

Technology Metals Report (03.28.2024): China Challenges US EV Plans and the DoE Invests \$6B to Decarbonize Economy

written by Tracy Weslosky | March 28, 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 Chile's attempts to spur lithium sector investments amidst regulatory and environmental concerns, France's Orano exploring the possibility of a uranium enrichment plant in the U.S., and China's challenge to U.S. electric vehicle subsidy policies at the WTO. Additionally, we delve into the EU's potential adjustments to its 2035 EV mandate, President Biden's electric vehicle policies influencing American election outcomes, and Kazakhstan's push to increase uranium exports to the U.S.

This week's TMR Report also highlights U.S. Critical Materials' efforts to publicize its Bitterroot gallium deposits, significant for semiconductors and defense technologies; the Department of Energy's largest-ever investment to decarbonize industry; Brazilian Rare Earths Limited's new rare earth discovery in the Pele Project; challenges in America's lithium laws slowing down the pace of domestic production; and collaborative efforts between Australia's Pilbara Minerals and

China's Ganfeng to study a new lithium chemical plant. Additionally, we explore CATL's discussions with Tesla and other automakers for U.S. licensing of its battery technology, aiming to navigate the tightening U.S. regulations on the battery sector. Through these stories, the TMR provides a comprehensive overview of the latest developments affecting the critical minerals sector, highlighting the challenges and opportunities ahead. To become a CMI member and stay informed on these and other topics, [click here](#)

Chile needs to finalize more lithium plan details to spur investment, miners say: (March 27, 2024, [Source](#)) – Chile's attempt to draw private investment into its lithium sector is met with apprehension due to unresolved details and potential regulatory hurdles. The government plans to open 26 salt flats for private mining, excluding some reserved for state control, as part of President Gabriel Boric's strategy to double lithium production by decade's end. However, concerns over how contracts will be allocated, opposition from Indigenous communities, and environmental considerations could deter investors. Industry voices also caution against possible legal conflicts over mining rights and the negative impact of heavy state involvement on Chile's investment appeal. With lithium prices and electric vehicle sales currently in a slump, the attractiveness of new projects is further challenged, making neighboring countries more appealing for lithium investment.

Chile opens lithium salt flats for investment, saves two for state control: (March 27, 2024, [Source](#)) – Chile has inaugurated a significant move to open more than two dozen lithium salt flats to private investment, while strategically keeping the prolific Atacama and Maricunga deposits under state majority control. This decision is part of President Gabriel Boric's vision to increase state involvement in the nation's lithium sector, which is the second-largest globally. The initiative

could potentially double Chile's lithium output within ten years, crucial for electric vehicle batteries, according to Finance Minister Mario Marcel. The tender process for 26 salt flats will start in April, aiming for completion in July. State-run enterprises are initiating projects in five other flats, seeking partners. Currently, only Sociedad Química y Minera de Chile S.A. ("SQM") (NYSE: SQM) and U.S.-based Albemarle Corporation (NYSE: ALB) operate in Chile, specifically in the lithium-rich Atacama salt flat. The government, signaling further interest in lithium ventures beyond Atacama and Maricunga, is also contemplating the establishment of a national lithium company and emphasizes environmental protection and indigenous community involvement in new projects.

China to challenge Biden's electric vehicle plans at the WTO: (March 27, 2024, [Source](#)) – China has filed a complaint with the World Trade Organization (WTO) against the United States, alleging that U.S. electric vehicle (EV) subsidy policies unfairly discriminate against Chinese products. This action comes in response to the U.S. Inflation Reduction Act, which, from January 1, disqualifies EVs from receiving tax credits if their critical minerals or battery components are sourced from Chinese, Russian, North Korean, or Iranian companies. China argues that these policies distort fair competition and disrupt the global EV supply chain by excluding Chinese products. The outcome of this dispute is uncertain, particularly if the U.S. appeals a ruling against it, due to the current dysfunction of the WTO's Appellate Body. This complaint underscores the growing tensions in the global EV market, where China is a dominant player in battery technology and aims to expand its auto industry globally.

France's Orano studying plan to build U.S. uranium enrichment plant: (March 27, 2024, [Source](#)) – French nuclear fuel company Orano, previously known as Areva, is exploring the possibility

of constructing a uranium enrichment plant in the United States, as part of efforts to decrease U.S. dependency on Russian uranium imports. The plan, which had been shelved following the Fukushima disaster due to a surplus in enrichment capacity, is being revisited amidst growing demand and geopolitical tensions. Orano, which is state-owned, aims to support the U.S., the world's largest nuclear power producer, in bolstering its domestic fuel production capabilities. This initiative aligns with recent U.S. legislative moves, including President Biden's approval of significant funding for domestic uranium production. Orano also plans to expand its existing uranium enrichment capacity in France to meet U.S. demand and reduce reliance on Russian supplies.

EU May Water Down Harsh 2035 EV Mandate And Reprieve Hybrids: (March 27, 2024, [Source](#)) – The European Union and Britain's ambitious plans to phase out combustion engine vehicles by 2035 in favor of electric vehicles (EVs) are facing scrutiny and potential adjustments. Experts suggest that hybrids may be given more leeway to ensure a smoother transition. The automotive industry is at risk of being dominated by more cost-effective Chinese EVs, prompting concerns over the financial viability of European carmakers in the shift to electric. Stricter CO2 emissions targets are also causing unease among manufacturers. Reports indicate that EV sales growth is slowing, and the current market offerings are deemed too expensive for widespread adoption, with technology and infrastructure not fully meeting consumer needs yet. There's lobbying for regulatory review and more flexible approaches, including a broader acceptance of hybrid models and other technologies to reduce emissions. The upcoming review by the EU, along with potential geopolitical shifts and industry collaborations, could influence the pace and nature of Europe's transition to electric mobility.

Electric cars will decide the outcome of the American election: (March 26, 2024, [Source](#)) – President Biden's aggressive promotion of electric vehicles (EVs) may jeopardize his political standing, particularly in critical Midwestern swing states. His administration's focus on EVs, marked by substantial price differences and practicality issues compared to traditional vehicles, risks alienating a significant voter base. This strategy, characterized by stringent mileage requirements and incentives for EV adoption, could undermine the traditional auto industry, a cornerstone of states like Michigan and Wisconsin. Furthermore, the policy may inadvertently bolster China's position in the global EV market, while threatening job losses across America's automotive sector, including sales, maintenance, and after-market services.

World's Top Uranium Miner Seeks to Boost Exports to US: (March 26, 2024, [Source](#)) – Kazakhstan, the leading uranium producer globally, is intensifying efforts to increase its uranium exports to the United States. This initiative follows discussions on energy cooperation with U.S. Senator Steve Daines. Kazakhstan already holds contracts for uranium product supply until 2032 with key U.S. energy companies. The push for expanded uranium exports comes at a time when the demand for this critical metal is rising, driven by a global shift towards nuclear power to combat climate change. Furthermore, the U.S. is contemplating a ban on imports of enriched Russian uranium, used in both nuclear reactors and weapons, highlighting the strategic importance of identifying alternative uranium sources.

Mining company touts Bitterroot gallium deposits: (March 26, 2024, [Source](#)) – U.S. Critical Materials is stepping up its public outreach concerning its mining claims in the Bitterroot's headwaters, with a focus on valuable gallium deposits over 6,700 acres, essential for semiconductors, 5G, smartphones, satellite systems, and defense technologies. The U.S. government,

recognizing the strategic importance of gallium—especially amidst a Chinese export embargo—is heavily involved in funding and driving the production of REE and other critical minerals, with significant contributions from federal agencies. Preliminary exploration at Sheep Creek has seen support from the DOD and collaboration with academic and geological institutions, utilizing advanced survey techniques. Amidst concerns over national security due to dependency on imported gallium, U.S. Critical Materials boasts high-grade gallium deposits and is exploring environmentally sustainable separation processes. The company's partnership with Idaho National Laboratories aims to develop new processing methods to establish a domestic supply chain, a crucial step given the current lack of processing facilities in North America and the environmental and commercial challenges of existing separation technologies.

Department of Energy announces largest-ever investment to decarbonize industry: (March 25, 2024, [Source](#)) – The Department of Energy has announced a substantial \$6 billion funding for 33 projects across the U.S. to reduce emissions in energy-intensive industries. This effort, part of the largest-ever investment to decarbonize industry, leverages the Bipartisan Infrastructure Law and Inflation Reduction Act, aiming for a combined investment of \$20 billion including company contributions. Targeting major sectors like steel, aluminum, cement, and food production, the initiative is expected to cut down 14 million metric tons of CO₂ annually, equivalent to removing 3 million gas-powered cars from the roads. Highlighted projects include Constellium's zero-carbon aluminum plant in West Virginia, with potential federal funding up to \$75 million, and Kraft Heinz's \$170.9 million investment to electrify and decarbonize food production at 10 facilities. Additionally, nearly 80% of the projects are located in disadvantaged communities, emphasizing the investment's broader social and environmental benefits.

Brazilian Rare Earths Limited (ASX:BRE) Announces New Rare Earth Discovery – the Pele Project: (March 25, 2024, [Source](#)) – Brazilian Rare Earths Limited (ASX:BRE) has unveiled the Pele Project, a significant new rare earth discovery in Bahia, Brazil, positioned 60km southwest of their Monte Alto Project. This district-scale endeavor is set to explore ultra-high grade REE-Nb-Sc mineralization across a target area vastly exceeding that of Monte Alto. Key findings include extensive geophysical anomalies, the largest known hard rock monazite outcrop extending over 30m, and promising high-grade monazite sand intercepts. Initial results suggest a substantial rare earth mineralization potential, mirroring the successful exploration techniques employed at Monte Alto. With comprehensive surveys and an imminent diamond drilling program, CEO Bernardo da Veiga anticipates accelerating exploration to uncover this area's full potential, marking another stride in expanding their rare earth province footprint.

America's lithium laws fail to keep pace with rapid development: (March 25, 2024, [Source](#)) – Efforts to make the United States a leading global lithium producer are hindered by a tangled set of state regulations, creating a significant barrier against reducing dependence on foreign lithium supplies, particularly from China. Confusion over ownership, valuation, and processing of lithium resources across states like Texas and Louisiana, combined with fluctuating commodity prices and technical challenges, are major obstacles. This situation complicates the Biden administration's ambitions for electrification and increasing domestic lithium production. Despite the urgent need for regulatory clarity to attract investment and advance projects, states vary widely in their approaches to lithium extraction and regulation. The uncertainty around regulatory frameworks is delaying the development of lithium projects, thus affecting the U.S.'s ability to meet its

lithium production and electrification goals.

Pilbara Minerals and China's Ganfeng agree to study for lithium chemical plant: (March 24, 2024, [Source](#)) – Australia's Pilbara Minerals and China's Ganfeng Lithium have agreed to study the feasibility of building a lithium chemical plant capable of producing 32,000 metric tons of lithium carbonate or hydroxide annually, at an undecided location. The study, set to complete by March 2025, explores potential sites, including Australia, aiming for greater supply chain diversification. Pilbara Minerals, which has partnerships in other lithium projects, seeks to reduce transportation volumes and carbon footprint through midstream lithium chemicals production. Preliminary discussions have shown strong international interest in the venture, with incentives such as economic benefits and support for permitting. The venture would be a 50:50 partnership, with Ganfeng considering a stake sale based on U.S. Inflation Reduction Act benefits. Pilbara is increasing spodumene production to 1 million tons annually and may expand further, committing 300,000 tons annually to this project if it proceeds.

CATL in talks with Tesla, global automakers for US licensing, WSJ reports: (March 25, 2024, [Source](#)) – Contemporary Amperex Technology Co. Ltd. (CATL), a leading Chinese electric-vehicle battery maker, is currently in discussions with Tesla Inc. (NASDAQ: TSLA) and other automakers to license its battery technology in the U.S. This approach comes as an alternative to establishing its own manufacturing facility in the country. These negotiations, still in the early stages, revolve around the extent of the collaboration and the specifics of the technology Tesla would license, influenced by the EV giant's financial health. CATL's existing partnership with Ford, which recently adjusted its investment strategy for a Michigan battery plant to use CATL's licensed technology amid legislative pushback, serves as a blueprint for potential agreements with

other U.S. car manufacturers. This development is amidst a global downturn in EV demand and tighter U.S. regulations on the battery sector to curb Chinese influence, with CATL also focusing on innovations like faster charging batteries for Tesla.

CATL Working With Tesla on Fast-Charging Cells, Supplying Nevada: (March 25, 2024, [Source](#)) – CATL is enhancing fast-charging batteries for Tesla, targeting an electric car under \$25,000. Emphasizing cost-efficiency and longevity, CATL's collaboration extends to supplying Tesla's Nevada factory and innovating in battery technology. Despite global EV market challenges, CATL sustains growth through a diversified clientele including BMW and Mercedes-Benz, and is adapting to U.S. market restrictions by licensing its technology, notably to Ford. With geopolitical tensions affecting trade, CATL values client trust and plans to expand production in Europe and Southeast Asia. The company's strong financial standing allows it to delay further funding rounds, focusing instead on technological advancement and strategic partnerships to navigate the evolving electric vehicle landscape.

Investor.News Critical Minerals Videos:

- March 25, 2024 – Western Uranium & Vanadium's George Glasier on Gearing up for SMC to Commence Production in Colorado <https://bit.ly/3ITmUVA>

Critical Minerals IN8.Pro Member News

Releases:

- March 28, 2024 – American Clean Resources Group Establishes Environmental Sustainability Board <https://bit.ly/43JkN0o>
- March 28, 2024 – Scandium Canada Forms a Strategic Advisory Committee and Confirms its Initial 3 Members <https://bit.ly/3ISuHTM>
- March 28, 2024 – Nano One Reports Q4 2023 Results and Provides Progress Update <https://bit.ly/3IXI2Km>
- March 26, 2024 – Voyageur Pharmaceuticals Files Audited Annual Financial Statements and Grants Stock Options <https://bit.ly/4a0gTFV>
- March 26, 2024 – First Phosphate Reports Published Research Studies for its Lac à l'Original, Mirepoix and Bégin-Lamarche Properties in the Saguenay-Lac-St-Jean region of Quebec, Canada <https://bit.ly/3T0TEWq>
- March 26, 2024 – Kraken Energy Confirms Elevated Radioactivity in Both Initial Drill Holes at Harts Point Property, Utah <https://bit.ly/3VskYem>
- March 25, 2024 – Bechtel contract to support ASM with engineering at the Dubbo Project <https://bit.ly/3Vsx8E3>

**Technology Metals Report
(03.01.2024): Biden Calls**

Chinese EVs a Security Threat and the Greenest Car in America May Surprise You?

written by InvestorNews | March 28, 2024

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This week's report also highlights various strategic collaborations and developments, including the significant challenge posed by China's EV industry to Detroit's Big Three automakers and Australia's navigation of a critical minerals market meltdown amidst declining prices for key exports such as iron ore, nickel, and lithium. Furthermore, we cover Lynas Rare Earths Ltd.'s (ASX: LYC) call for government vigilance in the volatile nickel market, China's lithium-ion battery industry facing excess inventory and production capacity issues, Energy

Fuels Inc.'s (NYSE American: UUUU | TSX: EFR) record net income and uranium production ramp-up, and Mercedes-Benz's adjustment of its electrification goal. These stories underscore the rapidly changing landscape of the technology metals and critical minerals industry, spotlighting strategic collaborations, market dynamics, and the critical role of innovation and policy in shaping the future of sustainable technology and energy.

Biden Calls Chinese Electric Vehicles a Security Threat (February 29, 2024, [Source](#)) – President Joe Biden has initiated measures to potentially restrict the entry of internet-connected Chinese electric vehicles (EVs) into the U.S. market, citing national security concerns over their ability to transmit sensitive data to Beijing. The Commerce Department has launched an investigation into these security threats, marking the beginning of a broader strategy to prevent low-cost Chinese EVs from undermining U.S. automakers. This move comes amid growing tensions between the U.S. and China over trade and technology, with Biden emphasizing the need to protect the domestic auto industry from unfair Chinese practices. The investigation, a result of discussions with major automakers and unions, could lead to new regulations on vehicles using Chinese software, which is feared to collect extensive data on American users. This action is part of Biden's wider efforts to bolster U.S. technology restrictions against China and maintain competitiveness in the global auto market.

The 'greenest' car in America might surprise you (February 29, 2024, [Source](#)) – A new report from the American Council for an Energy Efficient Economy challenges the common perception that electric vehicles (EVs) are the greenest cars in America by naming the Toyota Prius Prime SE, a plug-in hybrid, as the top environmentally friendly vehicle. The Prius Prime SE can travel 44 miles on electricity before switching to hybrid mode, combining electric and gasoline power. The report assesses over

1,200 vehicles on their road and manufacturing emissions, including pollutants beyond carbon dioxide. Despite the growing market for EVs, the report emphasizes that a car's green credentials depend on factors like weight, battery size, and overall efficiency, not just its electric capabilities. Plug-in hybrids like the Prius Prime offer a balance for drivers by allowing short electric commutes and longer gas-powered trips, presenting a practical alternative amidst America's evolving charging infrastructure. Critics argue that fully electric vehicles remain the best option for environmental benefits, especially as renewable energy sources increase. However, the report suggests the importance of offering consumers a range of environmentally friendly choices to suit different needs.

Lithium Investors Are Looking Beyond Price Plunge, Chile Minister Says (February 28, 2024, [Source](#)) – Despite a recent downturn in lithium prices, investors remain keen on new lithium projects in Chile, as confirmed by the country's Mining Minister, Aurora Williams. This interest is fueled by the long-term prospects associated with the global shift towards renewable energy and electric vehicles, rather than short-term price fluctuations. Chile, home to the world's largest lithium reserves, has seen prices drop significantly since the introduction of a new public-private partnership model aimed at attracting investment while ensuring major deposits remain under state control. Despite this, major international companies like Rio Tinto Group and Tsingshan Holding Group have continued discussions with Chilean authorities, demonstrating a sustained interest in the sector. Chile plans to offer exploration rights in certain salt flats, with the possibility of private investors gaining either minority or majority stakes depending on the strategic importance of the area. This initiative is part of a broader effort to maintain Chile's status as a key player in the global lithium market, amidst growing competition and as the

country also seeks to bolster its position in the copper industry.

Navigating the Climate Change Storm of ESG Withdrawal and Climate Change Commitment (February 28, 2024, [Source](#)) – Recent decisions by JPMorgan, State Street, and Pimco to exit Climate Action 100+ (CA+), amid political pressures, have sparked debate over the fate of global ESG initiatives. Nevertheless, CA+'s extensive network, including over 700 members and its collaborations with high-emission companies for a low-carbon transition, exemplifies the resilience of ESG efforts. Despite these withdrawals, the broader commitment to ESG principles, especially in the extractive industries with initiatives like Copper Mark and Responsible Steel, remains robust. This commitment is further reinforced by regulatory measures against greenwashing and heightened public activism for environmental protection and equitable benefits. These trends underscore that, far from diminishing, ESG remains a crucial driver of corporate strategy and societal expectations, suggesting a sustained impact on global business practices.

Tetrataenite as a solution to the rare earth crisis (February 28, 2024, [Source](#)) – The rare earth crisis, pivotal for modern technologies such as electric motors and wind turbines, stems from the scarcity and environmental impact of mining rare earth elements like yttrium and neodymium. As demand for these materials grows due to their importance in reducing fossil fuel reliance and combating climate change, shortages are anticipated. A potential breakthrough in 2023 by an international research team suggests tetrataenite, a meteorite mineral with similar magnetic properties to rare earths, as a solution. Unlike its natural slow formation in space, the team discovered a method to synthesize tetrataenite on Earth rapidly using common materials like iron, nickel, and phosphorous, potentially offering an alternative to address the rare earth

crisis.

Chinese automaker BYD looking for Mexico plant location, executive says (February 28, 2024, [Source](#)) – Chinese electric vehicle manufacturer BYD is scouting locations in Mexico for a new factory, targeting the local market to enhance its share, as stated by BYD Americas CEO Stella Li. With an annual production capacity of 150,000 cars, the company plans to finalize the plant location by year-end. Recently surpassing Tesla in global EV sales, BYD's expansion into Mexico signals a potential competitive challenge to U.S. auto companies, amidst concerns from the Alliance for American Manufacturing about low-cost Chinese cars impacting the U.S. auto sector's viability. BYD's strategy focuses on serving the Mexican market, particularly eyeing central and southern regions for factory sites. The company's cost competitiveness is attributed to early investments in EV technology and extensive vertical integration. BYD also announced the launch of its Dolphin Mini EV in Mexico, priced significantly lower than the cheapest Tesla, aiming to make electric cars accessible to more Mexican consumers. However, challenges remain, such as the limited network of charging stations in Mexico.

China's Electric Vehicles Are Going to Hit Detroit Like a Wrecking Ball (February 27, 2024, [Source](#)) – China's electric vehicle (EV) industry, led by automakers like BYD, poses a significant challenge to Detroit's Big Three (Ford, General Motors, and Stellantis). Despite recent profits and optimistic forecasts for 2024, these American giants are struggling with their EV sales goals amidst the rapid emergence of affordable and efficient Chinese EVs. BYD, in particular, has sold millions of electrified vehicles, expanding its global manufacturing footprint to meet increasing demand. The competitive pricing and technological efficiency of Chinese EVs underscore China's evolving industrial capabilities, transitioning from basic

manufacturing to complex, high-tech production including cars and batteries. This shift represents a broader challenge to American automakers, who must navigate a changing market landscape while addressing structural vulnerabilities in their business models, heavily reliant on sales of trucks and SUVs to a niche market. The U.S. government faces a delicate balance of supporting domestic industries through subsidies and trade restrictions while fostering a competitive environment that encourages innovation and adaptation to the global shift towards electrification.

Australia's Precarious Position: Navigating a Critical Minerals Market Meltdown (February 26, 2024, [Source](#)) – Australia is at a critical juncture, facing a significant downturn in the prices of key exports such as iron ore, nickel, and lithium, which underscores the country's vulnerability due to its heavy reliance on these commodities and its dependence on China, its main buyer. The global implications of this market meltdown are profound, with the economic viability of mining and refining operations being challenged, as demonstrated by Lynas Rare Earths Ltd.'s (ASX: LYC) struggles at its Kalgoorlie ore processing plant. The decline in the nickel industry has uncovered manipulations of market prices, reflecting China's strategic dominance over the global supply chain for rare earth elements and other critical minerals. In response, Australia is attempting to reduce dependence on Chinese processing by offering subsidies to local mining and processing operations, while also dealing with the economic repercussions of collapsing metal prices. This situation necessitates a strategic reevaluation of Australia's role in the global minerals market, exploring options like underwriting national processing facilities to enhance the value of its mineral exports and diversify its economic base amidst changing global trade dynamics.

Rare earths leader Lynas warns govt on nickel fallout (February 26, 2024, [Source](#)) – Lynas Rare Earths Ltd. (ASX: LYC), a leading rare earths producer, has highlighted the importance of government vigilance in response to the nickel market's volatility and its broader impact on the mining sector. The company reported a 74% decrease in net profit to \$39.5 million for the half-year ending December 31, attributing this decline to subdued prices for critical minerals, largely due to China's dominance in supply. Despite the market challenges, Lynas, the largest producer of rare earths outside China, emphasizes its strategy of being a low-cost producer to sustain profitability even in a weak market. Lynas is expanding its operations, including projects in the United States, and making contingency plans for potential disruptions in supply chains, such as sourcing sulphuric acid due to the possible closure of BHP's nickel refinery. The company's experience underscores the interconnected nature of the minerals industry and the need for strategic planning and government engagement to ensure resilience and competitiveness, especially in securing sovereign supplies of critical minerals.

China's lithium-ion battery industry faces excess inventory, production capacity as EV market downshifts: industry analysts (February 25, 2024, [Source](#)) – China's lithium-ion battery industry, pivotal in the global EV market, is navigating through a phase of excess inventory and production capacity due to decreased demand for electric vehicles. Analysts predict a challenging year ahead, with companies facing losses amidst a price war triggered by overcapacity. The situation has led to significant price drops in lithium carbonate and battery cells, exacerbated by reduced subsidies for EVs. With production far exceeding installation into products, further price declines are expected. The market is undergoing a clearing phase, with expectations of breaking even next year. Investment in new

capacity is likely to decelerate. Despite a forecasted slowdown in domestic EV sales growth, the global lithium market faces a ballooning excess supply, raising concerns over the long-term growth prospects for lithium. Top battery and lithium mining firms may only see profitability by 2025, as the industry grapples with these challenges.

Energy Fuels Announces 2023 Results: Record Net Income and Earnings per Share, Uranium Production Ramp-Up, and Near-Term Production of Separated Rare Earth Elements (February 23, 2024, [Source](#)) – In 2023, [Energy Fuels Inc.](#) (NYSE American: UUUU | TSX: EFR) announced significant achievements including a record annual net income of nearly \$100 million and the commencement of uranium production across three mines, aiming for a production rate of 1.1 to 1.4 million pounds per year by mid-to-late 2024. The company highlighted a strong balance sheet with over \$220 million in liquidity and no debt. Revenue was primarily driven by uranium sales, with significant contributions from rare earth elements (REE) and vanadium. The sale of the Alta Mesa project funded investments in uranium and REE production. Energy Fuels is preparing for the near-term production of separated REEs, anticipating to become a leading producer outside of China. With a focus on growth, the company is also exploring expansions into additional uranium and REE sources, aiming to significantly increase production capabilities while capitalizing on market opportunities in both sectors.

Mercedes-Benz delays electrification goal, beefs up combustion engine line-up (February 22, 2024, [Source](#)) – Mercedes-Benz announced a postponement of its electrification target by five years, aiming for electrified vehicles to comprise up to 50% of its sales by 2030, a shift from the initial 2025 goal focused mainly on all-electric cars. This adjustment reflects a broader trend among automakers recognizing the slower-than-anticipated adoption of electric vehicles (EVs), as investments in EV

technology and capacity have surpassed current demand. CEO Ola Kaellesius highlighted that even in Europe, a complete switch to electric vehicles by 2030 is unlikely, noting that EVs currently represent a small fraction of total sales. Mercedes-Benz reassured investors and customers of its commitment to refining its combustion engine vehicles alongside its EV ambitions, with plans for a significant lineup refresh by 2027. The announcement, coupled with a €3 billion share buyback program, positively impacted the company's stock, which saw a 5.9% increase. However, challenges such as economic slowdowns, supply chain issues, and geopolitical tensions have led the automaker to anticipate lower sales and reduced profitability for 2024.

Investor.News Critical Minerals Media Coverage:

- February 28, 2024 – Navigating the Climate Change Storm of ESG Withdrawal and Climate Change Commitment <https://bit.ly/3SXymnP>
- February 26, 2024 – Australia's Precarious Position: Navigating a Critical Minerals Market Meltdown <https://bit.ly/3uWQo0Z>

Investor.News Critical Minerals Videos:

- February 29, 2024 – PDAC President Raymond Goldie Bolsters Toronto's Status as Global Mining Investment Capital in Lead-Up to PDAC 2024 <https://bit.ly/42VBDss>

Critical Minerals IN8.Pro Member News Releases:

- March 1, 2024 – Voyageur Pharmaceuticals Ltd. Announces Closing of Private Placement <https://bit.ly/432eRzi>
 - February 29, 2024 – Ucore Rare Metals to Present at the 2024 PDAC Conference <https://bit.ly/3TglcUa>
 - February 28, 2024 – First Phosphate and Craier Sign MOU for the Development of Global Logistical Competencies to and from the Saguenay-Lac-St-Jean region of Quebec, Canada <https://bit.ly/49xD5DI>
 - February 27, 2024 – American Rare Earths to present at two leading industry conferences in March PDAC and International Battery Seminar <https://bit.ly/49uaFuu>
 - February 27, 2024 – Nano One Commences Feasibility Study for First Commercial LFP Plant and “Design-Once-Build-Many” Growth Strategy <https://bit.ly/3TaFtum>
 - February 27, 2024 – Media Advisory – Neo Performance Materials Inc. Fourth Quarter 2023 Earnings Release & Conference Call <https://bit.ly/3uSkeUQ>
 - February 26, 2024 – Appia Reports High-Grade Total Rare Earth Oxide Results up to 22,339 ppm or 2.23% on Diamond Drill Hole #1 Within Target IV at PCH IAC Project, Brazil <https://bit.ly/48DKQHe>
 - February 26, 2024 – Kraken Energy Commences Drilling at Harts Point & Provides Corporate Update <https://bit.ly/49r02bS>
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Technology Metals Report (02.23.2024): Yellen to Visit Chile for Critical Minerals and Biden's EV Dreams Are a Nightmare for Tesla

written by Tracy Weslosky | March 28, 2024

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This TMR report also highlights the broader implications of these developments on the global stage, including efforts to diminish reliance on China for essential metals, the impact of Tesla's pricing strategies on the used EV market, and the

strategic dialogues around rare earths markets. The visit by US Treasury Secretary Janet Yellen to Chile is spotlighted as a key initiative to bolster ties around critical minerals, emphasizing the urgency of diversifying supply chains amid growing demands for green transition materials. Additionally, the narrative around the challenges posed by the Inflation Reduction Act for Tesla and the US car industry, coupled with BHP's cautionary stance on the Australian nickel sector, illustrates the complex interplay between policy, market dynamics, and strategic resource management. As we delve into these stories, our aim is to provide a comprehensive overview that informs and stimulates discussion among policymakers, industry leaders, and stakeholders, navigating the intricate pathways towards a sustainable and competitive future for critical minerals and technology metals.

MP Materials swings to quarterly loss on falling rare earths prices (February 22, 2024, [Source](#)) – MP Materials Corp. (NYSE: MP) reported a fourth-quarter loss, attributed to declining rare earths prices and increased production costs, despite expectations of a larger deficit. Amidst unsuccessful merger discussions with Lynas Rare Earths Ltd. (ASX: LYC) and competition from Chinese firms, CEO Jim Litinsky emphasized the potential for mutual learning and cost reduction among companies. Despite a 2.7% drop in shares on Thursday, a slight recovery was observed in after-hours trading. The company experienced a significant shift from previous year's profit to a \$16.3 million loss. Sales of rare earths concentrate to China decreased by 34% due to lower production at its Mountain Pass mine, exacerbated by facility issues. However, MP is advancing in refining rare earths domestically, with ongoing projects in California and Texas, and has initiated production in a new facility in Vietnam.

Stalling the American EV Industry: The Unintended Consequences

of the Inflation Reduction Act's Attempt to Bypass China for Critical Minerals (February 22, 2024, [Source](#)) – The Inflation Reduction Act (IRA), integral to President Joe Biden's environmental strategy, seeks to transition the American automotive industry towards a US-centric electric vehicle (EV) supply chain, reducing reliance on Chinese materials. This shift, exemplified by initiatives like Tesla Inc.'s (NASDAQ: TSLA) lithium refinery in Texas, aims to enhance the competitiveness of American-made EVs. However, the IRA's stringent requirements for sourcing materials domestically or from approved countries by 2024 pose significant challenges, complicating efforts by major manufacturers to maintain affordability and quality. Jack Lifton, an expert in the field, highlights the complexity of creating a new EV supply infrastructure and the strategic challenges of overtaking China's advanced position in the EV sector. The article emphasizes that realizing the IRA's vision demands innovation, strategic foresight, and time, presenting both obstacles and opportunities for the U.S. automotive industry in its quest for sustainability and energy independence.

Battery factories: Europe's mechanical engineering companies are lagging behind (February 22, 2024, [Source](#)) – The report "Battery Manufacturing 2030: Collaborating at Warp Speed" by Porsche Consulting and the German Engineering Federation (VDMA) highlights the expansion of battery factories, with around 200 set to be constructed worldwide in the next decade, predominantly in Europe. Despite this growth, European mechanical engineering firms are trailing behind their Asian counterparts, particularly in supplying high-tech equipment for these factories, with only 8% of such technology currently coming from Europe. This low market share limits Europe's influence on technical development in the battery sector. The study suggests that to avoid technological dependency and

enhance their market position, European companies must aim for at least a 20% market share, requiring significant growth and collaboration to offer integrated factory solutions competitive with turnkey plants from China. The study emphasizes the potential for growth and the critical need for European firms to innovate and collaborate to secure a substantial stake in the rapidly expanding battery production technology market, estimated at 300 billion euros by 2030.

“This is a very important article, because it illustrates that the EV battery manufacturing industry has become technologically dependent upon Chinese manufacturing technology for efficient and economical production. Is this the beginning of the end for any attempt by the non-Chinese world to catch up? No, we’ve already reached that point, and what other manufacturing industries in the West are circling the drain?” – Jack Lifton, CMI Co-Chair & Co-Founder

China’s CATL says its lithium mine operating normally (February 22, 2024, [Source](#)) – Chinese battery giant Contemporary Amperex Technology Co. (CATL) has confirmed that its lithium mine in Jiangxi province is operating normally, amidst market speculation of a halt due to falling lithium prices. The Jianxiawo mine, rich in hard rock lepidolite and a subsidiary of CATL, faced rumors of reduced or stopped production due to economic challenges. However, CATL asserts production is ongoing as planned, despite market rumors suggesting otherwise. After the Lunar New Year holiday, it was noted that only one of two production lines resumed operation. The mine, which began phase-one production recently, aims for a 200,000 tons capacity of lithium carbonate equivalent (LCE) upon completion of all phases. Despite high production costs compared to current market prices, analysts predict significantly lower output this year than initially expected, with potential delays in future expansion due to these costs. The speculation had earlier

boosted Australian lithium stocks.

China's lithium carbonate futures jump on talk of environmental crackdown (February 21, 2024, [Source](#)) – On Wednesday, China's lithium carbonate futures prices experienced a significant rally, driven by market speculation regarding potential environmental inspections in a key production area. This speculation raised concerns about possible output restrictions, leading to a 6.35% increase in the most-active July contract on the Guangzhou Futures Exchange, reaching 99,600 yuan per metric ton. Speculation centered around Yichun, a major lithium production city in Jiangxi province, facing environmental checks that could limit operations for producers failing to properly manage lithium slag. Despite these rumors, major producers in Jiangxi continued their operations as planned, with some undergoing scheduled maintenance. The price surge, reflecting concerns over supply constraints, followed a rally in Australian lithium stocks prompted by rumors that Chinese battery maker CATL had closed its Jianxiawo mine.

Yellen to Visit Chile in Push to Boost Ties on Critical Minerals (February 21, 2024, [Source](#)) – US Treasury Secretary Janet Yellen is scheduled to visit Chile next week as part of an effort to strengthen the United States' ties with Chile, focusing on the South American nation's significant role in the green transition through its contribution to renewable energy policies and as a supplier of critical minerals. This visit is a strategic move by the US to diversify its critical minerals supply chain and reduce its dependence on China, which currently leads the market for essential metals necessary for energy transition technologies. Chile, possessing one of the world's largest lithium reserves, is seeking foreign investment to expand its capacity within the global battery supply chain. The visit, which follows Yellen's attendance at a G20 finance ministers' meeting in Sao Paulo, aims to deepen bilateral

economic relations, particularly in the context of Chile's potential to benefit from President Biden's green stimulus program due to a free-trade agreement with the US, thereby supporting North American electric vehicle production.

Tesla's price cuts are driving down car values so much that EV makers are sending checks to leasing firms to compensate them (February 21, 2024, [Source](#)) – Tesla's price reductions have significantly lowered the resale value of used electric vehicles (EVs), prompting automakers to issue compensation to leasing companies like Ayvens to cover these losses. This adjustment comes as the industry is pushed to sell more EVs to avoid fines, with leasing firms seeking protections against further depreciation in the \$1.2 trillion second-hand car market. The demand for used EVs fell due to Tesla's price cuts, affecting companies that play a vital role in the corporate car market. To mitigate risks of depreciation, negotiations for buyback agreements and re-leasing options are underway. Regulatory pressures for lower fleet emissions compound the issue, as unstable used-EV pricing challenges the transition to electric mobility by 2035. Corporate shifts, like SAP SE discontinuing Teslas for employees, underscore the broader impacts of volatile EV pricing on the industry.

Biden's EV Dreams Are a Nightmare for Tesla and the US Car Industry (February 20, 2024, [Source](#)) – The Inflation Reduction Act (IRA), initiated by President Joe Biden to foster a US-centric electric vehicle (EV) supply chain and reduce reliance on Chinese components, poses significant challenges for Tesla and other American car manufacturers. Despite Tesla's initial steps towards compliance, including sourcing batteries from within the US and building a lithium refinery in Texas, the company's substantial procurement of Chinese lithium-ion batteries underscores the complexity of shifting away from China's supply network. The IRA mandates stringent sourcing

requirements for battery components and raw materials, aiming to cut China's dominance in the EV sector. However, these measures have compelled carmakers to navigate a difficult transition, risking the affordability and competitiveness of EVs. As Tesla, GM, Ford, and others strive to adapt to these evolving standards and develop alternative supply chains, they face the daunting task of balancing economic, environmental, and strategic objectives in a rapidly changing global market dominated by geopolitical tensions and the strategic distribution of critical minerals.

Goldman, hedge funds step up activity in physical uranium as prices spike (February 20, 2024, [Source](#)) – Investment banks Goldman Sachs and Macquarie, along with some hedge funds, are increasingly engaging in the uranium market, driven by a spike in uranium prices to 16-year highs. While many banks remain cautious, these institutions are actively trading physical uranium and, in Goldman's case, its options. This shift is fueled by utilities' need for new supplies amid shortages. The interest in uranium is also growing among hedge funds and financial institutions, a notable change after the sector's stagnation post-Fukushima disaster. Uranium prices have doubled over the past year, reaching \$102 a pound, prompted by production cuts from top producers and a renewed interest in nuclear energy as a means to reduce carbon emissions. Goldman Sachs has also introduced options on physical uranium for hedge funds, marking a significant development in the market. This increased activity reflects a broader appeal of uranium to financial investors, with notable investments in physical uranium as well as equities related to the sector.

Gecamines plans overhaul of mining JVs in world's top cobalt supplier (February 20, 2024, [Source](#)) – Gecamines, the state miner of the Democratic Republic of Congo, is seeking to renegotiate terms of its copper and cobalt joint ventures to

increase its stakes and gain more control. Aiming to leverage global demand for minerals essential for the green energy transition, Gecamines plans to secure better off-take contracts and ensure local representation on venture boards for improved asset management. The strategy addresses past oversights, focusing on rectifying prolonged indebtedness and insufficient investment by some partners. Recent deals, like the one with China's CMOC Group, exemplify Gecamines' efforts towards securing equitable terms, demonstrating a push for enhanced returns, community benefits, and transparency in the world's top cobalt supplier and a leading copper producer.

Industry Leaders Lifton and Karayannopoulos China's Influence on Rare Earth Prices and Markets Today (February 19, 2024, [Source](#))

– In an insightful interview, Jack Lifton and Constantine Karayannopoulos delve into the complexities of the rare earths market. Karayannopoulos, wary of current market trends, notes a decline in prices for key elements like neodymium and praseodymium and maintains a cautious outlook due to the industry's cyclical nature. Lifton points out the impact of China's economic struggles on low rare earth prices, advocating for strategic investments in mining and processing at this juncture. Both experts discuss the discrepancy between market expectations and reality, particularly in the context of China's economic growth and the slower-than-anticipated expansion of its magnet industry, vital for electric vehicle production. They emphasize the significance of investing in raw materials and processing to navigate and leverage China's market dominance effectively, offering a comprehensive view on economic trends, geopolitical strategies, and investment opportunities in the rare earths sector.

BHP says Australian support for nickel miners 'may not be enough' to save industry (February 19, 2024, [Source](#)) – BHP Group (ASX: BHP | NYSE: BHP) warned that Australian government

efforts to support the nickel industry might not suffice amid challenges, as a write-off in its nickel operations led to a nearly 90% drop in first-half net profit. The crisis in Australia's nickel industry is due to a price collapse from a supply glut in Indonesia. Despite government measures like production tax credits and royalty relief, BHP's CEO, Mike Henry, suggested these might be inadequate due to structural market changes. BHP, facing a \$3.5 billion pre-tax impairment charge on its Nickel West operation, is contemplating suspending its activities there, despite healthy nickel demand from the electric vehicle sector. However, Henry highlighted copper, potash, and iron ore as stronger growth areas for BHP. The company announced a higher-than-expected interim dividend, reflecting robust copper and iron ore performance, and anticipates stability in commodity demand from China and India.

US Bid to Loosen China's Grip on Key Metals for EVs Is Stalling (February 19, 2024, [Source](#)) – The U.S. is striving to diminish its reliance on China for crucial metals like gallium and germanium, vital for electric vehicles and military technology. Efforts have been hampered by the diminished efficacy of the U.S. National Defense Stockpile and budget cuts, revealing vulnerabilities to supply shocks. Despite the Biden administration's initiatives to diversify metal sources through international deals and domestic projects, China's control over the global metal supply remains strong. Recent legislative reforms aim to enhance strategic stockpiling and procurement flexibility, but challenges in establishing a coherent strategy and securing stable mineral supplies continue. The situation underscores the complex dynamics of global supply chains and the critical nature of these metals for technological and defense applications.

JPMorgan, State Street quit climate group, BlackRock steps back (February 15, 2024, [Source](#)) – JPMorgan Chase and State Street's

investment arms exited the Climate Action 100+ coalition, a global investor group advocating for reduced emissions, withdrawing nearly \$14 trillion in assets from climate change initiatives. BlackRock scaled back its participation by shifting its membership to its international arm. These moves follow the coalition's request for members to intensify actions against companies lagging in emission reductions. Despite political pressure from Republican politicians accusing financial firms of antitrust and fiduciary duty breaches, none cited politics as a reason for their departure. State Street cited conflicts with the coalition's new priorities, which include engaging policymakers and public emission reduction commitments, as misaligned with its independent approach. BlackRock aims to maintain independence while prioritizing climate goals for its clients.

Investor.News Critical Minerals Media Coverage:

- February 22, 2024 – Stalling the American EV Industry: The Unintended Consequences of the Inflation Reduction Act's Attempt to Bypass China for Critical Minerals <https://bit.ly/3T8IpYE>
- February 22, 2024 – Revolutionizing Energy Storage with NEO Battery Materials' Strategic Advances in Silicon Anode Technology <https://bit.ly/3T5r080>

Investor.News Critical Minerals Videos:

- Industry Leaders Lifton and Karayannopoulos China's

Influence on Rare Earth Prices and Markets Today
<https://bit.ly/3SNSuZk>

Critical Minerals IN8.Pro Member News Releases:

- February 22, 2024 – American Rare Earths Announces A\$13.5m Placement to advance Halleck Creek Project
<https://bit.ly/3wuU1fB>
- February 22, 2024 – First Phosphate Project Receives Letter of Support from Mario Simard, Canadian Parliamentary Deputy for the Riding of Jonquière, Québec
<https://bit.ly/3S0AP3i>
- February 21, 2024 – Nano One Adds 4 More Lithium Battery Manufacturing Patents in Asia – Boosts Total to 40
<https://bit.ly/3I6EmFL>
- February 21, 2024 – Power Nickel Expands on High Grade Cu-Pd-Pt-Au-Ag Zone 5km northeast of its Main Nisk Deposit
<https://bit.ly/433eJj3>
- February 20, 2024 – American Clean Resources Group Acquires SWIS Community, LLC, an Environmental Water Technology Company <https://bit.ly/3T6iSis>
- February 20, 2024 – First Phosphate Provides Update on Plans for a Purified Phosphoric Acid Plant at Port Saguenay, Quebec <https://bit.ly/4bINVs4>
- February 20, 2024 – Western Uranium & Vanadium Receives over \$4.6M from Warrant Exercises <https://bit.ly/3UI3DxH>
- February 20, 2024 – Appia Unveils Significant REE, Cobalt and Scandium Assay Results From 47 RC Drill Holes at the Buriti Target Within Its PCH IAC REE Project, Brazil
<https://bit.ly/3ST4GIG>
- February 20, 2024 – Fathom Nickel Announces the Closing of

Its Second and Final Tranche of Private Placement
<https://bit.ly/3wjSSr7>

- February 20, 2024 – Canadian GoldCamps to Earn 50% of Murphy Lake for \$10M Exploration Spend
<https://bit.ly/4bBbtz0>

To become a Critical Minerals Institute (CMI) member, [click here](#)

Industry Leaders Lifton and Karayannopoulos China's Influence on Rare Earth Prices and Markets Today

written by InvestorNews | March 28, 2024

In a thought-provoking InvestorNews interview hosted by the [Critical Minerals Institute](#) founder [Tracy Weslosky](#), [Jack Lifton](#) and [Constantine Karayannopoulos](#), two renowned figures in the rare earths market, share their insights on the sector's current trends and future prospects. Constantine Karayannopoulos, reflecting on the state of the market, observes, "There is never a dull moment in the rare earths industry," highlighting the ongoing slide in prices for critical rare earth elements like neodymium and praseodymium. He expresses a cautious outlook, noting, "I'm a little pessimistic about the near term... it's a cyclical industry."

[Critical Minerals Institute](#) (CMI) Co-Chair Jack Lifton adds: "The low prices may be here for a while because the principal

producer in the world is China, and China's having a very bad time economically right now." He emphasizes the opportunities presented by the current market conditions for strategic investments, advising, "This is the ideal time for real mining and real processing companies to get into the game."

Karayannopoulos also touches on the disconnection between market interest and actual market trends, suggesting, "There's always a disconnect between reality versus expectation." He elaborates on the nuanced dynamics within China, mentioning, "The Chinese consumer has not stopped buying, China grew at 5% last year.. However, the main consumer of rare earths today, the magnet industry that feeds the electric vehicle production in China, it's not growing as fast as people thought it was going to grow."

Lifton further discusses the broader implications of supply and demand, cautioning, "As long as the supply is in excess, the prices are not going to go up." He also highlights the strategic importance of investments in raw material sources and processing capabilities, particularly in light of China's dominance in the market.

Through their conversation, Lifton and Karayannopoulos provide a nuanced analysis of the rare earths market, blending perspectives on economic trends, geopolitical strategies, and investment opportunities. To access the complete interview, [click here](#)

Technology Metals Report (02.02.2024): Rumors between MP and Lynas, Tesla EV Recall – the Rightsizing of Critical Minerals Begins?

written by Tracy Weslosky | March 28, 2024

Welcome to the latest Technology Metals Report (TMR), where we highlight the Top 10 news stories that members of the [Critical Minerals Institute](#) (CMI) have forwarded to us over the last 2 weeks.

In early 2024, the rare earths sector is witnessing significant strategic movements amidst a backdrop of declining prices and geopolitical tensions. Lynas Rare Earths Ltd. and MP Materials Corp., key players outside China, are rumored to be considering a mega-merger in response to falling rare earth prices and to mitigate the impact of Chinese trade restrictions. This potential consolidation aims to strengthen their production capabilities and align with the Australian and US governments' efforts to reduce reliance on Chinese supplies, particularly for defense applications.

CMI's Jack Lifton comments, "In the swirling rumors of a mega-merger between MP Materials and Lynas Rare Earths, it's clear that the OEM industry's disdain for single sourcing of critical materials is being overlooked. Litinski is eager to deploy his capital before it devalues, while Lacaze eyes a boost in share price ahead of her retirement. This scenario is akin to two veterans of the trade, unadorned and stark, facing the harsh daylight. Both MP and Lynas are in a precarious position, each

with a singular customer and seemingly devoid of new strategies to navigate the market's tumultuous waters."

Concurrently, the industry is adjusting to market corrections, as highlighted by the Critical Minerals Institute's [observations](#) on the electric vehicle (EV) materials market, indicating a shift towards efficiency and cost management. Meanwhile, initiatives like Controlled Thermal Resources Holdings Inc.'s funding quest for its lithium brine project and [Appia Rare Earths & Uranium Corp.](#)'s (CSE: API | OTCQX: APAAF) exploration successes underscore the ongoing diversification and expansion within the critical minerals domain. These developments reflect a broader industry trend towards securing resilient supply chains for critical minerals amidst fluctuating market dynamics and geopolitical pressures.

Also breaking news today, Tesla Inc.: The EV maker [is recalling](#) 2.2 million vehicles, or nearly all of its electric vehicles in the United States, due to incorrect font size on warning lights, which increases the risk of a crash, the National Highway Traffic Safety Administration (NHTSA) said. This is more than the 2.03 million vehicles it recalled in the United States two months back, its biggest-ever such move at the time, to install new safeguards in its Autopilot advanced driver-assistance system. The latest recall includes vehicles across Tesla's various models, including the Model S, Model X, 2017-2023 Model 3, Model Y, and 2024 Cybertruck vehicles, the NHTSA said. Separately, U.S. safety regulators said they have upgraded their probe into Tesla vehicles over power steering loss to an engineering analysis – a required step before they could potentially demand a recall.

Lynas linked to rare earths mega-merger as price falls bite (February 2, 2024, [Source](#)) – Amid a sharp decline in rare earths prices and concerns over Chinese trade restrictions,

there are speculations that [Lynas Rare Earths Ltd.](#) (ASX: LYC) may be considering a merger with its New York-listed rival, [MP Materials Corp.](#) (NYSE: MP). Industry insiders suggest that the two companies, both leading non-China producers of essential rare earth materials used in defense and various industries, could be in talks to create a mega-merger. The exact details of the deal are unclear, given the current slump in rare earth prices and Western concerns about China's dominant position in the supply chain. However, a potential merger between Lynas, based in Western Australia and Malaysia, and MP, operating in California's Mountain Pass, aligns with efforts by the Australian and US governments to strengthen collaboration between their resource companies for critical minerals extraction and processing, reducing dependency on China. Both Lynas and MP have suffered significant stock price declines, and a merger could help them bolster production capabilities and meet growing demands, particularly from the US Department of Defense, which aims to reduce reliance on Chinese supplies. *Referral, CMI Co-Chairman [Jack Lifton](#)*

Critical Minerals “rightsizing” in reaction to governments’ efforts to regulate market (February 1, 2024, [Source](#)) – The critical minerals industry is undergoing significant changes in the electric vehicle (EV) materials market. Jack Lifton, Co-Chairman of the [Critical Minerals Institute](#) (CMI), views recent price declines in key EV component materials as a natural market correction rather than a disaster, emphasizing minimal regulatory intervention. Declining profits for industry leaders, including China Northern Rare Earth, result from overestimated EV demand, economic factors, and falling sales, especially in California. Lifton advises investors to focus on efficient, low-cost producers, particularly in neodymium. The January [2024 CMI Report](#) notes the U.S. government’s plan to ban Pentagon battery purchases from major Chinese companies and hints at potential

recovery in lithium prices. Lynas Rare Earths' revenue drop reflects market trends but also strategic capacity expansion. In summary, the industry faces short-term challenges but underscores the importance of efficiency, cost management, and adaptability for long-term success. *Source, [Investor.News](#)*

GM, Stellantis-Backed Lithium Startup Seeks More Than \$1 Billion for Brine Project (February 1, 2024, [Source](#)) – Controlled Thermal Resources Holdings Inc., (CTR) a US lithium startup backed by Stellantis N.V. (NYSE: STLA) and General Motors (NYSE: GM), seeks over \$1 billion in funding for its California lithium brine project. This initiative defies the industry's 80% drop in lithium prices since late 2022. CTR's unconventional approach focuses on geothermal brine deposits, seen as a potential future lithium supply source once technology challenges are overcome. This aligns with US government efforts to establish a domestic EV commodity supply chain. The funding plan includes equity and debt financing, with Goldman Sachs as the lead bank. Stellantis and GM have previously invested significantly in CTR to secure lithium for EV production. *Referral, CMI Co-Chairman [Jack Lifton](#)*

Attention set on rare earths in Canada and Brazil, Appia hits 2024 running (January 31, 2024, [Source](#)) – [Appia Rare Earths & Uranium Corp.](#) (CSE: API | OTCQX: APAAF) is focusing on its rare earths projects in Canada and Brazil: the Alces Lake Project and the PCH Ionic Clay Project. The Alces Lake Project in Canada is recognized for its high-grade rare earths and gallium in monazite ore. Recent drill results have shown up to 1.57 wt.% Total Rare Earth Oxides (TREO) with mineralization extending to a depth of < 85 meters. In Brazil, the PCH Project offers a simplified extraction process for rare earths essential for electric motor magnets in most EVs. Hole RC-063 reported a total weighted average of 3.87% TREO. Appia's expansion of mining claims and plans for a Maiden Resource in Q1, 2024, signal their commitment to these projects, with a market cap of C\$27 million

suggesting a potentially significant year ahead in 2024. *Source, [Investor.News](#)*

China EVs: lithium producers Ganfeng, Tianqi issue profit warnings, blame price plunge for battery material as stocks sink (January 31, 2024, [Source](#)) – Chinese lithium producers Ganfeng Lithium and Tianqi Lithium have issued profit warnings, attributing their declining profits to a significant drop in lithium prices. Ganfeng expects its 2023 net profit to plummet by 70-80% to between 4.2 billion yuan and 6.2 billion yuan. After accounting for non-recurring items, net profit will range from 2.3 billion yuan to 3.4 billion yuan, down 83-88.5% from 2022 levels. Tianqi anticipates a net profit decline of 62.9-72.6% to 6.62 billion yuan – 8.95 billion yuan. Both companies attribute their struggles to the cyclical nature of the lithium industry and declining lithium prices. The average price of China-produced lithium hydroxide exported to South Korea fell by 45% last month. While electric vehicle sales are still growing, the rate has slowed, impacting lithium demand. However, global lithium demand is expected to rise by 27% this year, with a surplus expected before a deficit in 2026. *Referral, CMI Co-Chairman [Jack Lifton](#)*

Mining analyst-turned-Vital Metals CEO eyes much larger Nechalacho reboot (January 29, 2024, [Source](#)) – Geordie Mark, CEO of Vital Metals Limited (ASX: VML), aims to revamp the Nechalacho rare earths project in the Northwest Territories, leveraging 15 years of experience as a mining analyst. Recognizing the growing demand for rare earth elements in the technology and electric vehicle (EV) markets, Mark plans to shift Vital's strategy towards a bulk tonnage operation targeting lighter rare earths like praseodymium and neodymium. This comes after the failure of the company's processing division and a Chinese investment lifeline in 2023. A comprehensive scoping study is crucial for long-term viability,

and Mark expects demand for praseodymium and neodymium to rise significantly in the next decade, particularly in China and Europe. Shenghe Resources' investment provides vital capital for Nechalacho's development, positioning it to compete with North America's only rare earths mine, [MP Materials Corp.](#)'s (NYSE: MP) Mountain Pass operation. *Referral, CMI Co-Chairman [Jack Lifton](#)*

The Critical Minerals Institute Report (01.25.2024): U.S. government bans Pentagon battery purchases from major Chinese companies starting October 2027 (January 25, 2024, [Source](#)) –

The January 2024 Critical Minerals Institute (CMI) report highlighted key economic and geopolitical developments. U.S. inflation in December 2023 impacted interest rate reduction plans, while the S&P 500 rose by 2.04% year-to-date. China's economy slowed, with falling home prices, and global tensions persisted. In the global electric vehicle (EV) market, December 2023 set a record for plugin electric car sales, led by China. However, the EV sector's growth rate slowed compared to previous years. The U.S. reported a surge in EV sales and enacted Zero Emission Vehicle mandates to boost adoption. In the EV battery sector, the U.S. government announced a ban on Pentagon battery purchases from major Chinese companies, starting October 2027. Challenges in the critical minerals sector included depressed prices due to oversupply and slowing EV market growth. Recovery in lithium prices was anticipated in late Q1 or early Q2 2024. The report emphasized a negative supply response from producers and expected a potential recovery in the second half of 2024, assuming reasonable EV sales growth. *Source, [Investor.News](#)*

Tesla Projects Slower Growth in 2024 as EV Demand Softens (January 24, 2024, [Source](#)) – Tesla Inc. (NASDAQ: TSLA) anticipates slower growth in 2024 amid a challenging landscape for the electric vehicle (EV) industry. CEO Elon Musk desires greater control, aiming for a 25% ownership stake to deter activist shareholders. This follows Musk's ultimatum to shift

focus to AI and robotics if control isn't achieved. Tesla faces declining demand, shrinking profit margins, heightened competition, and recent price cuts. Despite doubling fourth-quarter net income to \$7.9 billion, costs for projects like the Cybertruck and AI research impact profitability. Tesla's valuation, historically tied to sales and Musk's vision, faces uncertainty. Challenges include Hertz selling EVs and Chinese automakers [overtaking Tesla](#). EV enthusiasm wanes due to pricing, charging concerns, and range limitations. Tesla plans cost reduction for future vehicles but encounters short-term cost pressures. Despite this, strong Cybertruck demand is expected, with production scaling up gradually. *Referral, CMI Director, [Alastair Neill](#)*

Rare-earths miner Lynas' Q2 revenue halves on falling prices, lower China demand (January 24, 2024, [Source](#)) – Australia's Lynas Rare Earths reported a significant drop in its second-quarter revenue, falling by 51.7% to A\$112.5 million due to plummeting rare earth prices and reduced demand in China, particularly in the appliance sector amid a construction slowdown. This decline in revenue, which missed analysts' forecasts, led to a 30-month low in its share prices. Despite this downturn, Lynas has continued to expand its operations, including the near-completion of its Kalgoorlie processing plant in Australia, upgrades to its Malaysian facilities, and ongoing work at the Mt Weld mine. The company, a major supplier outside China, has also been working on a new facility in Texas to serve the U.S. Department of Defense. Despite these efforts, Lynas' challenges are compounded by the lower average selling price of its products, which has more than halved compared to last year. *Referral, CMI Director, [Russell Fryer](#)*

Investors turn to copper, gold and uranium amid battery metals rout (January 24, 2024, [Source](#)) – In 2024, investors are shifting their focus away from battery metals, such as nickel

and lithium, due to significant price declines. Instead, they are turning to commodities like copper, gold, and uranium. Copper prices have rebounded following supply shortages and disruptions in production by key global producers. Gold is experiencing renewed interest, driven by geopolitical crises and a weakening US dollar, with forecasts predicting it to trade above \$2,000 per ounce in the coming year. Uranium has gained substantial momentum, reaching decade-high prices, driven by limited supply and increased demand for nuclear energy in Western countries. Investors are diversifying their portfolios, seeking better prospects in these alternative commodities. *Referral, CMI Director, [Russell Fryer](#)*

China, in comic strip, warns of ‘overseas’ threats to its rare earths (January 22, 2024, [Source](#)) – China’s State Security Ministry released a comic strip on social media, depicting foreign threats to its rare earth resources. The narrative shows security officers uncovering covert operations by foreign-looking characters, suggesting overseas interest in China’s strategic minerals. China, the leading producer of rare earths essential for high-tech industries, has imposed [export restrictions](#) on these elements and related technologies, citing national security. The move has heightened tensions, particularly with the United States, amidst accusations of economic coercion. The comic underscores the importance of safeguarding these resources against international competition and espionage. The state-controlled Global Times highlighted the story, reflecting on the global race for rare earths, vital in military, consumer electronics, and renewable energy sectors, as a national security issue. *Referral, CMI Director, [Alastair Neill](#)*

Tanzanian, Canadian firms to search for rare metal (January 22, 2024, [Source](#)) – Tanzanian firm Memnon Project Management Services Company Limited and Canadian company Anibesa Energy

Metals Corp. are set to collaborate in prospecting for niobium in Mbozi District, Songwe Region, with an anticipated investment of up to \$50 million. They have obtained regulatory approvals and are finalizing the acquisition of three licenses for niobium minerals, while three more geologists are expected to join the exploration team. Memnon Project Management Services is involved in various projects, including the Kongwa Lithium Project and solar energy initiatives. Niobium, a rare metal, enhances the strength of alloys and is used in various industries, including aerospace and construction. As of 2022, Brazil held the largest niobium reserves globally. The partnership aligns with Tanzania's goal of attracting international companies to boost the mining industry by focusing on valuable critical metals projects. *Referral, CMI Director, [Alastair Neill](#)*

Investor.News Critical Minerals Media Coverage:

- February 01, 2024 – Critical Minerals “rightsizing” in reaction to governments’ efforts to regulate market <https://bit.ly/49f78zC>
- January 31, 2024 – Attention set on rare earths in Canada and Brazil, Appia hits 2024 running <https://bit.ly/3ueaxjq>
- January 25, 2024 – The Critical Minerals Institute Report (01.25.2024): U.S. government bans Pentagon battery purchases from major Chinese companies starting October 2027 <https://bit.ly/4961zU0>
- January 22, 2024 – Unveiling Insights from Ecclestone on the Future of Mining and Investment from Riyadh's Future Minerals Forum Event <https://bit.ly/491pV0S>

Critical Minerals IN8.Pro Member News Releases:

- February 2, 2024 – Appia Announces Plans for Drilling at the Loranger Uranium-Bearing Property, Saskatchewan,

Canada <https://bit.ly/3Uphb0s>

- February 1, 2024 – Obonga: Wishbone Exploration Permit Application <https://bit.ly/3UlnF0j>
- February 1, 2024 – First Phosphate to Provide Project Update to the Federation of Chambers of Commerce of the Saguenay-Lac-Saint-Jean Region of Quebec, Canada <https://bit.ly/42ugvt1>
- January 31, 2024 – Defense Metals Announces Closing of its \$738,836 Non-Brokered Private Placement <https://bit.ly/3umNv9S>
- January 31, 2024 – First Phosphate Announces Launch of 25,000 m Drill Campaign at its Bégin-Lamarche Project <https://bit.ly/3SmPtPD>
- January 30, 2024 – Ucore Announces Closing of Debenture Offering <https://bit.ly/3SHT1xa>
- January 30, 2024 – Western Uranium & Vanadium Bolsters Mining Team to Scale-Up Uranium Production <https://bit.ly/47UTIHZ>
- January 30, 2024 – F3 Hits 2.05m Off Scale >65,535 CPS in First Hole of Winter Program at JR Zone <https://bit.ly/3SCxru9>
- January 29, 2024 – First Phosphate Confirms Two Additional New High-Grade Discoveries at Begin-Lamarche Property and up to 39.45% P2O5 at Larouche <https://bit.ly/30lGWew>
- January 29, 2024 – American Rare Earths Quarterly Activities Report for the Period Ending 31 December 2023 <https://bit.ly/3SBQ0eM>
- January 29, 2024 – Australian Strategic Materials Quarterly Activities Report to 31 December 2023 <https://bit.ly/3UdGXVK>
- January 26, 2024 – Appia Rare Earths & Uranium Corp. Announces New Cooperation Agreement with the Ya'thi Néné Lands and Resources Office <https://bit.ly/30ke4TU>
- January 25, 2024 – First Phosphate, American Battery

Factory and Integrals Power Sign MOU to Produce LFP Cathode Active Material and Battery Cells in North America
<https://bit.ly/48MnCiU>

- January 23, 2024 – F3 Announces Commencement of Drilling at PLN <https://bit.ly/3Uc6C0o>
- January 23, 2024 – Power Nickel Announces Filing of Amended Technical Report <https://bit.ly/3HvYPUD>
- January 23, 2024 – First Phosphate Corp. Welcomes the Addition of Apatite (Phosphate) to the Critical and Strategic Minerals List of Quebec, Canada
<https://bit.ly/48Pv7Wf>
- January 22, 2024 – First Phosphate Announces Closing of the Third and Final Tranche of Oversubscribed Private Placement Financing for Total Gross Proceeds of \$8.2 Million <https://bit.ly/3U5Vl2l>
- January 22, 2024 – Elcora Develops Innovative Process To Extract Vanadium From Its Moroccan Vanadinite Deposit
<https://bit.ly/3Hu8Zon>
- January 22, 2024 – American Rare Earths Announces Breakthrough Metallurgical Results <https://bit.ly/3096trp>
- January 22, 2024 – F3 Expands PLN Project with Acquisition of PW Property from CanAlaska <https://bit.ly/3vKBMTb>

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 | March 28, 2024

Welcome to the January 2024 [Critical Minerals Institute](#) (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 [Critical Minerals](#) or visit the [CMI Library](#).

Global macro view

January 2024 saw a slight rise in U.S. inflation [reported](#) 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 [reductions](#) 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 [S&P 500](#) is up 2.04%. U.S. GDP looks set to slow in Q4, 2023 ([announcement](#) due 25 January 2024) with [forecasts](#) for 2% annualized growth, which would result in a [2023 GDP](#) of ~2.7%. 2024 U.S. GDP is [forecast](#) to be ~2.2%. The U.S. consumer remains resilient with U.S. employment [very strong](#).

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 [bombing](#) Iran-backed Houthis over their attacks in the Red Sea. The Middle East is a hotbed ready to explode.

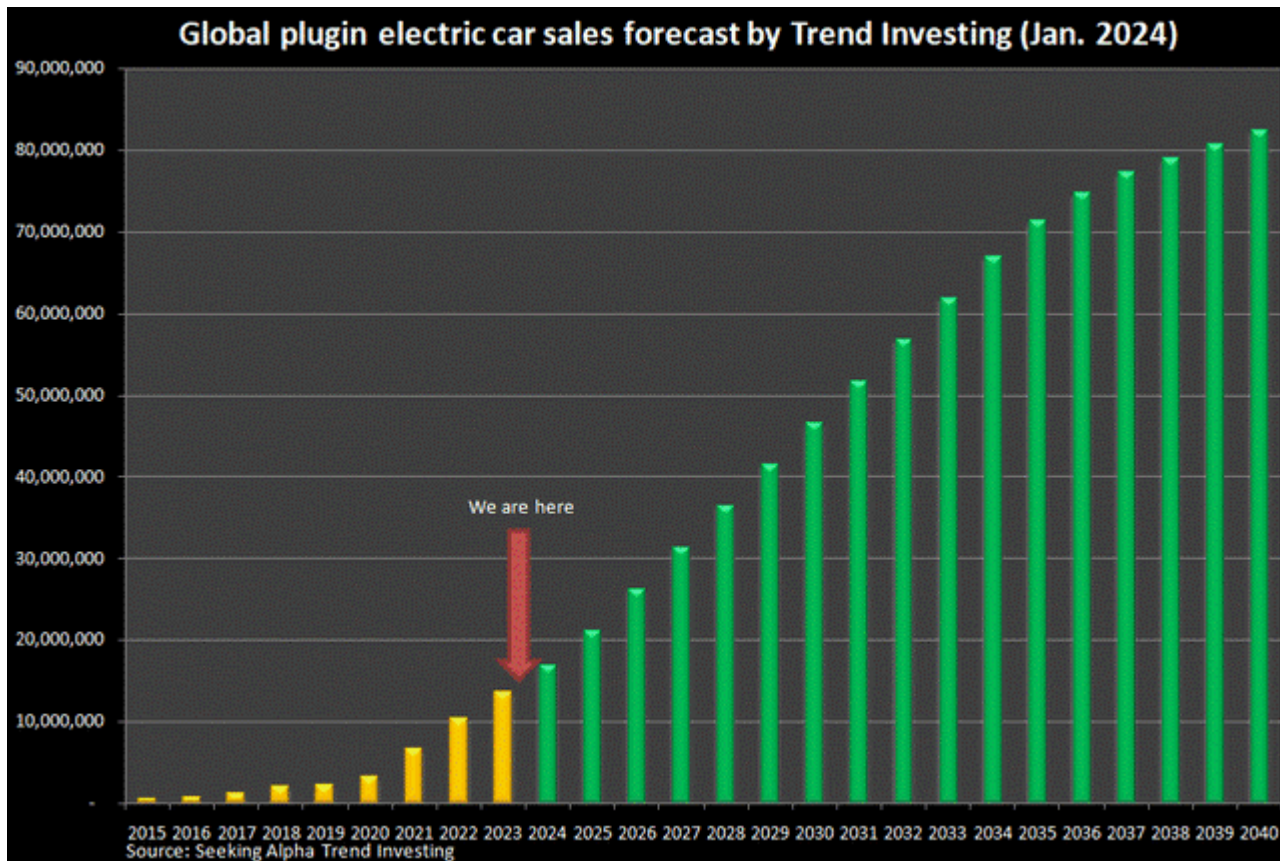
Global plugin electric vehicle (“EV”) update

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 [1.191 million units](#), up [46% YoY](#).

Global plugin electric car sales ended 2023 at [13.6 million units](#) (~16% market share), for a growth rate of [31% YoY](#) (a significant slowdown from the ~60% growth rate in 2022).

- Trend Investing [forecast](#) for 2024 is 17 million units (20% market share), for a growth rate of 25% YoY.
- BloombergNEF [forecast](#) 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 [a record](#) 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 [reached 7.6%](#) in 2023 and that 55% of EV sales were attributable to Tesla (NASDAQ: TSLA).

The UK announced that their Zero Emission Vehicle (ZEV) [mandate](#) 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 [reported](#): “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: [Bloomberg article, January 10, 2024](#)

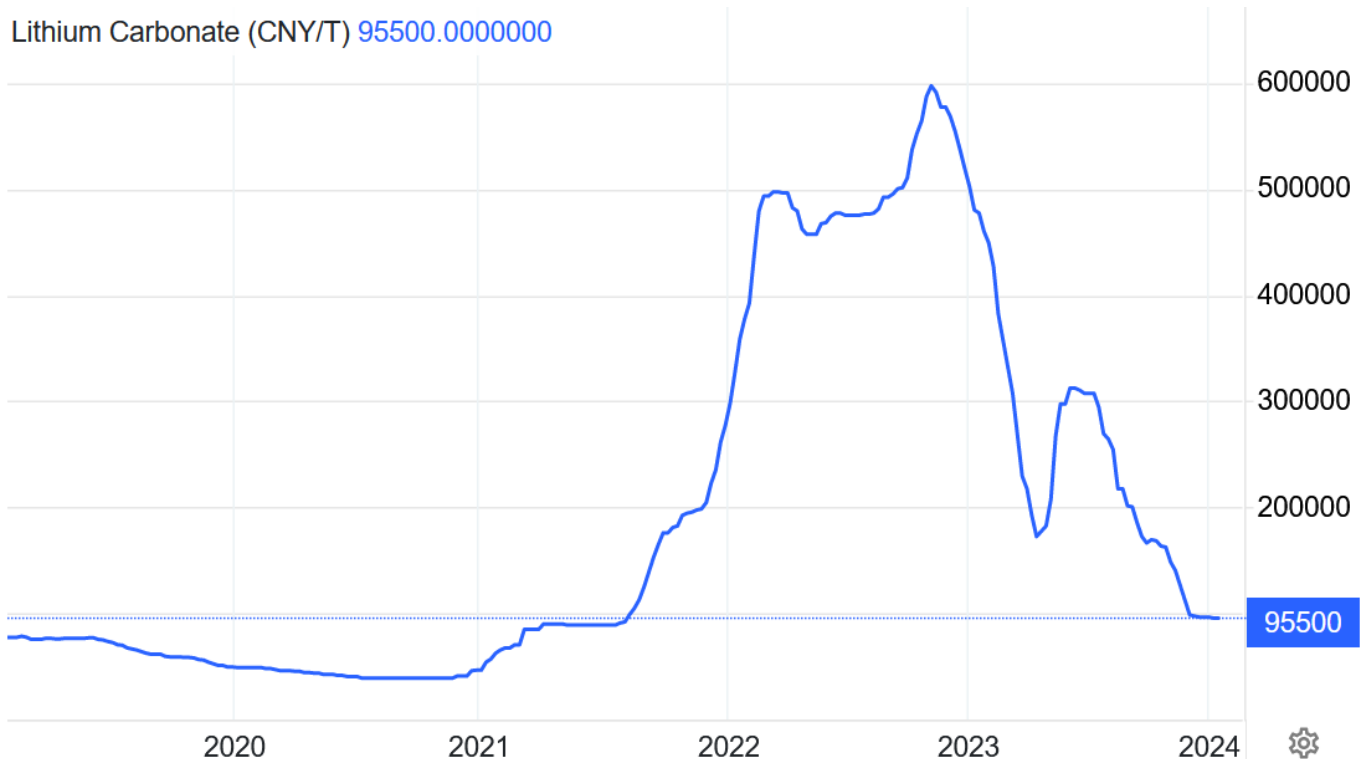
Lithium

China lithium carbonate [spot prices were flat](#) the past month, with the price now at [CNY 95,500/t](#) (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: CX0) announced on January 5, 2024 it will [temporarily suspend](#) mining operations. Then on January 17, 2024, Albemarle Corporation (NYSE: ALB) [anno](#)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



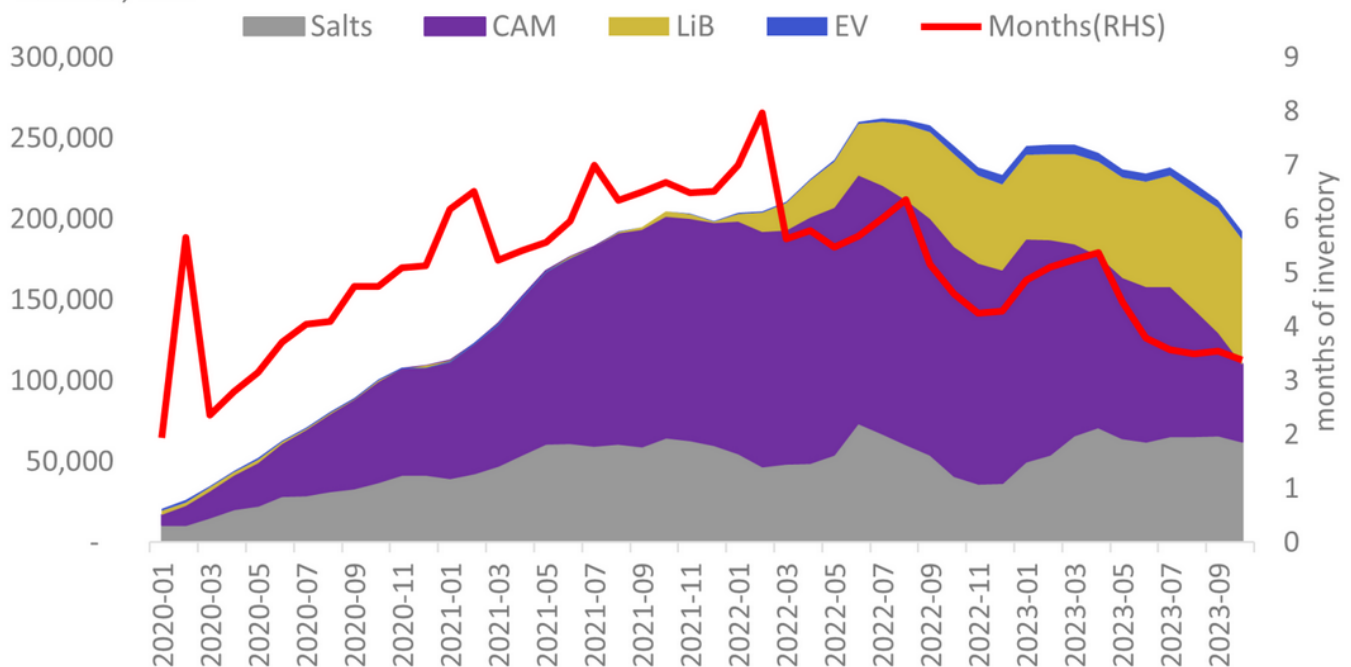
Source: [Trading Economics](#)

On the topic of when we might see some recovery in lithium prices. On January 19 Fastmarkets put out a report [stating](#): “...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

Implied lithium inventory within China's supply chain
tonnes, LCE



Source: [Fastmarkets](#)

Magnet Rare Earths

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

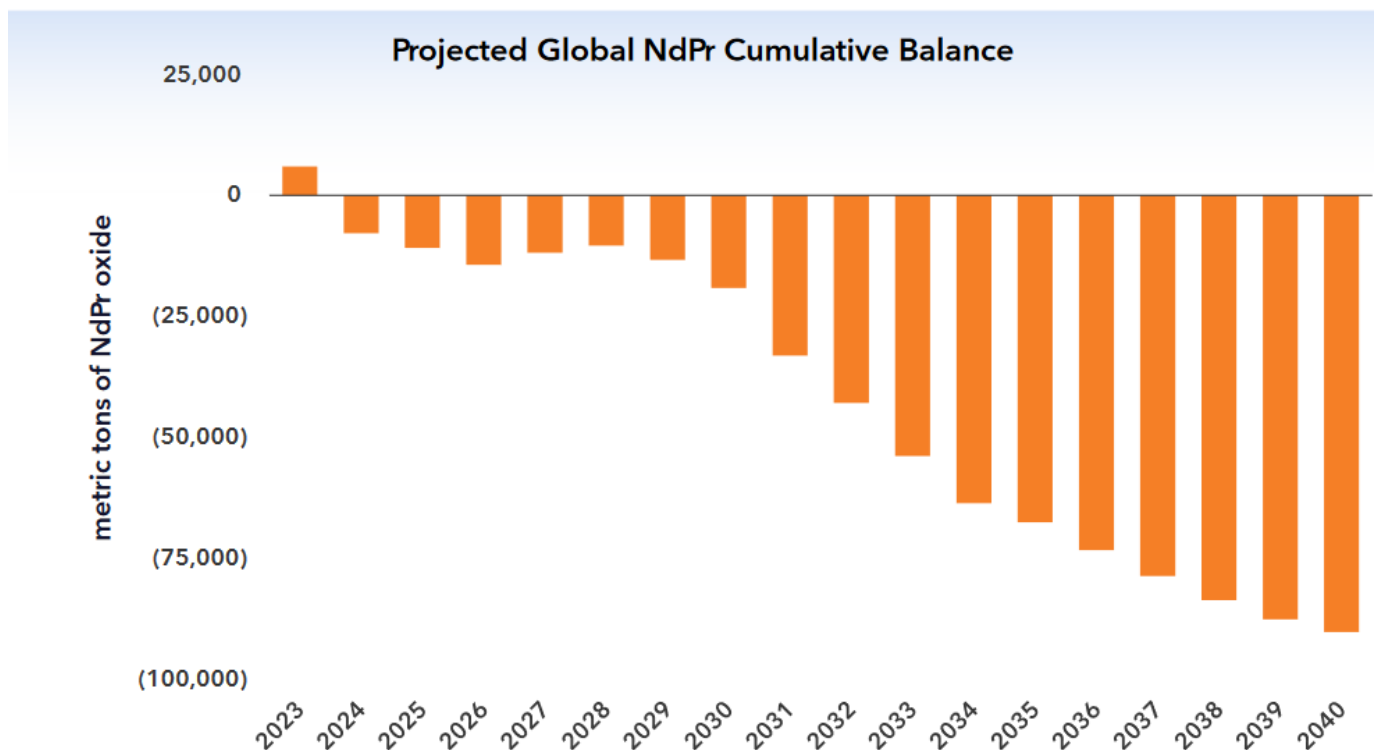
As discussed in a recent [InvestorNews article](#), the consensus of industry experts is for 2024 to be a consolidation year. The article states: "2024 should see a year of consolidation for the rare earths sector as some experts are telling me. Some [forecasts](#) are for NdPr supply deficit to begin 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 [news item](#) 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

[consists of gypsum](#) waste piles that contain large quantities of the magnet rare earths. Rainbow CEO Bennett [stated](#): “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: [MP Materials courtesy Adamas Intelligence](#)

Cobalt, Graphite, Nickel, Manganese and other critical minerals

Cobalt prices (currently at [US\\$12.90/lb](#)) 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 [down ~2%](#) over the past month.

A January 2024 Bloomberg [report](#) 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 ~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 [here](#).

Nickel prices fell again last month to [USD 15,799/t](#). The [1 year outlook for nickel](#) remains poor due to oversupply concerns from Indonesia. As a result of low nickel prices we saw [the collapse](#) of Panoramic Resources (ASX: PAN) in December and then on January 22, 2024, it was [reported](#) 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 [CNY 29.25/MTU](#).

Uranium prices have been the exception to the rule the past year as they continue to rise, now at [US\\$106/lb](#).

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.

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

written by Tracy Weslosky | March 28, 2024

Welcome to the latest **Technology Metals Report (TMR)** where we highlight the Top 10 news stories that members of the [Critical Minerals Institute](#) (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, [Source](#)) – 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 quarter 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 mass-produced 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 FE0C 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, [Source](#)) – 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 [Critical Minerals 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 bio-extraction, 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 [\\$10.6 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, [Source](#)) – 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 <https://bit.ly/3vo6Xn3>
- 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" <https://bit.ly/3tzBfm9>
- December 29, 2023 – Hallgarten Initiates Coverage of Edison Lithium: Pivoting to Sodium-Ion Battery Technology <https://bit.ly/3tG08wq>
- December 27, 2023 – The Critical Minerals Institute Report (12.27.2023): Politics Driving Marketable Commodities into 2024 <https://bit.ly/48sqnVU>
- December 21, 2023 – Global Rare Earths Market Heats Up as China Implements Export Ban <https://bit.ly/3TAClsv>
- 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 <https://bit.ly/4aGvQdQ>
- December 20, 2023 – An update on the graphite sector and what to expect in 2024 and beyond <https://bit.ly/3v8xLHG>
- December 19, 2023 – Australia updates their Critical Minerals List and Adds a second, introducing the

Australian Strategic Materials List <https://bit.ly/3R0x7aG>

InvestorNews Critical Minerals Videos:

- December 30, 2023 – Jack Lifton with Mark Chalmers on Energy Fuels Rare Earth Deal and Increasing US Uranium Production <https://bit.ly/3TM5wsK>
- December 30, 2023 – Mark Chalmers of Energy Fuels Discusses Increasing Uranium Production in the United States <https://bit.ly/3TDPH7k>
- 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 <https://bit.ly/3GKa2jL>

Critical Minerals IN8.Pro Member News Releases:

- January 4, 2024 – Ucore Acquires Alexandria, Louisiana, Facility for Rare Earth Element Processing Plant <https://bit.ly/3RJC00s>
- January 2, 2024 – Panther Metals PLC Corporate Summary: Positioned to Succeed <https://bit.ly/3tDKSQI>
- January 2, 2024 – First Phosphate Closes Second Tranche of Oversubscribed Private Placement for Total Current Financing of \$7.5 Million <https://bit.ly/48jDCbP>
- December 29, 2023 – Panther Metals PLC: Obonga Project Awkward East Claim Purchase Agreement <https://bit.ly/3NKBeTr>
- December 28, 2023 – Appia Rare Earths & Uranium – A Year in Review <https://bit.ly/48xo3gh>

- December 28, 2023 – Kraken Energy Receives Permit to Resume Phase I Drill Program at Harts Point and Provides Corporate Update <https://bit.ly/48pALxM>
- 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 <https://bit.ly/47lDF5v>
- December 27, 2023 – Ucore Comments on China's Ban on the Export of Rare Earth Technology <https://bit.ly/3RYiimD>
- December 27, 2023 – Appia Announces Closing of Non-Brokered Flow-Through Private Placement <https://bit.ly/41EDIbJ>
- December 27, 2023 – Defense Metals Completes Geotechnical Field Data Collection for Wicheeda Rare Earth Element Project Preliminary Feasibility Study <https://bit.ly/3RGLehB>
- December 27, 2023 – F3 to Spend \$16 Million on Drilling at PLN <https://bit.ly/4aCQwDc>
- December 22, 2023 – First Phosphate Announces Closing of Initial Tranche of Private Placement Financing Along with Date of Second Tranche Closing <https://bit.ly/48LgHWR>
- 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 <https://bit.ly/3S6aCyF>
- December 21, 2023 – Imperial Mining Closes \$1M Critical Minerals Flow-Through Private Placement <https://bit.ly/4aEEsSh>
- December 21, 2023 – Western Uranium & Vanadium Provides Market and Company Updates <https://bit.ly/3tyzFAP>
- December 21, 2023 – Ucore Completes RapidSX(TM) Demo Plant Commissioning – Begins US Department of Defense Demonstration Program <https://bit.ly/3tjI4Iz>

- 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 <https://bit.ly/3Ru3Lxv>
 - December 20, 2023 – Panther Metals PLC: Financing Update <https://bit.ly/410C3jB>
 - December 20, 2023 – Critical Metals PLC advances the Molulu Copper-Cobalt Project in DRC <https://bit.ly/3ts5TxH>
 - December 19, 2023 – Auxico Announces Board Decisions on Key Assets and Filing of Technical Reports <https://bit.ly/3TyNx FY>
 - December 19, 2023 – Automotive OEM Validates Nano One LFP and Kicks Off Tonne-Scale Evaluations <https://bit.ly/48g4KZ6>
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Investor.Coffee (01.05.24): Strong U.S. Dollar Impact on Metal Prices, while Japanese Stocks Rise

written by InvestorNews | March 28, 2024

Canadian stock index futures fell as a strong U.S. dollar impacted metal prices and investors anticipated the country's employment report. Wall Street futures also declined slightly ahead of the U.S. non-farm payrolls report, affecting expectations for the Federal Reserve's monetary policy. European stocks saw a decline, potentially marking their first weekly

loss in eight weeks, while Chinese stocks dropped due to economic and deflationary concerns. In contrast, Japanese stocks rose, helped by a weaker yen.

Investor.Coffee (12.11.2023): CDN Healthcare Deal, U.S. Dollar Gains Strength on Japan's Nikkei Rebound

written by Tracy Weslosky | March 28, 2024

[DIAGNOS Inc.](#) (TSXV: ADK | OTCQB: DGNOF), a company we have followed for several years out of Montreal, [announced](#) a landmark move for the Canadian healthcare sector this morning. DIAGNOS Inc., a pioneer in artificial intelligence (AI)-driven health solutions, has announced a significant distribution agreement with global ophthalmic leader EssilorLuxottica. This exclusive Canadian contract, unveiled on December 11, 2023, signifies a pivotal moment for DIAGNOS, cementing its place in the market with its cutting-edge retinal analysis technology.

Renowned for its effectiveness in the early detection of eye conditions, DIAGNOS's technology will now reach a broader audience through EssilorLuxottica's expansive network, promising an enhancement in the quality of eye health care. The three-year agreement, which includes a renewal option, entails a per-patient exam payment model to DIAGNOS. André Larente, DIAGNOS' President, highlighted this partnership's role in broadening the accessibility of their innovative technology, aligning with

their mission to foster visual health in Canada and globally.

Market Watch: Global and US Economic Indicators

As the business day commences, futures indicate a downtrend, shadowing a dip in commodities like oil and gold. In the U.S., we are awaiting the Federal Reserve's monetary policy meeting and upcoming inflation data, which will shed light on the possibility of a soft landing for the economy. European shares are also experiencing a downturn, while Japan's Nikkei has seen a rebound. The U.S. dollar is gaining strength against the Japanese yen.

U.S. Central Bank's Interest Rate Decision

The U.S. Federal Reserve is set to release its interest rate decision on Wednesday, following last month's unchanged benchmark rate. Wall Street is increasingly optimistic about maintaining the status quo in December, as efforts to curb inflation without triggering a recession seem fruitful.

In recent global and U.S. economic updates, the market is witnessing a downward trend in futures, mirroring declines in commodities such as oil and gold. Investors in the U.S. are particularly focused on the upcoming Federal Reserve's monetary policy meeting and the release of inflation data, which are crucial in assessing the prospects of a soft economic landing. Meanwhile, European shares are experiencing a downturn, in contrast to Japan's Nikkei which has shown a rebound. The U.S. dollar is strengthening against the Japanese yen.

The U.S. Federal Reserve is poised to announce its decision on

interest rates this Wednesday, following a period of unchanged rates. There's a growing sentiment on Wall Street that the Fed might maintain the current rates in December, buoyed by successful measures to control inflation without pushing the economy into recession.

Some Business News Highlights:

- In corporate developments, French AI company Mistral AI, founded by ex-employees of Meta and Google, has [raised](#) €385 million in a second funding round, marking a significant milestone. This funding, led by investors such as Andreessen-Horowitz and Lightspeed Ventures, positions Mistral AI as a key player in the global AI landscape. The company also launched Mixtral 8x7B, an AI platform intended to compete with leading AI platforms like OpenAI's ChatGPT and Google's Bard.
- In the healthcare sector, U.S. insurer Cigna (NYSE: CI) has [ended](#) its merger talks with Humana Inc. (NYSE: HUM), citing price disagreements, and instead announced a significant \$10 billion share buyback plan. This development follows several years after regulatory interventions blocked major consolidations in the health insurance sector.
- In the tech industry, NVIDIA Corporation (NASDAQ: NVDA) is [expanding](#) its footprint in Vietnam, partnering with leading tech companies in the country. This expansion, announced by NVIDIA's CEO, focuses on AI and digital infrastructure, aligning with Vietnam's ambitions to advance in chip design and manufacturing, especially in the context of ongoing U.S.-China trade tensions.
- In the energy sector, Occidental Petroleum Corp. (NYSE: OXY) has confirmed its [acquisition](#) of CrownRock, an energy

producer in the Permian basin, in a \$12 billion deal. This acquisition is a strategic move for Occidental's growth in the energy sector.

- TC Energy Corp.'s (TSX: TRP | NYSE: TRP) Coastal GasLink project is currently facing legal challenges due to construction delays, which could significantly impact its financial liabilities. This comes as the C\$14.5 billion project was completed at over double its initial budget.
- In corporate leadership news, Tellurian Inc. (NYSE American: TELL) has announced a major change by [removing](#) its chairman and co-founder, Charif Souki, from his executive role. This change is part of the company's strategy to improve its prospects, particularly focusing on its Driftwood LNG project.
- Tesla Inc. (NASDAQ: TSLA) is under pressure from Nordic pension funds to [respect](#) collective bargaining rights for its employees. Concurrently, the company is defending its use of "Autopilot" and "self-driving" terminology amid regulatory examination in California.

Globally, the Middle East continues to experience intense conflict with no resolution in sight. The UK's manufacturing sector is showing signs of recovery, which could bolster the sector in the coming year. UK Prime Minister Rishi Sunak faces a critical week with a COVID-19 inquiry and a key parliamentary vote on asylum policy. The EU has reached a provisional deal on AI regulation, which includes governing biometric surveillance. Bosch is adapting to changing auto sector demands, leading to significant job cuts. Signa Development Finance's potential insolvency proceedings highlight ongoing market challenges. Lastly, BP Plc's Bilbao Plant sale to Gunvor reflects BP's strategic transformation and commitment to becoming a net-zero company.

We kicked off our morning by tweeting our Top 10 Trending columns and videos for the last week that we encourage you to review:

1. Top 10 Trending on #InvestorNews, in the #1 Position, READ: #TechnologyMetals Week-in-Review: The British Stake Claim in #Quebec and the #Uranium Boom in North America <https://bit.ly/47jhbmH> cc: @IN8News @Energy_Fuels @F3Uranium @Ucore @FirstPhosphate @CriticalMnlInst #criticalminerals
2. Top 10 Trending on #InvestorNews, in the #2 Position, READ: The #CriticalMineralsInstitute Report (CMI 11.2023): #Neodymium price is down 33% over the Past Year, Record Plug-In #EV Car Sales for September <https://bit.ly/3QV2dfE> cc: @IN8News #RareEarths #Lithium #ElectricVehicles @CriticalMnlInst #criticalminerals
3. Top 10 Trending on #InvestorNews, in the #3 Position, READ: Harris Administration's \$3.5 Billion Investment in U.S. #Battery Manufacturing and #CleanEnergy Transition <https://bit.ly/46hagJe> cc: @IN8News #criticalminerals #Biden @CriticalMetals_ @CriticalMnlInst
4. Top 10 Trending on #InvestorNews, in the #4 Position, READ: Update on the #Teck and #Glencore deal: "Never Fear, the Feds are Here" <https://bit.ly/4a1fULR> cc: @IN8News #MetallurgicalCoal @TeckResources @Glencore
5. Top 10 Trending on #InvestorNews, in the #5 Position, READ: Exploring the Future of #Battery Technology and #CriticalMinerals <https://bit.ly/3G4HSQ1> cc: @IN8News @CriticalMnlInst @FirstPhosphate
6. Top 10 Trending on #InvestorNews, in the #6 Position, WATCH: Progress in #Pathogen Defense, Dr. Carolyn Myers Discusses #FendX's Collaboration with Dunmore for #REPELWRAP™ <https://youtu.be/rLDSZ8KMBqs> via @YouTube #Nanotechnology #PathogenRepellent #VirusRepellent

#DiseaseControl @FendXTech \$FNDX.C \$FDXTF

7. Top 10 Trending on #InvestorNews, in the #7 Position,
WATCH: Greg Fenton on how #Zentek's Advancement in
#Aptamer Technology is Revolutionizing #Biotech
<https://youtu.be/LJrNda7ZHRQ> via @YouTube
#PathogenDetection #ZenGUARD #HVACFilters @ZentekLtd \$ZTEK
\$ZEN.V
8. Top 10 Trending on #InvestorNews, in the #8 Position,
WATCH Jack Lifton interviews Mark Chalmers on #EnergyFuels
Strategic Path to Dominance in the North American
#RareEarths Market <https://youtu.be/a1xrRJB5hAw> via
@YouTube #Uranium #criticalminerals @Energy_Fuels \$UUUU
\$EFR
9. Top 10 Trending on #InvestorNews, in the #9 Position,
WATCH: Terry Lynch on @PowerNickel's collaboration with
#CVMR Corporation for developing Canada's first
#CarbonNeutral #Nickel mine <https://youtu.be/x0tY6U7ovRE>
via @YouTube #CriticalMinerals #BatteryMetals \$PNPN.V
\$PNPNF @terrybali
10. Top 10 Trending on #InvestorNews, in the #10 Position,
READ: Who might follow #PatriotBattery Metals #lithium
exploration success in Canada in 2024?
<https://bit.ly/48fFh1P> via @YouTube #criticalminerals
@BrunswickExplor @WinsomeRes

The Critical Minerals

Institute Report (CMI 11.2023): Neodymium price is down 33% over the Past Year, Record Plug-In EV Car Sales for September

written by Matt Bohlsen | March 28, 2024

Welcome to the November 2023 [Critical Minerals Institute](#) ("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 critical minerals ([CMI List of Critical Minerals](#)) or visit the [CMI Library](#) where critical minerals expert Alastair Neill tracks the latest critical mineral lists worldwide.

Global macro view

High interest rates (and cost of living increases) in most Western countries continue to be a drag on the global economy. Europe, in particular, continues to struggle. Last month saw a welcome fall in US inflation to [3.2%pa](#) suggesting the US Fed may not need to raise rates at their [December 12-13 meeting](#).

China has been [ramping up support](#) for their beaten down property sector and economy. The key hope for 2024 is that China's property market stabilizes and their economy improves. Some early positive signs are appearing.

The Russia-Ukraine war continues as does the Hamas-Israel war. The outcomes of these conflicts can impact oil prices and hence inflation, meaning they are key events to monitor as we head into 2024.

Global electric vehicle (“EV”) update

November 2023 saw strong EV sales reported for September 2023. Global plugin electric car sales for September were a record [1,291,000](#) up 23% YoY to 17% market share.

In September, China sales were up 22% YoY to 37% share. Europe sales were up 15% YoY to 25% share. USA sales were up 59% YoY to 9.9% share.

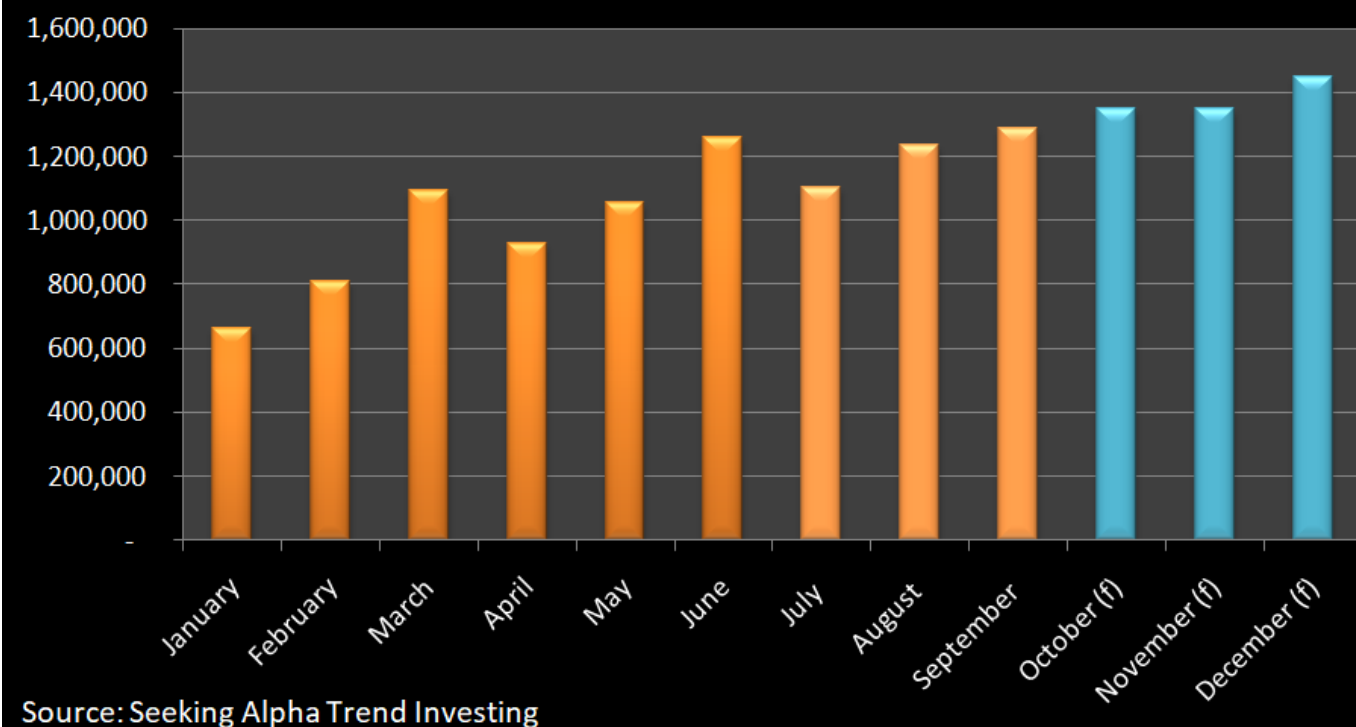
Results look very promising for October 2023 with global plugin electric car sales on track to reach or exceed ~1.35 million. China’s October sales have been announced and they hit a new record of [956,000 sales](#).

2023 sales look set to finish at ~13.6 million and 17% market share, which would be a 29% increase on 2022 (10.522 million and 13% market share). A 29% growth rate in 2023 would be a significant slowdown on the 56% growth rate achieved in 2022.

Regarding US Battery Electric Vehicle (“BEV”) car sales, the EIA recently [reported](#) that “BEV prices are now within \$3,000 of the overall industry average transaction price for light-duty vehicles.”

Global plugin electric car ‘monthly’ sales in 2023 ([source](#))

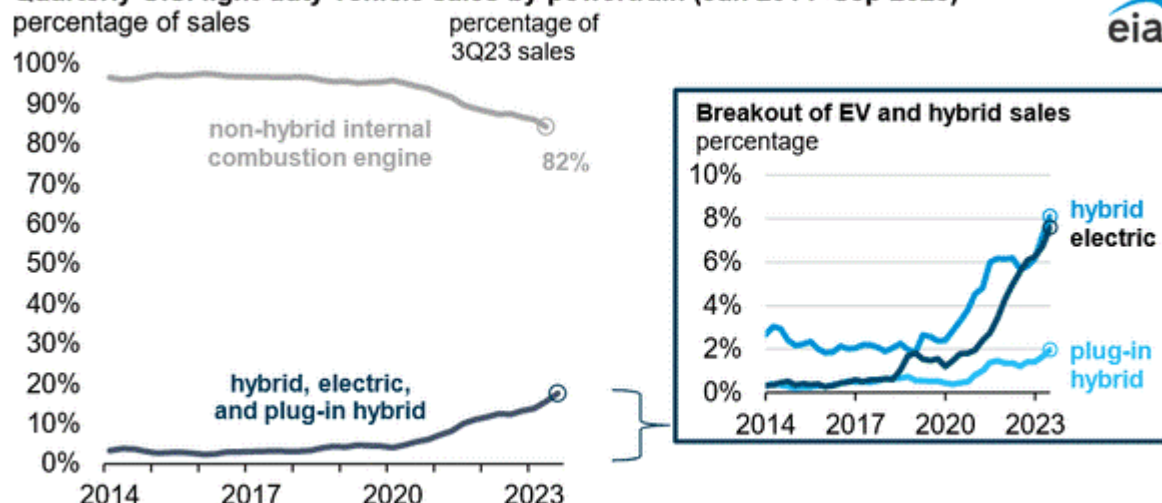
2023 Global plugin electric car sales (actual & forecast)



Finally, [reports](#) of a slowdown in US EV demand are 'fake news'. US electric car sales are achieving record sales in 2023 as we saw in the [US Energy Information \("EIA"\) announcement](#) on November 27, 2023. The chart below gives a good summary. The fact that [Ford Motor Company \(NYSE: F\)](#) and [General Motors \(NYSE: GM\)](#) are slowing down their EV production plans due to weak EV sales says more about their failure to produce well priced and desirable EVs rather than the US market as a whole. There is a similar situation with Volkswagen AG in Europe. Both BYD Company Limited (OTC: BYDDF) and Tesla Inc. (NASDAQ: TSLA) continue to rapidly expand their production and EV sales. Legacy automakers need to up their game or be left behind by the EV leaders Tesla and BYD who continue to go from strength to strength.

Electric vehicles and hybrids grow to a record-high 18% of U.S. light-duty vehicle sales ([source](#))

Quarterly U.S. light-duty vehicle sales by powertrain (Jan 2014–Sep 2023)



Data source: Wards Intelligence
Note: 3Q23 = third quarter of 2023

Global critical minerals update

Western governments, led by the USA, have continued to ramp up support for a Western EV and battery supply chain. In November we had two key announcements:

- On October 31 The Government of Canada [announced](#): “Government of Canada to enhance critical minerals sector with launch of \$1.5 billion Infrastructure Fund...“Our investments will help the mining industry develop important enabling and supporting infrastructure such as roads and energy facilities required prior to construction of mines.”
- On November 15 [Energy.gov announced](#): “Biden-Harris Administration announces \$3.5 Billion to strengthen domestic battery manufacturing...As part of President Biden’s Investing in America agenda, the funding will create new, retrofitted, and expanded domestic facilities for battery-grade processed critical minerals, battery precursor materials, battery components, and cell and pack manufacturing...”

These are positive developments, however not enough is being done upstream to support the critical minerals 'miners' to get into production. The Canadian Government's announcement above is reasonably well directed, but it is to be spread over 7 years and is nowhere near enough money for what is needed. The US Government's effort is further supported on the back of previous announcements as part of the 2022 Inflation Reduction Act ("IRA") which intends to spend US\$369 billion in energy security and climate change programs over ten years. However, most of the funds so far are to support battery manufacturing and EV plants and subsidies. More funds need to be put to use to help support the critical mineral mining companies, particularly as key critical minerals such as lithium is the bottle neck to ramp up western production of EV's and energy stationary storage.

The IRA has been extremely successful so far at bringing EV and battery investments to the USA. For example, in November we heard [a report](#) of yet another US factory being planned with Toyota planning to invest US\$8 billion in a North Carolina battery plant to increase EV capacity.

Over in Europe, the EU Critical Raw Materials Act ("CRMA") has progressed to the next stage with 'provisional' agreement achieved, noting the increased focus on recycling. On November 13, the European Union Council [announced](#):

"The Council and the European Parliament today reached a deal on the proposed regulation establishing a framework to ensure a secure and sustainable supply of critical raw materials, better known as the Critical Raw Materials Act. The agreement is provisional, pending formal adoption in both institutions...The political agreement reached today keeps the overall objectives of the original proposal but strengthens several elements. It includes aluminium in the list of strategic and critical materials, reinforces the benchmark of recycling, clarifies the

permitting procedure for strategic projects, and requires relevant companies to perform a supply-chain risk assessment on their sourcing of strategic raw materials...On the global stage, the regulation identified measures to diversify imports of critical raw materials ensuring that **not more than 65% of the Union's consumption of each strategic raw material comes from a single third country**...The provisional agreement keeps the benchmarks of 10% for extraction of raw materials and 40% for processing but increases the benchmark for recycling to at least 25% of EU's annual consumption of raw materials...The provisional compromise also unifies the timings of the permit procedure. **The total duration of the permit granting process should not exceed 27 months for extraction projects and 15 months for processing and recycling projects**...Next steps. The provisional agreement reached with the European Parliament now needs to be endorsed and formally adopted by both institutions."

Note: Bold emphasis by the author. Synthetic graphite was also added.

In November we did hear some more reports on sodium-ion batteries and how they can help meet the incredible battery demand needed for the green energy transition. Sodium-ion can help around the margin, but it will not replace lithium-ion. Sodium-ion batteries will be used for energy stationary storage and cheap (<US\$10,000) low-end, low-range, small EVs. Beyond that, the sodium-ion battery as exists today will have limited demand. CATL is leading the way with sodium-ion battery manufacturing and is one to watch.

On November 25 The Fraser Institute [reported](#):

"A total of 388 new mines must be built to produce the metals required to meet international government mandates for electric vehicle...The International Energy Agency (IEA) suggests that to

*meet international EV adoption pledges, **the world will need 50 new lithium mines by 2030, along with 60 new nickel mines, and 17 new cobalt mines**...Historically, however, mining and refining facilities are both slow to develop and are highly uncertain endeavors plagued by regulatory uncertainty and by environmental and regulatory barriers. Lithium production timelines, for example, are approximately 6 to 9 years, while production timelines (from application to production) for nickel are approximately 13 to 18 years, according to the IEA...The risk that mineral and mining production will fall short of projected demand is significant, and could greatly affect the success of various governments' plans for EV transition."*

Note: Bold emphasis by the author.

Lithium

China lithium carbonate [spot prices fell significantly](#) in November 2023, with the price now at [CNY 126,500/t](#) (US\$ 17,870/t) and down 78% over the past year. At these prices, marginal cost lithium producers in China are shutting down and Albemarle Corporation (NYSE: ALB) and JV partners at the Greenbushes Mine [are considering production cuts](#) in H1, 2024. A bottom is likely to form soon at or above CNY 100,000/t assuming global EV sales hold up at current rates of about 30% growth in 2023 and 2024.

Lithium takeovers continue despite weak sentiment

Chile's SQM recently increased their takeover offer for Azure Minerals Limited (ASX: AZS) to US\$900 million. Meanwhile, Mineral Resources Limited (ASX: MIN) has been [building an equity stake](#) in Azure Minerals as well as buying a [19.85% equity interest](#) in Wildcat Resources Limited (ASX: WC8), another WA lithium junior miner. Not to be outdone, Australian billionaire

Gina Reinhart has recently bought a [19% interest](#) in Azure Minerals. Reinhart was active in buying Liontown Resources Limited (ASX: LTR), ultimately leading Albemarle [to withdraw their takeover offer](#).

At least it looks like the Allkem-Livent merger is still going ahead. Allkem Limited (ASX: AKE) and Livent Corporation (NYSE: LTHM) [have received all required regulatory approvals globally](#) for their 'merger of equals', expected to close by January 4, 2024.

All of this takeover activity from the major lithium companies suggests that we are near a bottom in the lithium price cycle and that the mid to long-term outlook for lithium remains very strong.

Rare Earths

Neodymium ("Nd") prices fell in November and are currently sitting at [CNY 610,000/t](#). The neodymium price is down 33% over the past year, but still well above the 2019 price.

Neodymium 5 year price chart ([source](#))



On November 16 Rare Element Resources Ltd. (OTCQB: REEMF) announced receipt of the final [NEPA approval](#) for their rare earth processing and separation demonstration plant to be built in Upton, Wyoming, USA. The news [stated](#): “The Company is awaiting next stage budget approval from the DOE, which is providing approximately 50% of the project costs, to commence construction.”

Cobalt, Graphite, Nickel, Manganese and other critical minerals

Cobalt prices (currently at [US\\$14.85/lb](#)) remained flat the past month and continue to be very depressed. China’s demand for NMC cathode material for EVs has been weak as LFP cathodes (no nickel or cobalt) have gained in popularity.

Flake graphite prices also remain very weak with prices near the marginal cost of production. The big news in the graphite world is China’s intention to temporarily enforce export license permits on three synthetic graphite-related items and six

natural graphite-related items, starting from December 1, 2023. As a result, we have seen some buying activity and [flake graphite prices rising in Europe](#).

Nickel prices fell further to [US\\$16,593/t](#) in November due to oversupply concerns from Indonesia and the depressed Chinese property sector.

Manganese [prices](#) also fell slightly in November.