

The Critical Minerals Institute October Report: A slowing global economy continues to temper demand

written by Matt Bohlsen | October 13, 2023

Welcome to the October 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 IEA [list of Critical Minerals](#).

A slowing global economy continues to temper demand for critical minerals in 2023

High interest rates in most Western countries continue to be a drag on the global economy. Last month saw the U.S. Fed pause their interest rate hikes, with the [reserve rate still at 5.5%](#). However, U.S. inflation has been rising again and the Fed has indicated rates will need to stay higher for longer. The September [CPI was 3.7%](#), same as August's 3.7%, but up on the July 3.2% figure. Long-term bond rates have adjusted higher leading to higher borrowing rates. All of this is slowing the U.S. and much of the global economy therefore not helping EV sales. China's housing collapse is another negative drag on sentiment and has resulted in slower China EV sales growth in 2023.

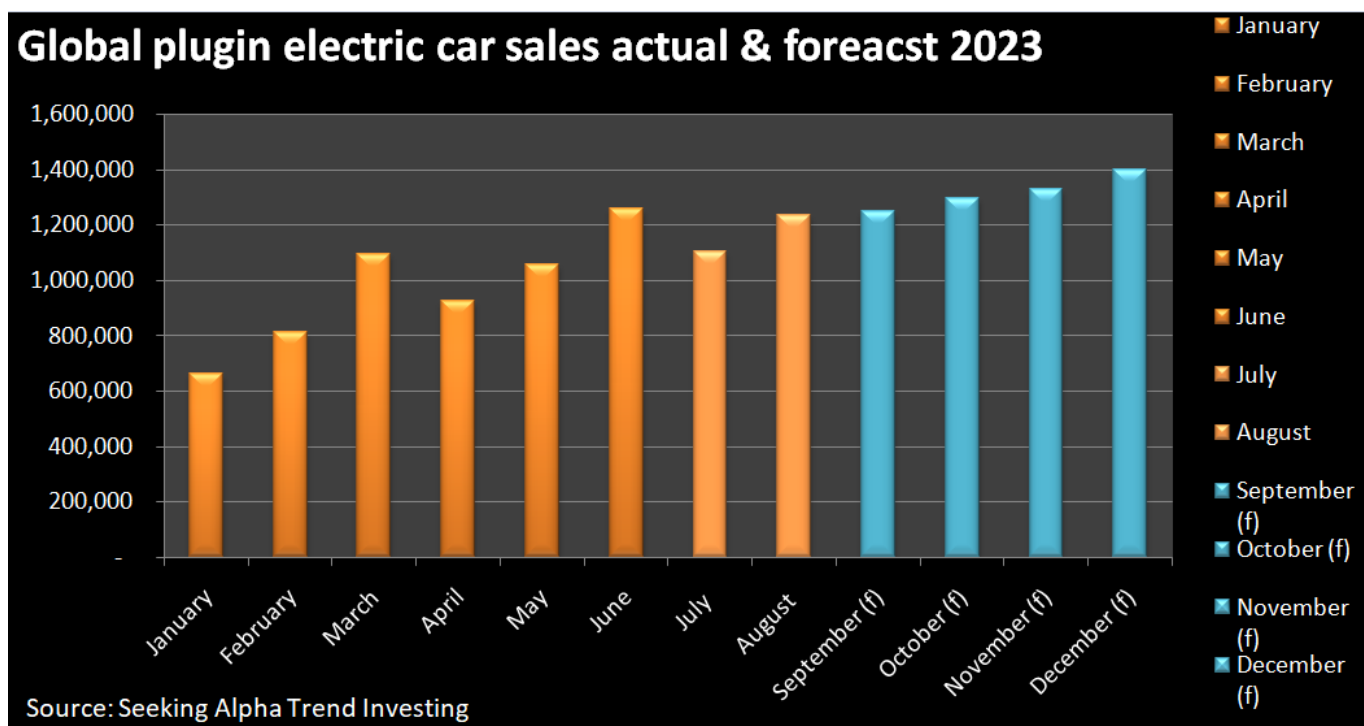
Global critical minerals and electric vehicle (“EV”) update

October 2023 saw some better results coming in for global plugin electric car sales which gives some hope that depressed EV metals prices may soon start to recover. Q4 is traditionally the strongest quarter for EV sales with December usually the best sales month of the year.

Global plugin electric car sales were [1,238,000](#) in August 2023, up 45% on August 2022 sales. Global plugin electric car market share in [August was 18%](#), led by China with [39% share](#), Europe with [30% share](#), and USA with [9.51% share](#). Reports to date suggest that September sales look like being another strong month of about 1.25 million.

2023 sales look set to finish at ~13.5 million and 17% market share, which would be a 28% increase on 2022 (10.522 million and 13% market share). A 28% growth rate in 2023 would be a significant slowdown on the 56% growth rate achieved in 2022.

Global plugin electric car ‘monthly’ sales in 2023



The West is working hard to build up EV and battery capacity rather than being too dependent on China

One of the biggest news of the last month was that Quebec, Canada is in talks with battery makers and automobile companies looking to invest about C\$15 billion (US\$11 billion) in Quebec over the next three years to support EV supply chains. The report [stated](#):

"Quebec has secured C\$15 billion over the past three years and another C\$15 billion is coming in the next three years...Over the past three years, Quebec has attracted investments from auto and battery makers such as General Motors, POSCO and Ford Motors. The biggest investment was announced on Thursday when Swedish battery maker Northvolt announced plans to build a \$5.2 billion plant in the province."

While this is good news for the EV and battery manufacturers it

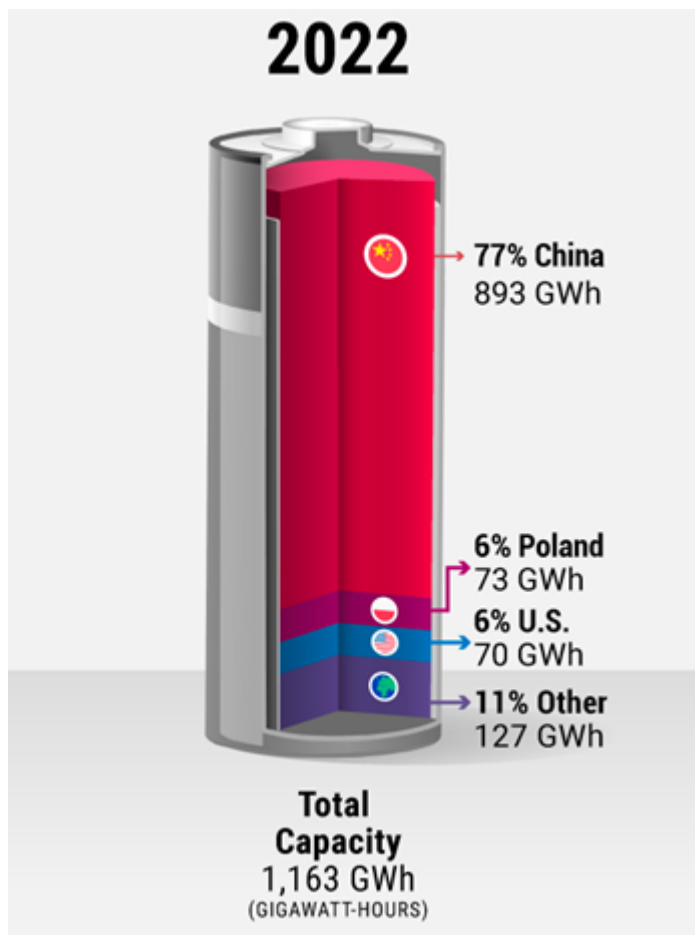
does nothing to support the mining industry. It is similar to the U.S. Inflation Reduction Act, where most funds are going to auto and battery companies and very little to the upstream miners. This will only boost demand for critical minerals needed to feed the EV and energy storage booms. Very little is being done to address the looming supply deficits of these critical materials in the second half of the decade.

For example, there are [18 gigafactories](#) planned to be built in the USA this decade, requiring 715,000tpa of lithium, but only 180,000tpa is currently planned. Similar mismatches of supply and demand exist in the pipeline for several other critical metals. Europe's critical minerals supply chain looks even more dire.

China continues to dominate the EV and battery manufacturing industry

Many people might be unaware that China manufactures ~75-80% of all new global plugin electric cars and [~77% of global lithium-ion batteries](#). China's BYD is the world's largest seller followed by Tesla, who makes over 50% of their cars in China.

In 2022 China had 77% of the lithium-ion battery global capacity



Source: [Visual Capitalist](#)

Lithium

China lithium carbonate [spot prices fell](#) so far in October 2023, with the price now at [CNY 166,500/t](#) (USD 22,781/t) and [down 68%](#) over the past year. At these prices, some of the marginal producers in China have begun shutting down. We did get a glimmer of hope for a bottom this week (mid October) as lithium carbonate futures contracts in Guangzhou [jumped by 7% to limit up](#) for the day.

Lithium takeovers and equity

interests are a leading trend in mid 2023

The biggest news the past month in the lithium sector has been the fight for control of Australia's Lontown Resources Limited (ASX: LTR), who 100% own the near production Kathleen Valley Lithium Project in Western Australia. U.S. lithium giant Albemarle Corporation (NYSE: ALB) is currently doing due diligence after upping their offer to [A\\$3.00 per share, or about A\\$6.6 billion \(US\\$4.23 billion\)](#) to purchase all of Lontown Resources. However, in recent weeks Australia's richest woman, Gina Rinehart, via her controlled company Hancock Prospecting, increased its stake in Lontown to [19.9%](#). Rinehart's motives are not yet known but it appears the iron ore magnate has become very interested in lithium.

Only 2-3 months back Albemarle bought a [6.4% stake](#) in Canadian lithium junior Patriot Battery Metals Inc. (TSXV: PMET | ASX: PMT | OTCQX: PMETF). The purchase price paid was **C\$109 million** and it was made just one day after Patriot Battery Metals announced their Maiden Resource of 109.2 Mt @ 1.42% Li₂O Inferred, the largest lithium spodumene resource in the Americas. The interesting part is that Patriot Battery Metals market cap is only US\$866 million, 4.7x lower than Lontown Resources market cap of US\$4.068 billion. Lontown Resources resource is about 50% bigger (156Mt at 1.4% Li₂O) and about 4 years more advanced than Patriot Battery Metals Corvette Project. Nonetheless, if Albemarle decides to back away from the Lontown Resources takeover bid then there is a very good chance Albemarle will turn their takeover attention towards Patriot Battery Metals.

Mineral Resources Limited (ASX: MIN) has also been very active in 2023 in the lithium space. In September it was confirmed that

Mineral Resources is bidding for the liquidated Bald Hill Lithium Mine. Mineral Resources has also backed Develop Global's [takeover offer](#) for Essential Metals Limited (ASX: ESS) for A\$152.6 million (US\$101 million), plus *Mineral Resources has also bought equity stakes in Delta Lithium Ltd. (ASX: DLI) and Global Lithium Resources (ASX: GL1).*

Chile's SQM (NYSE: SQM) also recently made a [takeover offer](#) for Azure Minerals Limited (ASX: AZS) for US\$585 million.

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

Rare Earths

Rare earths supply disruptions have led to some price improvements recently. Neodymium ("Nd") prices continued their recent recovery so far in mid October 2023 after a rough 2023, currently sitting at [CNY 650,000/t](#).

Rare earths prices have been falling for most of 2023; however [recent supply disruptions in Myanmar](#) have caused most rare earth prices to strengthen. There have also been some reports that Malaysia is developing a policy to ban exports of rare earths raw materials so as to boost their domestic industry. There is no date given yet as to when a ban may start. In any event, Myanmar is a much more important supplier than Malaysia.

This month [Australian Strategic Materials Limited](#) (ASX: ASM) announced some world-class [test work results](#) with their terbium (Tb) and dysprosium (Dy) heavy rare earth separation test work. Pilot plant test work produced [">99.99% for Tb and > 99.95% for Dy1, at steady state"](#). Results like this from their Dubbo

Project ore should give some more impetus to getting the Dubbo Project financed with probable output of around 140tpa Dy and 20tpa Tb. ASM Managing Director, Miss Rowena Smith [stated](#):

“These excellent results demonstrate the strength of ASM’s advanced technical capability...Terbium and dysprosium oxides are not only scarce commodities they are very difficult to separate at high purity. With the continued expertise of the team at ANSTO and the welcome support of the NSW Government, we are positioning the Dubbo Project to be at the forefront of Australia’s rare earth and critical minerals evolution.”

Dysprosium is a key rare earth used in nuclear reactor control rods and neodymium-iron-boron permanent magnets used in many EVs and wind turbines. Terbium is used in fluorescent lamps and television and monitor cathode-ray tubes.

Cobalt, Graphite, Nickel, Manganese and other critical minerals

Cobalt prices (currently at [US\\$14.84/lb](#)) remained flat the past month and continue to be very depressed. China’s demand for NMC cathode material for EVs has been weak, not helped by the popularity of LFP cathodes that don’t use nickel or cobalt.

Flake graphite [prices](#) remain very weak with prices near the marginal cost of production. A combination of slower EV sales growth in 2023 and increased China graphite supply has led to a depressed graphite market. [Macquarie](#) and [others](#) forecast graphite to start heading into deficit from about 2024.

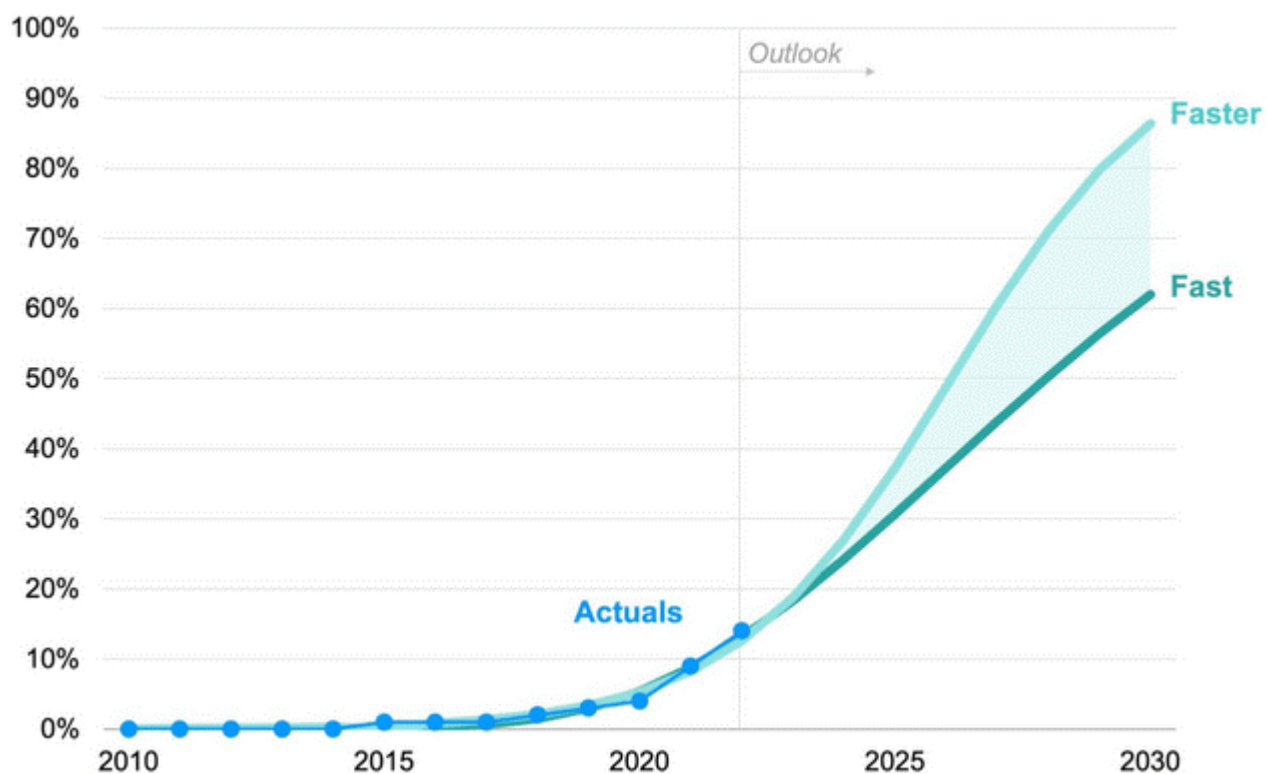
Nickel [prices](#) have recently weakened further due to oversupply concerns from Indonesia and a slowing Chinese property sector.

Manganese [prices](#) remain weak mostly due to weak Chinese demand

as the Chinese housing industry continues to rebalance after years of over construction and oversupply.

Longer term the outlook for the EV and energy stationary storage (“ESS”) sectors looks extremely strong. This is expected to lead to a huge surge in demand for the critical metals that supply these sectors.

EV sales are forecast to increase to somewhere between 62% and 86% market share of global car sales by 2030



Source: [CleanTechnica](#) courtesy Rocky Mountain Institute

Trend Investing v IEA demand forecast for EV metals

Increase in metal demand 2020 to 2037 (100% EV and sustainable energy world)

	Trend Investing (f) to 2037	IEA (f) to 2040		
Lithium demand	35	13 --42		
Cobalt demand	5.7	6--21		
Nickel demand	2.8	7--19		
Manganese demand	1.7	3--8		
Flake Graphite demand	17	8--25		
NdPr demand	5.9	3--7		
Copper demand	2.3	2--3		

Source: [Trend Investing](#) and the [IEA](#)

Latest CMI events

- Friday October 20, 2023 – **CMI Masterclass: Critical Minerals in the Congo**. Details and event tickets [here](#).

World Renowned Rare Earths Expert Geoff Atkins to Join the Critical Minerals Institute Board

written by Tracy Weslosky | October 13, 2023

“Geoff Atkins is one of the giants of critical minerals,” said CMI Founder Tracy Weslosky, “long before people recognized the vital importance of critical minerals. Geoff is one of the few mining executives outside of China who has played a critical role in establishing two landmark rare earth operations – Mt.

Weld with Lynas Rare Earths Limited and Nechalacho with Vital Metals Limited. He joins a growing team of distinguished experts and industry leaders as a Director of the Critical Minerals Institute and will participate in a number of panels at the upcoming Critical Minerals Summit being held on June 14-15, 2023, in Toronto.”

Some potential winners from the White House commitment to ‘Securing a Made in America Supply Chain for Critical Minerals’ Announcement

written by InvestorNews | October 13, 2023

Could this be the moment the USA finally takes some actions towards supporting critical minerals supply chains? The big news in the world of securing domestic supplies of critical minerals for the USA last week were two key announcements by the White House:

- [FACT SHEET: Securing a Made in America Supply Chain for Critical Minerals](#) – *Biden-Harris Administration, Companies Announce Major Investments to Expand Domestic Critical Minerals Supply Chain, Breaking Dependence on China and Boosting Sustainable Practices.*

- [DOE Releases First-Ever Comprehensive Strategy to Secure America's Clean Energy Supply Chain](#) – *DOE Report Includes Over 60 Actions to Enhance Supply Chain Resiliency, Spur Domestic Manufacturing Capacity, and Create Millions of Good Paying Jobs for American Workers.*

Additionally, the first article linked above refers to earlier reports (E.g: [America's Supply Chains](#)) and [states](#): “the reports recommended expanding domestic mining, production, processing, and recycling of critical minerals and materials – all with a laser focus on boosting strong labor, environmental and environmental justice, community engagement, and Tribal consultation standards.”

The takeaway here is that investors looking to benefit from the new White House initiatives need to look for U.S. domestic critical mineral projects, processing projects, and recycling projects. A U.S. processing project would include [Energy Fuels Inc.](#) (NYSE American: UUUU | TSX: EFR) rare earths processing at their White Mesa mill in Utah, USA. Today I will focus on the U.S. critical minerals projects.

China has dominated the critical minerals supply chain, leaving the U.S. vulnerable this decade

After many years of talk and very limited action, it appears the USA may finally be waking up to the need to urgently support and facilitate domestic U.S. critical minerals supply chains. Those of us involved in the manufacturing industry know that for years China has been buying up and controlling the critical minerals' supply chains. The consequences are that China now completely dominates the supply chains for lithium-ion batteries, electric vehicles, wind energy, and solar energy. These are multi-trillion-dollar industries, but if you cannot access the raw materials then you cannot produce a product. We saw that in 2021, with semiconductor shortages slowing the U.S. auto

industry, and we are seeing it again now with lithium-ion battery shortages leading to a limited supply of domestically produced EVs, despite enormous consumer demand. Tesla has an estimated [1.3 million pre-orders](#) for its Cybertruck but has [delayed production until 2023](#) due to not having enough lithium-ion batteries.

Green energy from solar, wind, and nuclear will increasingly power electric vehicles



Companies that may benefit from U.S. support of the critical minerals industry

Looking through the White House announcement gives us several clues:

1. “These minerals—such as **rare earth elements, lithium, and cobalt**.....As the world transitions to a clean energy economy, global demand for these critical minerals is set to skyrocket by 400-600 percent over the next several decades, and, for minerals such as **lithium** and **graphite** used in electric vehicle (EV) batteries, demand will increase by even more—as much as 4,000 percent.....will also discuss **\$3 billion** in [BIL funding](#) to invest in refining battery materials such as **lithium, cobalt, nickel, and graphite**”
2. “President Biden will announce that the Department of Defense’s Industrial Base Analysis and Sustainment program has awarded MP Materials Corp. (NYSE: MP) **\$35 million** to separate and process heavy rare earth elements at its facility in Mountain Pass, California.”
3. “Berkshire Hathaway Energy Renewables (BHE Renewables) will announce that this spring, they will break ground on a new demonstration facility in Imperial County,

California, to test the commercial viability of their sustainable lithium extraction process from geothermal brine.....In addition to BHE Renewables, Controlled Thermal Resources (CTR) and EnergySource Minerals have established operations in Imperial County to extract lithium from geothermal brine.”

4. “Redwood Materials will discuss a pilot, in partnership with Ford and Volvo, for collection and recycling of end-of-life lithium-ion batteries at its Nevada based facilities to extract lithium, cobalt, nickel, and graphite.”
5. “Tesla intends to source high-grade nickel for EV batteries from Talon Metals’ Tamarack nickel project.”
6. “DOE, DOD, and the Department of State signed a memorandum of agreement (MOA) to better coordinate stockpiling activities to support the U.S. transition to clean energy and national security needs.”

The winners of the U.S. critical minerals policy should be those with projects in the USA which are focused on critical minerals (rare earths, lithium, cobalt, nickel, graphite), critical minerals processing and critical minerals recycling. Needless to say, they will need to pass environmental and permitting rules and support local communities and American jobs.

Of the companies mentioned above, MP Materials and Talon Metals are the only two that are listed. BHE Renewables, Controlled Thermal Resources (CTR), EnergySource Minerals, and Redwood Materials are all private companies.

MP Materials Corp.

MP Materials Corp. (NYSE: MP) owns and operates the Mountain Pass open pit rare earths mine facility, located in Mountain Pass, California, USA. Mountain Pass plans to have an output containing 5,000 metric tons of neodymium and praseodymium

(NdPr), starting in ~2022. MP Materials also plan to have their own Heavy Rare Earth separation facility at their Mountain Pass Mine. As discussed above MP Materials have now been [awarded a DoD contract](#) (refer to the US\$35 million in point 2 above). MP Materials Chairman and CEO, James Litinsky, [stated](#): “The ability to mine, process, and refine rare earths at Mountain Pass is foundational to a national effort to secure the U.S. rare earth supply chain.....We thank the Department of Defense for its confidence and support.”

MP Material’s stage III plan is to develop a rare earth metal, alloy and [permanent magnet manufacturing facility in Fort Worth, Texas](#). MP Materials has [an agreement to supply General Motors](#) (GM) with magnets to be used in EV motors for the Hummer EV, Cadillac Lyriq, Chevrolet Silverado EV, and more than a dozen models using GM’s Ultium platform.

Talon Metals Corp.

Talon Metals Corp. (TSX: TL0) has a JV with Rio Tinto (ASX: RIO) at their Tamarack nickel-copper-cobalt Project in Minnesota, USA. Talon owns 50% but can earn-in to a 60% share of the Project. Talon recently announced a 5-year [nickel supply agreement](#) with Tesla (NASDAQ: TSLA).

Other critical mineral companies with USA projects

Lithium – Lithium Americas Corp. (NYSE: LAC | TSX: LAC), Standard Lithium Ltd. (TSXV: SLI | NYSE.A: SLI), Piedmont Lithium Inc. (NASDAQ: PLL | ASX: PLL) (have a [supply deal with Tesla](#)), Cypress Development Corp. (TSXV: CYP | OTCQX: CYDVF), Ioneer Ltd (ASX: INR), Albemarle Corporation (NYSE: ALB).

Cobalt – Jervois Global Limited (ASX: JRV | TSXV: JRV), Electra Battery Materials Corporation (TSXV: ELBM | OTCQX: ELBMF) (previously First Cobalt), Global Energy Metals Corporation

(TSXV: GEMC | OTCQB: GBLEF).

Graphite – Westwater Resources, Inc. (NYSE American: WWR), Syrah Resources Limited (ASX: SYR) (spherical graphite plant planned for USA).

Nickel – Global Energy Metals Corporation (TSXV: GEMC | OTCQB: GBLEF).

Rare Earths – Lynas Rare Earths Limited (ASX: LYC) (rare earths processing plant planned for USA).

Li-ion batteries – Magnis Energy Technologies Limited (ASX: MNS) – New York battery factory.

Li-ion battery recycling – Li-Cycle Holdings Corp. (NYSE: LICY) – [Partnership](#) with GM and LGES's Ultium JV for a battery recycling facility in Ohio.

Closing remarks

In addition to the above-mentioned companies with U.S. projects it should be noted that allied countries such as Canada and Australia will also be needed to help supply critical materials. Several of these companies can be found [here](#) in our InvestorIntel member's page.

The USA's domestic production of green energy and the associated need for critical materials supplies has long been a major weak point for the USA to compete with China. It does look like the USA is finally taking some **actions** to catch up, albeit still about a decade behind China.

Investors can look to play this catch-up trend, and as we saw with Tesla, if you invest early the sky is the limit.

Disclosure: The author is long Tesla (NASDAQ: TSLA), MP

Materials (NYSE: MP), Lithium Americas (TSX: LAC), Piedmont Lithium (ASX: PLL), Jervois Global (TSXV: JRV), Electra Battery Materials (TSXV: ELBM), Syrah Resources (ASX: SYR), Lynas Rare Earths (ASX: LYC), and Magnis Energy Technologies (ASX: MNS).

Invitation for Trump to join Lifton on the Technology Metals Show to discuss the Critical Materials Executive Order issued yesterday

written by Tracy Weslosky | October 13, 2023

This morning I raced through Fallon, Kimmel, Corden and Colbert as I do every morning with a cup of coffee. The idea? Hit the ground running having enjoyed the late-night talk show hosts translations of the news events from the day before...

Henry Weingarten doesn't understand why I cannot commit to a [follow up interview](#), he's right – we need one. After all, in our last interview he forecasted everything from who will win the Presidential election to a bullish graphite, gold and media market this Fall. Undoubtedly we would all like to know what percentage of forecasts he is making on our capital markets that are right and which ones are wrong. Alright, we will get this done and live by next week.

Reviewing the emails, Russell Fryer of [Critical Metals PLC](#) (LON:

CRTM) alerted many of this AM to the [Executive Order on Addressing the Threat to the Domestic Supply Chain from Reliance on Critical Minerals from Foreign Adversaries](#) that was published on the White House site yesterday.

Russell adds in his email: "The use of the term 'foreign adversaries' is quite a strong phrase, designed and inserted to call out China..." He then adds his summary points of interest:

1. the United States develops secure critical minerals supply chains that do not depend on resources or processing from foreign adversaries. (i.e. China)
2. the United States develops globally competitive, substantial, and resilient domestic commercial supply chain capabilities for critical minerals mining and processing.
3. reduce the vulnerability of the United States to the disruption of critical mineral supply chains through cooperation and coordination with partners and allies, including the private sector
4. build resilient critical mineral supply chains, including through initiatives to help allies build reliable critical mineral supply chains within their own territories

OK, thanks Russell and kudos on listing Critical Metals PLC in London earlier this week, we are all watching to see what you do next.

Now Trump? While the content of this Executive Order is unquestionably of great interest to me and my associates in this sector, why wasn't Trump busy investing in how to clean up his post debate mess is of great interest to me. Experts tell me that the positive he is doing for critical materials will continue no matter who becomes President this Fall, but it does makes it hard to communicate what I deem to be a very positive action on his behalf when he is **not** behaving like a gentleman.

For the record, talkative is fine. After all, rare earths' experts are exceptionally talkative...

In fact, I was speaking with Jack Lifton earlier this last week and asked him about a new editorial candidate for InvestorIntel to do a regular column on our sector, and his response to one candidate was "he's good, but if you ask him the time, he will give you the history of how time was created."

My point? Give us Trump for the Technology Metals Show and I will have no challenge being the moderator with Jack Lifton as I am used to strong driven communicators with passionate positions on why we should all be buying their stock. On that note I would like to personally extend an invitation for President Trump to be on the Technology Metals Show and have Jack Lifton interview him on this Executive Order?

Now why will this work? It will work, because we are all on the same side here...when it comes to our North American issues around sustainability, we all agree. No one should ever be solely reliant on one nation for all of our Technology Metals.

See a theme here?

Before I change the point here, yes, I do plan on asking Ron Wortel to write a piece on this order ASAP. Why Ron? Well in a conversation with Ron yesterday in discussions about him taking on a regular moderator role of a critical materials editorial board (this clever idea was suggested to me by Jeff Green and his team at J.A. Green & Company last week). Ron was discussing his history in rare earths, and you know what? I think he can do it and do it well. Ron's style is understated and many of us enjoy reading well done text that is written by knowledgeable professionals that understand the business...you will of course tell me what you think – you always do.

Alright, I am running to go assist Raj Shah on putting together a Top 20 InvestorChannel Watchlist of graphite companies today. Would like to thank Julie Pacquet of [Nouveau Monde Graphite Inc.](#) (TSXV: NOU | OTCQX: NMGRF) for being the catalyst of this idea.

On a final note I am going to start calling out 'flags on the field' of the capital markets and today I would like to highlight an analyst who did what I deemed a 'smackdown' on another rare earths company in an eblast I received yesterday. Let me add, I have grown weary of advising him that his content is not my friend and have been unsuccessfully and getting off of his darn list, but hey this is simple.

How can you call out other critical material company when you sit on Boards and are presently raising funds for your own company (in the same sector of course)? When are we as investors simply going to build a wall for you and insist that you not climb over it? Consider this my brick, and as I have told you before – why can you not just market yourself without tearing someone else down, especially when you do not know what is going on.

It seems we have analysts that could use a brush up on professional behavior as well.

Enjoy your day, we will get Mr Weingarten set up for an interview, finish the InvestorChannel Graphite Watchlist, and attempt to get the news release written on the new Investor Talks video meeting series and in your inbox by Friday afternoon.

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