

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 | February 23, 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 members over the past week, reflecting the dynamic and evolving nature of the critical minerals and technology metals industry. From the Inflation Reduction Act's challenges for the American EV industry to China's lithium market developments and Treasury Secretary Janet Yellen's strategic visit to Chile, our report covers a wide array of developments crucial for stakeholders. The unveiling of Tesla Inc.'s (NASDAQ: TSLA) lithium refinery in Texas, alongside CATL's confirmation of its lithium mine's normal operations, paints a picture of the industry's efforts to navigate through pricing volatilities, supply chain complexities, and geopolitical tensions. Moreover, the significant moves by major financial institutions in the uranium market and Gecamines' strategic overhaul in the DRC underline the shifting paradigms in the mining and investment landscapes of technology metals.

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>

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Technology Metals Report (02.16.2024): Australia makes Nickel a ‘Critical’, Hastings Rare Earth Deal with Baotou, and Uranium Market Continues to Rise

written by Tracy Weslosky | February 23, 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 members over the past week, reflecting the dynamic and evolving nature of the critical minerals and technology metals industry. Among the key stories featured in this report are the Australian government’s decision to classify nickel as a ‘critical’ mineral, entitling it to support from a significant stimulus fund, and the emerging competitive landscape in Africa as Western countries endeavor to reduce China’s dominance in the

critical minerals sector, particularly in cobalt production.

This week's report also highlights various strategic collaborations and developments, including Hastings Technology Metals Ltd.'s (ASX: HAS) offtake agreement with Baotou Sky Rock for the Yangibana Project, and the U.S. Department of Energy's funding allocation for projects aimed at extracting rare earth elements and critical minerals from coal-based resources. Furthermore, we cover the notable surge in uranium prices to a 17-year high and the strategic expansion plans by Energy Fuels Inc., alongside LG Energy Solution's efforts to secure lithium supply through a second agreement with WesCEF. Lastly, we touch on the advancements in battery technology, such as the pilot production of battery-grade purified phosphoric acid by First Phosphate Corp. and the formation of the China All-Solid-State Battery Collaborative Innovation Platform (CASIP) by leading Chinese battery and automobile manufacturers, including CATL and BYD, aiming to propel the development of all-solid-state batteries.

Australia classifies nickel as a 'critical' mineral to protect ailing industry (February 16, 2024, [Source](#)) – The Australian government has recognized nickel as a critical mineral, making it eligible for support from a A\$6 billion stimulus fund due to concerns over the nickel industry's decline, exacerbated by a supply glut from Indonesia and falling EV demand. This move aims to protect thousands of jobs and key producers like IGO Limited (ASX: IGO) and BHP Group (ASX: BHP | NYSE: BHP) from the impacts of falling nickel prices, which have dropped 43% in the past year. BHP has announced a significant impairment charge on its Nickel West division, highlighting the industry's dire situation. The government's intervention, including potential low-interest loans and grants, is a response to the challenges posed by cheaper Indonesian nickel, driven by Chinese investment and a ban on nickel ore exports from Indonesia. This situation

has led to reduced investment and operational suspensions in Australia's nickel sector, threatening its survival and the country's ambition to develop alternative supply chains to China.

West challenges China's critical minerals hold on Africa (February 16, 2024, [Source](#)) – In a significant development in the global minerals market, China's CMOC Group has surpassed Glencore PLC (LSE: GLEN) to become the leading producer of cobalt, primarily through its operations at the Kisanfu mine in the Democratic Republic of Congo. This surge in production has created one of the largest cobalt surpluses in recent years, despite a drastic fall in cobalt prices. Western countries, recognizing the strategic importance of cobalt and other critical minerals for clean energy and military applications, are challenging China's dominance in Africa. They are particularly focused on the rich copper and cobalt reserves in the Copperbelt region, which spans Zambia and the Congo. Western entities, including companies backed by prominent investors like Bill Gates and Jeff Bezos, are venturing into this region, despite political and infrastructural challenges. The U.S. and other Western nations are supporting infrastructure and energy projects to facilitate mining and reduce logistical costs. Efforts to de-risk mining in the Copperbelt include upgrading rail lines and developing solar power projects. Meanwhile, the Congolese government is asserting more control over its mineral resources, revising deals with Chinese companies and aiming to formalize artisanal mining to secure a fairer share of the revenue from its mineral wealth. This marks a pivotal shift in the geopolitics of critical minerals, highlighting the strategic competition between the West and China over Africa's mineral resources.

Hastings And Baotou Sky Rock Sign Binding Term Sheet For Integrated Tolling And Offtake Arrangement (February 16, 2024,

[Source](#)) – Hastings Technology Metals Ltd. (ASX: HAS) has entered into a binding term sheet with Baotou Sky Rock Rare Earth New Material Co., Ltd for an integrated tolling and offtake arrangement concerning the Yangibana Project's rare earth concentrate. This arrangement allows Hastings to toll treat its concentrate in China, transforming it into separated rare earth oxides, and sell them, improving Hastings' revenue and cash flows beyond previous models. The agreement, lasting seven years with a possible five-year extension, guarantees a minimum of 10,000tpa of concentrate processing. This deal complements Hastings' existing contract with thyssenkrupp and is part of negotiations with other potential customers for further offtake agreements. The updated financial model reflecting this integrated approach will support the project's funding, showcasing significantly enhanced project economics, including a notable increase in post-tax NPV, IRR, and life of mine free cashflow, while reducing the capital payback period.

The Up and Coming Uranium Boom (February 15, 2024, [Source](#)) – In an interview with Hallgarten + Company's Christopher Ecclestone and the [Critical Minerals Institute](#)'s (CMI) Tracy Weslosky, the discussion centered around the uranium market's burgeoning prospects. Ecclestone expressed skepticism regarding the effectiveness of a US ban on Russian uranium, suggesting that Russian uranium could be rerouted through Kazakhstan. He highlighted the challenges Western countries might face in replacing Russian uranium sources. Ecclestone described the uranium market as vibrant, contrasting it with the stagnation in battery metals, and emphasized uranium's unique investment appeal. He advised investors to focus on proven assets from previous booms, cautioning against investing in new, unproven fields. Ecclestone also critiqued the hype around thorium and small modular nuclear reactors, advocating for their potential but also indicating a need for realism. Lastly, he mentioned

Argentina and the Athabasca region as key areas for uranium investment, highlighting the importance of geographic and asset-based considerations in the uranium industry.

DOE Awards \$17M To Conduct FEED Studies for Production of Rare Earth Elements, Critical Minerals (February 15, 2024, [Source](#)) – The U.S. Department of Energy (DOE) is allocating over \$17 million to three projects for extracting rare earth elements and critical minerals from coal-based resources. Funded by the Bipartisan Infrastructure Law, this initiative aligns with President Biden's Investing in America agenda to diminish reliance on foreign critical minerals vital for clean energy technologies, including solar panels and electric vehicles. Leveraging America's substantial coal reserves and waste, the projects aim to foster a self-reliant supply chain, enhance national security, support environmental sustainability, and create quality jobs. This strategic move towards utilizing domestic resources for critical mineral production underscores a significant push towards energy independence, aligning economic revitalization with clean energy advancements.

India to Capitalise on Coveted 'Critical Minerals Club' to Acquire Overseas Assets (February 15, 2024, [Source](#)) – India is strategically enhancing its position in the global critical minerals market by focusing on acquiring overseas assets through collaborations with Western countries and leveraging partnerships within the US-led Minerals Security Partnership (MSP). This international coalition aims to ensure reliable critical mineral supply chains amidst global disruptions. India, which joined the MSP in 2023, is encouraging public sector undertakings (PSUs) like Coal India Limited, NLC India Ltd., and NTPC Ltd. to secure strategic assets in lithium, cobalt, and graphite to bolster its green energy transition and manufacturing capabilities in electronics, including electric vehicles and semiconductors. Deals have been made, notably with

Australia and countries in South America and Africa, to secure these essential materials. The initiative reflects India's ambition to become self-reliant in critical minerals crucial for the technology-driven world economy, particularly as it aims to accelerate its green energy transition and indigenous manufacturing.

Uranium Prices at a 17-Year High, Energy Fuels Rapidly Increases Uranium Production in 2024 (February 14, 2024, [Source](#)) – Uranium prices have surged to a 17-year high at \$106/lb, driven by reduced supply and increased demand, with [Energy Fuels Inc.](#) (NYSE American: UUUU | TSX: EFR) poised to benefit significantly. The uranium market's optimism is further bolstered by a commitment from over 20 countries at COP28 to triple nuclear energy capacity by 2050, highlighting a significant shift towards nuclear energy to meet clean energy goals. Additionally, 118 governments have pledged to triple renewable energy capacity by 2030. Energy Fuels, the leading uranium producer in the USA, has initiated production at three mines, targeting a significant increase in uranium output to over 2 million lbs by 2025, alongside exploring additional production avenues. With uranium's strategic importance in the clean energy transition underscored, Energy Fuels is leveraging favorable market conditions and long-term growth prospects, underlined by its ambitious expansion and production plans.

LG Energy signs 2nd agreement with WesCEF to expand lithium supply (February 13, 2024, [Source](#)) – LG Energy Solution from South Korea and Wesfarmers Chemicals, Energy, and Fertilisers (WesCEF) from Australia have signed their second agreement to expand LG's lithium supply chain. WesCEF will supply LG with 85,000 tons of lithium concentrate, expected to yield about 11,000 tons of lithium hydroxide, sourced from the Mt. Holland project in Western Australia, set to start in early 2025. This agreement builds on a previous deal for 50,000 tons of lithium

hydroxide in 2022. Additionally, LG Energy is focusing on expanding its presence in India's electric vehicle market, already leading in supplying battery cells to e-scooter makers. In 2023, LG secured a deal with Chile's SQM for 100,000 tons of lithium for seven years, highlighting its efforts to bolster its supply chain amidst increasing lithium demand for rechargeable batteries.

First Phosphate Corp. Completes Pilot Production of LFP Battery-Grade Purified Phosphoric Acid (February 13, 2024, [Source](#)) – [First Phosphate Corp.](#) (CSE: PHOS) announced the successful completion of a pilot project that converts high purity phosphate concentrate into battery-grade purified phosphoric acid (PPA) for the lithium iron phosphate (LFP) battery industry. In collaboration with Prayon Technologies SA, the company has transformed phosphate concentrate into merchant grade phosphoric acid and then into PPA, conforming to food and battery-grade specifications. This achievement enables the production of LFP cathode active material and battery cells from a North American source of battery-grade PPA. First Phosphate aims to integrate its mining operations in Quebec, Canada, into the supply chains of LFP battery producers, emphasizing high purity, responsible production, and a low carbon footprint.

CATL, BYD, others unite in China for solid-state battery breakthrough (February 12, 2024, [Source](#)) – In a bold move to spearhead the electric vehicle (EV) revolution, China's leading battery and automobile manufacturers, including CATL and BYD, have joined forces under the government-led China All-Solid-State Battery Collaborative Innovation Platform (CASIP). Established in January, CASIP aims to commercialize all-solid-state batteries by 2030, enhancing EV performance with greater energy density and safety. This initiative, uniting industry rivals and leveraging AI technology, seeks to position China at the forefront of the next-generation battery technology,

challenging current leaders like Japan and Western countries. With the participation of major companies and state support, China is poised to transform the EV market and maintain its global leadership in automotive battery innovation.

Investor.News Critical Minerals Media Coverage:

- February 15, 2024 – The Up and Coming Uranium Boom <https://bit.ly/3uAUdcv>
- February 14, 2024 – Uranium Prices at a 17-Year High, Energy Fuels Rapidly Increases Uranium Production in 2024 <https://bit.ly/48wVY8N>

Investor.News Critical Minerals Videos:

- February 13, 2024 – Tom Drivas on the 3 world-renowned rare earths experts on Appia's Critical Minerals Advisory Committee <https://bit.ly/49bVMNj>

Critical Minerals IN8.Pro Member News Releases:

- February 15, 2024 – First Phosphate and Integrals Power sign Joint Development Agreement to Produce Environmentally Compliant Battery Grade Iron III Phosphate Precursor for the LFP Battery Industry <https://bit.ly/3uDdslR>
- February 14, 2024 – Imperial Mining Announces Effective Date of New Trading Symbols after TSXV Approves of Name Change to Scandium Canada Ltd. <https://bit.ly/48hRyl0>
- February 13, 2024 – Western Uranium & Vanadium Mining Operations Update <https://bit.ly/4bvDKHr>
- February 13, 2024 – Donald Swartz, CEO American Rare Earths, to speak at “The Future Panel”

<https://bit.ly/3UF2M05>

- February 13, 2024 – First Phosphate Corp. Completes Pilot Production of LFP Battery-Grade Purified Phosphoric Acid <https://bit.ly/3P51pF5>
 - February 13, 2024 – Defense Metals Updates Metallurgical Test Work and Preliminary Feasibility Study Progress for its Wicheeda Rare Earth Elements Project <https://bit.ly/3HYiV9R>
 - February 13, 2024 – Power Nickel extends resource mineralization at Nisk Main <https://bit.ly/49aJCE9>
 - February 12, 2024 – F3 Hits 66.8% U3O8 over 0.5m within 42.4% over 2.0m at JR <https://bit.ly/3HUa60a>
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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 | February 23, 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

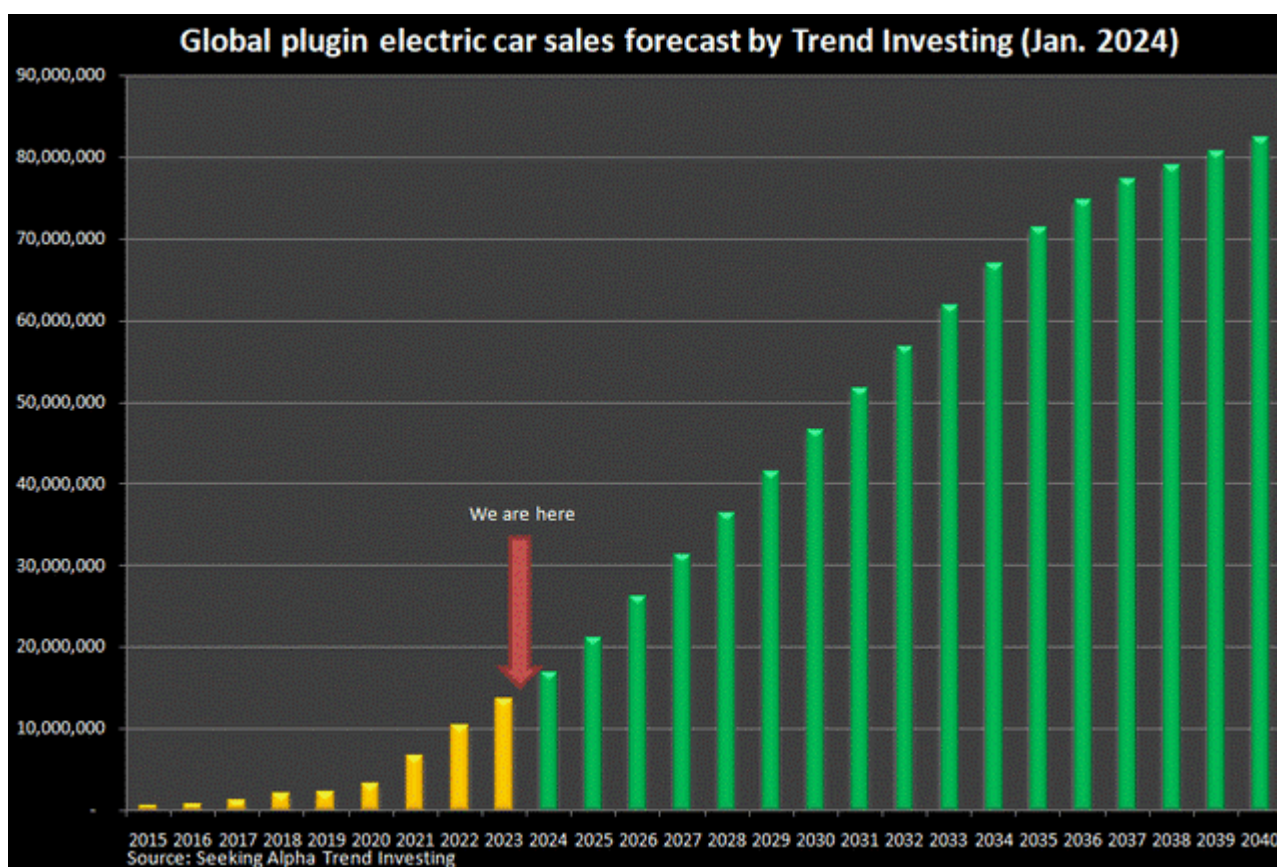
December 2023 saw the usual seasonal upswing in global plugin electric car sales reaching a record [~1.5 million](#). China led the way with a stellar result of [1.191 million units](#), up [46% YoY](#).

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.

Bloomberg

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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

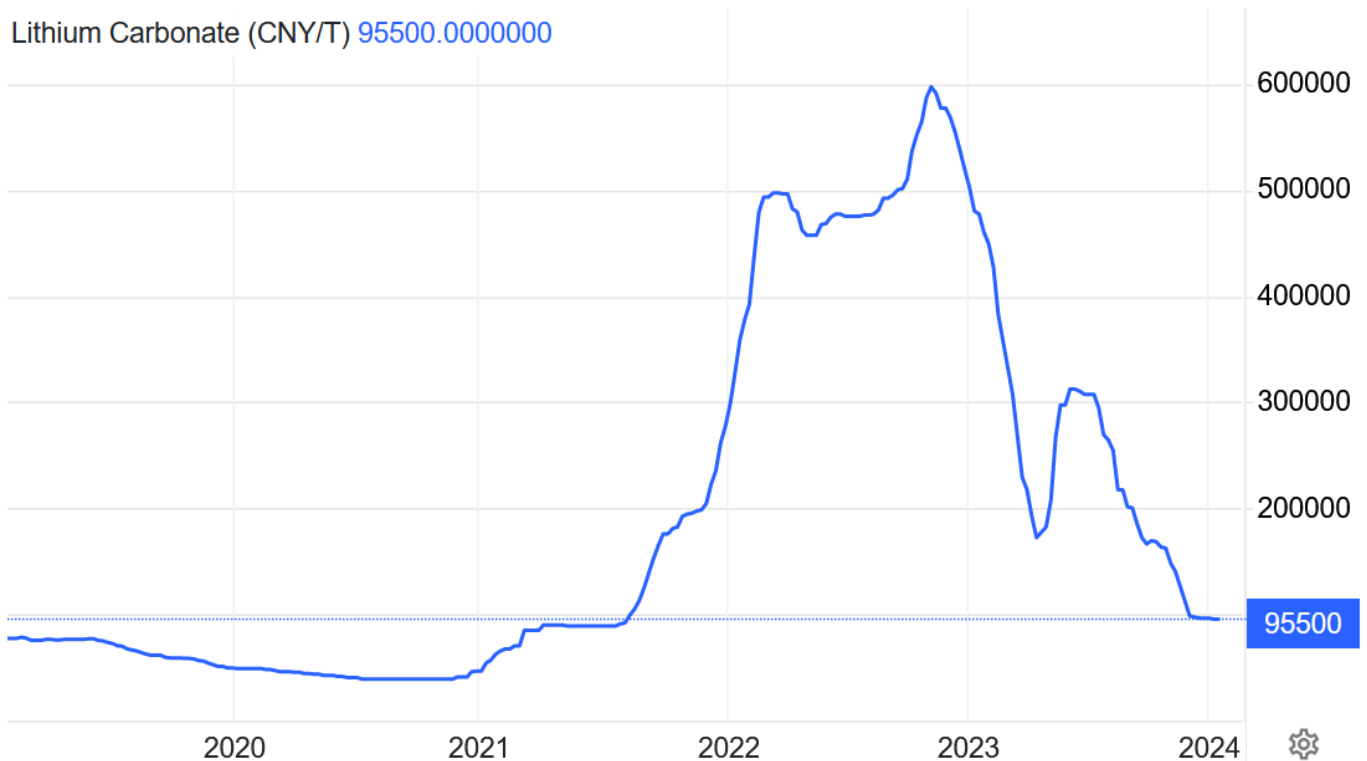
China lithium carbonate [spot prices were flat](#) the past month, with the price now at [CNY 95,500/t](#) (USD 13,275/t). After an [~80%](#) fall from the high, lithium prices appear to have finally stabilized. This is logical given that prices are now at or below the marginal cost of production, especially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



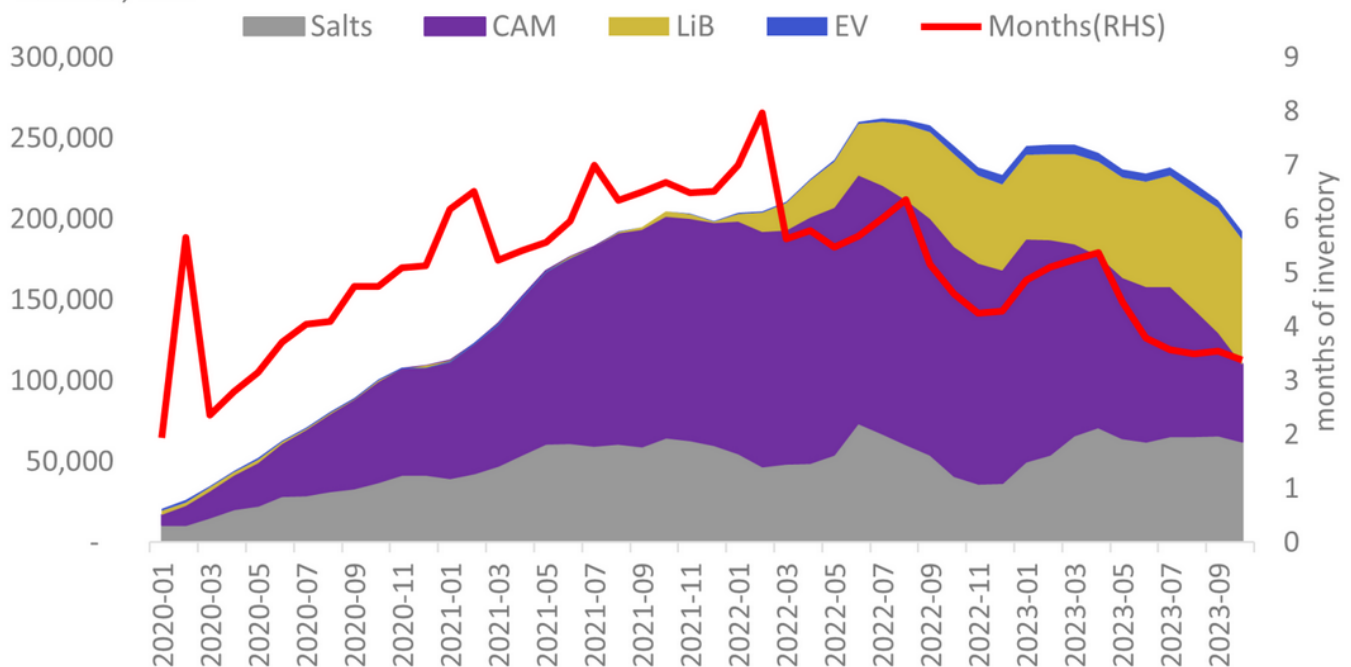
Source: [Trading Economics](#)

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.

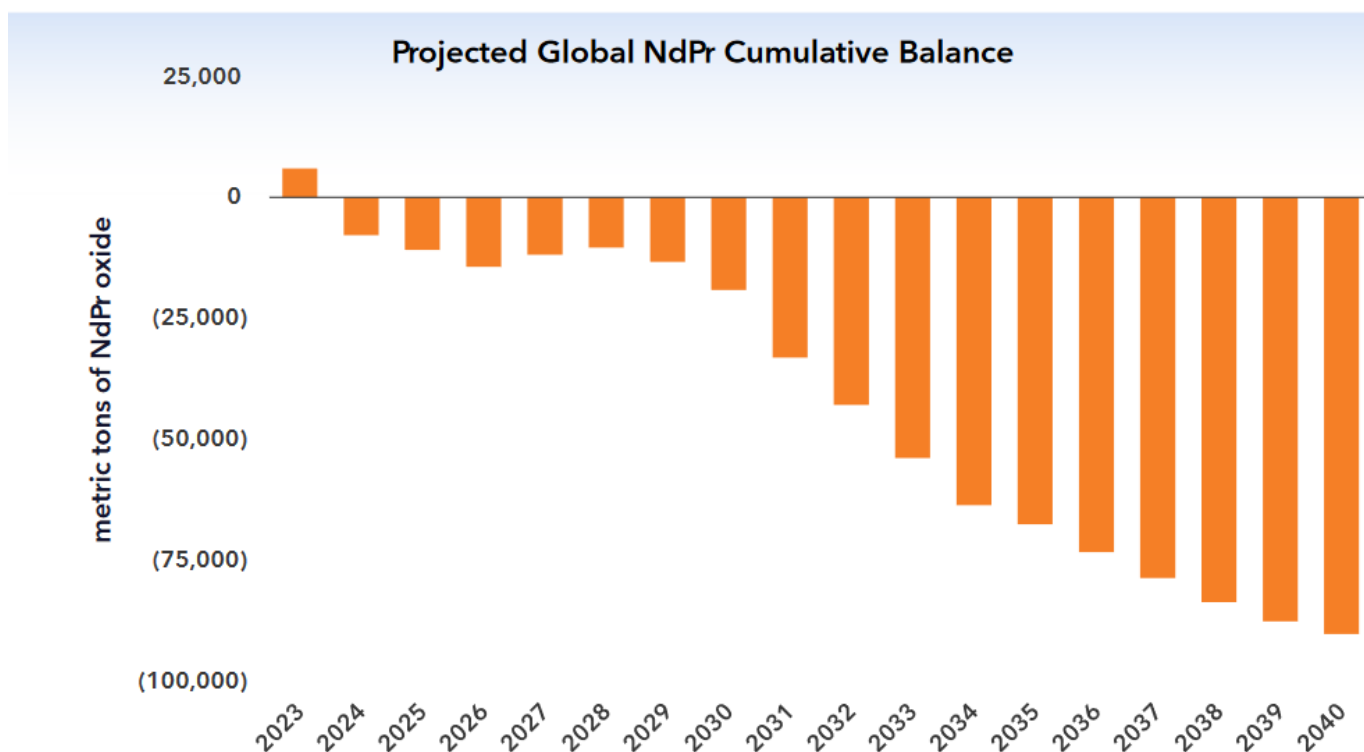
As discussed in a recent [InvestorNews article](#), the consensus of industry experts is for 2024 to be a consolidation year. The article states: "2024 should see a year of consolidation for the rare earths sector as some experts are telling me. Some [forecasts](#) are for NdPr supply deficit to begin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

The Critical Minerals Institute Report (12.27.2023): Politics Driving Marketable Commodities into 2024

written by Matt Bohlson | February 23, 2024

Welcome to the December 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 or click here to visit the [CMI Library](#).

Global macro view

December 2023 saw a further fall in U.S. inflation from 3.2%pa in October to [3.1%pa](#) in November. As expected the U.S. Fed left interest rates unchanged at their December meeting. Even more significant was the Fed indicated that there are potentially [‘3 interest rate cuts coming’](#) in 2024. This was an early Christmas present for U.S. equity markets which continued their recent

rally. Year to date, as of December 26, 2023, the S&P 500 is up 25.75% and the NASDAQ is up an amazing 43.25%. Of course, this follows heavy falls in 2022.

In late December China signaled a possible early 2024 interest rate cut when they [reduced](#) bank deposit rates. As a result China 30 year government bond yields hit their lowest level since 2005. All of this [recent support](#) for China's economy and property market looks likely to set up a potential China recovery story in 2024. If China starts to recover in 2024 it would be a positive for commodity markets including the critical minerals.

The Russia-Ukraine war drags on through the European winter. There are some very [early signs](#) that both sides may be willing to end the war in 2024. We will see. Meanwhile, the Hamas-Israel war has been contained for now. We can only hope for peace in 2024.

Global plugin electric vehicle ("EV") update

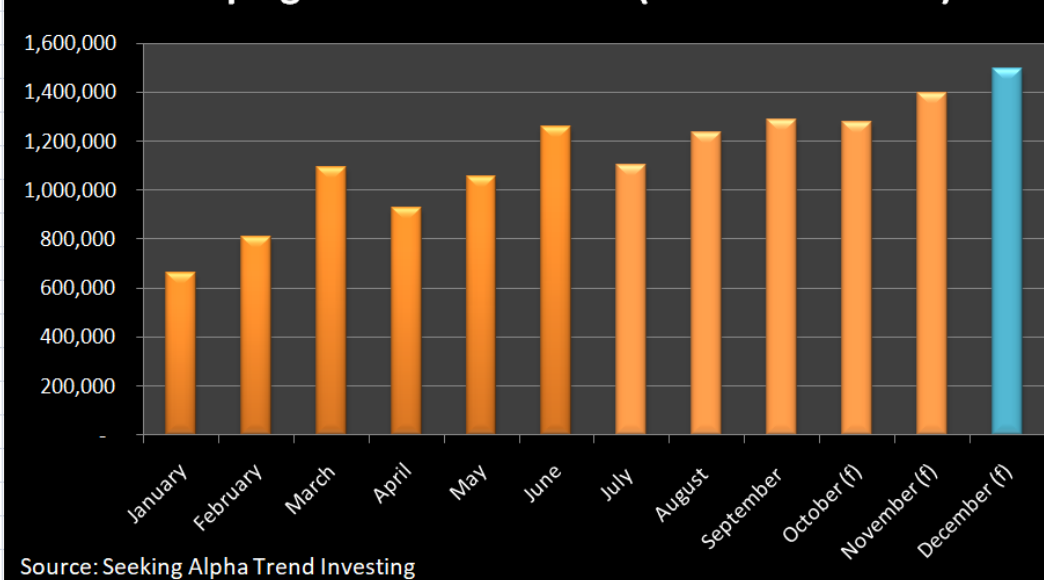
Global plugin electric car sales were [1,279,000](#) in October 2023 (the second-best month ever), up 37% YoY. November global sales reached [1.4 million](#). December should be even better. CPCA expects China's NEV (New Energy Vehicle) retail sales in December 2023 to reach a record [940,000 units](#) (41.4% market share), up 46.6% YoY. That should mean December global EV sales will be around 1.5 million.

This means that 2023 global plugin electric car sales should end up close to 13.6 million (~17% market share), for a growth rate of ~29% YoY (a significant slowdown from the 56% growth rate in 2022).

2023 Global plugin electric car sales (actual + forecast)

Month	Sales
January	662,000
February	812,000
March	1,097,000
April	928,000
May	1,057,000
June	1,260,000
July	1,104,000
August	1,238,000
September	1,291,000
October (f)	1,279,000
November (f)	1,400,000
December (f)	1,500,000
	13,628,000
H1 sales	5,816,000

2023 Global plugin electric car sales (actual & forecast)



In other EV related news, in December Germany announced an abrupt [ending](#) to their EV subsidy. The subsidy was originally intended to apply until the end of 2024.

We also heard news that the U.S. is considering [raising tariffs](#) on Chinese EVs and Chinese solar products. The White House plans to complete a tariff review in early 2024. Chinese EVs entering the USA already have a [25% tariff](#). This follows the [EU's](#) probe into China subsidies for EVs. All of this has come about due to the fact that about 60% of all global plugin EV sales are in China and the fact that China completely dominates the EV market and EV supply chain. This is now leading to a flood of compelling Chinese electric cars being exported to global markets where Western manufacturers (excluding [Tesla Inc.](#) (NASDAQ: TSLA)) are struggling to compete with China.

Finally, in December it was announced that Canada will require all new cars and trucks to be zero-emissions vehicles by 2035. The Canadian government [stated](#): "The Standard will ensure that Canada can achieve a national target of 100 percent zero-emission vehicle sales by 2035. Interim targets of at least 20 percent of all sales by 2026, and at least 60 percent by 2030."

Global critical minerals update

In December we got a key U.S. political announcement that will impact EV sales and critical minerals demand in 2024 and beyond.

U.S. Foreign Entity of Concern (“FEOC”) proposal

The U.S. DoE releases proposed interpretive guidance on Foreign Entity of Concern (“FEOC”) rules. FEOC’s include China, Russia, North Korea, and Iran. Key proposals include:

- Beginning 2024, companies that have >25% ownership or control by a FEOC will not be eligible for tax credits available under the Inflation Reduction Act (IRA).
- Beginning in 2024, an eligible clean vehicle (for IRA credits) may not contain any battery components that are manufactured or assembled by a FEOC.
- Beginning in 2025, an eligible clean vehicle may not contain any critical minerals that were extracted, processed, or recycled by a FEOC.

These rules are quite strict and it is looking like the majority of EVs sold in the USA will not qualify in 2024 and hence not receive the subsidy of up to US\$7,000 per vehicle. For example, the Tesla Model 3 and Model Y base range EVs use Chinese made LFP batteries, making them both ineligible to meet the FEOC rules. Things will only get harder in 2025. Of course, this is designed to motivate auto and battery OEMs to hurry up and build a new western battery supply chain, independent of FEOC.

The FEOC proposal follows last month’s news of new guidelines for the EU Critical Raw Materials Act (“CRMA”) as discussed [here](#). A key ruling was that ***“not more than 65% of the Union’s***

consumption of each strategic raw material comes from a single third county."

U.S. proposal to create a 'Resilient Resource Reserve' for key critical minerals

As [reported](#) in December, the U.S. select committee has recommended the creation of a critical mineral reserve to protect domestic industry. The Fastmarkets report [stated](#):

*"The adoption of such a reserve is intended to "insulate American producers from price volatility and (the People's Republic of China's) weaponization of its dominance in critical mineral supply chain. Such a reserve would be used to sustain the price of a critical mineral when prices fall below a certain threshold and would be replenished through contribution from companies when prices are "significantly" higher"...The fund would target critical metals where there is high price volatility, low US domestic production and import dependence on China. **Cobalt, manganese, light and heavy rare earths, vanadium, gallium, graphite, germanium and boron** are critical minerals that fall under that category, according to the report..."*

Note: Bold emphasis by the author.

Lithium

China lithium carbonate spot prices [fell again](#) in December 2023, with the price now at [CNY 96,500/t](#) (USD 13,505/t) and [down 82%](#) over the past year. Prices are now below the marginal cost of production, meaning a bottom should be found very soon (assuming EV sales hold up in 2024).

Industry participants are increasingly calling a likely bottom. For example, China Futures Co. analyst, Zhang Weixin, forecasts China's lithium carbonate spot to bottom out between [CNY 80-](#)

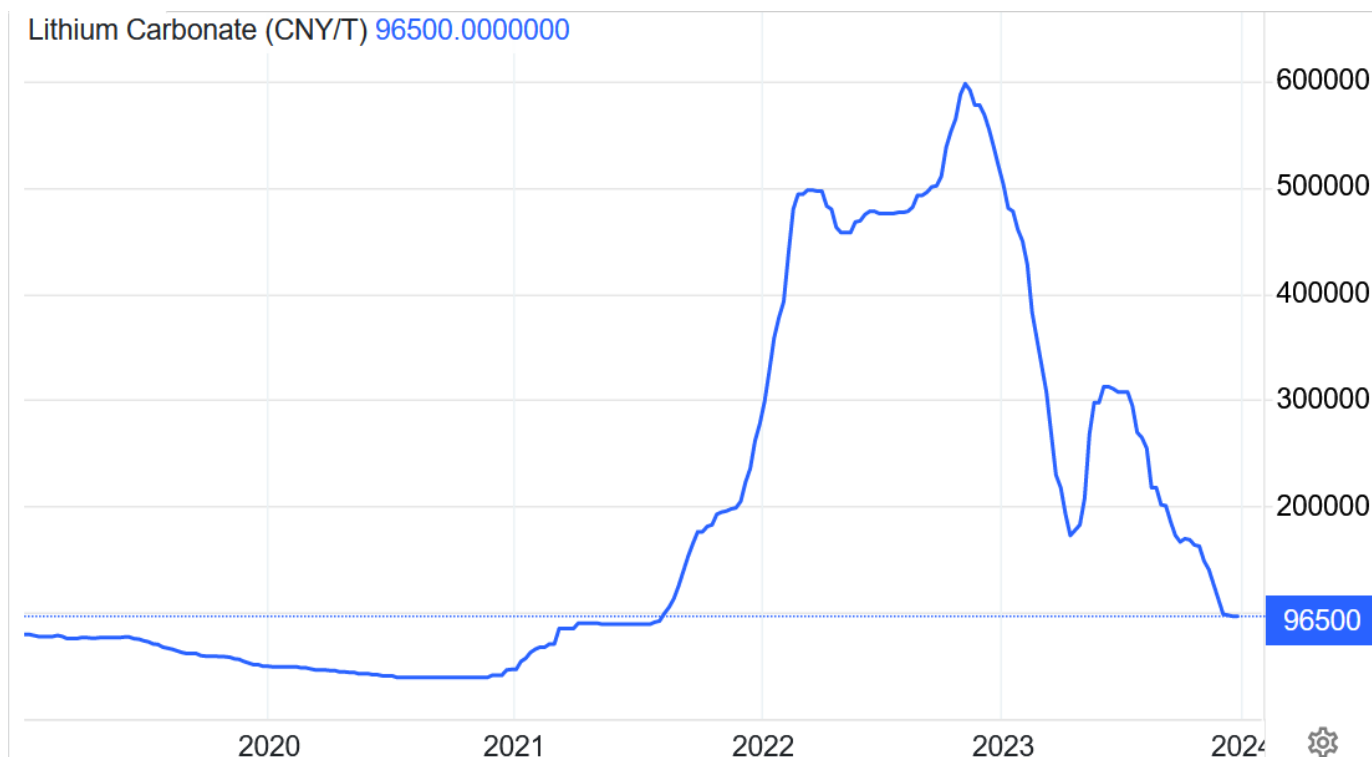
[90,000/t](#) (US\$11,200-US\$12,600/t). Goldman Sachs is a little more bearish with a 1 year price target for China's spot lithium carbonate of [US\\$11,000/t](#).

The negative price action has not deterred SQM and Gina Reinhart's Hancock Prospecting (private) who recently increased their bid to A\$3.70 per share to [takeover](#) Australia's Azure Minerals Limited (ASX: AZS).

In December we saw shareholders approve the Allkem Limited (ASX: AKE | TSX: AKE) – Livent Corporation (NYSE: LTHM) '[merger of equals](#)' which is now expected to close by January 4, 2024. The new company is to be known as Arcadian Lithium PLC (NYSE: ALTM | ASX: LTM).

Finally, in December we got news that free markets supporter Javei Milei [was elected](#) as the new Argentina President. This is good news for those companies with mining projects in Argentina, of which there are many lithium projects under development.

The lithium carbonate spot price collapsed in 2023 and is now below the marginal cost of production and expected to form a bottom very soon



Source: [Trading Economics](#)

Magnet Rare Earths

Neodymium prices fell in December to [CNY 560,000/t](#) almost 1/3 the price of the February 2022 peak. The [one year outlook](#) remains quite weak; however, this will largely depend on how China's economy performs in 2024. A strong pickup in EV sales in 2024 could quickly change the market dynamics.

The big news in December in the rare earths market this month was China's announcement to ban the export of [rare earth processing technology](#). As discussed in an [InvestorNews article](#), Western companies have been efficiently separating rare earths for some time, so this ban has minimal implications. CMI Co-Chair and rare earths expert, Jack Lifton, [states](#): "Solvent extraction separation is a long-established practice everywhere. The issue is the production of rare earth metals and alloys and from them of rare earth permanent magnets. This is where China's massive lead in manufacturing technology may be insurmountable. Time will tell."

Of course, the trend for Western auto OEMs is concerning, especially following China's recent introduction of export [license permits](#) on graphite products (including synthetic graphite, flake graphite, and spherical graphite).

Cobalt, Graphite, Nickel, Manganese, and other critical minerals

Cobalt prices (currently at [US\\$12.91/lb](#)) were lower the past month and continue to be very depressed. China's slowdown and the [slowdown](#) in global electronics sales have suppressed cobalt demand at the same time as new supply from the DRC and Indonesia has risen.

One glimmer of hope for the Western cobalt producers is that the U.S. government announced in December the creation of a critical mineral 'Resilient Resource Reserve' (as discussed above).

Flake graphite [prices](#) also remain very weak with prices near the marginal cost of production. Following the introduction of Chinese export license permits in December 2023 there has been some increased signs of buying activity and a slight graphite [price improvement](#). However, the main concern for flake and spherical graphite is that lower energy input costs in China have lowered the cost of producing synthetic graphite, thereby dampening demand for flake and spherical graphite. Despite this, there are several analysts now forecasting graphite deficits to begin as soon as 2024/25 as you can read in a recent InvestorNews article [here](#).

Nickel prices fell slightly in December to [US\\$16,279/t](#). The [1 year outlook](#) for nickel remains poor due to oversupply concerns from Indonesia. A recovering global economy and Chinese property sector will be needed to help balance the nickel market, which is currently in oversupply.

Manganese [prices](#) also fell slightly in December and are now at [CNY29.20/MTU](#).

2023 has been a tough year for many [critical mineral prices](#) (except for gallium, germanium, tellurium, indium, tin, and uranium – [a critical mineral in Canada](#)) as a slowing China and global economy weighed down demand at a time where supply increased. Uranium was the standout performer in 2023 with a gain of [over 75%](#). You can read an article [here](#) from back in April 2023 where we highlighted the coming rise of uranium.

The key to watch in 2024 will be if we see lower interest rates in China trigger a China property and economy recovery. A stronger U.S. and Europe in 2024 would also help boost the global economy and demand for critical minerals. Lower interest rates in 2024 could potentially make it a great year for the auto sector and EV metals.

Wishing you all a safe and prosperous 2024 from the Critical Mineral Institute (“CMI”).

Top 3 best valued lithium juniors, as lithium prices near a bottom

written by InvestorNews | February 23, 2024

Following an incredible 2022, the lithium sector has had a horrible 2023; however soon the pain should be over. The China lithium carbonate spot price is down 82.5% in the past year and is now below the marginal cost of production, meaning the

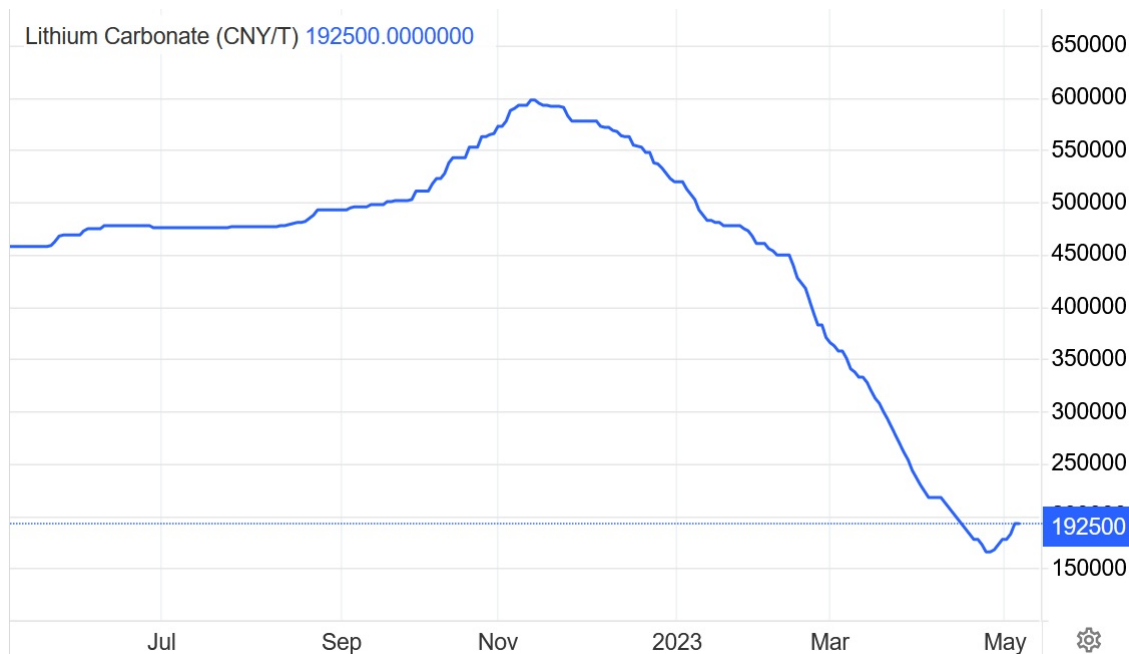
lithium price fall should end very soon. This assumes the marginal cost producers continue to stop production and that EV sales continue to grow in 2024.

Lithium Prices Recover as China EV Sales Rebound Reigniting Investor Interest in Albemarle & Tesla

written by Matt Bohlsen | February 23, 2024

The first quarter in 2023 was a rough period for lithium stocks as the China lithium carbonate spot price crashed lower. However, the second quarter is looking a lot better.

FIGURE 1: China lithium carbonate spot prices appear to be rebounding after hitting a low in late April 2023



Source: [Trading Economics](#)

Global and China EV sales recovered strongly in March and April 2023

March 2023 global plugin electric car sales were [over the 1 million mark](#) and were the 'second best month ever'. This was due to very strong sales in China and Europe, with the USA also contributing. It is already looking like the panic sell-off in lithium stocks has been overdone with stocks rebounding higher in the past 3 weeks.

Reports have it that Chinese lithium consumers are buying again after running down inventories in Q1/2023. Certainly, China plugin electric car sales have rebounded very strongly with over 500,000 sales in March and approximately 600,000 in April 2023. Those sales numbers are a huge increase over China's January sales which fell 8% Year-over-Year to [343,000](#) as new energy vehicle ("NEV") subsidies expired.

Lithium stocks rallying again

Strong EV sales in China are leading to early signs of a China lithium price recovery. Lithium contract prices remain much higher than spot prices reflecting the past lithium price rise and the strong outlook for lithium demand in 2023 and beyond.

As shown on the chart below, February, March, and April saw the leading lithium stocks (Albemarle Corporation (NYSE: ALB), Sociedad Química y Minera de Chile S.A. (NYSE: SQM), Livent Corporation (NYSE: LTHM), and Pilbara Minerals Limited (ASX: PLS)) follow spot prices lower; however, in May we can see a potential price recovery starting (green arrow in chart below).

FIGURE 2: Leading lithium stocks have been moving higher in May buoyed by improving EV sales and lithium prices (NYSE: ALB, NYSE: SQM, NYSE: LTHM, ASX: PLS)



Source: [Yahoo Finance](https://finance.yahoo.com)

Albemarle remains very positive on the lithium market with takeover offers and expansion plans

During the lithium price collapse of early 2023, [Albemarle](https://www.albemarle.com) was

moving in the opposite direction as it made several key announcements that indicated its strong belief that the lithium market would rebound. Below is a brief summary:

- March 27, 2023 – Albemarle [announced a takeover offer for Liontown Resources at a 69% premium](#) to the 30-day VWAP.
- May 3, 2023 – Albemarle [announced plans to double lithium hydroxide output in Australia](#), effectively adding 50,000 tonnes per year of lithium refining capacity at their Kemerton plant.

Furthermore, Albemarle announced on May 3, a [net sales increase of 129% for Q1/2023](#). Albemarle CEO Kent Masters [commented](#):

“Compared to last year, first quarter net sales more than doubled, adjusted diluted earnings per share more than quadrupled providing a robust start to the year. ... We see strong sales volume growth for the rest of the year but have modified our guidance to reflect softening lithium market pricing. We remain confident in the underlying market strength of our world-class asset base and our long-term growth strategy.”

Albemarle knows the lithium market better than most, especially given it has been the industry leader for over a decade. Currently, they have numerous expansion plans globally including:

- The Salar Yield Improvement Project in Chile;
- The above-mentioned Kemerton trains III & IV lithium hydroxide production expansion in Australia;
- An under-construction lithium conversion facility in Meishan China; and,

- The Kings Mountain mine development in the USA that will eventually feed their planned new South Carolina lithium processing facility.

Added to these items is the attempted takeover of [Liontown Resources Limited](#) (ASX: LTR) for A\$2.50 or US\$1.66 per share in cash, which values Liontown at A\$5.2 billion or US\$3.4 billion on an enterprise basis, at the time of the offer.

Both Bank of America and Scotiabank have recently upgraded Albemarle. The latter assigned a [US\\$250 price target](#), which is well above the current price of US\$195 at the time of writing.

Closing remarks

Several negative events in early 2023 caused a dramatic fall in China spot lithium carbonate prices. The lithium price had increased over 10x and was due for a fall, with Q1 typically being a weak quarter due to seasonal impacts causing lower EV sales.

Discussions about sodium-ion batteries did not help either. As it turns out, market participants are now realizing that lithium demand is still very strong, despite some short-term volatility. Sodium-ion batteries, at best, will have limited use cases in energy storage, and cheap, small EVs, mostly sold in China, due to inferior volumetric energy density.

For investors, the recent market dip in lithium stocks may prove to be a good time to go shopping. The long-term demand wave for lithium is a supercycle with 2037 demand forecast to be [35x higher](#) (according to [Trend Investing](#)) than 2020 levels.

Certainly, Albemarle, the lithium leader, remains extremely bullish on the lithium sector with a multi-billion dollar takeover offer and expansion plans.

The EV and stationary energy storage booms are here and will only grow stronger this decade. The [Tesla Inc.](#) (NASDAQ: TSLA) [Master Plan 3](#) reports that we need 240 TWh (240,000 GWh) of energy storage for the world to run on 100% renewable energy, most from lithium-ion batteries. Given global lithium-ion battery production in 2022 was only about 700 GWh you can draw your own conclusions. Albemarle and Tesla already have shown us what they think. The latter is [breaking ground on a new billion-dollar lithium refinery](#) in Texas this week.

Chile's Plan to Nationalize its Lithium Industry Could Impact These 5 Companies

written by InvestorNews | February 23, 2024

In a television address on Thursday evening, Chile's president Gabriel Boric announced plans to nationalize the country's lithium industry, with massive implications for the booming lithium industry.

The left-wing former student leader set out his government's strategy for developing the huge lithium resources, including the creation of a state-owned National Lithium Company to lead the sector and partner with companies to develop the lithium projects but with state control.

The prospect of state intervention in natural resources would normally send investors running for the exit. Could this time be different? Under Cold War-era rules, lithium production in Chile

is strictly controlled with only two companies, Albemarle (NYSE: ALB) and SQM (NYSE: SQM), entering production in the last four decades.

To break the deadlock, the National Lithium Company would be empowered to form joint ventures with private investors to develop lithium production in the salt flats that dot the Andean Mountains.

State-owned copper producer Codelco, one of the largest copper producers in the world, will lead the transition until the new National Lithium Company can be set up. President Boric's plan still needs to be approved by Chile's National Congress which is expected to be debated later this year.

This announcement follows Mexico's [legislation last year](#) to ban private and non-Mexican lithium mining and processing activities and restrict all future projects to state-run companies, and the [recent discussions](#) amongst leaders in Argentina, Chile, Bolivia, and Brazil to form an OPEC-like cartel for the lithium industry.

According to the USGS, Chile was the second largest lithium producer in 2022, behind Australia, with China third, Argentina a distant fourth, and Brazil fifth. Chile has the largest lithium reserves, while Bolivia and Argentina have the largest overall resources.

Here are some of the firms operating in Chile that could be impacted:

Albemarle Corporation (NYSE: ALB)

- ALB is a global leader in engineered specialty chemicals. The company produces lithium, bromine, and catalysts for various industries, such as electric vehicles, flame retardants, and oil refining.

- The company has operations in Chile, where it extracts lithium from brine deposits in the Salar de Atacama, and an existing joint venture with Codelco to explore and develop new lithium resources in the country.
- ALB has a market capitalization of over US\$24 billion and employs about 5,600 people and serves customers in 100 countries.

CleanTech Lithium Plc (AIM: CTL)

- CLT owns claims on three Chilean salt flats, the largest of which – Laguna Verde – is estimated to contain 1.5 million tonnes of lithium carbonate equivalent (“LCE”).
- Using Direct Lithium Extraction technology, which avoids the need for large and wasteful evaporation pools, the company plans to build an operation that could produce around 20,000 tonnes annually LCE by 2025.
- CLT has a market capitalization of approximately £60 million.

Lithium Power International Limited (ASX: LPI)

- LPI controls one of the most advanced private lithium projects in Chile. With an environmental license and export permits already in place, it is already in talks with financiers to fund its US\$626 million Blanco project on the Salar de Maricunga which could produce around 20,000 million tonnes annually of lithium carbonate over 15 years.
- The company now expects the government to name the project as the country’s newest lithium project through a

partnership with the state.

- Its market capitalization is approximately A\$167 million.

Sociedad Química y Minera de Chile S.A. (“SQM”) (NYSE: SQM)

- SQM is today the world’s largest producer of lithium and ramped up production from the claims it rents on the Salar de Atacama to keep up with booming demand. But it has said future investments are conditional on reaching a new agreement with economic development agency CORFO, which owns the claims, on its rental contract which expires in 2030. So far, these talks have got nowhere.
- But investment bank JP Morgan thinks the announcement of a new policy could be positive for the firm by facilitating a new deal with CORFO while the creation of the new national lithium company, which requires the approval of Congress where the government lacks a majority, could take several years.
- SQM has a market capitalization of over US\$22 billion and employs about 7,000 people in 110 countries.

Wealth Minerals Ltd. (TSXV: WML)

- WML owns mineral claims on the southern part of the Salar de Atacama which today accounts for around a third of global lithium production and 15% of known lithium reserves.
- The salt flat boasts lithium grades of more than 1,800 micrograms per liter (“mg/l”), compared to 1,250 mg/l and just 740 mg/l in Salar de Hombre Muerto in northwest Argentina where Livent Corporation (NYSE: LTHM) operates

its main lithium operation.

- WML has a market capitalization of approximately C\$110 million.

Figure 1: South America's Lithium Triangle



Source: eResearch Corp.

Mixed Signals for the Lithium Market as China Spot Prices Decline but M&A Paints a Bullish Picture

written by Matt Bohlsen | February 23, 2024

So far in 2023, the lithium sector is a mix of good news and bad news.

The bad news relates to the China lithium carbonate spot price collapsing, [now down ~65%](#) (see chart below) from its crazy high of CNY 600,000/t (US\$87,272/t) in late 2022. Contract prices remain strong and lithium hydroxide ([~US40,000/t](#)) and spodumene ([US\\$3,810/t](#)) spot prices have been less impacted, but have still fallen about 1/3 to 1/2 from their recent highs.

The good news relates to the fact that the leading lithium companies and [most analysts](#) remain very bullish on lithium in the mid to long term. We saw this very recently with [Albemarle Corporation](#)'s (NYSE: ALB) A\$5.2 billion (US\$3.4 billion) [takeover offer](#), at a 69% premium, for [Liontown Resources Limited](#) (ASX: LTR). Little wonder investors seem confused. Is the lithium boom over, or is it just getting started?

China lithium carbonate spot price collapsing

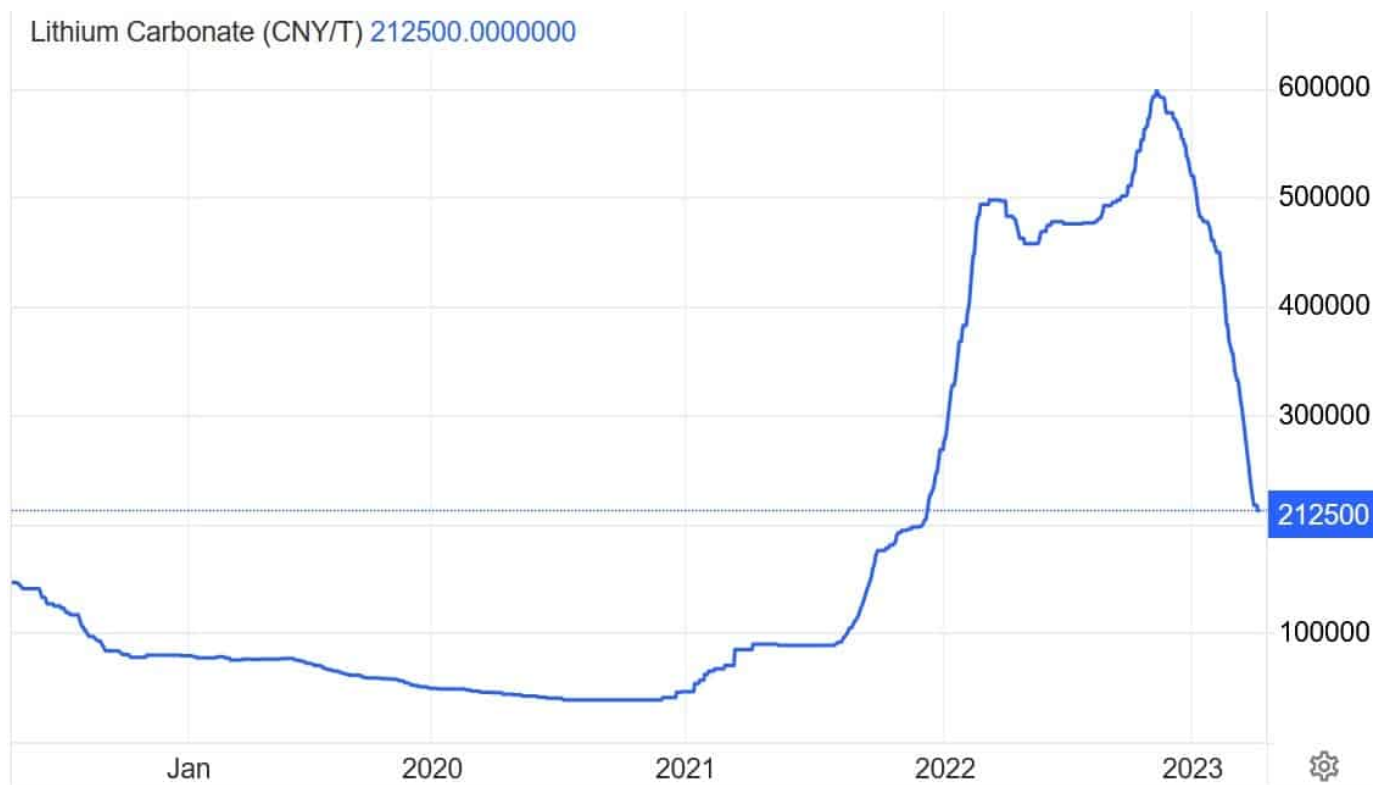
As shown in the chart below, the China lithium carbonate spot price had a meteoric rise in 2022 and is now collapsing in 2023. The main reasons for the downturn in price are a slowdown in China's new energy vehicle ("NEV") sales growth in 2023 and the Chinese cathode and battery suppliers running down inventory

thereby delaying lithium purchases in order to get a lower price. Also, liquidity in the China spot market has been rather low in Q1/2023.

China NEV sales in January 2023 saw [an 8% year-over-year \("YoY"\) fall](#), due to the China federal NEV subsidies ending, Covid-19 impacts, and the Chinese New Year falling in January. February saw China NEV sales recover and [rise by 56% YoY](#), and March saw sales [rise by 34.8% YoY](#). As a result, in Q1/2023, China saw NEV sales [rise 26.1% YoY](#) and reach a total of nearly [1.59 million](#) units. The first quarter is always the slowest month for NEV sales in China, so the seasonal slowdown from Q4/2022 to Q1/2023 was also a significant factor.

The Q1/2023 26.1% growth is not bad considering the poor January; however to keep the lithium market in balance between supply and demand, Trend Investing forecasts we need global plugin electric car growth to be at [36% YoY](#). In other words, China's NEV sales growth rate in Q1/2023 of 26.1% is lagging below the 36% global growth rate needed in 2023.

China lithium carbonate spot price – 5-year chart



Source: Trading Economics

Albemarle's A\$5.2 billion (US\$3.4 billion) takeover offer for Liontown Resources

If we are in a lithium bear market, why is the lithium leader, Albemarle, offering to buy Liontown Resources at a [69% premium](#) to its 30-day volume weighted average price ("VWAP")? And willing to outlay A\$5.2 billion (US\$3.4 billion)?

The short answer is that Albemarle sees the longer-term picture, that is lithium demand is set to [grow ~35x from 2020 to 2037](#) according to Trend Investing, or [13-42x](#) from 2020 to 2040 according to the IEA.

Also, the fact that tier 1 lithium assets are rare. Liontown Resources 100% owned Kathleen Valley Project is a tier 1 global resource, one of the top 5 largest lithium spodumene resources globally. The resource estimate is a massive [156MT @ 1.4% Li2O](#). The project is at the advanced stage with production set to

begin in [mid-2024](#) and initially ramp up to about 600,000 tonnes per annum (“tpa”) of spodumene.

Albemarle is playing the long game and understands the lithium market better than most. They want to secure another tier 1 long-life mine in Australia just as they did when they bought Rockwood Holdings Inc. (former owner of the [Greenbushes Mine](#)) for [US\\$6.2 billion](#) in 2014. The reason then was “[to capture the upside potential from the electrification of automobiles](#) that’s likely to occur over the next several years”. The reason to buy Liontown Resources is the same today.

Lithium demand should surge in 2024 and 2025 as new EV segments hit the market

The second half of 2023 should see the Cybertruck from Tesla (Nasdaq: TSLA) finally begin production and a [rapid ramp-up in 2024](#). We will also see in 2024 a strong ramp-up in sales of other pickup trucks in the USA from Ford, GM, Ram (Stellantis), and others. With reportedly [over 1.6 million reservations](#) for Tesla Cybertruck and a battery size twice that of a Model 3 RWD, the Cybertruck alone will cause a bump in lithium demand.

Then in late 2024 or 2025, we should see Tesla potentially start production of their compact car, with plans ‘reportedly’ to produce [4 million per year](#). BYD is already producing great value compact cars (Dolphin, Seagull, etc) in China at very affordable prices [well under US\\$20,000](#). BYD plans to sell “[at least 3 million](#)” plugin electric cars in 2023. It looks like by 2025, Tesla and BYD alone could be selling 10 million electric cars per year combined, which would be almost the same as the entire market in 2022 of [10.522 million](#). That’s how fast things are changing! Global electric car sales are forecast to almost double in just 2 years from 10.5 million in 2022 to [~20 million](#) in 2024, according to Trend Investing.

The limiting factor for auto OEMs will be securing batteries and their limiting factor is lithium.

Electric pickup trucks will soon be as popular as Tesla Model 3 in the USA, after that will be millions of compact electric cars potentially in 2025



Source: [iStock](#)

Closing remarks

So far in 2023, it has been a year of contradictions in the lithium market. Collapsing China spot lithium carbonate price paints a bearish picture, yet a multi-billion dollar takeover offer at a 69% premium price paints a bullish picture.

The conclusion is rather simple. Short-term lithium price action is a result of a China Q1/2023 NEV slowdown in growth, just as a wave of new lithium supply is hitting the markets. Chinese

cathode and battery makers winding down inventory has helped them achieve lower pricing, but cannot go on too much longer. New emissions rules in China come into effect from July 1, 2023 which should boost NEV sales. Combined with strong demand from the USA boosted by the IRA incentives, and Europe embracing EVs, means that H2, 2023 should start to see some strong recovery in global EV sales and hence lithium prices. This assumes we are not in a severe global recession by then.

Looking out to the rest of the decade and it continues to look like lithium supply is the limiting factor for the EV boom, which means quality lithium miners should be the long term winners. But remember as is usual in the mining sector, expect to see large price swings up and down, even in a lithium supercycle.

Can the Global Automotive Industry Source Enough Critical Minerals to Meet EV Production by 2030?

written by Jack Lifton | February 23, 2024

American President, Joe Biden, has decreed, and the U.S. Congress has mandated, that, by 2030, 50% of new domestic American OEM automotive production must be of electric vehicles (EVs). Further, the U.S. government now requires by law that, by 2028, for a new EV purchaser to receive a tax credit of up to \$12,500, then 80% of the vehicle's components must have been

made in the United States from raw materials produced and processed in the United States.

American OEM automakers are losing money hand-over-fist on making and selling EVs. Ironically, it is their profits from internal combustion engine (ICE) vehicles that are keeping them afloat. Without subsidies, also known as “tax credits,” no one could continue to make and sell EVs. And, quite frankly, without ICEs, Tesla could not afford to be in the EV business. The supply chains for universal automotive components used both by ICEs and EVs could not exist without the scale and sales of the ICE industry.

Sourcing Critical Minerals for EV production

I think that the idealogues, both elected and unelected, in North America and Europe need to answer some questions. Today I am asking, “How does the global non-Chinese OEM automotive industry plan to source enough critical minerals and metals, annually, to meet government-mandated, not market-driven goals for the production of EVs by 2030?”

In the following discussion, I’m going to limit myself to the critical minerals and materials needed for the production of EVs just in the United States. Keep in mind that American domestic OEM automotive production is just 10% of the global annual total production.

The domestic American OEM automotive assembly industry most of which is owned and operated by foreign-owned manufacturers is building today, in North America, at least nine new factories to construct lithium-ion batteries for EVs. In addition, a half dozen EV drive train factories and a dozen assembly plants will be built or converted to pure EV production by the end of this

decade.

Calculating the amount of Critical Minerals needed

The figures below are averages used in a variety of lithium-ion types. The only constants are for lithium and graphite, which are calculated for a 100 kWh Tesla battery no matter what the cathode chemistry.

The figures for material usage for rare earth permanent magnets are for one drive motor. American cars typically use two.

For the battery:

Material/Metal	Usage per BEV	For 7,500,000 EVs
Lithium (no matter which chemistry)	6-8 kg (measured as metal)	45-60,000 metric tonnes
Nickel	40 kg	300,000 metric tonnes
Cobalt	12.5 kg	93,750 metric tonnes
Manganese	24.5 kg	183,750 metric tonnes
Copper	53 kg	397,500 metric tonnes
Graphite	66 kg	495,000 metric tonnes

For the drive motor and the 25 accessory micro-motors:

Neodymium / praseodymium (75:25)	1.5 kg	56,250 metric tonnes
Dysprosium	0.05 kg	562 metric tonnes
Terbium	0.01 kg	112 metric tonnes
Gallium	tbd	

Note that the amounts above are annual needs for 50% of projected American domestic production using a production number

baseline of 15,000,000 vehicles per year, which is more than 2022 production and sales but far less than the 21st-century average.

The material usage per vehicle comes from the most recent estimates of the International Energy Association (“IEA”).

Finally, note that the amount of lithium required, up to 60,000 tonnes, measured as metal, is equal to 360,000 tonnes, measured as lithium carbonate equivalent (LCE), which is more than half of the global production of LCE in 2022!

Assuming that 50% of global OEM automotive production in 2030 will be EVs, you need to multiply the above demand numbers each by a factor of between 5 and 10 just to assume that the total global production of vehicles remains the same in 2030 as today, about 100,000,000 vehicles per year.

The amount of lithium necessary for enough stationary storage to manage a world totally converted away from fossil fuels is estimated to be 3.5 times as much as is necessary for the conversion of the global automotive fleet, so you need to add that demand to the above totals. I do not know how much of the world’s energy production in 2030 will be from non-fossil fuels, but even if it is just 20% of the total the above demand numbers would double.

The question we need to ask...

The core questions are:

1. Can the world’s economies divert enough of their total capital and natural resources to effect the above transformation(s)?
2. Even, if so, are there sufficient resources of the critical minerals and processing capacity for transforming

them into end user products to carry out even this percentage of the transformation in just 7 years?, and

3. Would even the attempt to transform the global energy production economy from fossil-fuels to alternate energy destroy wealth creation and its wide distribution bringing about the decline of the Western standard of living and the destruction of any hope that the developing world has of achieving that standard?

It's time to decide if it's all worth it.

Lithium Prices Soar as Demand Surges Amid EV Boom, But Is the Bull Run Sustainable?

written by InvestorNews | February 23, 2024

Most commodities are cyclical in nature. The ebb and flow of demand, potentially from a new application or general growth, which in turn makes the supply of that commodity scarce can cause prices to rise, sometimes dramatically. This is followed by a supply response that typically is too effective (because everyone wants to partake in the high commodity price) and eventually, the demand is outstripped by supply, commodity prices in turn fall or outright collapse and the cycle repeats.

In the case of lithium, we've been seeing demand surge as the electric vehicle (EV) revolution accelerates while the ever-increasing supply is failing to keep pace. There are lithium headlines in the news all the time now, with the likes of

[General Motors Co.](#) (NYSE: GM) and [Tesla, Inc.](#) (NASDAQ: TSLA) inking supply deals with producers or the speculation of deals. It would appear we are in the heart of a bull market for lithium...or are we?

Lithium Boom – 1950s

This isn't the first lithium boom the world has seen. You may be surprised to learn that the first one began in the 1950s when the world's primary source of lithium came from North Carolina. Lithium was extracted from spodumene (hard rock) and was a key component of the military's H-bomb program. As a reference point, by the mid-1970s U.S. lithium production was roughly 2,900 tons per year. (1 US ton = 0.97 metric tonne)

Lithium Boom – 1990s

Lithium's next rally occurred in the early 1990s when Sony first began production of the lithium-ion battery used in consumer electronics. By the end of 1991, Sony had ramped up production to 100,000 batteries a month. Enter Sociedad Química y Minera de Chile S.A., or SQM, the Chilean fertilizer and mining company which began selling lithium (from brine) in late 1996, almost immediately lithium carbonate prices fell by a third, to US\$2,000 a ton. This marked the end of the existing American lithium industry.

Current Lithium Production By Country (2021)

Rank	Country	2021 Production (tonnes)	% of Total
#1	Australia 🇦🇺	55,416	52%
#2	Chile 🇨🇱	26,000	25%
#3	China 🇨🇳	14,000	13%
#4	Argentina 🇦🇷	5,967	6%
#5	Brazil 🇧🇷	1,500	1%
#6	Zimbabwe 🇿🇼	1,200	1%
#7	Portugal 🇵🇹	900	1%
#8	United States 🇺🇸	900	1%
	Rest of World 🌐	102	0.1%
Total		105,984	100%

Source: [World Economic Forum](#)

Lithium Boom – Today!

Fast forward to today and in November we saw lithium prices surge above US\$80,000/tonne in a sign that supply was definitely not keeping pace with the huge increase in demand sparked by EVs. You have wildly [bullish forecasts](#) suggesting supply needs to grow somewhere between 150,000 to 200,000 tonnes every single year.

For more perspective, consider that Tesla is targeting the manufacture of 20 million EVs per year by 2030. In order to produce those vehicles in a year, Tesla will need more lithium than was produced in the world last year, which could explain why the market was all excited when [Bloomberg reported](#) Tesla has been discussing a possible bid for [Sigma Lithium Corporation](#) (TSXV: SGML | NASDAQ: SGML).

And speaking of Sigma Lithium, have a look at their 2 year chart!



Source: [StockCharts.com](https://stockcharts.com)

Investors should be very happy with a 10x move in just under 2 years. There have also been some pretty good runs for some of the Canadian hard rock lithium names. A quick look at the one-year chart for Critical Elements Lithium Corporation (TSXV: CRE | OTCQX: CRECF) and Patriot Battery Metals (TSXV: PMET | OTCQX: PMETF) and you'll see a double and another 10 bagger. It suggests that we may not be in the early innings of this game.

When all this starts to become prevalent in the news cycle, I start to get a little concerned. It's almost like fanatic optimism is a harbinger that the cycle is about to end. I know that isn't very scientific, but let's look a little closer at what I'm getting at. Capital solves problems. With the lithium price at current levels, lithium mines are some of the most profitable in the whole mining sector. One could surmise that supply might respond more rapidly than currently forecast with lots of capital being thrown at exploration and development at present. I wouldn't be surprised if Investment Bankers are cold-calling anyone involved with lithium right now to see if they would like to raise capital. On top of that, when you have the likes of Tesla, GM, etc. buying into producers it tends to

stretch valuations beyond anything that would otherwise seem reasonable. M&A, especially by companies not actually in the mining business, can often be considered a sign that we are getting close to a top. Again, not scientific by any stretch of the imagination but it also typically isn't sustainable behaviour.

Is this a Market Top?

I'm not suggesting lithium is going back to US\$2,000/ton but we have seen the price retreat to just over US\$60,000/tonne largely due to the Chinese market seeing lower subsidies for electrified vehicles and weak consumer confidence. With that said, lithium is still worth eight times more than it was before 2021 and still wildly profitable for both hard rock and brine producers. Is this a sign that the current bull run for lithium prices is over or just taking a breather before it settles into a new price range or perhaps starts to climb again? I guess it depends on your time frame. Traders may want to look at taking a little profit off the table for now, long term buy and hold investors may not even be paying attention to the day-to-day noise in the market and be comfortable holding lithium equities for the foreseeable future.

My caution to anyone wildly bullish on lithium prices and the corresponding mining companies is this – there are a lot of smart capitalists out there and if a component becomes the most expensive part of your product, a lot of effort will be spent to try and find a replacement or an alternative. I also have a nagging concern that at some point in time, the rapid adoption of EVs may overwhelm the electric grid and put a hard stop to EV growth (at least temporarily). Either of these scenarios could have a sudden and very negative impact on lithium prices but not likely in the near future. So when it comes to investing in

lithium, make sure your risk tolerance matches your investment exposure.