

Weekly Precious Metals News Articles: Feb 10, 2024

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Below is a cross section of relevant news article to the world of Precious & Critical Metals: This markets, supply & demand shifts, investment, mining, recycle and industrial applications.

A printable PDF version with more embedded graphics is attached. Enjoy-



- Gold, Silver, Platinum Forecasts Gold Retreats Ahead Of The Weekend
 - Silver and platinum are also moving lower amid a broad pullback in precious metals markets.
- Gold en route to weekly dip as rising bond yields dent appeal
 - Gold slipped on Friday and was heading for a weekly fall, pressured by elevated Treasury yields, while investors awaited next week's US inflation data for more clues on the timing of the Fed's interest rate cuts.
 - Spot gold was down 0.5% at \$2,022.86 per ounce at 01:47 p.m. ET (1847 GMT) and fell 0.8% over the week.
- Gold Price Forecast Gold Markets Continue to Look to The Upside
 - Gold markets have pulled back just a little bit during the trading session on Friday as it looks like we are trying to reach out to the 50-Day EMA.
- <u>Global gold demand hits record high in 2023</u>
 - Total global gold demand, inclusive of over-the-counter and stock flows, amounted to 4,899 mt last year, hitting a record high, said an industry report.
 - The demand of central banks reached 1,037 mt in 2023, the second highest in history, according to the report released by the World Gold Council.
 - Global gold-backed exchange-traded funds (ETFs) saw an annual outflow for the third consecutive year, losing 244 mt in 2023, said the report.

Semiconductor Related Articles (impacting Precious Metals electronics):

<u>Gold</u>

Global Semiconductor Sales Decrease 8.2% in 2023; Market Rebounds Late in Year

- "Global semiconductor sales were sluggish early in 2023 but rebounded strongly during the second half of the year, and double-digit market growth is projected for 2024," said John Neuffer, SIA president and CEO. "With chips playing a larger and more important role in countless products the world depends on, the long-term outlook for the semiconductor market is extremely strong. Advancing government policies that invest in R&D, strengthen the semiconductor workforce, and reduce barriers to trade will help the industry continue to grow and innovate for many years to come."
- Worldwide Tablet Shipments Hit Their Lowest Level Since 2011 in 2023, According to IDC
 - Worldwide tablet shipments declined 17.4% year over year in the fourth quarter of 2023 (4Q23), totaling 36.8 million units, according to preliminary data from the International Data Corporation (IDC) Worldwide Quarterly Personal Computing Device Tracker. This is the largest decline in fourth quarter tablet shipments since 2016. For calendar year 2023, worldwide tablet shipments totaled 128.5 million units, a decline of 20.5% compared to 2022 and the lowest annual volume since 2011.
- Samsung battles TSMC and Intel for global chip dominance
 - Samsung faces intensifying competition amid TSMC's rise and Intel's comeback
 - TSMC to build 2nd Japan chip factory, raising investment to \$20 bil. The Korea Times
 - TSMC said last month the first Japanese factory would open in February with volume production in the fourth quarter, and that the company was also exploring building a second factory in the country.
 - In a statement, TSMC, the world's largest contract chipmaker, said its majority-owned unit Japan Advanced Semiconductor Manufacturing in Kumamoto would build a second fabrication plant, or fab, in response to rising customer demand.
 - The second fab will begin construction by the end of this year and with both factories the site is expected to have total monthly capacity of more than 100,000 12-inch wafers to be used for automotive, industrial, consumer and high performance computing-related applications, TSMC said.
- Intel delays Ohio fab build, blames semiconductor slowdown
 - Intel has postponed the completion date of its planned Ohio manufacturing site to late 2026, blaming the current weakness of the semiconductor market and delays in receiving CHIPS Act subsidy cash.
 - Now the company is instead slowing the pace of the build and pushing the date of completion back, citing "market challenges" and the slow rollout of government funding to help chip companies build up manufacturing capacity on US soil, according to the Wall Street Journal.
- Apple forecasts iPhone sales dip on slow China demand
 - Apple on Thursday forecast a drop in iPhone sales and targeted overall revenue US\$6 billion below Wall Street expectations as its China business took a hit.
 - That overshadowed overall fiscal first-quarter sales and profit that beat analysts' targets, powered by iPhone growth, sending Apple shares down 3% in after-hours trade.

Silver

- Silver extends recovery on hopes for Chinese demand
 - The new lunar year in China starts tomorrow, February 10, and continues for 15 days, and is expected to be a year filled with "positive energy" according to Chinese astrology.
 - During the festivals, demand usually spikes on jewelry of all kinds, with people exchanging gifts and wearing new jewelry items as part of the traditions.
- Demand worries continue to put pressure on silver prices
 - Historically, silver moves in tandem with the performance of gold. However, in the past few years, the price performance of silver has been different from gold. The commodity has both industrial and investment

applications, but industrial use of this metal has remarkably increased in the past few years affecting its price outlook significantly.

- Silver Market Anomaly: Silver Demand Outpaces Supply With A Flat Silver Price
 - The silver market is experiencing a supply deficit, that's the third year in a row now. But the price of silver remains flat, how is this possible?
 - Within the silver market dynamics, the looming silver shortage stands out as a ticking time bomb. Despite COMEX silver price setting, the law of supply and demand will eventually prevail. As we approach a true silver supply shortage, the silver market's true potential awaits, ready to reshape the price setting dynamics and elevate silver to new heights.
- Silver Loadings: <u>30% Less Than TOPCon, Risen Energy reduce Silver Consumption of HJT Hyper-ion</u> <u>Module to <7mg/W</u>
 - Risen Energy announced that it has successfully reduced silver consumption in its Heterojunction (HJT) Hyperion solar modules to less than 7mg/watt, not only significantly better than both PERC (around 7.82mg/W) and TOPCon (around 10.24mg/W), but also stands out as a leader in HJT technology. This breakthrough highlights Risen Energy's commitment to advancing PV solutions. Together with the recent achievement of 3x IEC certification from TÜV SÜD, it demonstrates the gradual evolution of HJT Hyper-ion solar modules into more cost effective, efficient and reliable products
- <u>Anti-biofilm properties of laser-synthesized, ultrapure silver-gold-alloy nanoparticles against</u> <u>Staphylococcus aureus</u>
 - It could be shown that AgAu NPs exhibit antibacterial properties against planktonic bacteria but also against early-stage and even mature biofilms, with a complete diffusion through the biofilm matrix. Furthermore, AgAu NPs primarily targeted metabolic activity, to a smaller extend membrane integrity, but not the biofilm volume. Additional molecular analyses using qRT-PCR confirmed the influence on different metabolic pathways, like glycolysis, stress response and biofilm formation. As this shows clear similarities to the mechanism of pure silver ions, the results strengthen silver ions to be the major antibacterial agent of the synthesized nanoparticles. In summary, the results of this study provide initial evidence of promising antibiofilm characteristics of silver–gold-alloy nanoparticles and support the importance of further translation-oriented analyses in the future.

Precious Metals Mining:

- Sibanye-Stillwater to cut PGM output by up to 60,000 oz/year
 - "It is a very small impact on production," he said in an interview on the sidelines of the Mining Indaba conference in Cape Town. Sibanye-Stillwater is expected to produce 1.7 to 1.8 million oz of PGMs from its South African assets for its 2023 financial year. Sibanye-Stillwater issued a Section 189 restructuring notice in October which it said could affected more than 4,000 employees in its South African PGM business. Three shafts will be affected as previously announced: B4 and Rowland shafts in the Marikana (former Lonmin) section, and Siphumelele shaft in the Rustenburg Mines business.
- Platinum miners' profits slump
 - Impala Platinum Holdings said its second-half profit likely fell by more than 85% as the company battled with slumping metal prices and wrote down the value of assets in South Africa and Canada.
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- Anglo Platinum share price hit by weak production update
 - Anglo American Platinum saw a 6% decrease in total Platinum Group Metals (PGMs) production in the fourth quarter of 2023, amounting to 932,200 ounces. The total production for the year reached 3,806,100 ounces.

- The decrease in total PGMs production was primarily attributed to a 3% reduction in their own-managed mines' PGMs production, which fell to 543,500 ounces. This decline was mainly due to lower production at Amandelbult due to planned infrastructure closures and challenging ground conditions at Dishaba Mine.
- Nornickel's 2023 profit slumps 51% on falling metal prices
 - Russian metals producer Nornickel said on Friday its 2023 net profit slumped by 51% to \$2.9 billion as prices for nickel, palladium and copper fell, though sales of previously accumulated inventory partly offset the negative factors. Geopolitical risks have also hampered Nornickel, the world's largest palladium producer and a major producer of refined nickel, and made Asia Nornickel's largest sales market with a share of more than 50% for the first time in its history.

E-Waste & Precious Metals Recycle Related:

- <u>The Growing E-Waste Problem: A Promising Solution for Gold Extraction</u>
 - A study published on Science Direct showcases the development of highly efficient and selective adsorbents for recovering gold from electronic waste, specifically using MoS2 TpTa composites. This composite demonstrated an impressive maximum adsorption capacity and showed good repeatability over multiple cycles. This innovative technique is not only environmentally friendly but also economically beneficial, as gold is a precious and expensive commodity.
 - The process is swift, taking no more than 12 hours to recover up to 99.0% pure gold metal from 10 kg of ewaste, yielding 8.82g of gold. The extraction process involves using a special catalyst to break down the ewaste and extract the gold particles. This process reduces the need for harmful chemicals, making it more environmentally friendly and suitable for large-scale adoption.
- Old milk can be used to extract gold and other metals from e-waste | New Scientist
 - To extract valuable metals from discarded computer motherboards, researchers have developed a goldabsorbing material made from old milk
- Solar waste to provide material supply security pv magazine International
 - "End-of-life PV panels are not waste, they are valuable material reservoirs for the manufacturing of new panels," she said. "In five years, end-of-life silver and aluminium from PV panels could supply 30% of future PV demand, 50% in 15 years, escalating to 100% in 25 years considering realistic forecast installations."
- <u>Aurubis Q1 profit misses forecast on lower metal prices</u>
 - The decline was driven by a 16% drop in earnings for the metal recycling segment, as metal prices fell especially for nickel, palladium and copper, the company said.
- Pandora Stops Using Mined Silver and Gold
 - Pandora, the world's largest jeweler by amount of products sold, has stopped using mined silver and gold and now only manufactures with recycled precious metals, which require less energy to produce. The Danish company, known for its \$65 to \$95 charm bracelets, buys around 340 tons of silver and one ton of gold every year. Its supply chain generated 264,224 tons of CO2 in 2022, according to its annual report.

<u>Platinum</u>



Platinum Never Cheaper vs Gold But Erases Palladium Price Discount

 The price of platinum has erased its discount to sister metal palladium for the first time in 6 years, but it's hit a new record discount against gold after the PGM metals both fell hard on concerns over 2024 supply and demand. The 'basket price' of platinum-group metals sank by 38% last year, leaving "roughly half of global PGM mine supply operating at a loss," says specialist consultancy Metals Focus, comparing spot bullion prices with the 'all-in sustaining' measure of mining costs.

<u>Scientists Craft Chiral Superconductor with Mixed Properties</u>

 Researchers from Tokyo Metropolitan University have created a new superconductor with a chiral crystalline structure by mixing two materials, one with superconductivity but no chirality, another with chirality but no superconductivity. The new platinum-iridium-zirconium compound transitions to a bulk superconductor

below 2.2 K and was observed to have chiral crystalline structure using X-ray diffraction. Their new solid solution approach promises to accelerate the discovery and understanding of new exotic superconducting materials.

• (USA) <u>Heavy Truck Sales Increased in January</u>

- Heavy truck sales declined sharply at the beginning of the pandemic, falling to a low of 308k SAAR in May 2020. Heavy truck sales were at 485k SAAR in January, up from 458k in December, and down 3.1% from 501k SAAR in January 2023.
- Johnson Matthey Technology Review
 - Technical deep dive papers.

Fuel Cells/H₂ Economy Related Articles:

Shell Shuts Down Its US Hydrogen Filling Stations

- The warning signs appeared last year when Shell scrapped its plans to build 48 hydrogen refueling stations for light duty vehicles in California. The company was in line for over \$40 million in state incentives to install those fueling stations, but even that was not enough to move the project forward. In September, Shell closed three of its five hydrogen stations in the state.
- Honda starts series production of fuel cells Power Progress
 - Honda has started series production of fuel cells (FC) at its Fuel Cell System Manufacturing (FCSM) facility in Brownstown, Michigan. The plant is a joint venture with General Motors, which will also use fuel cells produced by the facility.
 - This latest fuel cell system is said to be key to Honda's future hydrogen business strategy. Co-developed by Honda and GM over the last decade, it is reported that the new FC is twice as durable as the model it replaces due to corrosion-resistant materials.
 - Costs are said to have been reduced by about 66% through simplification of auxiliary components, common sourcing, economies of scale and reduced use of precious metals.

<u>Researchers Warn On Eutrophication Potential Of Ammonia</u>

 "Among the environmental problems that can be traced to use of ammonia are eutrophication and acidification," says Kanchiralla. "Even though green ammonia is a fossil-free and relatively clean fuel, it is probably not green enough for the environment as a whole. More risk assessments on the emissions of ammonia, and the related nitrogen compounds, need to be done before adopting this fuel for shipping."



<u>Palladium</u>

- Palladium slides by over 3% to below \$900
 - Palladium prices fell on Friday as the dollar edged down against most major rivals, while investors assess the likely path ahead for US policies.
 - A series of stimulus measures launched by China last year to boost the real estate market failed to buoy the market sufficiently.
- Southern Palladium scopes out \$408m Bengwenyama
 - An emerging view in general is that the cataclysmic outlook for ICE is overstated, more so if hybrid vehicles are recatergorised as ICE instead of electric vehicles which some market commentators tend to do. Adrian Hammond, an analyst for Standard Bank Group Securities wrote last month he could see 3% consumption growth for the ICE market.
- Palladium price drops below platinum for the first time since 2018
 - Palladium demand hugely driven by the auto sector
 - Auto industry has been replacing palladium with cheaper platinum
 - Market share of palladium-free electric vehicles is rising
 - Miners' ability to reduce palladium output is limited

PGM Minor Metals (Rhodium, Iridium, Ruthenium, Osmium)



• Molybdenum-ruthenium catalyst helps produce green fuel from water

- Scientists at South Korea's Dongguk University have synthesized an efficient catalyst for the oxygen evolution reaction a component of the water-splitting process that produces hydrogen for fuel cells.
- In a paper published in the journal Applied Catalysis B: Environmental, the researchers note that the catalyst, synthesized using molybdenum and ruthenium, exhibits high activity, reaction rates, and durability, opening doors to the cost-effective and large-scale production of next-generation catalysts.
- <u>Bi-directional strains increase the performance of iridium oxide nanoparticles towards the acidic</u> oxygen evolution reaction in proton exchange membrane electrolyzers - Inorganic Chemistry <u>Frontiers (RSC Publishing)</u>
 - The challenge of achieving high-performance iridium-based catalysts towards the oxygen evolution reaction (OER) in proton exchange membrane (PEM) electrolyzers remains unresolved due to the highly acidic catalyst/PEM interface and oxidation conditions. To address this issue, we introduce core–shell structured Sb_{0.3}Ir_{0.7}O_x@TB-IrO_x nanocatalysts featuring twin boundaries (TBs) with bi-directional (shear and axial) strains that exhibit a remarkably low overpotential of 201 mV at 10 mA cm–2 towards the OER in 0.5 M H2SO4. Moreover, Sb_{0.3}Ir_{0.7}O_x@TB-IrO_x displays outstanding mass activity of 3.16 A mg per Ir (η = 270 mV), which is 26.2 times better than that of commercial IrO₂. The enhanced catalytic activity is attributed to the tuned Ir– O bond lengths along the bi-directional strains, caused by twin boundaries and the core–shell structure,

optimizing oxygen intermediate adsorption energy, as supported by microscope characterization and theoretical calculations.

- <u>New catalyst to generate green fuel from water</u>
 - "Carbon materials are crucial for commercial acidic polymer electrolyte membrane water electrolyzers. At high voltages, however, carbon atoms degrade in strongly acidic media, necessitating the need for new catalyst materials beyond carbon materials." The study involved implanting ruthenium oxide into a twodimensional molybdenum carbide to create a catalyst (Mo 2 TiC 2 T x MXene) with high mass activity, turnover frequency, and durability. Calculations also indicated that the ruthenium sites had a strong affinity towards oxygen species, which enhanced the reaction.
 - De Nora enters a project for the construction of one of the largest European water electrolysis plants for the generation of green hydrogen – ThyssenKrupp nucera submitted orders for the supply of electrolyzer cells to produce more than 700 MW of green hydrogen
 - The project, which will produce green hydrogen with a total installed capacity of more than 700 MW, ranks among Europe's largest water electrolysis plants. Green hydrogen will be used in a hard-to-abate industry decarbonization project and will, once completed, significantly reduce the carbon footprint of the end customer compared to the use of traditional technologies.



- Land Grab & Food Supply Control: Farmer Protests Erupt Across Europe Against Net Zero Agenda
 - YouTube Video News Piece: Starts with a clip of John Kerry claiming that some 26-33% of global emissions are from Synthetic Ammonia & Fertilizer, Farming emissions, and livestock emissions.
- Ofgem to investigate claims of wind farms overcharging billpayers millions
 - Energy regulator Ofgem is investigating the claims that wind farms may have incorrectly added close to £51m to taxpayer bills since 2018. A Bloomberg report found that 40 out of 121 (33%) studied projects overstated their output by 10% on average and 27 (22%) of the wind farms were found to be overstating by at least 20%.
- Growing interest in green and blue ammonia for energy imports | World Fertilizer
 - As one of the world's most traded base chemicals, ammonia is today mainly used for fertilizer production, with natural gas as a feedstock. However, more and more producers are looking for alternatives, and there are two main options. The first is 'blue ammonia', which is still produced from natural gas, but with the CO2

being captured and stored to reduce the carbon footprint as much as possible. The first projects are already underway, and many countries see this as a viable way to improve sustainability in the short term.

 In the medium and long term, the green production of ammonia is key for a sustainable world. Only water, air and renewable electricity are needed to produce this high-demand base chemical in a completely emission-free way. As the global infrastructure for handling, storing, and transporting ammonia already exists, green ammonia could be produced in the sunny Gulf States, Australia or other renewable-rich countries and then transported to countries with high demand for renewable energy or hydrogen, such as many European countries.

Global Manufacturing Rebound Could Signal a Bright Year for Copper

- Some industry leaders are anticipating lofty gains in the coming months. The billionaire founder of Ivanhoe Mines, Robert Friedland, has forecast a potential surge in copper prices to \$9,500/mt this year. This bullish call is underpinned by a combination of lower interest rates later in the year and a ramp-up in demand from China, which Robert stresses has not slowed its consumption of the red metal, despite its shaky real estate market. The country bought more copper in 2023 than in any other year on record, importing 27.54 Mt.
- Grade decline at the world's largest copper mine Earth Resource Investments
 - With the richest portions of the ore body being mined around the turn of the century, the grades started to drop off quickly. The reserve grade, the grade used to calculate the future ore tonnage to be mined, was continuously adjusted downwards and is today around 0.5%, around a third of what it was when the operation started. BHP continued to expand the Escondida concentrator in order to increase mined volumes and to keep up copper production volumes to compensate for the declining grade.

Conflicted methanol won't take ammonia's place in shipping

The Power to Methanol project, an 8,000 ton per year pilot scheduled to start operations in 2022 at the port of Antwerp, has been officially canceled due to escalating costs. The development consortium, led by Inovyn, a subsidiary of chemicals giant Ineos, cited the ongoing energy crisis and geopolitical uncertainties as key factors influencing the project's financial infeasibility. The consortium, comprising seven companies including Engie, Fluxys, Indaver, and the Port of Antwerp-Bruges, admitted that no offtakers were willing to commit to long-term contracts at current prices, making the production of e-methanol financially unviable. The project's feasibility study alone cost approximately €2 million, with the regional Flemish government contributing €1 million in 2021. Inovyn, the project lead, already operates a chlor-alkali...

JET nuclear fusion machine produces record clean energy

- A UK-based nuclear fusion collaboration just produced a record amount of energy, a refreshing dose of good news in humankind's quest for cleaner energy sources. The Joint European Torus facility, or JET, produced just over 69 megajoules of heat. A brief distillation of nuclear fusion: It is a reaction by which atomic nuclei fuse, turning into a new element while at the same time producing a huge amount of energy. It is a cleaner process than nuclear fission, its evil twin, which generates energy (and a sizable amount of waste) by splitting atoms. Nuclear fusion is the same reaction that powers stars like our Sun, and for decades scientists have tried to make the reaction energy efficient on Earth.
- Oklo advances Ohio nuclear plans, gets key fed approval for fuel fabrication facility
 - Oklo aims to build its second and third plants on land owned by SODI, it announced last May. The land will host two commercial 15-MWe Aurora powerhouses (30 MWe total) and over 50 MW of clean heating.
 - Oklo's Aurora powerhouse design is a fast neutron reactor that would transport heat from the reactor core to a power conversion system and is designed to run on material from used nuclear fuel known as HALEU, or "high assay, low-enriched uranium." The reactor builds on the Experimental Breeder Reactor-II and space reactor legacy.

BEV / LiB Mineral & Battery Market News



Tesla Rakes In \$9 Billion From Carmakers Failing to Sell Enough EVs - Bloomberg

- Tesla Inc. continues to cash in on other carmakers needing help to meet emissions standards, keeping up a lucrative business the company thought would fade away.
- The Elon Musk-led manufacturer generated \$1.79 billion in regulatory credit revenue last year, an annual filing showed last week. That brought the cumulative total Tesla has raked in since 2009 to almost \$9 billion.

• LG Chem, GM Sign \$19 Billion Cathode Supply Deal - WSJ

- South Korea's LG Chem will supply General Motors GM with nearly \$19 billion worth of cathode materials in the coming years, part of the U.S. carmaker's long-term ambitions to become a leader in electric vehicles.
- The Seoul-based chemical company said Wednesday that it signed a 10-year deal to provide GM with more than 500,000 tons of cathode materials—enough to make batteries for about five million EVs—beginning in 2026. It said the cathode supply is worth at least 24.75 trillion won (\$18.65 billion).
- <u>SK Innovation projects slower growth in global EV demand</u>
 - While battery unit SK On narrowed its operating loss to 18.6 billion won in the fourth quarter from 86.1 billion won in the previous quarter, it missed its previously announced target to turn a profit in the fourth quarter, adding that it aims to reach a break-even point in the second half of this year.
 - "The overall battery shipment in the first half of this year would likely drop slightly, however, with automaker customers' launch of new EVs and lower interest rates supporting an increase battery shipments in the second half of the year," SK On Chief Financial Officer Kim Kyunghoon said in a post-earnings conference call.
- Ford reassessing EV plans, including vertical battery integration
 - Ford is rethinking its electric vehicle strategies, CEO Jim Farley said Tuesday.
 - The automaker previously confirmed plans to delay or cut \$12 billion in spending on all-electric vehicles.
 - Farley reiterated the company still believes EVs will grow, but noted widespread adoption for mass-market consumers won't happen until the costs are more in line with traditional vehicles.
- <u>Germany set for 14% drop in electric-vehicle sales as carmakers scale back ambitions and demand</u> <u>'does not look good'</u>
 - Standing at the front of the room at an auto industry association's new year reception in Berlin this week, BMW CEO Oliver Zipse had reason to feel vindicated. A singular focus on battery-powered vehicles by policymakers and manufacturers is leaving Germany's most important industry exposed with a forecast of slumping EV demand in the EU's biggest car market.
 - Zipse has been making that same point for years, advocating for flexible production lines for combustion, hybrid and even hydrogen-powered cars. His cautious strategy — which chimes with his predecessor's — was attacked as not aggressive enough on challenging electric leader Tesla Inc.
- Ford's EV Sales Drop 11% While Hybrids Surge 43% In January
 - Automakers are working hard to make sure that 2024 is a success, and for Ford, it seems that hybrids are becoming a substantial part of their sales strategy. In January alone, the automaker witnessed a 43% increase in hybrid sales compared to the same month last year. This substantial increase in hybrid sales managed to offset a 10.3% decline in EV sales for the same period.

From green hype to bailouts, the nickel industry has imploded

- As a result, prices for the metal have crashed over 40% from a year ago, adding to hurdles in a market that is also wobbling from weak demand and persistent concerns about China's economy. Macquarie analysts estimate that more than 60% of the global industry is losing money at current prices.
- That's because Indonesian production which accounts for half of global supply may prove more resistant to output cuts. The SE Asian nation has emerged as a global nickel hub after billions of dollars of investment in efficient plants that benefit from inexpensive labour, cheap power and readily available raw materials.
- Automakers uncertain about EV affordability as demand wanes
 - As electric vehicle demand cools, automakers have had mixed reactions in their latest quarterly earnings. While Tesla's (TSLA) Elon Musk believes lowering EV prices would boost consumer appetites, rivals like Ford (F) and General Motors (GM) indicate affordability constraints prevent offering further discounted price tags.
- **EVs are using less nickel and cobalt as carmakers aim for budget prices, and that might actually be** good for these Aussie miners
 - The rise of cheaper LFP battery chemistries in electric vehicles has often been seen as a challenge to Australia's resource sector with nickel and cobalt on the outer
 - But as LFP demand rises outside China, Western suppliers of commodities like phosphate, manganese and fluorspar could benefit
- Plunging 2,000 feet underground for a critical mineral graphite
 - Video News Excellent 13 minute dep dive news piece.
- Li-S Energy scales up lithium battery manufacturing
 - Li-S Energy has announced the commissioning of manufacturing equipment in its Phase 3, 2 MWh production facility at Geelong, allowing the company to scale up manufacturing of their lithium sulfur and lithium metal batteries.
- Nickel price extends slump on Indonesian glut as metals hit by Fed MINING.COM
 - Prices of nickel on the London Metal Exchange have almost halved over the past year, prompting miners
 outside of Indonesia to close operations. Risk appetite for that metal and other industrial commodities fell
 further on Monday after Fed Chair Jerome Powell said policymakers will likely wait beyond March before
 cutting interest rates.
- Why Lithium Prices are Plunging and What to Expect Carbon Credits
 - The current decline in lithium prices can be primarily attributed to the slowing growth of electric vehicle sales in China. This is coupled with the broader slowdown in the ChineseSource: Trading Economics
 - Lithium carbonate prices have experienced a significant decline in China. They dropped from a record high of \$81,360 per tonne in November 2022 to \$20,782 per tonne in the current month. This marks the lowest level in two years, reflecting a 67% decrease year-on-year.
- <u>Australia's Novonix signs deal to supply synthetic graphite to Panasonic Energy</u>
 - Under the deal, Novonix will supply 10,000 tonnes of synthetic graphite from its Riverside facility in Chattanooga, Tennessee to Panasonic Energy's U.S. plants from 2025 till 2028.
- Visualizing The Future Demand For Battery Minerals
 - Battery minerals are crucial for the global clean energy transition, as they enable both cost-effective, ondemand power systems and the decarbonization of the transport sector.

Regards – Matt



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