



Weekly Precious Metals News Articles: March 29, 2024

Distribution: If you no longer wish to be on this mailing list, send me a note. If others want to be added to distribution, again let me know.

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



- [Gold Hits Fresh Record High for Easter 2024 Ahead of US Inflation Data](#)
 - The price of gold went into the long Easter weekend at new record highs on Thursday, fixing above \$2213 per Troy ounce at London's afternoon benchmarking auction, and gaining 8.0% in Dollar terms for the month, as the surge in global stock markets paused and new US data gave a mixed picture for the world's largest economy ahead of tomorrow's core PCE inflation figures.
- [Gold advances as rate cut bets firm ahead of US inflation test](#)
 - US PCE price index data due on Friday
 - Gold jumped over 1% earlier in the session, just below record highs
- [Central Banks Double Down On Gold Bars | Markets.com](#)
 - Over the last decade, a core group of central banks, mainly Russia, China, India, Turkey, Kazakhstan, and others, has led the charge in buying gold.
 - China has hinted it may eventually hold over 8,800 mt of gold bars in its official coffers, making it the second-largest gold-holding nation behind the USA. According to the World Gold Council, the People's Bank of China accumulated 62 mt of gold bars in 2022. Russia added a massive 275 mt during 2022, which some experts dubbed a "gold buying spree" while under sanctions. The substantial Russian purchases accounted for nearly half of all central bank demand during 2022.
- [Gold prices rise but pinned below record highs as dollar strength persists](#)

- Anticipation of more cues on U.S. inflation and interest rates also kept investors heavily biased towards the dollar, although metal markets still saw some buying after steep losses Friday.
- [Sugar-coated Gold Nanoparticles Could Replace Some Antibiotics](#)
 - According to a Penn Medicine study, a new therapy involving laser light and sugar-coated gold nanoparticles can reduce tooth decay and infected wounds without needing antibiotics.



Semiconductor Related Articles (impacting Precious Metals electronics):

- [China's SMIC 'potentially' broke law, US official says](#)
 - US Undersecretary of Commerce for Industry and Security Alan Estevez was questioned about the 7-nanometer processor that SMIC made for Huawei during testimony before US lawmakers. When asked by US House of Representatives Foreign Affairs Committee Chairman Michael McCaul whether SMIC violated US controls, Estevez said "potentially, yes."
- [Taiwan 'in middle' of AI revolution: Nvidia CEO](#)
 - Jensen Huang celebrated the nation's role in the formation of the tech firm at a Silicon Valley gathering, saying 'Taiwan saved Nvidia'
- [Everyone wants the latest chips. That's causing a huge headache for the world's biggest supplier](#)
 - Sometimes called the most important company in the world, TSMC produces ~90% of the world's super-advanced semiconductor chips, used to power everything from smartphones to AI applications.
 - Last month, the chip giant opened its first fab in the Japanese city of Kumamoto and is set to open two \$40 billion facilities in Phoenix, AZ in the coming years to make smaller, more advanced chips. It has committed to investing \$3.8 billion to build a fab in Dresden, Germany, the company's first in Europe.
 - The soaring demand, particularly for chips that power AI, has created a shortage of talent for the semiconductor industry. TSMC said last year that one of its fabs in Arizona would be delayed because of a lack of specialist workers.
- [CHIPS Act is not 'crony capitalism'](#)
 - With the recent passage of the CHIPS and Science Act, the U.S. has a chance to enable a resurgence of semiconductor manufacturing in the U.S. The law, however, passed despite much Republican opposition, which often dwells on an aversion to so-called "crony capitalism." A brief, partial history of the support you—the American taxpayer—provided to the semiconductor industry should convince you that such investment is not a new idea. Furthermore, efforts to undermine the CHIPS Act will also undermine U.S. competitiveness and national security.
- [Apple could double down on China market, Wedbush says, as iPhone sales drop](#)
 - Apple CEO Tim Cook was recently in China where he met Commerce Minister Wang Wentao and opened the company's newest flagship store in Shanghai last week.
 - The company needs to overcome challenges in China before the iPhone 16 release and "it all starts with reaffirming Apple's presence in China," said Wedbush analysts on Monday.
 - Apple is operating in a tough environment in its key market, China, as it faces stiff competition from local Chinese smartphone makers and declining iPhone sales.
- [How We'll Reach a 1 Trillion Transistor GPU](#)
 - Advances in semiconductor technology [top line]—including new materials, advances in lithography, new types of transistors, and advanced packaging—have driven the development of more capable AI systems.

Silver

- [IRENA says solar capacity rose by 345.5 GW in 2023](#)
 - An additional 345.5 GW of solar was deployed throughout the world in 2023, according to official figures from IRENA, published in its Renewable Energy Capacity Statistics 2024 report.
 - These numbers differ substantially from figures released in February by BloombergNEF, which said global newly installed PV capacity reached approximately 444 GW last year.
 - IRENA's figures represent a 32.2% increase on 2022 levels and are a record for a single calendar year. Solar represented roughly 73% of total renewable-energy deployments last year, at 473 GW overall.
 - *Matt: IRENA numbers are the reliable standard for tracking Solar installations globally. This lower than Bloomberg reported number translates into an estimated 240 Moz of Silver Demand in 2023, up +67% from 143Moz in 2022.*
- [Should you invest in silver bars and coins? Benefits and risks of buying in](#)
 - But while gold can offer a number of unique benefits to investors, it's certainly not the only precious metal investing option available to you. Pt, Pd, Cu and even silver are other options to consider when it comes to investing in precious metals, and like gold, there are benefits to adding one or more of them to your portfolio.
 - Silver, in particular, presents an alternative option worth considering. While it doesn't garner the same prestige as gold, silver offers several unique potential benefits to investors. Below, we'll take a closer look at the potential benefits and risks of investing in physical silver right now.
- [Silver Prices Forecast: Gains Capped by Rising Yields, Strong Dollar](#)
 - Silver prices remained steady on Thursday, influenced by Federal Reserve Governor Christopher Waller's remarks regarding interest rate policies. Waller's guarded approach towards rate adjustments, coupled with upcoming U.S. economic data, has captured the attention of the market. The release of the PCE Inflation Index on Friday is especially critical, offering insights into the Fed's strategy for inflation management.
- [Square-pyramidal subsurface oxygen \[Ag4OAg\] drives selective ethene epoxidation on silver](#)
 - Overview of selective oxidation of ethylene-to-ethylene oxide by Ag catalysts. ... Why silver is the unique catalyst for ethylene epoxidation.



FREEPORT OF THE WEST

**HIGH-SECURITY
VAULTING FACILITY
IN WYOMING**

CASPER, WYOMING

- FULLY INSURED — CLASS 3 VAULT WITH STATE-OF-THE-ART SECURITY
- QUARTERLY EXTERNAL AUDITS, ACCESSIBLE TO ACCOUNT HOLDERS BY BUREAU VERITAS
- ANNUAL FULL AUDITS BY FORVIS
- STRONGEST PROPERTY RIGHTS LAWS IN THE NATION
- FREE TRADE ZONE

CONTACT: EMAIL
INQUIRIES@THEWYOMINGRESERVE.COM
TELEPHONE (307) 201-6098
170 STAR LANE, CASPER, WY 82604
WWW.THEWYOMINGRESERVE.COM

Precious Metals Mining:

- [LBMA seeking to integrate small and artisanal miners into the legitimate gold supply chain](#)
 - Independent precious metals authority LBMA has launched a major initiative to support the integration of artisanal and small-scale mining (ASM) into the legitimate global gold supply chain, through its 66 accredited

refiners. The initiative takes the form of a 'toolkit' which addresses issues specific to the ASM sector, including legal titles, mining licenses, formal regulatory oversight, and the existence of pre-refinery aggregators, as well as environmental issues.

- [Gold mid-tiers' Q4 2023 fundamentals](#)
 - The bottom line: mid-tier gold miners just reported their second spectacular quarter in a row. They are doing everything right, led by growing their production while lowering mining costs. That combined with near-record average gold prices fueled skyrocketing profits. Smaller gold miners' fantastic operating performances were reflected in great accounting results, a stark contrast to the super-majors' endless struggles.
- [Implats experiencing strong PGMs demand, working on pulling hydrogen uptake closer](#)
 - "On the demand side, if we were to look at the current requirements from customers, we still see very good demand in terms of all the major metals except for ruthenium," Implats group executive: refining and marketing Sifiso Sibiyi said during a media briefing.
- [Sibanye-Stillwater Halts PGMs Production at Rustenburg Shaft](#)
 - Siphumelele was expected to contribute approximately 4,500 4E Toz/month, or 54,000 4E Toz for 2024, accounting for about 3.5% of Sibanye's annual output from S. African platinum-group metals (PGMs) mines.

E-Waste & Precious Metals Recycle Related:

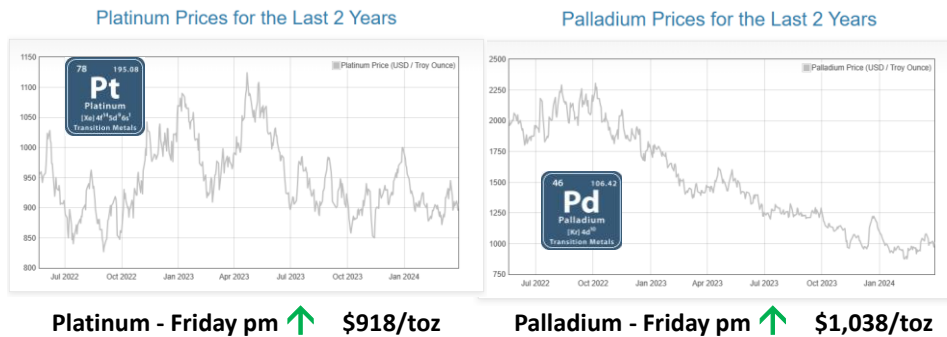
- [Obsolete electronics pile up as e-waste outstrips recycling efforts, UN warns](#)
 - The United Nations International Telecommunications Union and research arm UNITAR said some 56 Mt of "e-waste" was generated in 2022, enough to fill tractor-trailers that could be lined up bumper to bumper around the globe. That amount is on track to reach more than 70 Mt by 2030.
- [Electrochemistry helps clean up electronic waste recycling, precious metal mining](#)
 - The study describes the first precious metal extraction and separation process fully powered by the inherent energy of electrochemical liquid-liquid extraction, or e-LLE. The method uses a reduction-oxidation reaction to selectively extract gold and platinum group metal ions from a liquid containing dissolved electronic waste.
 - In the lab, the team dissolved catalytic converters, electronic waste such as old circuit boards, and simulated mining ores containing gold and PGM using an organic solvent. The system then streams the dissolved electronics or ores over specialized electrodes in three consecutive extraction columns: one for oxidation, one for leaching and one for reduction.
 - "The metals are then converted to solids using electroplating, and the leftover liquid can be treated to capture the remaining metals and recycle the organic solvent," Su said. "The stream containing the organic extractant is then pumped back to the first extraction column, closing the loop, greatly minimizing waste."
- [Bigger and better solar panel recycling centres needed to deal with PV waste, says report](#)
 - The 'Scoping study: Solar Panel End-of-Life Management in Australia' report from the Australian Centre of Advanced Photovoltaics (ACAP) which is led by UNSW Sydney, highlights projected cumulative volume of decommissioned panels to reach 1 Mt by 2035. On an annual basis, that could be as much as 100,000 mt of photovoltaic (PV) waste being generated every year by the end of the decade.
- [The global E-waste Monitor 2024 – Electronic Waste Rising Five Times Faster than Documented E-waste Recycling: UN](#)
 - The world's generation of electronic waste is rising five times faster than documented e-waste recycling, the UN's fourth Global E-waste Monitor (GEM) reveals today.
 - A record 62 Mt of e-waste was produced in 2022, +82% from 2010; On track to rise +32%, to 82 Mt in 2030; Billions of dollars' worth of strategically-valuable resources squandered, dumped; Just 1% of rare earth element demand is met by e-waste recycling



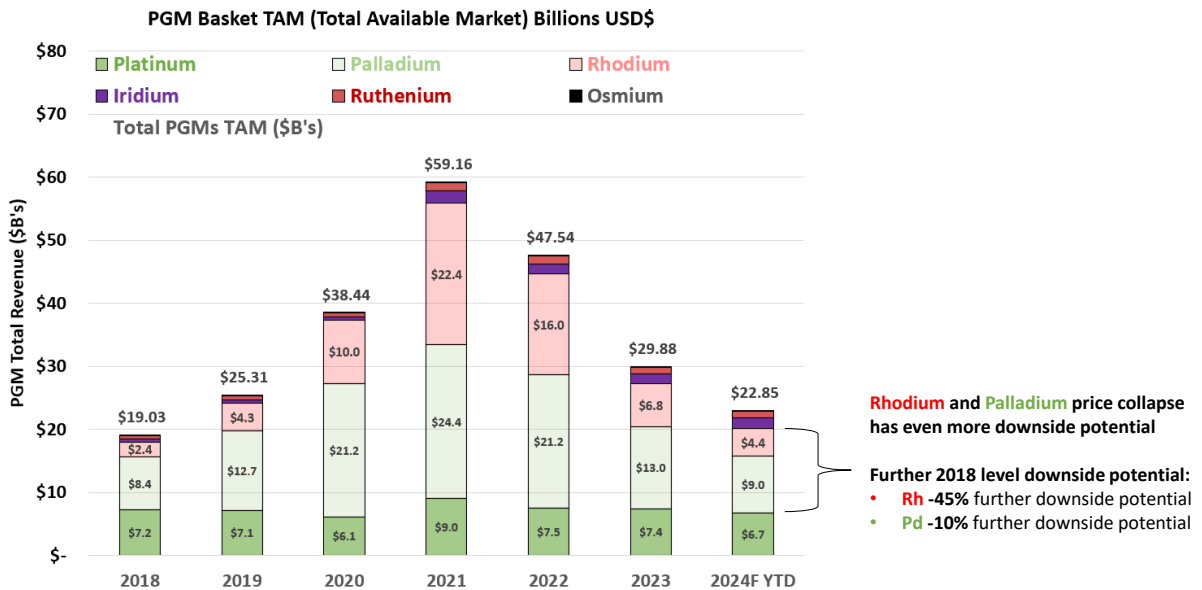
- [When solar panels retire: Navigating the waste wave](#)

- Six out of 10 of the world’s largest solar PV companies operate out of Malaysia. “As one of the countries engaged in solar PV manufacturing, Malaysia is well-positioned to capitalise on opportunities by embracing the ‘reduce’ and ‘reuse’ principles within the existing supply chain,” says Collier.
- “The EU’s Waste Electrical and Electronic Equipment Directive started to include end-of-life solar PV in 2012, based on the extended producer responsibility principle which makes PV manufactures legally responsible for end-of-life management of PV modules, including collection and treatment.
- “In 2021, EU member countries have reported over 31,000 tonnes of PV waste collection, around 90 percent of which are recycled or prepared for reuse. Some subnational governments have adopted similar policies on the end-of-life management of solar PV, such as Washington State (in the US),” says Collier.

Platinum



The Dramatic Rise and Fall in PGM Basket Prices



- [Platinum Price Forecast 2024, 2025, 2030: Will the Downtrend Reverse?](#)

- Despite being famously used in catalytic converters to help cars emit fewer harmful emissions, it has been struggling to break out from the weak trend of the past two years due to subdued demand, particularly from the auto industry. Auto manufacturing makes up 44% of platinum’s demand.
- Traderindo’s Laksono predicted platinum price could reach as high as \$1,250 per ounce by 2028. “The opportunity to go above \$1,000 is very much open in the long term.”

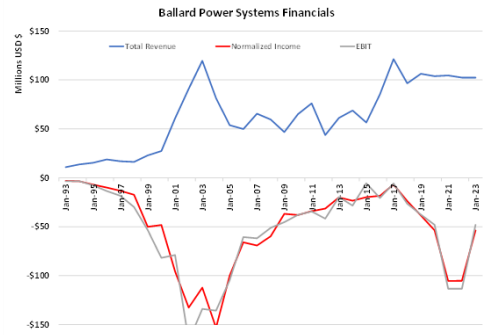
- **WPIC: [Pt's supply risks cannot be overlooked as PGM prices remain weak and miners reduce capex](#)**
 - In response to low PGM prices PGM miners are focussing on efficiencies and reducing capex.
 - Lower real capex has weighed on miner's ability to maintain production.
 - Downside risk to future supply may widen projected platinum market deficits.
- **[Platinum Global Bridging Finance Under Fire: Stock Loan and Crypto Loan Scam Accusations Target Company and Director Ged Ward](#)**
 - Troubled waters surround Platinum Global Bridging Finance, a United Kingdom-based financial firm specializing in bridging loans. The company, along with its director, Gerard Ward (Ged Ward), is embroiled in a web of accusations alleging unethical practices within their stock loan and crypto loan offerings.
- **[Researchers discover a mechanism that could improve platinum-based cancer therapy](#)**
 - Targeting a protein in bladder cancer could increase patient eligibility for platinum-based therapies, as well as make this treatment more effective.
- **[Clariant and Lummus awarded catalyst technology contract](#)**
 - Clariant and its process partner, Lummus Technology, have been selected by Huizhou Boeko Materials Co. Ltd., to provide their CATOFIN catalyst and process technology for the dehydrogenation of isobutane at the new plant in Huizhou City, China.

Fuel Cells/H₂ Economy Related Articles:

- **[Blue H₂-based shipping fuels will be cheaper than oil in 2035, if there's a carbon tax: Wartsila](#)**
 - However, most fuels made with green H₂ will remain slightly more expensive
 - Wartsila calculates in its report, Sustainable fuels for shipping by 2050 – the 3 key elements of success, that blue ammonia is currently around 2.4 times more expensive than low-sulphur fuel oil; liquid blue hydrogen is 3.6 times dearer, while compressed H₂ is just over double the price
- **[Cummins and Tata cut ribbon on first hydrogen engine factory in India](#)**
 - The plant is expected to produce 4,000 H₂ engines a year
 - A joint venture between US engineering giant Cummins and Indian conglomerate Tata has this week inaugurated its first manufacturing facility in India for hydrogen internal combustion engines (ICEs) for medium- and heavy-duty transport.
- **[Electrolyzer prices – what to expect](#)**
 - In addition to the cost of electricity, the price of hydrogen depends largely on the up-front investment cost of the electrolyzer. The lower the full-load hours, the greater the impact. Analyst BloombergNEF (BNEF) sees a number of different possible pathways for the market to develop.
 - This is where PEM electrolyzers come into play. These can better follow the fluctuating electricity supply and also work efficiently in partial load operation or off-grid. However, this technology still needs to significantly reduce its dependence on expensive platinum group metals, especially iridium, in order to gain a dominant market share, said Wang. Plug Power, from the United States, and ITM Power, from the United Kingdom, use 200 grams to 300 grams of iridium per megawatt of capacity.
- **['Severe overcapacity' | The global supply of electrolyzers far outstrips demand from green hydrogen projects: BNEF](#)**
 - BNEF also warns that despite this major oversupply, more electrolyser manufacturers are flooding the market, with more than 100 companies now claiming to produce the equipment.
 - This has significantly diluted the alkaline electrolyser market, with the top ten manufacturers representing only 50% of capacity at the end of 2023, compared to 84% in 2021.
 - The market for proton-exchange-membrane (PEM) electrolyzers is much more concentrated, with five companies likely to account for 72% of production capacity by the end of this year.

- [Ballard announces plans for new facility in Rockwall TX](#)

- Fuel cell company Ballard Power Systems says it plans to invest about \$160 million through 2027 to build a new manufacturing facility (gigafactory) in Rockwall as part of the project's first phase.
- Ballard announced this week that the Hydrogen and Fuel Cell Technologies Office within the U.S. Department of Energy (DOE) notified it that its applications for two grants totaling \$40 million to support the facility's construction were selected and recommended for negotiation of a financial award.
- *Matt: A company that has never made a profit, betting on going bigger with a 3GW factory! High Risk.*



- [ExxonMobil unveils plans to export half a million tonnes of ammonia to Japan from revamped Texas blue hydrogen project](#)

- Japanese giant JERA signs early-stage deal to offtake half the NH3 supply from Baytown complex, and take a future stake in the scheme

- [NREL To Lead New Lab Consortium To Enable High-Volume Manufacturing of Electrolyzers and Fuel Cells](#)

- Roll-to-Roll Consortium Aims To Accelerate Domestic Manufacturing and Reduce Cost of Durable, High-Performance Systems

- [PEM fuel cell challenges are 'massively underestimated,' says AVL whitepaper](#)

- Noting thermal, hydration, potential and mechanical as the four major stressors in fuel cell operation that significantly contribute to degradation, AVL said due to their interconnectivity, they can quickly turn into a “multi-dimensional challenge.”
- “Fuel cell degradation is a multi-dimensional challenge with many cross-dependencies, non-linear sensitivities and hidden, self-enforcing feedback loops, which are easy to underestimate or to miss.”
- Due the limited opportunities to optimise materials and design because of FCEV application requirements and framing conditions, the paper said early degradation detection is the “strongest” alternative to improve product lifetime.

- [EU clears €900m in French subsidies for green hydrogen and biofuels production](#)

- Projects producing renewable H₂ for industrial and transport fuels could be in line for grants up before the end of next year

- [What Is The Lifespan Of A Toyota Mirai? Here's What We Know](#)

- Unfortunately, it's impossible to state precisely how long the Toyota Mirai will last you. Too many factors are at play to provide a specific figure, such as driving behavior, whether the car is kept inside a garage, accessories, regular care, and even factory faults. However, it appears that hydrogen fuel cells have a similar average lifespan to gasoline and EV engines at around 150,000 to 200,000 miles.

- [JERA, Exxon to explore development of hydrogen and ammonia production project in US](#)

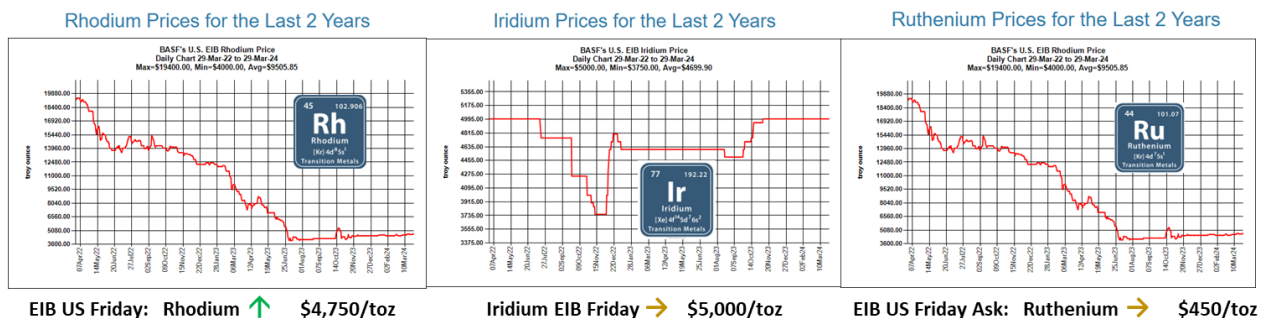
- JERA, Exxon to explore development of hydrogen and ammonia production project in US
- [Hydrogen facility at Baytown, TX:](#) To further support our ambitions for net zero Scopes 1 and 2 greenhouse gas emissions across major operated assets by 2050, Exxon/JERA are planning a world-scale **blue hydrogen plant** at Exxon’s integrated refining and petrochemical complex in Baytown, Texas. The new plant could generate up to 1 billion cubic feet of hydrogen per day, delivering low-carbon fuel to the Baytown olefins plant and other Houston-area facilities.
- Framing Large Offtake Agreement: Under the agreement, JERA may invest in the project and buy about 500,000 tons annually of low-carbon ammonia from the project for demand in Japan, JERA said.

- *Matt: Best possible location with some of the lowest industrial energy prices in the USA. This project has the potential to directly feed US Heavy/Chemical industries with large scale NH₃ (energy) storage. H₂ regional dedicated pipelines also available to reduce transport costs.*
- **3M invests in hydrogen electrolyzer manufacturer EVOLOH**
 - 3M has invested in EVOLOH, a company working to scale up manufacturing of multi-megawatt liquid alkaline electrolyzers to make green hydrogen affordable and efficient.
 - The low-cost production of green H₂ is key to the world reaching its climate goals and the investment is part of 3M's ongoing commitment to materials science-based climate tech solutions, the company said.
- **AICHe Selected by DOE to Lead New Hydrogen Electrolyzer and Fuel Cell Recycling Consortium**
 - H2CIRC includes partners across the value chain of electrolyzers and fuel cells: Accelera by Cummins; Delaware State University; General Motors, LLC; Heraeus Precious Metals; Johnson Matthey; National Renewable Energy Laboratory; Nel Hydrogen; Oak Ridge National Laboratory; Plug Power; The Chemours Company; University of Delaware; University of Houston; and Worcester Polytechnic Institute. AICHe and its consortium partners will establish a blueprint across the industry for recycling electrolyzer and fuel cell systems and components, aimed at securing long-term supply chain security and environmental sustainability.
- **German steel producer unveils tender for 50,000 tonnes of locally-made green hydrogen**
 - A German steel giant has launched a tender for 50,000 tonnes of renewable H₂ to use in the manufacture of direct-reduced iron for "clean" steel production, the company announced (Tuesday).
- **SSE scraps plan to produce green hydrogen from excess power at existing Scottish wind farm**
 - So the economics of running electrolyzers at probably <5% utilisation didn't stack up without government subsidies. Is anyone surprised by this? Even with free electrolyzers and free electricity the capital cost of building the infrastructure required to store and transport the hydrogen from a remote location to an end user would make it prohibitively expensive.

Palladium

- **New-Vehicle Sales Forecasted to Surge 12.1% in March**
 - New-vehicle sales are expected to see a 12.1% increase in March compared to the same month last year, according to J.D. Power and GlobalData.
- **Palladium - a misunderstood critical mineral: Chalice**
 - "There's a perception that palladium demand is going to be destroyed by EVs but that is absolutely not true."
 - Prices for palladium have been at cyclical lows but are creeping higher. Palladium supply has been decreasing, while demand remains "robust".

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



EIB US Friday: Rhodium ↑ \$4,750/toz

Iridium EIB Friday → \$5,000/toz

EIB US Friday Ask: Ruthenium → \$450/toz

- **Generative AI and HAMR will drive next wave of growth for traditional hard disk drives**

- HDDs still hold the advantage of having a lower capacity cost per unit compared to SSDs, especially in the nearline storage market for data centers. A report from Nikkei pointed out that in 2023, a nearline storage HDD had a unit price/GB of US\$0.013, while large-capacity SSDs for servers had a unit price/GB of US\$0.123, nearly 9.5 times higher than HDDs.
- *Matt: HAMR (Heat Assisted Magnetic Recording) uses zero Ruthenium and +70% Platinum].*
- Seagate begins mass production of HAMR HDDs with capacities >30TB in March 2024, with plans to produce 40TB HDDs in 2025 and introduce products that >50TB between 2027 and 2028. Seagate's advancement surpasses Toshiba's MAS-MAMR, making it the hope of the HDD market in the latter half of the 2020s.
- [Oxygen-dependent interactions between the ruthenium cage and the photoreleased inhibitor in NAMPT-targeted photoactivated chemotherapy](#)
 - Photoactivated chemotherapy agents show a promising ability to kill cancer cells under the action of light, including those in chronic hypoxic conditions. Those compounds form a new branch of physically targeted anticancer agents with potentially lower systemic side effects for patients. On the other hand, very few information exists on the intracellular interactions between the photoreleased ruthenium cage and the photoreleased anticancer inhibitor.
- [Storing electrons from hydrogen for clean chemical reactions](#)
 - After carefully examining many combinations of metal ions and organic ligands, the research team crafted an iridium-based compound which, when exposed to hydrogen incorporates it into the metal center after losing an iodide ion. In this way, the proposed compound can effectively extract and store electrons from hydrogen.
- [Electron-bending effect could boost computer memory](#)
 - Now, Wang and colleagues have demonstrated the anomalous Hall effect in an antiferromagnetic metal containing ruthenium and oxygen, with no magnetic field. The team had to add a small amount of chromium to the crystal, which slightly changed its symmetrical structure, enabling the effect.
- [First Graphene Announces Low-cost, High-performing Graphene-based Electrocatalysts](#)
 - First Graphene has developed a low-cost, high-performing graphene-based electrocatalyst that targets the rapidly growing production of 'green hydrogen' by water electrolysis. Electrocatalysts are used to produce 'green hydrogen', but currently require high-cost rare metals such as iridium and ruthenium which can drive up operating costs.
- [Photocatalytic CO2 Reduction Using an Osmium Complex as a Panchromatic Self-Photosensitized Catalyst: Utilization of Blue, Green, and Red Light](#)
 - Although some osmium (Os) photosensitizers absorb long wave-lengths in the visible-light region, a self-photosensitized, mono-nuclear Os catalyst for red-light-driven CO₂ reduction has not yet been exploited. Here, we discovered that the introduction of an Os metal to a PNNP-type tetradentate ligand resulted in the absorption of light with longer-wavelength (350–700 nm) and that can be applied to a panchromatic self-photosensitized catalyst for CO₂ reduction to give mainly carbon monoxide (CO) with a total turnover number (TON) of 625 under photoirradiation ($\lambda \geq 400$ nm).

Clean Energy Market News





- [**China Copper seeks to acquire overseas mines amid tight supply, chairman says**](#)

- China Copper, one of the country's leading producers of the metal, wants to acquire overseas mineral resources amid tight mined copper supply and rising demand, the company's chairman told Reuters on Monday. A lack of rich copper resources at home has driven Chinese companies to hunt elsewhere, with an unexpected supply deficit this year adding to the impetus.

- [**Is global energy transition 'visibly failing'?**](#)

- Solar power and batteries had a tremendous 2023. Offshore wind, EVs and heat pumps encountered some challenges, while carbon capture, hydrogen, nuclear power, green steel and electricity transmission remain far short of where they need to be to solve crucial parts of the climate challenge.

- [**BASF selected for negotiation of \\$75 million in funding from U.S. DOE for low-carbon syngas production investment at its Freeport, Texas site**](#)

- BASF has been selected by the U.S. Department of Energy (DOE) to begin award negotiations to receive up to \$75 million – funded under the Bipartisan Infrastructure Law and Inflation Reduction Act (IRA) – for an investment project to introduce low-carbon syngas production from recycled chemical byproduct streams at its Freeport site. With this project, BASF intends to recycle liquid byproducts from existing production processes into low-carbon syngas through electrically powered reformation.

- [**Texas residents have contamination concerns after solar panel's damaged**](#)

- YouTube: Thousands of solar panels in the Needville area were destroyed in a heavy hail storm on March 16 and residents are concerned about possible chemical contamination. FOX 26's Randy Wallace reports more after speaking to community members.
- *Matt: NREL states the field failure rate on Solar PV Modules is 0.5%. Events like this that trash entire 440 MW (thousands of PV panels) installations make me think that the field failure rate number is low.*



- [**As AI booms, land near nuclear power plants becomes hot real estate**](#)

- All datacenters are energy-hungry but with more watt-greedy AI workloads on the horizon, nuclear power has fresh appeal, especially for hyperscalers. Such a shift in power also does wonders for greenwashing narratives around net-zero operations. While not technically renewable, nuclear power does have the benefit of being carbon-free, not to mention historically reliable — with a few notable exceptions of course.

- [**Biden administration will lend \\$1.5B to restart Michigan nuclear power plant, a first in the US**](#)

- The federal government will provide a \$1.5 billion loan to restart a nuclear power plant in southwestern Michigan, officials announced Wednesday, March 27, 2024. Holtec International acquired the 800 MW Palisades plant in 2022 with plans to dismantle it. But now the emphasis is on restarting it by late 2025, following support from the state of Michigan and the Biden administration.

- [**Newest vehicle emission standards rattling car dealers amid slumping demand**](#)

- The statement says it is positive that the regulations were softened “in recognition of the slowing growth of EV sales.” However, it would still require an increase in sales far beyond the consumer interest they are experiencing at their dealerships. The statement says customers continue to bypass EVs due to concerns about “affordability, charging infrastructure, performance in cold weather, and resale value,” despite generous government, manufacturer and dealer incentives. “Worse still, the regulations spike in 2031-32 and revert to the unrealistic mandate that essentially requires that two-thirds of all vehicles sold be electric.”
- [How Nevada is about to become a leading boron producer - The Nevada Independent](#)
 - For every ton of lithium mined at Rhyolite Ridge, 9 to 10 mt of boric acid will be unearthed. The revenue from the boric acid, estimated at ~\$150 million per year, will cover nearly two-thirds of the mine’s operating costs.
- [German treasury rejects additional large-scale state support for solar PV industry](#)
 - Although the demand for solar power systems is higher than ever, the supply of cheaper Chinese PV modules has caused prices to fall. Swiss solar module maker Meyer Burger recently announced its intention to wind up panel production in Germany, citing “grave market distortion” and better investment conditions in the U.S. as the main reasons.
- [Mobility Notes: 5-Min Monthly Read: Feb-March 2024](#)
 - Cummins announces latest X15 capable of meeting MY2027 EPA regulations
 - Autonomous on-highway trucking for MY 2027
 - Apple cancels plans to build an electric car
 - The U.S. EPA is expected to announce the final light-duty multipollutant rule in the coming week.
- [Baltimore bridge collapse to primarily impact flow of coal, cobalt](#)
 - The collapse of Baltimore's Francis Scott Key Bridge, after being struck by a container ship early March 26, disrupted traffic through the Maryland port, a major hub for warehousing and transshipment of commodities on the US East Coast. The closure is expected to primarily impact US coal exports and US cobalt imports, as Baltimore was a central trading hub for both.
 - *Matt: Baltimore handles lots of the bulk shipping commodity traffic.*
 - The US imported 10.3M kg of cobalt products in 2023 with 5.43M kg, over 50% of the shipments, flowing into Baltimore, making it the largest source of US cobalt imports, according to US Commerce Department data.

BEV / LiB Mineral & Battery Market News



- [Why Aren't EVs Selling As Experts Predicted?](#)
 - Could electric vehicle (EV) makers have moved too aggressively into the marketplace without first convincing the motoring public en masse that replacing gas-powered cars with EVs is the right one and at the right time? It's looking that way. Yes, EV sales have risen over the past few years, but that fast manufacturer push for massive EV adoption by 2030 has stalled.
- [Tesla trims car output in China as EV sales growth slows](#)
 - The U.S. carmaker (Tesla) earlier this month instructed employees at its Shanghai facility to lower production of both the Model Y and Model 3 — the two vehicles Tesla makes in China — by working five days a week

instead of the usual 6½ days, the people said, asking not to be identified because they're not authorized to speak publicly.

- [Hybrid Cars Have 'Very Few Compromises' Says Ford Exec, Sales Booming](#)
 - Sales growth for hybrid cars is outpacing growth for electric vehicles this year.
 - Ford is one automaker reaping the benefits, with demand for its Maverick truck spiking.
 - "Hybrids now have very few compromises compared to their gas alternatives," Ford's Andrew Frick said.
- [The Toyota Prius Prime \(Hybrid\) Makes Most EVs Obsolete](#)
 - Powering the Prime is a 2.0-liter four-cylinder gas engine and a 13.6-Kwh LiB pack with two electric motors. The new pack is 55% larger than the 8.8-kWh battery in the outgoing Prime, and together with the engine, yields a combined output of 220 horsepower and 139 pound-feet of torque.
- [BASF picks 6MWh sodium-sulphur battery for solar power back-up](#)
 - Expected life is 20 years or 7,300 cycles. The batteries are made by NGK Insulators, distributed in this case by fellow BASF subsidiary BASF Stationary Energy Storage.
 - Sodium-sulphur is a high-temperature technology, with the cells needing to run at between 300 and 340°C.
 - The batteries are insulated, and modelled on a 20ft shipping container. 4x required for this 6MW installation.
- [Navigating Nickel](#)
 - The demand for nickel witnessed substantial growth in 2023 and is projected +9% in 2024. However, this surge in demand has also been met with a simultaneous rise in production, presenting a challenge for balancing the market. Consequently, the global nickel market experienced a surplus of 223 kt in 2023, over double the 104 kt surplus in 2022. This surplus is particularly noteworthy given that the total global nickel output reached approximately 3.42 Mt in 2023. Projections from the INSG indicate that this surplus is poised to expand to 239 kt in 2024, marking the third consecutive year of excess supply.
- [Experts Predict Nickel Prices Will Continue to Drop in 2024](#)
 - On average, most studies project a 60% surge in the demand for battery metals over the next twenty years. Meanwhile, anticipated data forecasts that the global primary nickel market will sustain a surplus from 2023 to 2027, culminating in a projected surplus of 27,000 metric tons by the end of 2027. Analysts say much of this shift stems from China's expanding refining capacity.
- [ZAPBATT unleashes Toshiba's Lithium Titanium Oxide \(SCiB™\) technology with revolutionary battery operating system](#)
 - The dominance of standard Lithium-Ion battery chemistries in today's market is largely due to the perceived ease of integration and lower upfront costs. However, this widespread adoption overlooks the nuanced needs of diverse applications, where alternative battery chemistries, such as Toshiba's proven SCiB™, could significantly enhance performance, durability, and safety. The true potential of these innovative chemistries remains largely untapped, hindered by high investment barriers, a lack of awareness, and complex integration challenges stemming from differing voltage and power requirements.

[Green Rush: Mining the Energy Revolution](#)

- [Episode 1 - Clean Energy Roadmaps Overview](#): Phil Harris, Kitco Contributor
- [Episode 2 - Palladium & Rhodium](#): 'There is life left in the internal combustion engine' — Mitsubishi's Jonathan Butler
- [Episode 3 – Silver the Industrial Metal & Solar PV](#): Phillips S. Baker, Jr - President & CEO Hecla Mining Company & Chairman of the Silver Institute

Regards – Matt

44 Ru Ruthenium	45 Rh Rhodium	46 Pd Palladium	47 Ag Silver
76 Os Osmium	77 Ir Iridium	78 Pt Platinum	79 Au Gold

Matt Watson, President

Precious Metals Commodity Management LLC.

1694 Cairo Street, Livermore, CA 94550

(925) 321-2686

Email: MatthewWatsonJr@Yahoo.com

URL: <https://www.PreciousMetalsCommodityManagement.com/>