

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

written by Tracy Weslosky | February 11, 2024

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

Moreover, this edition of the TMR delves into Bora Mining Services' strategic acquisition in the Steenkampskraal Monazite Mine and the landmark \$18.8 billion cathode supply deal between General Motors and LG Chem, both of which underscore the strategic efforts to secure critical materials for the burgeoning EV market. The report also examines Hitachi Construction Machinery's innovations with its all-electric dump truck prototype, signaling a push towards sustainability in

mining operations. Commentary on the EV market by industry expert Jack Lifton highlights the sector's challenges and misalignments with consumer preferences. Furthermore, Canada's advancement over China in the BloombergNEF Global Lithium-Ion Battery Supply Chain Ranking and the discontinuation of merger talks between Lynas Rare Earths and MP Materials are highlighted, reflecting the dynamic nature and strategic maneuvers within the global critical minerals and electric vehicle sectors.

Appia Appoints Constantine Karayannopoulos as New Member to Its Critical Minerals Advisory Committee (February 9, 2024, [Source](#)) – [Appia Rare Earths & Uranium Corp.](#) (CSE: API | OTCQX: APAAF) announced the appointment of Constantine Karayannopoulos to its Advisory Committee, alongside rare earths experts Jack Lifton and Don Hains. Karayannopoulos, with a 30-year career in the rare earth and critical minerals sectors, including as President and CEO of [Neo Performance Materials Inc.](#) (TSX: NEO), brings significant expertise to Appia. His background includes pivotal roles in the industry, such as leading the first foreign company in China's Rare Earth industry and co-founding Neo Lithium Corp. His appointment, starting February 1, 2024, is set to enhance Appia's strategic capabilities in the critical minerals sector, supported by his consulting company, Kloni Inc. Appia has granted 300,000 options to Kloni Inc. as part of this agreement.

Rare Earths Discovery Near Wheatland So Big It Could Be World Leader (February 7, 2024, [Source](#)) – American Rare Earths Limited (ASX: ARR | OTCQB: ARRNF) has made a groundbreaking discovery near Wheatland, Wyoming, revealing 2.34 billion metric tons of rare earth minerals, significantly surpassing initial estimates and other local discoveries. This positions Wyoming as a key player in reducing reliance on China's rare earth market, vital for green energy technologies. With only 25% of their land explored, the potential for further discoveries is immense. The

company, part of an Australian enterprise, plans scalable mining operations to meet the high global demand. This development, along with other explorations in Wyoming, could transform the U.S. into a major source of rare earth minerals, essential for a range of advanced technologies. Further economic and development projections are anticipated, underlining Wyoming's emerging significance in the global rare earth industry.

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

Bora Mining Acquires Share in Steenkampskraal Monazite Mine (February 7, 2024, [Source](#)) – Bora Mining Services (BMS) has acquired a share in Steenkampskraal Monazite Mine (SMM), a high-grade rare earths and thorium mine, to commence operations in early 2024. With a significant investment, including a R1

billion infrastructure, BMS aims to refurbish and develop the mine, leveraging its expertise in mining operations. The mine boasts an impressive 14.5% average grade of total rare earth oxides, with potential for resource expansion. The partnership focuses on producing monazite concentrate initially, with plans to extend production to mixed rare earth carbonate and thorium. The project has received positive feedback from regulatory bodies and has a dynamic growth strategy across three phases, eventually aiming to produce individual rare earth oxides. The initiative is expected to cater to global rare earth demands, with thorium also highlighted for its safety and potential in cancer therapy.

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

Hitachi launches final tests of its electric dump truck (February 6, 2024, [Source](#)) – Hitachi Construction Machinery has introduced a prototype of its all-electric dump truck, which is now undergoing final testing at a copper-gold mine in Zambia. Based on the EH4000AC-3 model with a 221-tonne payload, this electric version includes ABB's battery technology and

converters. Unlike its diesel counterpart, it operates on internal batteries on level ground and external trolley power uphill, while regenerative braking recharges the battery downhill. Performance details are pending, but the combustion engine model's specs offer insight. This initiative, started in 2021 by Hitachi and ABB, aims to meet electric dump truck demand in mining and reduce emissions, highlighting a shift towards electrification in heavy machinery and contributing to environmental sustainability.

Riding the EV Revolution Rollercoaster Amid the West's Electric Car Climbdowndown (February 5, 2024, [Source](#)) – Jack Lifton's critique on the electric vehicle (EV) industry highlights the clash between government strategies and market dynamics, alongside the competitive pressure from Chinese manufacturers. He points out major manufacturers like Renault and Volvo retreating from ambitious EV projects due to mismatches in market demand and production costs. Jack also observes a consumer shift back to petrol models, suggesting a misalignment between EV production and consumer preferences. Advocating for hybrids, he emphasizes the need for adaptability, innovation, and market responsiveness. His insights stress the importance of aligning visionary goals with practical market demands and competitive challenges, underlining the complexity of navigating the evolving EV landscape with agility and foresight.

South African platinum industry could shed up to 7,000 jobs to cut costs (February 5, 2024, [Source](#)) – The South African platinum industry, responsible for about 70% of the world's mined platinum, may cut 4,000 to 7,000 jobs due to restructuring amid high costs and declining prices. The Minerals Council highlighted this at the Investing in African Mining Indaba conference in Cape Town, noting the impact of the shift towards electric vehicles and the falling demand for platinum group metals (PGMs) used in traditional combustion engines. High

electricity and labor costs, along with a 40% and 15% drop in palladium and platinum prices respectively, have pressured miners. Major companies like Anglo American Platinum and Sibanye Stillwater are considering operation restructuring and job cuts to reduce expenses, facing challenges from lower ore grades and rising input costs.

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

Australia's Lynas Rare Earths quits tie-up talks with MP Materials (February 5, 2024, [Source](#)) – Australia's Lynas Rare Earths and U.S.-based MP Materials terminated merger discussions amid valuation disagreements and strategic considerations. The potential union aimed to bolster supply chain diversification for critical minerals outside China, which commands the rare earth market. The talks' cessation reflects the complexities of consolidating operations within the global rare earths industry, crucial for technology and defense sectors. Despite the strategic intent to reduce reliance on Chinese rare earths, both

companies faced hurdles, including technological challenges and anti-trust regulations. Lynas, with significant projects across Australia, Malaysia, and the U.S., and MP Materials, which relies on Chinese refining, concluded that the merger lacked sufficient synergies to proceed, underscoring the intricate dynamics of international rare earths commerce.

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

Germany's dream of 15 million electric vehicles is fading away (February 3, 2024, [Source](#)) – At a Berlin auto industry event, BMW CEO Oliver Zipse and Transport Minister Volker Wissing highlighted the slowdown in electric vehicle (EV) adoption in Germany. Despite previous optimism, challenges such as a saturated high-end market, lack of affordable options, dwindling government incentives, and inadequate charging infrastructure have emerged. With EV sales projected to drop and the ambitious goal of 15 million EVs by 2030 now looking unrealistic, the industry faces a pivotal moment. The need for diversified vehicle power solutions, including combustion, hybrid, and

hydrogen vehicles, becomes apparent. Analysts are skeptical about meeting emissions targets without further subsidies, pointing to a broader slowdown that could impact investment and long-term environmental goals.

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

Investor.News Critical Minerals Media Coverage:

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

Investor.News Critical Minerals Videos:

- February 8, 2024 – Jack Lifton and Panther Metals Darren Hazelwood on the “greenstone belt for VMS deposits” in Canada <https://bit.ly/42zDzqv>
- February 8, 2024 – Fathom's Ian Fraser on Rising Market Interest in Albert Lake and Nickel as a Critical Mineral <https://bit.ly/49uxFcu>
- February 5, 2024 – Tawana Bain and ACRG's Drive for a Sustainable American Supply Chain through Net-Zero Mineral Production <https://bit.ly/4bnBcLg>
- February 5, 2024 – Terry Lynch on Power Nickel's Ambitious

2024 Drilling Program at the Nisk Project in Nemaska
<https://bit.ly/49i70Ei>

- February 5, 2024 – Voyageur Pharmaceutical's Brent Willis on Revolutionizing the Medical Imaging Industry, plus SmoothX <https://bit.ly/3SsrLLt>

Critical Minerals IN8.Pro Member News Releases:

- February 9, 2024 – Ucore Announces Closing of Final Tranche of Upsized Debenture Offering <https://bit.ly/49o07Na>
- February 9, 2024 – Appia Appoints Constantine Karayannopoulos as New Member to Its Critical Minerals Advisory Committee <https://bit.ly/30CnNVL>
- February 9, 2024 – American Rare Earths Limited: Appointment of Chairman – Richard Hudson <https://bit.ly/3HU47Ji>
- February 8, 2024 – Auxico Announces Sampling Results From a Geological Report on the Minastyc Property <https://bit.ly/3UAtsj3>
- February 8, 2024 – Fathom Announces Start of Drilling at Albert Lake Project <https://bit.ly/499VW7K>
- February 8, 2024 – Appia Announces Outstanding Re-Assayed Diamond Drill Results Including 100 Metres Averaging 3,577 PPM TREO at Its PCH Ionic Clay Project, Brazil <https://bit.ly/48dXQTs>
- February 7, 2024 – American Rare Earths Resource Estimate Increased by 64% <https://bit.ly/3SuhAfU>
- February 7, 2024 – Imperial Mining Announces Shareholder Approval of Name Change to Scandium Canada Ltd. and Results of its 2024 Annual and Special Meeting <https://bit.ly/49nEltY>
- February 5, 2024 – Ucore Welcomes Canadian Government Officials to its Kingston Ontario CDF for an NRCan Funding

Announcement <https://bit.ly/495cTA3>

- February 5, 2024 – Nano One Provides Shareholder Update with Key Objectives for 2024 <https://bit.ly/49mNgut>
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Navigating the Future of Critical Minerals: Ford's Battery Plant Downscale and Canada's \$1.5 Billion Push

written by Tracy Weslosky | February 11, 2024

The automotive and energy sectors are witnessing significant shifts as companies and governments navigate the evolving landscape of electric vehicles (EVs) and sustainable energy. Two recent developments highlight these changes: Ford Motor Company's [scaling back of its Michigan battery plant](#) and the Canadian government's launch of a [\\$1.5 billion Critical Minerals Infrastructure Fund](#).

Ford's Revised EV Strategy Amid Market Realities

Ford Motor Company's (NYSE: F) decision to scale back its \$3.5 billion battery plant in Michigan, reducing its production capacity by 43% and cutting jobs, reflects the challenges facing the EV market. Despite the initial excitement and investment in EVs, consumer adoption has been slower than expected, and labor costs are rising.

Political and Economic Implications

Ford's partnership with Chinese manufacturer CATL has stirred political debates, especially in the context of US-China relations. This move, along with broader market dynamics, signifies the complex interplay of economics, politics, and technological advancements in the EV sector.

Canada's Strategic Move in Critical Minerals

Concurrently, Canada is stepping up its game in the critical minerals sector, crucial for clean technologies like EV batteries. The \$1.5 billion Critical Minerals Infrastructure Fund, announced by Natural Resources Canada, aims to fill infrastructure gaps and promote sustainable mineral production.

A Synergistic Approach to Sustainable Development

Canada's fund is not just an economic investment but also a strategic move to position the country as a key player in the global shift towards a net-zero-emissions future. This initiative complements efforts like Ford's, focusing on the development of clean technologies and the reduction of carbon footprints.

The Road Ahead for Ford and Global EV Market

Ford remains committed to its EV strategy, planning to open its revised battery plant in 2026. This plant will be crucial in producing lithium iron phosphate (LFP) batteries, a cheaper alternative to traditional lithium-ion batteries, possibly

giving Ford a competitive edge in the market.

Canada's Vision for Clean Energy and Economic Growth

Canada's investment in critical minerals infrastructure is a forward-looking approach to enhancing its role in the global supply chain for clean technologies. The focus on sustainable extraction, processing, and recycling of minerals aligns with the global agenda for a net-zero-emissions economy.

Conclusion: A Convergence of Efforts

The juxtaposition of Ford's scaled-back plans and Canada's aggressive investment in critical minerals infrastructure paints a picture of a world in transition. While challenges like market dynamics and political considerations shape corporate strategies, national initiatives aim to bolster the infrastructure and supply chains necessary for a sustainable future. Both Ford's recalibration and Canada's proactive steps are pivotal in driving the automotive and energy sectors towards a more sustainable and economically viable future.

**Investor.Coffee (11.13.2023):
Moody's downgrade on U.S.
Credit Rating Outlook**

“Negative”, Japanese wholesale inflation slows

written by Tracy Weslosky | February 11, 2024

Pre-Open Market Overview, Canada

Canadian markets are showing a downtrend, aligning with Wall Street futures which are slightly down after Moody's downgraded the U.S. credit rating outlook to "negative." European shares experienced a boost, primarily in the healthcare sector, while Japan's Nikkei index remained unchanged. Oil prices have seen a minor increase due to concerns over reduced demand in the U.S. and China, coupled with mixed signals from the Federal Reserve. Meanwhile, gold prices have risen marginally, and the U.S. dollar remains relatively stable against other major currencies.

Tax Selling Deadlines

For Canadian tax filers, December 27, 2023, marks the deadline for tax-loss selling. I mention this as we have a [CMI Masterclass on Critical Minerals and Flow Through](#) that I am hosting next Monday, November 20th at 7PM EST that I urge you to attend. Use the promo code CMI3 and you can secure a complimentary pass. I am writing the news release today. Transactions post this date will be counted for the 2024 tax year. The U.S. deadline, as per the IRS, is December 29.

European Stock Futures

Euro STOXX 50 futures rose by 7 points to 4,215, FTSE futures gained 6 points reaching 7,378, and German DAX futures increased by 5 points to 15,297 as of 0530 GMT.

Asian Market Trends

Asian stocks saw an upward trend, taking cues from Wall Street's Friday rally, despite Moody's downgrade of the U.S. credit outlook. Oil prices, however, receded after the initial rally, influenced by concerns over diminishing demand in the U.S. and China.

U.S. Market and Economic News

U.S. markets have witnessed two consecutive weeks of gains. Key factors that could impact this trend include Moody's recent downgrade of the U.S. credit outlook and the upcoming consumer price index release. Retail earnings reports from major U.S. companies are also anticipated.

Company-Specific News

- **Alphabet Inc. (NASDAQ: GOOGL):** Google is in discussions to invest in Character.AI, with negotiations ongoing regarding the terms.
- **Exxon Mobil Corporation (NYSE: XOM):** Exxon plans to start [lithium production](#) in Arkansas by 2026. Also, Exxon has reached a settlement with Iraq over the West Qurna 1 oilfield.
- **Ford Motor Company (NYSE: F):** UAW workers at Ford's Kentucky plants have [mixed opinions](#) on the new labor agreement, with production workers voting against it.
- **Livent Corporation (NYSE: LTHM):** Livent is set to meet Allkem investors [regarding a merger](#) that would create a significant lithium producer.
- **Streaming Giants (Netflix, Disney, Warner Bros Discovery):** They have agreed to pay significant bonuses as part of a labor deal with the SAG-AFTRA actors union.
- **NVIDIA Corporation (NASDAQ: NVDA):** The U.S. restrictions on China are prompting Nvidia to innovate to meet market

needs.

- **Tesla Inc. (NASDAQ: TSLA):** EG Group [plans to buy](#) Tesla ultra-fast charging units to expand its EV charging network in Europe.

Economic Data Release

- The Federal budget for October is expected to show a deficit of -\$30.00 billion, compared to the previous -\$171.00 billion.

Europe/Asia Political and Health Updates

- UK Interior Minister Suella Braverman was dismissed amid allegations of political bias against London police.
 - Former UK PM David Cameron surprisingly returned as foreign minister.
 - U.S. Senator Tim Scott withdrew from the 2024 Republican presidential nomination race.
 - Japanese wholesale inflation slowed, indicating easing price pressures.
 - **Bayerische Motoren Werke AG (BMW) (OTC: BMWYY)** is [investigating](#) operations at a Moroccan cobalt mine following reports of legal breaches.
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Investor.Coffee (10.16.2023): Critical Minerals in the Congo Masterclass, Ferrari NV Embraces the Future by Rolling out Cryptocurrency Transactions

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Mark Your Calendars for a CMI Masterclass

The Critical Minerals Institute Masterclass is just around the corner, scheduled for Thursday, October 19th at 11 AM EST. Centering around the intriguing topic of Critical Minerals in the Congo, this event promises enlightening discussions. Don't forget to [register](#) using the exclusive CMI member code CMC2 to avail your free entry (limited to 50). Featured speakers include CMI Board Members Melissa 'Mel' Sanderson and Russell Fryer. While Mel boasts a rich 16-year history in Congo relations through [Freeport-McMoRan Inc.](#) (NYSE: FCX), Russell is the dynamic leader of [Critical Metals PLC](#) (LSE: CRTM), a formidable name in Congo's copper industry.

Fresh Off The Press: Dive deep into the CMI October edition of the Critical Minerals Institute Report, bearing the headline [A slowing global economy continues to temper demand](#). Authored by the distinguished Matt Bohlsen, an Australian-based CMI Director, he's a familiar name for many as the Senior Editor for

[InvestorNews.com](https://investornews.com) and a distinguished voice on SeekingAlpha when it comes to critical minerals.

A Glance at InvestorNews.com's Recent Critical Mineral Highlights:

- **WATCH:** [Nano One's Partnership with Sumitomo: Sustainable Cathode Materials for EV](#)
- **READ:** [Ara Partners Acquires Vacuumschmelze: Mission Critical in the Electric Vehicle Landscape](#)
- **WATCH:** [Russell Fryer on Critical Metals PLC's Strategic Moves in the DRC and Global Expansion](#)
- **WATCH:** [Mark Billings on Auxico's critical minerals project advancements in Bolivia and Colombia](#)
- **WATCH:** [Donald Swartz's insights on ARR's Halleck Creek Project unlocking America's rare earth potential](#)
- **WATCH:** [Ian Fraser on Fathom Nickel's Exploration Progress and the Critical Mineral Potential in Saskatchewan](#)

A Quick Scan of Global Markets

Canadian futures are on a notable rise, drawing momentum from burgeoning copper prices. The U.S. market witnesses a cautious optimism, with futures making modest gains ahead of this week's crucial corporate announcements and economic revelations. European shares are rallying, with mining stocks taking the lead, all thanks to growing enthusiasm over Chinese demand, although the looming Middle East tensions remain a concern. Over in Asia, Japan's Nikkei grapples with a setback, predominantly influenced by the slump in chip-related stocks.

Corporate Chronicles

Chevron Corporation (NYSE: CVX) finds itself amidst a brewing storm. Initial peace agreements seem to crumble as unions at their Australian LNG setups gear up for renewed [strikes](#). The pivot for this unrest? Chevron's alleged retreat from prior commitments.

In a groundbreaking move, Ferrari NV embraces the future, rolling out [cryptocurrency transactions](#) for their luxury vehicles in the U.S. Europe is next on their radar. This initiative aligns with their ambitious goal of achieving carbon neutrality by the close of 2030.

Ford Motor Company (NYSE: F) encounters turbulence in its dealings with the United Auto Workers. In an anticipated move towards resolution, the union found itself presented with a *deja vu*, receiving an offer identical to one from two weeks earlier.

General Motors Co. (NYSE: GM) breathes a sigh of relief up north, as Canadian labor union Unifor members give a nod to a new contract. This positive stride contrasts with the simmering unrest led by hourly workers in the U.S.

Investor.Coffee Daily Updates are intended to hit a few business news highlights for the day.

Investor.Coffee (9.26.2023) :

Ford Pauses \$3.5Bn Michigan EV Battery Project and Global Banks Join Forces to Standardize Stock Position Disclosures

written by InvestorNews | February 11, 2024

In the ever-evolving financial market, staying updated with the latest trends and developments is crucial. This week has brought a blend of intriguing shifts across different global sectors. Let's dive in and dissect the prominent changes that are shaping the market narrative.

Investor.Coffee (9.25.2023): As September concludes, markets worldwide display volatility, reflecting the complexities of geopolitics

written by InvestorNews | February 11, 2024

Canada in Focus

Canadian markets are showing signs of weakness as metal prices take a dip. Alongside this, U.S. stock index futures are experiencing a slip, with the market anticipating key economic data and awaiting remarks from Federal Reserve policymakers throughout the week.

European shares too are not performing optimally, with the STOXX 600 index seeing a pullback due to China-exposed shares. In the East, Japan's Nikkei has displayed resilience, rebounding robustly as investors see potential in previously beaten-down stocks after the index's tumultuous week. The metals market sees gold prices trickling down, given the U.S. dollar's surge, which is attributed to predictions of sustained higher interest rates. Meanwhile, oil prices are climbing, reflecting concerns about a tightening supply, especially after Moscow's surprising temporary fuel export ban.

A notable partnership emerges between Japan's Sumitomo Metal Mining Co., Ltd. and Canada's [Nano One Materials Corp.](#) (TSX: NANO). The former is [investing C\\$ 16.9 million](#) in Nano One, a company specializing in sustainable battery material production. The strategic partnership aims at enhancing global battery supply chains and developing cost-effective, environmentally-friendly battery cathode materials for EVs.

U.S. Market Updates

The U.S. market trajectory is heading downward as September wraps up. The Dow Jones, the S&P 500, and the Nasdaq Composite are all showing negative trends.

Labor tensions are evident in the automotive sector, with Ford Motor Company (NYSE: F) citing "significant gaps" in their

ongoing negotiations with the United Auto Workers (UAW) union. Meanwhile, the UAW intensifies strikes against General Motors Co. (NYSE: GM) and Stellantis.

Rupert Murdoch, the stalwart media tycoon, stepped down from Fox Corporation (NASDAQ: FOX), marking an end to his illustrious seven-decade career. The compensation details for both Rupert and his successor, Lachlan Murdoch, have been disclosed, showing a significant hike for the senior Murdoch.

Other notable U.S. business news includes The Goodyear Tire & Rubber Company's (NASDAQ: GT) [rationalization plans](#), a [lawsuit](#) against Meta Platforms, Inc. (NASDAQ: META) by Metabyte over trademark rights, and Oracle Corporation's (NYSE: ORCL) substantial [investment](#) in Ampere Computing.

Global Glimpses – Europe, Asia, and India

The Chinese property giant, Evergrande, faces another setback as it discloses its inability to issue new debt, sending its shares tumbling.

While Hollywood's writers union and major studios reach a tentative agreement, potentially ending industry strikes, Russian crude oil supplies surge despite G7 sanctions, and Germany stalls its building insulation standards, providing a breather to its building sector.

Sweden's SBB offloads a chunk of its education subsidiary, TotalEnergies preps to discuss its Namibian oil prospects, and India exhibits a mixed bag of financial news. India's foreign exchange reserves witness a dip, but optimism surrounds its bond yield following JPMorgan's decision. The tech industry breathes a sigh of relief as India decides to defer import license

requirements that could have impacted giants like Apple and Samsung.

In summary, as September concludes, markets worldwide display volatility, reflecting the complexities of geopolitics, evolving economic partnerships, and sector-specific dynamics. Investors and market enthusiasts are advised to keep an eagle eye on these developments to make informed decisions.

Ford Enters a 'Brave New World' in Securing Lithium for Battery Gigafactories to Drive EV Production Surge

written by InvestorNews | February 11, 2024

[Ford Motor Company](#) (NYSE: F) hosted its investor event on Monday and it would appear that in a single investor day presentation the Company has gone from worst to first when it comes to securing battery-grade lithium supplies to scale up its electric vehicle production. I'm pretty sure all these deals didn't come to fruition over the weekend, but they sure made a splash when they were presented on Monday.

In total, Ford announced deals with five separate companies sourcing lithium from all over the world, including Quebec, Chile, Argentina, Australia, and a few U.S. locations sprinkled in for good measure. These latest supply deals announced by Ford complement the [ioneer Ltd](#) (ASX: INR | NASDAQ: IONR) contract

[signed in July 2002.](#)

Ford Investor Day Lithium Announcements

According to the Ford Investor/Analyst Day presentation transcript (yes I scanned most of the 78 pages and know way more about Ford than I ever wanted to know), they've now sourced about 90% of the nickel and the lithium to meet their future capacity targets, including producing 2 million electric vehicles (EVs) by 2026. On Monday, the Company announced lithium agreements with 3 of the top producing major global suppliers – [Albemarle Corporation](#) (NYSE: ALB), Chile's [Sociedad Química y Minera de Chile S.A.](#) (aka "SQM") (NYSE: SQM), and [Nemaska Lithium](#).

Nemaska is a joint venture backed by [Livent Corporation](#) (NYSE: LTHM) and the [investment arm of the Province of Quebec](#). According to Ford, these are some of the largest lithium producers in the world with the best quality, existing capacity, and [IRA compliance](#) (although Albemarle does have plenty of Chinese processing capacity but we'll assume Ford knows that).

US-Based Lithium Development Deals

Coupled with these deals with major players to provide stability to its plants, Ford is also investing in U.S.-based development projects through agreements with [Compass Minerals International, Inc.](#) (NYSE: CMP), [EnergySource Minerals LLC](#) (*private*), and the previously announced deal with *ioneer*.

The interesting thing about these investments is that Ford is basically pursuing promising technology that has yet to be proven at scale. Ford claims they are developing extraction

technologies to further diversify the industry, but if they are betting on the right horse, it could certainly give them a leg up on the competition.

A Bet on Direct Lithium Extraction Technology

Specifically, we are talking about direct lithium extraction (DLE) technology. The Holy Grail for lithium extraction as it seeks to extract the white metal from brine using filters, membranes, ceramic beads, or other equipment that can typically be housed in a small warehouse. It would enable miners to boost global lithium production with a footprint far smaller than open-pit mines and/or evaporation ponds, which are often the size of multiple football fields.

Compass and ESM are using ESM's proprietary [ILiAD™ adsorption technology](#), which is a DLE technology that competes with what pioneer and [Lithium Americas Corp.](#) (TSX: LAC | NYSE: LAC) are pursuing at their respective projects. The pursuit and potential success of DLE technology is easily an article in itself, and probably well above my pay grade to do it justice.

FIGURE 1: Giga Factory Locations



Source: Ford Investor Day Presentation (May 22, 2023)

Ford to Build 5 New EV Battery Giga Factories

So we'll circle back to the Ford story and talk about why they've locked in several large, multi-year lithium supply contracts. Ford is building 5 new giga factories to produce batteries, with the first two, located in Kentucky and Tennessee, on track to open in 2025. Another plant, in Marshall, Michigan, will be dedicated to producing battery cells using LFP (lithium iron phosphate) technology.

With respect to the LFP facility, it helps explain one of the lithium announcements noted above, the SQM deal which supplies lithium carbonate. Lithium carbonate is required for LFP batteries versus lithium hydroxide, which is the primary component for the current generation of lithium-ion batteries. Ford now feels it has control of its value chain. Instead of relying on a cell supplier, Ford can now move material around where they need it, so If they wanted to flex more into LFP and use more lithium carbonate, no problem. If the Company wants to swing more towards hydroxide, it can also do that.

Final Thoughts

Granted this isn't original thinking as Elon Musk was the first one out of the gates lining up sources of lithium (and other critical materials) for [Tesla, Inc.](#) (Nasdaq: TSLA), and in January, [General Motors Company](#) (NYSE: GM) [signed a deal](#) with the aforementioned Lithium Americas.

Nevertheless, it seems now that virtually all North American automakers are securing supplies of battery materials to boost EV output as demand for EVs continues to grow, and to take advantage of U.S. tax credits.

It would appear automakers are entering a '[Brave New World](#)'. Which, ironically is a dystopian novel written in 1931 by Aldous Huxley, where the citizens of the World State substitute the name of (Henry) Ford, founder of the Ford Motor Company, wherever people in our own world would say Lord. We shall see if the Ford Motor Company of 2023 will become the messiah of EV production.

Can we get back to the way we were?

written by Jack Lifton | February 11, 2024

The lack of understanding of the total supply chains for the complex, unseen components, that underlie and enable the operations of the technologies we now take for granted in our daily lives, is the main reason that we have given away our competitive advantage in so many of the technologies we

invented...bringing back C-suite engineer-managers and innovative R&D based on results, not credentials is the sole hope for reviving America's technological security and excellence.

Mining Industry Struggles with Inflation and Supply Chain Pose Challenges for a Low-Cost Green Future

written by InvestorNews | February 11, 2024

Despite the fact that consumers are starting to see faint glimmers of hope that inflation might finally be peaking and starting to hopefully roll over, the same can not be said for everybody. In the case of the mining community, where projects are developed over the span of years and decades, not days or weeks, the curses of the supply chain and inflation are continuing to rear their ugly heads.

There has been a spate of announcements suggesting that economics for these projects remain robust but costs are growing materially, or in one case, the company has put off the final investment decision until the second half of 2024. This is not encouraging when one thinks about how quickly governments around the world want to expedite the green economy and transition away from fossil fuels, given we are talking about the mines that will supply the resources to undertake this task.

Generation Mining's Marathon project's CAPEX just went up by 25%

The first example is [Generation Mining Limited](#) (TSX: GENM | OTCQB: GENMF), which is developing the [Marathon Project](#), a large undeveloped palladium-copper deposit in Northwestern Ontario. The Company released its initial Feasibility Study ("FS") in 2021, but keep in mind a lot has to happen between an FS and the start of construction, of which environmental assessments, permitting, and financing, are some fairly large and time-consuming components. Correspondingly, now that Generation Mining has received its environmental assessment approvals and [recently announced](#) an indicative offtake term sheet, it's time to get serious about financing. Naturally, the Company needs to review how much financing they will need to move forward, so a revised FS was undertaken.

Despite management's positive spin, the news wasn't pretty. At the end of March, Generation Mining [announced](#) a 25% (C\$224 million) increase to the initial construction CAPEX reported in the 2021 FS. Albeit, approximately 19% or C\$43 million was due to scope changes, which is reasonable, but 71% (C\$160 million) was due to cost escalation, and the final 10% (C\$22 million) was a result of increased contingency. That's a big chunk of change, although it is unlikely to slow the project down as the economics remain solid and [global demand for copper](#) seems to be bullish in the long run. As well, the project is touted as being one of the lowest CO2 equivalent intensity mines in the world, which is a factor I'm sure will continue to become more important as time goes on.

Trilogy Metals announces updated

Feasibility with CAPEX up 40%

Example number two is a similar story, [Trilogy Metals Inc.](#) (TSX: TMQ | NYSE American: TMQ) is advancing exploration and development at the [Upper Kobuk Mineral Projects](#), high-grade copper-zinc-lead-gold-silver-cobalt properties in Northwest Alaska. Very similar to Generation Mining, in mid-February Trilogy [announced](#) an updated FS for its [Arctic Project](#). But if you thought the Generation Mining results were exorbitant, wait until you see what happened to Trilogy. Granted it's not exactly apples to apples given the original Trilogy FS was a year older (2020) and there are somewhat different commodities in a different geographic jurisdiction but...

You know it's going to be a big number but I personally find it hard to conceive. The updated FS for Trilogy Metals' Arctic Project has gone from US\$1.22 billion to US\$1.72 billion or a 40% increase. On top of that, annual payable metals production is down from the 2020 FS, implying that little to none of the surge in CAPEX was due to scope creep. Sure there was more than a doubling in mine closure and reclamation expenditures (US\$205.4 million to US\$428.4 million), which could be regulatory changes or any number of uncontrollable issues. But that still leaves US\$271 million seemingly attributable merely to things getting more expensive.

This should be a bit of a wake-up call to investors everywhere who are banking on the optimism of "friend-shoring" natural resources. There are a lot of highly valued junior mining companies with a pre-feasibility study or possibly even less than that, who might be in for quite a reality check if/when the project starts to get serious.

Newmont delays Yanacocha Sulfides Project

All this might explain the simplicity of my third example. [Newmont Corporation](#) (TSX: NGT | NYSE: NEM) decided it wasn't even going to go there with its [Yanacocha](#) Sulfides project in Peru. Last September the Company [announced](#) it will delay the investment decision for the project to the second half of 2024. As part of the press release Newmont stated that evolving market conditions, including the continued war in Ukraine, record inflation rates, the rising prices for commodities and raw materials, prolonged supply chain disruptions, and competitive labor markets were part of its decision-making process. Unless I'm missing something, I would have to say that "war in Ukraine" is more of an acknowledgment than anything else, because I'm not sure how that impacts a mine in Peru. I would also think the rising price for commodities would be a good thing but maybe they intended it in a different way. Nevertheless, you see the recurring theme of inflation and supply chain in there, so I've included it in my synopsis.

Final thoughts

What's my point? I alluded to it earlier but I will expand on it. First off, I think there might be a little too much optimism baked into a lot of the junior explorers at present. Yes, [General Motors](#) (NYSE: GM), [Tesla](#) (NASDAQ: TSLA), [Ford](#) (NYSE: F) et al are signing deals left, right, and center with numerous companies, and that's a very bullish thing. But what if GM and Tesla are smart enough to sign deals that have the miner get stuck with all the mining cost increases? The examples above show how an initial Feasibility Study may not be overly relevant a couple of years down the road. So that begs the question "What are the REAL economics of a project?"

Lastly, and this is more of a thought experiment kind of

comment, in the grand scheme of things it would appear the world simply doesn't realize how much new critical minerals projects are going to cost. It seems that old metrics might not be overly relevant anymore. Inflation may have a much larger trickle-down effect than anyone imagined and the price of future EVs might cost a King's ransom, despite government subsidies.

Is there a Ford in your future?

written by Jack Lifton | February 11, 2024

The American Ford Motor Company, in its domestic operations, has now adopted the current business operations model of the Chinese OEM automotive industry, but lags far behind on the Chinese approach to critical materials supply security.

The Chinese like to emphasize that their approach to politics and economics cannot be wholly understood as just an example or even a simple variant of these disciplines as practiced in the West and applied to China. They refer to their economic system as Socialism with Chinese Characteristics and say that the operating focus of their domestic economy is now dual circulation, the emphasis of domestic consumption leading to a declining importance of exports.

Nonetheless, foreign analysts continue to view China with a Western academic definitions filter.

This has allowed analysts to miss almost entirely the critical details of the growth of the business operations model of the

(now world's largest) Chinese OEM automotive industry as it has adapted to what the Chinese call the production of "New Energy Vehicles " (NEVs).

To avoid internal conflict and increase efficiency, large Chinese auto companies now usually set up a separate NEV unit that runs independently from the traditional ICE car business.

I don't know James Farley, the CEO of the Ford Motor Company, personally, but I do know that he is among the most perceptive and far-seeing of American OEM automotive top managers, and one who actually understands the business of manufacturing of cars and trucks and the markets for those vehicles. How do I know this? By the action he announced last week that reveals his financial and market acumen. The Ford Motor Company has announced that it will separate its EV operations and its ICE operations into two separately managed and organized internal units, each of which will focus on a powertrain. There will be the Ford Model-e Division and the Ford Blue Division. The Presidents of both divisions will report directly to the CEO, now Jim Farley.

As Farley states: "We still think that more than half our customers are going to be ICE, and they're going to be ICE for a long time," Farley said. "It's almost like our industry's kind of given up on that business. Even if the unit volume starts to fall over when mass adoption of electrification happens, in a lot of segments that's not going to happen, and we want to have a dedicated team to run that business with passion."

So, now, at least, one of America's remaining, "Big Two" automotive OEMs have caught up with Chinese management "style" in product development.

But, there's one more area where Capitalism with Chinese characteristics has outpaced the rest of the world. That is in

security of supply of critical raw materials. China has an industrial policy that supports key industrial development, and it has had that policy for a long time.

When the Chinese domestic OEM automotive industry was in its infancy a generation ago China rapidly developed the domestic capability and capacity to produce a secure supply of raw materials to make ICE powered vehicles. Those main materials were steel, aluminum, copper and plastics. China soon overtook the USA and indeed the rest of the world combined in the production of those critical industrial materials.

About 6 years ago the Chinese government decided that the electrification of land transportation was critical to hedge against China's dependence on foreign fossil fuels and to reduce pollution in its rapidly advancing urbanization. Accordingly, the government set out to determine what materials would be critical for such developments. Lithium-ion battery and rare earth permanent magnet motor construction materials were determined to be priorities, and a national program to find them, extract them, process them, and manufacture end-use products dependent upon them for their function was added to the five-year plan system of formulating and carrying out industrial policy. Today, China has sufficient domestic secure supplies of materials and processes already in place to build all of the BEVs it plans to build through most of this decade.

This is where America and Europe are woefully far behind.

Neither the Ford Motor Company nor anyone else can afford to wait for their national governments to catch up with China's industrial policy planning and execution.

There is nowhere near enough non-Chinese production and processing of the critical materials for batteries and electric motors to fulfill any but a small part of the planned non-

Chinese production of BEVs, wind turbines, energy storage, aircraft and ship components, and consumer goods.

It's going to be every company for itself. I am hoping that the non-Chinese OEM automobile industry learns from the chart below what it will take to survive.



I am not optimistic.