct and EV demand remains solid, then we could expect some lithium price recovery late Q1, early Q2, 2024.

Fastmarkets reports China lithium inventory levels are now back to the pre-boom levels with ~3 months of supply (red line)



Implied inventory on the way back to normalized level

Source: Fastmarkets

Magnet Rare Earths

Neodymium spot prices fell again the past month to <u>CNY</u> 505,500/t. Prices peaked in February 2022 at CNY 1,506,530 and have been trending lower ever since then.

As discussed in a recent <u>InvestorNews article</u>, the consensus of industry experts is for 2024 to be a consolidation year. The article states: "2024 should see a year of consolidation for the rare earths sector as some experts are telling me. Some <u>forecasts</u> are for NdPr supply deficit to begin as early as 2024; however, this will largely depend on China demand, the global economy, EV sales, and new NdPr supply hitting the market."

One interesting <u>news item</u> that emerged in January was of Rainbow Rare Earths Limited (LSE: RBW) ("Rainbow") and their Phalaborwa Project in South Africa. The key aspect being that the Project <u>consists of gypsum</u> waste piles that contain large quantities of the magnet rare earths. Rainbow CEO Bennett <u>stated</u>: "We've got no mining cost, no crushing, no milling, no flotation. I saw the advantages to lead to a low capital intensity and low operating cost environment project." Rainbow targets first production for 2026.

Some analysts are forecasting deficits ahead for NdPr rare earths driven by strong EV and wind energy demand

A precarious supply-demand imbalance looms



Source: <u>MP Materials courtesy Adamas Intelligence</u>

Cobalt, Graphite, Nickel, Manganese and other critical minerals

Cobalt prices (currently at <u>US\$12.90/lb</u>) were flat the past month and remain at very depressed levels. The cobalt market is

suffering from excess cobalt supply from the DRC which combined with a global slowdown in demand has led to cobalt prices dropping by almost 2/3 since their April 2022 peak. With LFP batteries gaining in popularity (no cobalt required) and a weak global consumer electronics market, there appears to be no short term turnaround for cobalt. Leading cobalt producer Glencore PLC (LSE: GLEN | OTC: GLCNF) has been stockpiling their excess material. At current prices, there is limited incentive for western producers to expand or enter the market.

Cobalt has lost two-thirds of its value since a recent peak in 2022



Source: Trading Economics

Flake graphite prices remain very weak with prices near the marginal cost of production and $\frac{\text{down}}{2\%}$ over the past month.

A January 2024 Bloomberg <u>report</u> noted that natural flake graphite shipments slumped 91% in December from November 2023. Of course, sales surged prior to the Chinese export license permits being implemented in December 2023. December exports were 3,973 tons compared to the past monthly average of \sim 17,000t, so still a very significant fall.

Despite the spate of recent bad news, graphite is one of the EV metals with the largest demand profiles ahead this decade. Several groups are forecasting deficits ahead this decade starting from 2024/25 for the various types of graphite including flake, spherical, and synthetic. You can read more on the graphite outlook <u>here</u>.

Nickel prices fell again last month to <u>USD 15,799/t</u>. The <u>1 year</u> outlook for nickel remains poor due to oversupply concerns from Indonesia. As a result of low nickel prices we saw <u>the collapse</u> of Panoramic Resources (ASX: PAN) in December and then on January 22, 2024, it was <u>reported</u> that BHP Group (ASX: BHP | NYSE: BHP) plans "to put parts of Kambalda nickel concentrator in Australia on care and maintenance" from mid-2024. This was caused by Wyloo Metals, which supplies ore to the plant, announcing a pause in mining operations due to low nickel prices.

Manganese prices were flat the past month and are now at <u>CNY</u> 29.25/MTU.

Uranium prices have been the exception to the rule the past year as they continue to rise, now at <u>US\$106/lb</u>.

Uranium 5 year price chart



Source: Trading Economics

Conclusion

The biggest trend that looks to be emerging in Q1, 2024 for the EV metals sector is a negative supply response from producers. Producers are cutting CapEx, scaling back expansion, and in some cases reducing or stopping production. Expect to see a lot more of this in H1, 2024.

They say "the cure for low prices is low prices". Well that's exactly where we are now in the cycle. The next 3-6 months is likely to see the washout phase, where many miners collapse, reduce production or put their mine into care and maintenance. There is no point running a mine and selling a limited resource and making no profit. I will end with three well known sayings:

- "Bear markets are the author of bull markets"
- "Bull markets are born on pessimism, grown on skepticism, mature on optimism, and die on euphoria."

"You have suffered through the pain, now hang around for the gain."

Given the EV metals markets have been in a bear market for the past 15-18 months the end is near, and we should expect some recovery during H2, 2024, assuming EV sales can grow at a reasonable rate.

Will the magnet rare earths prices rise in 2024?

written by Matt Bohlsen | April 12, 2024

Today we take a look at the magnetic rare earths sector and two leading rare earth companies and what we can expect in 2024 and beyond.

The magnet rare earths prices have fallen in 2022 and 2023

The magnet rare earths sector was hit hard in 2023 with China's Neodymium (Nd), Praseodymium (Pr), and Dysprosium (Dy) prices falling as the global economy and EV demand slowed.

Neodymium prices came crashing down in 2022 and 2023 as demand slowed after the 2021 growth rate boom in EV sales – Now at CNY 530,000/t



Global plugin electric car sales <u>grew by 108%</u> in 2021 causing a huge spike in EV metal prices. Then in 2022, the growth rate slowed to 56% at a time when supply of most EV metals surged. Finally in 2023, the growth rate slowed further to an estimated 28%, resulting in further price decline for the magnet metals such as neodymium.

Demand for the magnet rare earths in electric motors is driven by multiple sources with electric vehicle sales being a key driver. (90% of EV motors use rare earth magnets)



threat to industries that drive prosperity and security.



Source: MP Materials company presentation

Will the magnet rare earths prices rise in 2024?

The answer to this question will largely depend on recovery in China and the global economy driving increased demand for EVs, wind turbines, and other magnets used in various industrial applications. Given the most recent trend globally has been towards future interest rate decreases (notably in the USA and China), it bodes well for a recovering consumer and hence demand. This may take a good part of 2024 to flow through with excess inventories across many sectors still needing to be worked off. If we get a strong pickup in EV demand (>40% YoY increase) in 2024, then the magnet rare earths sector woes could soon disappear.

China's December 2023 EV sales give some hope as they jumped to a record <u>945,000 units</u>, achieving a superb 47% YoY growth rate.

Lynas Rare Earths Ltd. (ASX: LYC) ("Lynas") update

The big recent Lynas news (announced December 7, 2023) is that the first feed of material from the Mt Weld Mine has been introduced into the new Kalgoorlie Rare Earths Processing Facility in Western Australia, leading to first production and ramp-up of the Facility. A great achievement for Lynas, especially given that the Kalgoorlie Rare Earths Processing Facility is Australia's first value-added rare earths processing facility. Lynas <u>stated</u>:

The Lynas Malaysia plant is currently shutdown as works to increase downstream processing capacity are completed. Production will recommence in January 2024. Mixed Rare Earth Carbonate (MREC) from the Kalgoorlie Rare Earth Processing Facility will be progressively introduced to the Lynas Malaysia plant commencing late in the March quarter and increasing as the controlled ramp up of the Kalgoorlie facility is progressed...."

Once their expansions are completed, Lynas intend to increase their production capacity to <u>10,500tpa NdPr</u> (Neodymium-Praseodymium). Lynas produced <u>6,142t of NdPr</u> in FY 2023.

2024 will see the Mt Weld Mine expansion and further work on Lynas' US Rare Earths Processing Facility Project targeted to be operational by <u>July 2025 – June 2026</u>.

Lynas is expanding its rare earths mining and processing capabilities through to 2025/26

Growing scale and increasing capacity to meet forecast demand growth





Source: Lynas company presentation

MP Materials Corp. (NYSE: MP) ("MP Materials") update

MP Materials owns and operates the Mountain Pass Rare Earth Mine and Processing Facility in California, USA. In the past MP Materials had to ship their concentrate to China for processing; however, they have a target to bring this back to the USA.

Their target is to grow their mine output by 50% over the next four years and to build separation capacity in the USA with annual production of 6,000 tpa NdPr oxide. The third stage of their plan is to build a greenfield production facility in Texas targeting ~1,000tpa of finished NdFeB (Neodymium Iron Boron) magnets. They already have General Motors (NYSE: GM) as a foundational customer.

MP Materials is working towards Stage II and Stage III of their plan to bring rare earths processing and magnets production to

the USA



- Largest ex-China producer
- ~15% global market share in 2022
 "Upstream 60K" strategy to grow output 50%
- over the next four years
- Stage II: RE Separations • Separation, refining and finishing capabilities to convert RE concentrate into separated REOs • >6k mt NdPr oxide annual production target • Lanthanum, Cerium and SEG+ production
- ~1k mtpa of finished NdFeB magnets • General Motors as foundational customer • To deliver intermediate product ahead of magnet completion

Greenfield production facility in Texas targeting

• Buy, build and/or JV

Source: MP Materials company presentation

Closing remarks

2024 should see a year of consolidation for the rare earths sector as some experts are telling me. Some <u>forecasts</u> are for NdPr supply deficit to begin as early as 2024; however, this will largely depend on China demand, the global economy, EV sales, and new NdPr supply hitting the market.

The two Western magnet rare earths leaders Lynas and MP Materials (and some other key players) are progressing their plans to further build a western supply chain and should be largely complete within the next 2-4 years if it goes to plan. This all supports the building of an end-to-end Western rare earths and magnets sector this decade. Stay tuned.

Technology Metals Report (01.05.24): The Intensifying Competition of BYD Surprises Tesla

written by Tracy Weslosky | April 12, 2024

Welcome to the latest **Technology Metals Report (TMR)** where we highlight the Top 10 news stories that members of the <u>Critical</u> <u>Minerals Institute</u> (CMI) have forwarded to us over the last 2-weeks.

Key highlights in this Technology Metals Report includes Tesla's impressive Q4 delivery record, overshadowed by BYD's surge as the top EV maker, underscoring the intensifying competition in the electric vehicle market. Energy Fuels Inc. has made significant strides, first by entering into an MOU with Astron Corporation to bolster the U.S. rare earths supply, and then by expanding its uranium production in response to favorable market conditions. Nio Inc. has made a technological leap with its innovative EV battery, boasting a 1,000km range, while global trends in the critical minerals and EV market show shifts influenced by economic and political developments. Notably, Codelco and SQM's new lithium venture in Chile represents a strategic move in the lithium market. The impact of China's rare earths export ban stands as a significant moment, compelling the U.S. to foster technological self-reliance. The landmark merger between Allkem and Livent to form Arcadium Lithium marks a major consolidation in the lithium industry. Atomionics' innovative use of AI and gravity in mining exploration showcases a technological breakthrough. The EU's ambitious goals for critical minerals, despite challenges, indicate a strong

commitment to securing essential resources for its green transition. Lastly, KoBold Metals' ambitious global lithium exploration, backed by industry giants, highlights the growing importance of lithium in the clean energy sector.

The 10-stories selected for this edition of the TMR with source links to source stories for this fast-paced sector are listed chronologically for your ease and review.

Tesla delivers record Q4 cars, but China's BYD steals top EV spot (January 3, 2024, <u>Source</u>) - In the fiercely competitive electric vehicle (EV) market, Tesla Inc. (NASDAQ: TSLA) achieved a significant milestone by delivering a record 484,507 vehicles in the fourth quarter of 2023, surpassing market expectations and fulfilling its annual target. Despite this success, Tesla was eclipsed by China's BYD in terms of sales volume, losing its position as the leading EV manufacturer. BYD, backed by Warren Buffett, delivered 526,409 vehicles, primarily in China, indicating a consumer preference for more affordable models in an economy burdened by high interest rates. Although Tesla's aggressive sales strategies led to a notable 11% growth over the previous guarter and a total production of 1.85 million units in 2023, it fell short of CEO Elon Musk's ambitious target of 2 million. The company's stock remained stable amidst a generally declining market. Meanwhile, BYD's strategy of price cuts appears to be paying off, gaining market share despite potential impacts on profit margins. Tesla, in a bid to boost sales, offered discounts and incentives, such as six months of free fast charging for deliveries made by the end of December. This strategy was partly in response to some models of its Model 3 sedan losing U.S. federal tax credits in 2024. Tesla's delivery performance stands out in comparison to domestic U.S. car companies, but it is also facing challenges like regulatory scrutiny over its self-driving technology and the need to adapt to changing tax credit policies.

Energy Fuels' Strategic MOU with Astron: Shaping the Future of the U.S. Rare Earths Supply Chain (December 30, 2023, Source) -Energy Fuels Inc. (NYSE American: UUUU | TSX: EFR) has recently entered into a significant Memorandum of Understanding (MOU) with Astron Corporation Ltd. to jointly develop the Donald Rare Earth and Mineral Sands Project in Victoria, Australia. This collaboration, announced on December 27, 2023, marks a crucial step in establishing a U.S.-focused rare earths supply chain, vital for meeting future national needs. The project will provide Energy Fuels with 7,000 to 14,000 metric tons of rare earth concentrate annually from the Donald deposit, processed at their White Mesa Mill in Utah. This arrangement not only utilizes the mill's capacity to manage radioactive elements but also supports the production of critical minerals like uranium. The project is set to initially produce 800 - 1,000 metric tons of Neodymium-Praseodymium (NdPr) oxide by Q1 2024, with prospects for expansion. This development is strategically important in light of the U.S. government's impending policy to restrict critical minerals sourced from Foreign Entities of Concern, effective from 2025. By fostering a sustainable, competitive, and independent supply chain, Energy Fuels' initiative is poised to significantly impact the electric vehicle and clean energy sectors in the U.S., reducing dependency on foreign sources, especially China, and bolstering national security and technological advancement.

A Chinese EV company developed a battery with a 1,000km range – and its CEO tested it out on a 14-hour livestream (December 29, 2023, Source) – Chinese electric vehicle (EV) company Nio Inc., often compared to Tesla, recently showcased a groundbreaking development in EV technology by introducing a battery with an impressive 1,000km range. The company's CEO, William Li, widely regarded as China's answer to Elon Musk, embarked on a 14-hour live-streamed journey covering 1,044km from Shanghai to Xiamen to demonstrate the battery's capabilities. Despite challenging weather conditions, Li's Nio ET7, powered by the company's new 150 kWh battery with the highest energy density for a massproduced EV battery, completed the trip with 3% charge remaining. Scheduled for mass production in April 2024, these batteries, though costly at around \$42,100, represent a significant advancement in EV technology. Nio's unique business model allows customers to buy cars without a battery, offering a subscription for battery swaps at over 2,000 stations across China. Despite financial challenges and each car resulting in a \$12,000 loss for Nio, this strategy has elevated Li's stature, drawing parallels with Tesla's Elon Musk. Li further showcased Nio's technological prowess at the annual "Nio Day," revealing the new ET9 flagship to thousands of Nio enthusiasts.

The Critical Minerals Institute Report (12.27.2023): Politics Driving Marketable Commodities into 2024 (December 27, 2023, **Source**) - The December 2023 Critical Minerals Institute report highlights key global economic and political developments influencing the critical minerals and electric vehicle (EV) markets. U.S. inflation decreases and potential interest rate cuts in 2024 have positively impacted equity markets, while China's anticipated economic recovery bodes well for commodity sectors. The EV market is experiencing significant growth, particularly in China, despite challenges from U.S. and EU policies aiming to reduce dependency on foreign entities. The U.S. Department of Energy's proposed FEOC guidelines and the EU's Critical Raw Materials Act reflect a strategic shift towards stabilizing and localizing critical minerals supply chains. The report also notes significant fluctuations in the lithium market, with expectations of a bottom forming soon, and discusses the broader market dynamics of other critical minerals like cobalt, graphite, nickel, and manganese, in the context of a global economic slowdown. The performance of uranium in 2023 and the potential impact of lower interest rates in 2024 on the global economy and critical minerals demand are key areas of focus.

Chile's Codelco to control new lithium venture with miner SQM (December 27, 2023, <u>Source</u>) - Chile's state-owned copper miner, Codelco, has entered into a significant partnership with mining company Sociedad Química y Minera de Chile S.A. ("SQM") (NYSE: SQM), gaining majority control in a new lithium venture. This move aligns with President Gabriel Boric's directive for greater government involvement in lithium production. Chile, holding the title of the world's second-largest lithium producer, aims to revitalize its market share, which is at risk of declining due to aging mining projects and increasing global competition. The deal, marking a pivotal step in Boric's national lithium strategy, mandates public-private partnerships for all lithium projects. Set to start in January 2025, Codelco will take over SQM's existing contracts and collaborate on increasing lithium production in the Atacama Desert. This partnership is not only a strategic move to stabilize SQM's market position but also sets a precedent for future lithium contracts in Chile, potentially reshaping the country's role in the global lithium market.

Global Rare Earths Market Heats Up as China Implements Export Ban (December 21, 2023, Source) – The recent ban by China on the export of rare earth processing technology represents a pivotal moment in the global rare earths market, particularly impacting the strategic metals sector. This ban, covering technology for extracting, separating, and producing rare earth metals and alloys, along with some magnet production technologies, has significant implications for industries like electronics, clean energy, and defense. Experts from the <u>Critical Minerals</u> Institute, including Melissa Sanderson and Peyton Jackson, highlight the necessity for the United States to proactively respond by investing in both green technologies, such as bioextraction, and traditional processing methods. They emphasize the risks of over-dependence on other nations and the importance of developing technological self-reliance. The U.S. government's funding of Lynas Rare Earths Ltd. (ASX: LYC) and Energy Fuels Inc.'s (NYSE American: UUUU | TSX: EFR) advanced solvent extraction system exemplifies a shift towards addressing these challenges through domestic initiatives. This strategic move is not only a reaction to China's export ban but also a step towards ensuring a more sustainable and secure future in the critical minerals sector.

Allkem shareholders approve \$10.6 billion Livent lithium merger (December 19, 2023, Source) - Australian lithium producer Allkem Limited (ASX: AKE | TSX: AKE) and U.S. company Livent Corporation (NYSE: LTHM) have agreed on a significant <u>\$10.6</u> billion merger, marking a major move in the lithium industry. This decision, approved by 72% of Allkem's voting shareholders, will result in the formation of Arcadian Lithium PLC (NYSE: ALTM | ASX: LTM), a formidable entity in the global lithium market. The merger, which has received all necessary regulatory approvals, positions Arcadium Lithium as one of the world's largest lithium companies, with operations spanning Australia, Argentina, and Canada. The new company will be integral in supplying lithium, a critical component for electric vehicle batteries, to various battery manufacturers. Under the terms of the deal, Allkem shareholders will exchange their shares on a one-for-one basis for shares in Arcadium Lithium, owning 56% of the new company, while Livent shareholders will receive 2.406 shares in Arcadium for each of their shares. Livent CEO Paul Graves is set to lead the new company, which will be the world's third-largest lithium producer. The merger comes amidst a surge in dealmaking activity in the lithium sector and is recommended by independent financial advisors and proxy firms. Additionally, Livent plans to expand its operations in Western Australia's

prominent lithium districts.

Singapore's Atomionics taps gravity, AI in hunt for critical minerals (December 19, 2023, Source) - Singapore-based startup Atomionics is transforming the mineral exploration industry with its innovative technology, Gravio, which combines gravity detection and artificial intelligence. This "virtual drill" technique offers a more precise and efficient method for locating ore bodies of critical minerals like copper, nickel, and zinc. Atomionics has already engaged with three major mining companies and is implementing its technology in Australia and the U.S. The technology's real-time data processing significantly accelerates the task of defining ore bodies, offering a cost-effective alternative to traditional exploration methods. The ability to build an accurate virtual picture of mineral deposits before physical drilling can greatly reduce costs, as exploratory drilling is expensive and often misses the target. Atomionics aims to decrease these unsuccessful attempts by at least half. This innovative approach holds the potential to be a game-changer in the mineral exploration sector, presenting a low-cost alternative to traditional methods and contributing to the energy transition.

EU sets critical mineral goals, but faces struggle to hit them (December 18, 2023, <u>Source</u>) – The European Union (EU) has ambitious targets for securing critical minerals essential for its green transition, as outlined in the Critical Raw Materials Act (CRMA), which aims to mine, recycle, and process significant portions of its annual needs for key materials like lithium and cobalt by 2030. These efforts are crucial for manufacturing clean technology products and reducing dependence on China, the dominant player in global mineral processing. However, the EU faces considerable challenges, including funding shortages, high energy costs, local opposition, and the need to expedite project permits. Additionally, the EU's efforts are comparatively underfunded compared to massive investments in green subsidies by countries like the U.S. The situation is further complicated by higher EU energy costs leading to reduced metal production and delays in mining projects in Portugal and Serbia. Despite these hurdles, there are positive signs, such as potential projects meeting EU supply needs and innovations to minimize material use. The EU also seeks to diversify imports and forge global partnerships, aiming to position itself as a clean tech leader by focusing on high-value manufacturing and relying on reliable allies for mineral sourcing.

Billionaire-backed KoBold Metals widens lithium hunt across four continents (December 14, 2023, Source) - KoBold Metals, a California-based startup financially backed by prominent billionaires including Bill Gates and Jeff Bezos, is broadening its search for lithium, a crucial component in the clean energy and electric vehicle sectors, across four continents. Utilizing advanced artificial intelligence technology, CEO Kurt House announced plans to explore for lithium in regions such as South Korea, Quebec, the United States, Australia, and Africa, with specific emphasis on Namibia and the Democratic Republic of Congo. Previously focused on nickel and copper, with successful ventures in Quebec and Zambia, KoBold is now transitioning to include lithium in its mining portfolio. This strategic move aligns with their long-term goal to become the leading supplier of critical metals within 10 to 15 years. The startup, supported by Breakthrough Energy Ventures, collaborates with major players like BHP Group and Rio Tinto on projects in Australia and Canada. This expansion reflects KoBold's ambition to fill the exploration void left by larger mining firms, which have recently prioritized operational efficiency and shareholder returns over new mineral discoveries.

InvestorNews Critical Minerals Media Coverage:

- January 3, 2024 Rare earths company stock price has had a 'meteoric' rise of over 21x the past 15 months <u>https://bit.ly/3vo6Xn3</u>
- December 29, 2023 Energy Fuels announces an MOU for a \$122M investment in Astron that will supply a "new U.S.based supply chain for decades" <u>https://bit.ly/3tzBfm9</u>
- December 29, 2023 Hallgarten Initiates Coverage of Edison Lithium: Pivoting to Sodium-Ion Battery Technology <u>https://bit.ly/3tG08wq</u>
- December 27, 2023 The Critical Minerals Institute Report (12.27.2023): Politics Driving Marketable Commodities into 2024 <u>https://bit.ly/48sqnVU</u>
- December 21, 2023 Global Rare Earths Market Heats Up as China Implements Export Ban <u>https://bit.ly/3TAClsv</u>
- December 21, 2023 Setback for U.S. Rare Earth Industry: China Tightens Export Laws on Key Technologies, Impeding American Efforts to Gain Independence Despite Financial Incentives <u>https://bit.ly/4aGvQdQ</u>
- December 20, 2023 An update on the graphite sector and what to expect in 2024 and beyond <u>https://bit.ly/3v8xLHG</u>
- December 19, 2023 Australia updates their Critical Minerals List and Adds a second, introducing the Australian Strategic Materials List <u>https://bit.ly/3R0x7aG</u>

InvestorNews Critical Minerals Videos:

- December 30, 2023 Jack Lifton with Mark Chalmers on Energy Fuels Rare Earth Deal and Increasing US Uranium Production <u>https://bit.ly/3TM5wsK</u>
- December 30, 2023 Mark Chalmers of Energy Fuels Discusses Increasing Uranium Production in the United States <u>https://bit.ly/3TDPH7k</u>
- December 30, 2023 Energy Fuels' Strategic MOU with Astron: Shaping the Future of the U.S. Rare Earths Supply

Chain https://bit.ly/41PPujp

 December 18, 2023 – Ucore's Strategic Leap: Pat Ryan Discusses the First Mover Advantage in Rare Earths Processing at Louisiana's Strategic Metals Complex <u>https://bit.ly/3GKa2jL</u>

Critical Minerals IN8.Pro Member News Releases:

- January 4, 2024 Ucore Acquires Alexandria, Louisiana, Facility for Rare Earth Element Processing Plant <u>https://bit.ly/3RJCQ0s</u>
- January 2, 2024 Panther Metals PLC Corporate Summary: Positioned to Succeed <u>https://bit.ly/3tDKSQI</u>
- January 2, 2024 First Phosphate Closes Second Tranche of Oversubscribed Private Placement for Total Current Financing of \$7.5 Million <u>https://bit.ly/48jDCbP</u>
- December 29, 2023 Panther Metals PLC: Obonga Project Awkward East Claim Purchase Agreement <u>https://bit.ly/3NKBeTr</u>
- December 28, 2023 Appia Rare Earths & Uranium A Year in Review <u>https://bit.ly/48xo3gh</u>
- December 28, 2023 Kraken Energy Receives Permit to Resume Phase I Drill Program at Harts Point and Provides Corporate Update <u>https://bit.ly/48pALxM</u>
- December 27, 2023 Energy Fuels Enters into MOU to Secure Near-Term, Large-Scale Australian Source of Rare Earth Minerals to Supply New U.S.-Based Supply Chain for Decades <u>https://bit.ly/471DF5v</u>
- December 27, 2023 Ucore Comments on China's Ban on the Export of Rare Earth Technology <u>https://bit.ly/3RYiimD</u>
- December 27, 2023 Appia Announces Closing of Non-Brokered Flow-Through Private Placement <u>https://bit.ly/41EDIbJ</u>
- December 27, 2023 Defense Metals Completes Geotechnical

Field Data Collection for Wicheeda Rare Earth Element Project Preliminary Feasibility Study <u>https://bit.ly/3RGLehB</u>

- December 27, 2023 F3 to Spend \$16 Million on Drilling at PLN <u>https://bit.ly/4aCQwDc</u>
- December 22, 2023 First Phosphate Announces Closing of Initial Tranche of Private Placement Financing Along with Date of Second Tranche Closing <u>https://bit.ly/48LgHWR</u>
- December 22, 2023 Ucore Announces Extension of Debt https://bit.ly/3S7KAev
- December 22, 2023 Fathom Nickel Announces the Closing of the First Tranche of Private Placement <u>https://bit.ly/3S6aCyF</u>
- December 21, 2023 Imperial Mining Closes \$1M Critical Minerals Flow-Through Private Placement <u>https://bit.ly/4aEEsSh</u>
- December 21, 2023 Western Uranium & Vanadium Provides Market and Company Updates <u>https://bit.ly/3tyzFAP</u>
- December 21, 2023 Ucore Completes RapidSX(TM) Demo Plant Commissioning – Begins US Department of Defense Demonstration Program <u>https://bit.ly/3tjI4Iz</u>
- December 21, 2023 In Response to Surging Prices, Supportive Government Policies, and a Domestic Focus on Security of Supply, Energy Fuels Has Commenced Production at Three of its U.S. Uranium Mines <u>https://bit.ly/3Ru3Lxv</u>
- December 20, 2023 Panther Metals PLC: Financing Update <u>https://bit.ly/410C3jB</u>
- December 20, 2023 Critical Metals PLC advances the Molulu Copper-Cobalt Project in DRC <u>https://bit.ly/3ts5TxH</u>
- December 19, 2023 Auxico Announces Board Decisions on Key Assets and Filing of Technical Reports <u>https://bit.ly/3TyNxFY</u>
- December 19, 2023 Automotive OEM Validates Nano One LFP and Kicks Off Tonne-Scale Evaluations

https://bit.ly/48g4KZ6