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

written by InvestorNews | March 20, 2024 In a notable development within the lithium industry, <u>Albemarle</u> <u>Corporation</u> (NYSE: ALB), the world's largest producer of lithium, has announced its plan to host an auction for a significant quantity of lithium on March 26. This move marks a strategic attempt to address the persistent issue of price discovery in a market characterized by its lack of transparency and high volatility. Jack Lifton, Co-founder of the <u>Critical</u> <u>Minerals Institute</u> (CMI), offers insightful commentary on the implications of this event, tying it to the broader challenges facing the lithium market today.

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

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

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

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

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

World Renowned Critical Minerals Expert Constantine Karayannopoulos is Bullish on Lithium

written by InvestorNews | March 20, 2024

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

Karayannopoulos offered insightful commentary on the critical minerals market, particularly focusing on lithium and rare

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

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

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

Anode Technology

written by InvestorNews | March 20, 2024 <u>NEO Battery Materials Ltd.</u> (TSXV: NBM | OTCQB: NBMFF), a leader in the development of low-cost silicon anode materials, is at the forefront of a technological revolution that promises to redefine the lithium-ion battery landscape. As the demand for electric vehicles (EVs) and renewable energy storage solutions grows, the quest for more efficient and cost-effective batteries has become more critical than ever. NEO's strategic initiatives and recent achievements reflect its commitment to driving innovation in this space, amidst a broader industry shift towards silicon anodes over traditional graphite.

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

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

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

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

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

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

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

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

written by Matt Bohlsen | March 20, 2024 Welcome to the December 2023 <u>Critical Minerals Institute</u> ("CMI") report, designed to keep you up to date on all the latest major news across the critical minerals markets. Here is the <u>CMI List</u> of Critical Minerals or click here to visit the <u>CMI Library</u>.

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 <u>'3</u> <u>interest rate cuts coming</u>' 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 <u>reduced</u> bank deposit rates. As a result China 30 year government bond yields hit their lowest level since 2005. All of this <u>recent support</u> 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 <u>early signs</u> 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 <u>1,279,000</u> in October 2023 (the second-best month ever), up 37% YoY. November global sales reached <u>1.4 million</u>. December should be even better. CPCA expects China's NEV (New Energy Vehicle) retail sales in December 2023 to reach a record <u>940,000 units</u> (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 (\sim 17% market share), for a growth rate of \sim 29% YoY (a significant slowdown from the 56% growth rate in 2022).



2023 Global plugin electric car sales (actual + forecast)

In other EV related news, in December Germany announced an abrupt <u>ending</u> 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 <u>raising tariffs</u> 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 <u>25% tariff</u>. This follows the <u>EU's probe</u> 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 <u>Tesla</u> <u>Inc.</u> (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 <u>stated</u>: "The Standard will ensure that Canada can achieve a national target of 100 percent zeroemission 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 <u>here</u>. 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 <u>reported</u> in December, the U.S. select committee has recommended the creation of a critical mineral reserve to protect domestic industry. The Fastmarkets report <u>stated</u>:

"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 <u>fell again</u> in December 2023, with the price now at <u>CNY 96,500/t</u> (USD 13,505/t) and <u>down 82%</u> 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 <u>CNY 80-</u> <u>90,000/t</u> (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 <u>US\$11,000/t</u>.

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 <u>takeover</u> 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 <u>was elected</u> 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



Magnet Rare Earths

Neodymium prices fell in December to <u>CNY 560,000/t</u> almost 1/3 the price of the February 2022 peak. The <u>one year outlook</u> 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 <u>rare earth</u> <u>processing technology</u>. As discussed in an <u>InvestorNews article</u>, 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, <u>states</u>: "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 <u>license permits</u> on graphite products (including synthetic graphite, flake graphite, and spherical graphite).

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

Cobalt prices (currently at <u>US\$12.91/lb</u>) were lower the past month and continue to be very depressed. China's slowdown and the <u>slowdown</u> 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 <u>US\$16,279/t</u>. The <u>1</u> <u>year outlook</u> 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 <u>CNY29.20/MTU</u>.

2023 has been a tough year for many <u>critical mineral prices</u> (except for gallium, germanium, tellurium, indium, tin, and uranium – <u>a critical mineral in Canada</u>) 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 <u>over 75%</u>. You can read an article <u>here</u> 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").

CMI Masterclass: Securing North America's Future, A Conversation on the Critical Minerals Supply Chains with

Jack Lifton

written by InvestorNews | March 20, 2024 In an insightful interview conducted by Brandon Colwell, the Director and Government Relations Liaison for the Critical Minerals Institute (CMI), with CMI Co-Chairman Jack Lifton, the focus is on the burgeoning challenges and strategic responses related to critical mineral supply chains in North America, especially in the context of China's dominance. Jack, a veteran in the field with over 60 years of experience, points out the significant gap in subject matter expertise within the governments of the United States and Canada. This gap, he argues, hinders the effective development and implementation of policies in the mineral sector. He emphasizes the complex and time-consuming process of converting a mineral discovery into an economically viable mining project, underscoring the need for more informed and strategic decision-making in governmental investments and policy development in this domain.

The Critical Minerals Institute Report for September 2023

written by Matt Bohlsen | March 20, 2024

Welcome to the mid-September 2023 Critical Minerals Institute ("CMI") report, designed to keep you up to date on all the latest major news across the critical minerals markets.

Lithium Royalty Corp.: Poised for Success as More Affiliates Reach Production

written by InvestorNews | March 20, 2024

Lithium demand continues to surge each year, despite some year on year ("YoY') volatility in demand and prices. In 2021 the IEA forecast lithium demand to increase from 13x to 42x from 2020 to 2040. Trend Investing forecasts lithium demand to increase 35x from 2020 to 2037 as we move to a 100% electric vehicle world. Rio Tinto Group (NYSE: RIO | LSE: RIO) forecasts that the world will need 60 new lithium mines the size of Jadar. BMI forecasts that we will need 78 new lithium mines from 2022 to 2035.

Elcora Ramps Up Manganese Sales with Vanadium Prospects on the Near-Term Horizon

written by InvestorNews | March 20, 2024

<u>Elcora Advanced Materials Corp.</u> (TSXV: ERA) ("Elcora") is a relatively new manganese ore producer and has other battery material projects containing vanadium, graphite, and copper located in Morocco and Canada. Elcora also has exposure to anode materials and graphene. Demand for manganese remains strong both for the steel industry, but also for lithium-ion batteries containing manganese, typically used for electric vehicles.

Elcora's goal is to be a globally competitive extractor and processor of battery-grade minerals and metals. They plan to do this by becoming a vertically integrated battery materials company and use their cost-effective process to purify highquality battery metals and minerals that are commercially scalable.

How Elcora is anticipating and responding to the Global Energy Revolution



Source: Elcora Advanced Materials company presentation

Manganese production has started in Morocco and new orders are rolling in

As <u>announced</u> in June 2023, Elcora delivered its first manganese order of 500 metric tons of 37%+ high-quality manganese from their Morocco Mine. Elcora owns the Atlas Fox Project in Morocco, which includes the Beni Mellal Manganese Deposit/Mine and the Ouarzazate Project (includes the Omar Mine). Elcora plans to rapidly ramp up their manganese production from these projects with an 8-12 month production target of <u>20,000 tonnes</u> <u>per month</u> of 37% manganese ore.

As <u>announced</u> on July 6, 2023, Elcora has secured two more orders for a total of 1,500 metric tons of 37%+ manganese ore set to be delivered by the end of July 2023, thereby securing sales revenue for the second month in a row for Elcora.

Vanadium production plans with sales potentially as soon as only 6 months away

Elcora is currently developing their Atlas Lion Vanadium Project in Morocco.

Elcora <u>announced</u> in June 2023 the completion of the first phase of vanadinite comminution testing. The result was 8.9% vanadium concentrate. Elcora then began shipping bulk samples for trial tests in smelters in Asia and Europe, and if results come back positive Elcora say they could potentially have concentrate sales revenue in as quick as <u>6 months</u>.

The short-term plan is to build a semi-mobile concentrator plant to produce a 46% lead ("Pb") and 9%+ vanadium ("V") concentrate, with a ramp up to 2,500t/month of concentrate production. Elcora's mid-term plan is to build a hydrometallurgical plant scheduled to produce 1,500 t/year of 99.99% V and 15,000t/year 99.99% Pb.

Elcora's graphite products

In addition to manganese, vanadium and lead; Elcora has <u>developed the technology to produce</u> flake graphite, advanced natural graphite anode powder and graphene. Elcora <u>states</u>:

"Elcora has developed a unique low-cost effective process to make commercially scalable graphite nanomaterials ranging from micro-graphite to graphene."

Flake graphite and anode powder are in growing demand for electric vehicles and energy stationary storage where the graphite is used in the anode part of the battery. Graphene has numerous potential uses and is known as a new wonder material.

Elcora <u>states</u>:

"Elcora has been structured to become a vertically integrated graphite & graphene company that <u>mines</u>, <u>processes</u>, refines graphite, and produces both the graphene and end graphene applications. Elcora's graphene production system is suitable for use with many different graphite sources and has produced industry-leading quality graphene."

Closing remarks

Elcora is executing well on their plans to become a vertically integrated battery materials company. Elcora already has a strong history within the flake graphite, anode powder, and graphene sectors.

Near-term catalysts will be further sales revenue of manganese concentrate from their Moroccan Mine and potentially good news on their vanadium concentrate smelting trials. Looking out a year or so from now Elcora should potentially have ramped up their vanadium concentrate production to 20,000t/month and vanadium concentrate to 2,500t/month. Beyond that, the plan is to potentially produce a final product via more processing thereby value adding to their current situation.

Elcora Advanced Materials trades on a market cap of only C <u>million</u>. Exciting times for Elcora, especially if they can continue to execute well and bring in growing revenues in 2023.

Incompetent Experts: For Critical Minerals, this is not an Oxymoron.

written by Jack Lifton | March 20, 2024

I am often asked to introduce technology metals based ventures to the sourcing/purchasing activities of the OEM automotive industry, based in Detroit, where I have lived for most of my 83 years, and for which I was a supplier of production parts and engineered materials for more than 30 years.

I find an almost complete lack of understanding of marketing and sales to the OEM automotive industry to be common among technology metals miners and refiners, who are of course the anchor companies of any and all production parts' supply chains.

In the past this has been of little interest to the OEM automotive industry due to its standard operating procedures of choosing preferred vendors, known in the industry as Tier One Vendors, who then became responsible for choosing their own vendors of parts and services, subject to the acceptance of the Tier One product by the end-use customer's internal Production Part Acceptance Protocol (PPAP), and even then, subject to ontime delivery, in the agreed quantities, to the customer's specification at the agreed pricing. Failure in any one of these required categories could, at the discretion of the OEM, result in the "desourcing" of the (approved otherwise) vendor. To ensure security and continuity of supply, the end-user normally would have a primary Tier One vendor and at least two alternates, each of which would normally get a small percentage of the total "buy" to keep it in the game. The alternates would be required to have the capability and the capacity to supplement or even replace the primary in the event of partial, or even total, non-performance by the primary.

Such Tier One Vendors are of course operating companies with an existing output or capability to produce the parts in question. They will have positive cash flow and, typically, are public companies with a listing on a major exchange and a substantial market cap. The core competency of each and every company in the total supply for the part chain would be required and it is understood to be guaranteed to the OEM by the Tier One.

Nowhere is the decay of proven, verifiable, competence as the sine qua non "standard" more apparent than in the, most likely to be, disastrous exemption of the PPAP standard in the OEM automotive industry for lithium-ion battery manufacturing. Rare earth permanent magnet motor manufacturing may soon be compromised by the same decay of standards.

The pathetic and jejune industry "experts" who not only analyze but, even worse, advise the OEMs on the sourcing of production parts based on critical metals are unified by their almost complete lack of practical experience, education and knowledge of the origin, processing, fabricating and manufacturing engineering at commercial scale of the **total** supply chains for the critical metals enabled devices upon which the motive power, "engine" management, and supply of information for the drivers of EVs depend.

Last week we were told by this "expert" class of journalists and advisors that both <u>germanium and gallium</u> were "rare earths" and that they were used in batteries. Both "expert" statements were completely wrong and misleading.

Earlier this year we were told and continue to be told by an "expert" firm that the economy needs "only 300" more lithium mines to meet the needs of a zero-carbon economy. Apparently, these fools think that there is not only a standard size lithium mine, but also a standard predictable demand for lithium. Mining engineers and mining company CFOs will be delighted to find out about this development.

I'm going to try from now on to list the Erroneous Critical Minerals Supply and Demand statement of the Week each Friday.

Attention manufacturing executives and policy makers: You need to do a due diligence review of your "experts," before you act on their advice.

Hint: Make sure that their jobs don't depend on always agreeing with you.

A final comment: Germanium and gallium are critical to chip manufacturing, LEDs, and military optics. The "CHIPs" act and the "IRA" pledged more than \$50 billion in subsidies for domestic chip manufacturing and battery manufacturing, but not ONE CENT for domestic gallium or germanium production.

Is this how policy experts in Washington think we can become independent of Chinese dominance in critical minerals production

Consolidated Lithium Metals aims to help supply North America with the surging demand for lithium

written by InvestorNews | March 20, 2024 Demand for lithium-ion batteries (and hence lithium) in North America is set to surge 13.8 fold from 2022 to 2035. The US Inflation Reduction Act has led to a massive increase in planned battery manufacturing in North America to support a North American supply chain for electric vehicles and energy stationary storage.