



Weekly Precious Metals News Articles: June 24, 2022

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Below is a cross section of relevant news article to the world of Precious Metals:

Markets, Supply & Demand, Investment, and Industrial Applications.

Printable PDF version attached. Enjoy-

Gold

- [Gold prices slip, while recession fears drive copper to biggest weekly loss in a year](#)
 - There's a sort of "world war in the financial markets," with interest rates, inflation, the U.S. dollar and Federal Reserve among the factions facing each other simultaneously, said Adam Koos, president at Libertas Wealth Management Group.
 - Inflation would normally push gold higher, but there's a question over whether this is inflation in the "traditional sense," or rather a "huge imbalance of supply and demand" resulting from the aftershock of the pandemic and the zero-COVID policy implemented in many Asian countries.
- [Gold set for second weekly drop on worries over big rate hikes](#)
 - SPDR Gold ETF holdings fell 8.7 tonnes on Thursday
 - Without global recession fears, gold would be lower -analyst
 - Silver, platinum too face weekly drops; Palladium set to gain
- [Major European nation buys tons of Russian gold](#)
 - Switzerland shipped more than 3 tons of gold from Russia last month, Bloomberg cited data from the Swiss Federal Customs Administration. The purchase represents about 2% of Swiss bullion imports in May. The country is a key refining hub that handles two-thirds of the world's gold.

Semiconductor Related Articles (impacting Precious Metals electronics):

- [Automakers steer way through chip shortages](#)
 - Experts from the China Association of Automobile Manufacturers predict that the chip shortage will be alleviated by the end of 2022, but "a small-scale shortage will be normal "in the future.
- [TSMC to start mass production of 2-nanometer chips by 2025](#)
 - TSMC will begin volume production of 2-nanometer chips by 2025 as it races with its top competitors to be first with the advanced technology.
 - At its North America Technology Symposium on Thursday U.S. time, TSMC highlighted the new technology and said chips made using the 2nm process will be 10-15% faster at the same power or save 25-30% power at the same speed compared to its 3nm process.
 - The 2nm process chips will feature a new technology called "nanosheet transistor architecture" for better performance and power efficiency, TSMC said.

- [Semiconductor Dependency Imperils American Security](#)
 - Morris Chang, founder of Taiwan Semiconductor Manufacturing Co., gave a rare interview in April. He believes Congress's current effort to provide \$50 billion in subsidies to American semiconductor companies, in the hope that they will become industry leaders, is "a very expensive exercise in futility." While he may be correct that U.S. firms are unlikely to overtake TSMC, that isn't the point: Complete dependence on Taiwan for advanced semiconductors puts American national security at risk.

Silver

- [Meet the Skincare Brand That Uses Pure Silver for an Anti-Aging Boost](#)
 - The use of precious metals and stones in luxury skincare is not a new phenomenon. From 24-karat gold facials to diamond-infused creams and platinum serums, there are multiple ways to bedazzle your grooming routine (and, often, rinse your bank account in the process.) In spite of their extravagance and novelty, such commodities have little clinical evidence backing up their value in skincare.
- [Silver Price Forecast – Silver Markets Stage Recovery](#)
 - Silver markets have fallen hard to kick off the trading session on Thursday to reach down to the \$21 level. The \$21 level is an area that has been important a couple of times so that being the case I think it's only a matter of time before we see volatility come back into this market. The \$22 level above is an area of resistance, and therefore you need to pay close attention that if we do bounce.
- [Silver Price Forecast – Silver Markets Balance After an Initial Selloff](#)
 - Looking at the size of the candlestick, it is rather volatile, and it shows a bit of a hammer forming. The hammer suggests that there are buyers underneath. The \$22 level is an area that is a large, round, psychologically significant figure, and an area where we have seen a lot of action in both directions. The 50 Day EMA sits just below the \$22.50 level and is drifting lower. The market has been forming a larger "H pattern", and that is a very bearish sign. Ultimately, this is a market that I continue to fade rallies that show signs of exhaustion.

Precious Metals Mining:

- [SA Govt's artisanal mining policy is sheer fantasy. Start by stopping the criminals.](#)
 - *Matt: Rare to see hard pushback like this*
 - The policy is a fantasy. With a stroke of the legislature's pen, it intends to magically create vast valuable open cast areas where artisanal miners can profitably mine, as previously mined areas are excluded to prevent artisanal miners from attracting environmental liabilities. **It also assumes that platoons of Zama Zamas will miraculously stop their illegal activities overnight, undertake formal training, use PPE and pay taxes and royalties. This is like allowing drug dealers to continue selling drugs if they obtain pharmaceutical qualifications and pay tax on their earnings – it just won't happen.**
- [Vodacom's wearable devices set to boost mineworker safety](#)
 - *Matt: Lead IoT application for mineworker safety*
 - In mid-2021, the first successful trial of the Connected Worker solution by Vodacom Business was introduced to a global mining company with various operations across the country. "The solution centres on a connected, track-and-trace wearable device for mineworkers, with a linked data-insights dashboard that gives real-time feedback to health & safety officers," explains Thando Sibindi, Managing Executive for Mining Resources and Manufacturing at Vodacom. "In this trial, we deployed 8 000 devices which enabled better oversight and management of worker safety, team productivity, and the resource scheduling of contractors. It goes without saying that improved safety and productivity are an added benefit which in turn results in cost savings for the operator in the long run," adds Sibindi.

- [Harmony Gold wins approval for 100,000 oz/year expansion of Mine Waste Solutions](#)
 - Harmony Gold said it had received regulatory approvals to expand Kareerand, a deposition site as part of its Mine Waste Solutions which was acquired from AngloGold Ashanti along with the Mponeng mine in 2020. The Kareerand Expansion Project is expected to produce about 100,000 ounces of gold a year and will add 16 years life of mine to MWS at
- [David Brown, Northam chairman and former Impala Platinum CEO, passes away](#)
 - David Brown, chairman of Northam Platinum, passed away on Sunday from a heart attack, according to industry sources. He was 59. Brown, who was also a non-executive director of Vodacom, the South African telecommunications company, was previously CEO of Impala Platinum (Implats) from 1999 to 2012. He was employed at Implats for 13 years.

E-Waste & Precious Metals Recycle Related:

- [Basel Convention to Require Informed Consent for E-Waste Exports](#)
 - New amendments to the Basel Convention will establish new definitions of hazardous and non-hazardous electronic waste, ensuring that these two categories of e-waste will either be banned from trade, or at a minimum, require notification by the exporting country and consent by the importing country prior to export. The legislative changes were approved at the 15th meeting of the Conference of the Parties to the Basel Convention (BC COP15).
 - The changes are expected to come into force on 1 January 2025, titled the 'Swiss-Ghana Amendments'. While most e-waste trade will require notification and consent, importing countries that are parties to the Basel Convention will not be allowed to receive US e-waste, as the country is not a party to the Convention. The only exception will be a special bilateral or multilateral agreement establishing an equivalent level of control.
- [Project aims to chart EU-based raw material supply chain](#)
 - The FutuRaM project is funded by the EU's Horizon Europe program and run by the WEEE Forum, a waste electrical and electronic equipment not-for-profit association of 46 producer responsibility organizations globally. The project, which kicked off June 1, will develop a secondary raw materials knowledge base with the availability, recoverability of and demand for secondary raw materials in the EU, especially critical raw materials such as palladium, lithium and cobalt, through 2050.
 - The research project will focus on materials from batteries, electrical and electronic equipment, vehicles, slag, ashes, construction and demolition debris, and other sources. A consortium of 28 partners from 11 countries will create the database over the next four years, the press release said.
 - By extracting more of those materials from "waste streams that are rich in them," the project hopes to "mitigate the risks associated with this uncertainty and reduce reliance on other countries for their supply," the release notes.
- [Regulators: Tough markets justify paying recyclers more](#)
 - The California Depart. of Resources Recycling & Recovery will raise the per-pound payments it provides to approved e-scrap companies that collect and recycle electronics covered by the state program.
 - Citing the rising costs of doing business, high inflation, trade impacts from the war in Ukraine and other reasons, CalRecycle decided to raise the CRT collection and recycling rate from 66 cents to 85 cents per pound and the non-CRT collection and recycling rate from 87 cents to \$1.03 per pound. The changes go into effect July 1.
- [South Carolina passes overhaul of e-scrap recycling](#)
 - House Bill 4775 would reform the state's extended producer responsibility (EPR) program for electronics to more closely resemble that of Illinois, with a focus on a convenience metric for drop-off sites, instead of a weight target. South Carolina would be the second state to move to that "clearinghouse-style" program if the bill is signed.

Platinum

- [PGMs Now 'Critical' to US Security](#)

- In the US, critical minerals are defined by the Energy Act of 2020 as those non-fuel minerals which have a supply chain that is vulnerable to disruption and which serve as an essential function in the manufacturing of a product, the absence of which would have significant consequences for the economic or national security of the US.
- This year's list, which will be updated again in three years' time, features the PGMs including platinum, palladium, iridium, rhodium and ruthenium as individual elements for the first time, reflecting the increasing importance of PGMs as raw materials in technologies that support the clean energy transition.
- *Matt: Look for the IEA Critical Minerals to also expand its definition of Critical Minerals in its next revision to include PGMs. You can't ignore the PGMs in the H₂ Economy (also Sc for SOFCs)*

- [One-kilo platinum coin from Canadian Royal Mint sells for record-breaking £800k](#)

- A 1kg pure platinum coin containing hundreds of Argyle pink diamonds has sold for more than £800,000 at auction. The coin, from the Royal Canadian Mint and named 'The Ultimate', sold for CAD\$1,261,250 via Heffel Fine Art Auction House.
- The coin's anonymous buyer set a new record for the price paid for a coin at auction in Canada.

- [7 facts you didn't know about platinum](#)

- Fact 1: Pt is very rare, Fact 2: Pt can be recycled, Fact 3: Pt is tough, Fact 4: Pt has helped control the emissions of vehicles since the 1970s, and Fact 5: Pt helps us get food on the table, Fact 6: Pt is fighting cancer, Fact 7: Pt will play a critical role in a net zero future

Fuel Cells/Hydrogen Economy Related Articles:

- [Hydrogen fuel in EU heavy vehicle sector to meet 2050 decarbonization targets](#)

- The EU's Sustainable and Smart Mobility Strategy aims to use H₂ fuel to decarbonize heavy duty vehicles. According to European Commission data, ~20% of the overall transport fuel mix will be from H₂. Another 20% will be composed of low-carbon synthetic fuels derived from H₂.

- [\(India's\) Govt to Issue a Policy on Methanol Use as Alternative Fuel Soon](#)

- E-methanol, which is made from captured carbon dioxide and green hydrogen, is another method of producing methanol. Because of its abundant reserves, methanol derived from coal is the most economically viable option for India, according to the NITI-Aayog.

- [ILA 2022: Airbus and Linde to cooperate on hydrogen infrastructure development](#)

- European aerospace manufacturer Airbus and Linde, a leading industrial gases and engineering company, signed a memorandum of understanding to work on the development of hydrogen infrastructure at airports worldwide», they said today.
- The initiative complements the cooperation agreement signed in Singapore in February of this year. The two companies will collaborate on global aviation hydrogen supply chains, from production to storage at individual airports.

- [WPIC: Platinum In Ports](#)

- *Matt: CARB did some nice work in California looking at localized air quality measures. Ends up the Ports in California are the dirtiest spots in the state. High concentrations of heavy duty trucking, lift trucks, marine, trains all running on diesel in close proximity contribute to same. This is why the Ports of LA Hydrogen Projects were created. Now globally, more ports are looking at Hydrogen to help meet their needs.*
- Ports are at the forefront of developing green hydrogen eco-systems and driving the growth in platinum-based electrolyser capacity

- [Volvo says it has started testing trucks with fuel cells powered by hydrogen](#)
 - Gothenburg-HQ Volvo Trucks says refueling of the vehicles will take under 15 minutes.
 - While there is excitement in some quarters about the potential of hydrogen powered vehicles, there are hurdles when it comes to expanding the sector. Competition to develop low and zero emission options within the trucking sector has increased in recent years.
- [PEM fuel cell with lower platinum content](#)
 - A Chinese-US research group has designed a PEM fuel cell with a hybrid electrocatalyst. The scientists said the device shows remarkable stability and low performance losses.
 - They fabricated the oxygen reduction reaction (ORR) catalyst with platinum and iron (Pt-Fe) alloy nanoparticles on highly dispersed Pt and Fe single atoms in nitrogen-doped carbon support. This resulted in an ultra-low Pt loading of around 1.7wt%.
 - “However, as the Pt loading decreases, the oxygen transfer resistance increases because of the limited accessible active sites, which results in a lower durability,” the scientists warned. “Thus, the ambition to develop low-Pt-loading cathodes poses great challenges in the areas of Pt utilization and the intrinsic durability of Pt-based electrocatalysts.”
- [Hyundai is building a Hydrogen-fueled future](#)
 - Hyundai Motor Company aims to deliver the next-generation fuel cell system that enhances performance and durability, in a lighter architecture with enhanced energy density by offering a highly efficient and diversified lineup of hydrogen-powered vehicles.
 - In December 2018, Hyundai Motor Company introduced ‘Fuel Cell Vision 2030’, a long-term roadmap that reflects its ongoing commitment to accelerate the development of a hydrogen society. That aims to secure 700,000 units a year of production capacity of fuel cell systems for automobiles, as well as for non-automotive sectors, such as vessels, rail cars, drones, and power generators, by 2030.
- [Thyssenkrupp's hydrogen division Nucera aims to list in autumn](#)
 - The Nucera hydrogen division of Germany's Thyssenkrupp aims to list in autumn, the Chief Financial Officer of Italy's electrode maker De Nora Matteo Lodrini said on Thursday.
 - Thyssenkrupp on Friday said it would not pursue an initial public offering (IPO) of Nucera for the moment, amid a volatile market that has already delayed numerous listings. [read more](#)
 - Nucera, which plans and engineers electrolyzers to produce hydrogen, is a 66-34 joint venture between ThyssenKrupp and family-controlled De Nora, itself an IPO candidate.
- [Echandia and Toshiba in Fuel Cell Cooperation Deal](#)
 - Echandia, a Swedish developer of energy solutions for maritime electrification, said Wednesday that it has entered a strategic cooperation deal with Toshiba Energy Systems & Solutions Corp. to explore the development of fuel-cell technology combined with batteries.
 - The two companies will explore technical collaboration to develop a pure hydrogen fuel cell system for marine applications suitable for long time continuous operation.
 - The deal will see the companies consider incorporating the next-generation pure hydrogen fuel cell currently under development by Toshiba ESS into the electric propulsion systems for ships being developed by Echandia, with the joint aim of commercializing a longer-life pure hydrogen fuel cell system by around 2024.
- [German auto giants place their bets on hydrogen cars](#)
 - Global auto hub Germany is in sharp focus. It is already betting billions on hydrogen fuel in sectors like steel and chemicals to meet climate targets, and closely-fought elections this month could see the Greens enter the coalition government and further push the technology.
 - BMW is hydrogen's biggest proponent among Germany's carmakers, charting a path to a mass-market model around 2030. The company also has one eye on shifting hydrogen policies in Europe and in China, the world's largest car market.

- [NextEra's Plan to Ditch Carbon Is a Huge Bet on Hydrogen](#)
 - One of the world's largest clean energy generators says it can wipe out emissions without using offsets

Palladium

- [Dubai Becomes New Switzerland for Traders of Russian Commodities](#)
 - Russian firms departing Geneva for the UAE's business capital as sanctions force a strategy rethink
 - Traders of Russian commodities are rushing to set up businesses in Dubai as Switzerland makes it increasingly challenging for them to deal with Moscow. Switzerland has for decades been home to middlemen helping to match Russian producers with buyers all over the world. Now, a ratcheting up of sanctions is prompting a migration to the emirate in the Persian Gulf.
- [Inhaled toxic particles take direct route from lungs to brain - study](#)
 - Breathing in polluted air could lead to toxic particles contributing to brain disorders and neurological damage. The data suggests that up to eight times the number of fine particles may reach the brain by travelling, via the bloodstream, from the lungs than pass directly via the nose - adding new evidence on the relationship between air pollution and detrimental effects of such particles on the brain."
 - Professor Iseult Lynch, University of Birmingham

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

- [Ru and Pt PVD Materials: Renesas develops 22-nm circuit technologies for embedded STT-MRAM](#)
 - *Matt: Ru and Pt uses in non-volatile memory continue to climb with embedded memory applications at a CAGR > 50%.*
 - Renesas announced that it has developed 22-nm embedded STT-MRAM circuit technologies. Renesas developed a test 32-megabit (Mbit) chip with an embedded MRAM memory cell array that achieves 5.9-nanosecond (ns) random read access at a maximum junction temperature of 150°C, and a write throughput of 5.8-megabyte-per-second (MB/s).
- [Durability Testing of Low-Iridium PEM Water Electrolysis Membrane Electrode Assemblies](#)
 - Abstract: Lowering the iridium loading at the anode of proton exchange membrane (PEM) water electrolyzers is crucial for the envisaged GW-scale deployment of PEM water electrolysis. Here, the durability of a novel iridium catalyst with a low iridium packing density, allowing for low iridium loadings without decreasing the electrode thickness, is being investigated in a 10-cell PEM water electrolyzer short stack. The anodes of the membrane electrode assemblies (MEAs) of the first five cells utilize a conventional iridium catalyst, at loadings that serve as benchmark for today's industry standard (2 mgIr cm⁻²). The last five cells utilize the novel catalyst at 8-fold lower loadings (0.25 mgIr cm⁻²). The MEAs are based on Nafion® 117 and are tested for 3700 h by load cycling between 0.2 and 2.0 A cm⁻², with weekly polarization curves and impedance diagnostics. For both catalysts, the performance degradation at low current densities is dominated by an increase of the overpotential for the oxygen evolution reaction (OER), whereby the OER mass activity of the novel catalyst remains ≈4-fold higher after 3700 h. The temporal evolution of the OER mass activities of the two catalysts will be analyzed in order to assess the suitability of the novel catalyst for industrial application.
 - *Philipp Walter/Heaeus LinkedIn Comments: Kopernikus P2X project recently invested 3700 hours to test novel low-iridium catalysts vs. standard catalysts, and found that low-iridium catalyst, despite containing 9x less #iridium, was as stable as the standard one. 👉 With this proof we can further industrialize low-iridium catalyst solutions, meaning we are on the right path to produce green hydrogen via PEM electrolyzers on an industrial scale.*
- [Air Liquide and Siemens Energy form a joint venture for the European production of large-scale renewable hydrogen \(PEM\) electrolyzers](#)

- Air Liquide and Siemens Energy announce the creation of a joint venture dedicated to the series production of industrial scale renewable hydrogen electrolyzers in Europe. With two of the global leading companies in their field combining their expertise, this Franco-German partnership will enable the emergence of a sustainable hydrogen economy in Europe and foster a European ecosystem for electrolysis and hydrogen technology. Production is expected to begin in the second half of 2023 and ramp-up to an annual production capacity of three gigawatts by 2025.
- *Matt: Siemens historically partnered with BASF for materials to support thus PEM Electrolyzer ramp. This bodes well for BASF.*
- **[East of England joins hydrogen party with new cluster plan](#)**
 - Hydrogen East has unveiled details of its planned hydrogen cluster in the east of England, including six electrolyser sites, centred around one of the nation's biggest natural gas infrastructure hubs at Bacton.
 - The proposal looks to leverage the region's existing energy infrastructure, including natural gas pipelines to Europe, the forthcoming Sizewell C nuclear power plant, and the North Sea's growing roster of offshore wind projects to build a distributed hydrogen cluster.
 - Six "core" electrolyser sites across Norfolk and Suffolk have been identified that can be developed and scaled as demand for clean hydrogen increases.
- **[Samsung SDI develops shorter cylindrical cells](#)**
 - Samsung SDI is not only developing 4680-format battery cells for Tesla but also shorter cells with the same diameter for other car manufacturers. One potential customer is probably from Germany.
 - The Korean publication The Elec, writes that Samsung SDI is not only testing battery cells in the format requested by Tesla with a diameter of 46 mm and a height of 80 mm but also other variants that also have a diameter of 46 mm but a height of between 40 and 60 mm. The South Korean company's development of 4680 cells became clear in July of 2021.
- **[PhD candidate among rising stars to attend 71st Lindau Nobel Laureate Meeting](#)**
 - Welsh said his research to date has identified that ruthenium complexes contain both anti-cancer and anti-bacterial properties, which compares to current clinically used anti-cancer and anti-bacterial drugs.
 - "Some of the leads identified in my study show enhanced selectivity relative to some [current] clinically used drugs. This is extremely exciting. It's ushering in a new dawn for cancer treatment using multinuclear complexes via different modalities," he said.

Clean Energy General News

- **[Aramco-backed start up Amogy races to develop ammonia as a fuel](#)**
 - \$46 mln funding round to help scale technology
 - Led by South Korea's SK Innovation
 - Aims to trial demonstration vessel in 2023
- **[Solar partly powering world's largest reverse osmosis desalination plant](#)**
 - ACWA Power and Emirates Water and Electricity Co. have commissioned the first phase of the Al Taweelah Independent Water Plant in the United Arab Emirates. The facility, which can produce more than 6.4 million cubic meters of water per day, sources some of its power from a nearby solar park.
- **[Chinese premier calls for more coal production as electricity demand soars](#)**
 - On Friday authorities again issued high temperature warnings for about a dozen provinces across the central and northern provinces, after consecutive days in the high 30s.
 - As people sought to escape the heat this week, state media reported that electricity demand was up 8.8% in north-west China compared with last year, and 3.2% in northern China, citing the State Grid Corp of China. Records for maximum electricity loads were broken in Shandong, Henan and Jiangsu.

- The premier, Li Keqiang, “urged tapping into advanced coal capacity, securing power supply and resolutely preventing power outages amid the peak summer season”, according to state media. The reports said Li also called for greater “efforts to ramp up efficient and clean coal power production”.
- [Investment in coal — the dirtiest fossil fuel — is set to rise 10% this year as energy security grows increasingly fragile due to the Ukraine war](#)
 - The International Energy Agency estimates investment in coal will jump 10% on-year in 2022.
 - A growing number of EU countries are planning a switch to coal as supply of natural gas comes under threat. Investment in coal is led by China and India — the world's largest consumers.
- [China’s renewable energy growth outlook for 2022 keeps getting bigger](#)
 - China’s leading renewable energy think-tank gave the most bullish forecast yet for its renewable power build-out this year as it tries to meet climate goals and reduce foreign fuel dependency.
 - China is set to install a record 156 gigawatts of wind turbines and solar panels this year, said Yi Yuechun, vice dean of the China Renewable Energy Engineering Institute, a think-tank that supports the National Energy Administration. That would be a 25 per cent jump from the previous record set last year, according to BloombergNEF data.
- [Green hydrogen may be energy's future, but it's complicated](#)
 - Green hydrogen is often touted as the future of energy, providing a flexible and zero-emission fuel for transportation and electricity generation.
 - The problem is how long will it take for that future to become reality.
 - An example of the immense challenges facing a hydrogen future can be neatly encapsulated by looking at Tasmania, Australia's island state that is seeking to become a global leader in producing and exporting green hydrogen.
- [TANAKA Establishes New Ruthenium Film Deposition Process That Contributes Toward Improved Durability Of Semiconductors](#)
 - TANAKA Precious Metals manufacturing business, announced today that TANAKA has established a two-stage film deposition process using the liquid ruthenium (Ru) precursor "TRuST." TRuST is a precursor that has excellent reactivity with both oxygen and hydrogen and can form high-quality ruthenium films. This process is a two-stage atomic layer deposition (ALD) process that uses hydrogen film formation to create a thin anti-oxidation film and oxygen for the deposition of a high-quality ruthenium film. It eradicates concerns that the substrate will become oxidized and, at the same time, can prevent the drop in ruthenium purity that occurs during hydrogen film deposition.
- [Clean Energy Investment Lags as Oil and Gas Prices Soar - The New York Times](#)
 - The head of the International Energy Agency said high prices for fossil fuels would probably persist for years.

BEV / LiB Mineral & Battery Market News



Friday Fix: Lithium \$71,388/mt Nickel \$22,645/mt Cobalt \$72,400/mt

- [Cobalt Gets Cheaper as China’s Buyers Hit by Battery Slump - Bloomberg](#)
 - World’s top market hit by electric-vehicle, smartphone woes

- High prices for raw materials put squeeze on Chinese refiners
- **Cobalt Gets Cheaper as China's Buyers Hit by Battery Slump**
 - Cobalt prices are crashing back to earth as sellers offer increasingly steep concessions to Chinese buyers who have turned cold on the battery metal as demand slumps in electric vehicles and smartphones, (and laptops).
 - The benchmark price for cobalt in Europe has slid more than 13% since a peak in May, and an even sharper decline in Chinese prices signals the sell-off could have further to run. Buyers in the country are racing to renegotiate supply deals in order to stem heavy losses arising from an unusual disconnect between domestic and international prices, according to cobalt traders and buyers.
 - *Matt: Not surprising given the mineral market demand slowed with recent China COVID lockdowns, while DRC mining operations did not halt. Tactical supply/demand price response expected.*
- **The sludge that could save BHP's carbon footprint**
 - The colleague had casually mentioned some work done in 2005 by scientists who had visited the tailings dam that holds (mine tailing) wastes produced by BHP's Mt Keith nickel mine in outback Western Australia. The scientists had found the dam was quietly sucking carbon out of the atmosphere and permanently storing it in secure mineral crystals, after a chemical reaction that occurred when the wastes interacted with ordinary air.
 - Subsequent research by independent scientists such as Sasha Wilson and Ian Power found the dam is currently storing about 39,800 mt of atmospheric carbon each year. That's an equivalent amount of carbon to that emitted by 8576 petrol-powered cars in a year. But the scientists also noted the 39,800 mt stored each year was only about 1% of the dam's potential as a carbon sink.
- **The Key Minerals In An EV Battery**
 - NextEra's Plan to Ditch Carbon Is a Huge Bet on Hydrogen
 - One of the world's largest clean energy generators says it can wipe out emissions without using offsets
- **Umicore wants to build the world's largest battery recycling plant**
 - Umicore has announced that it wants to build the world's largest battery recycling facility. The \$525 million plant, to be built somewhere in Europe, would be capable of processing 150,000 metric tons (t) per year of battery materials. The Belgian firm says the plant will be 15 times the size of its current facilities when it opens in 2026.
 - "We are recycling today. It's a matter of scaling up," Kurt Vandeputte, Umicore's senior vice president of government affairs, said during a June 22 presentation for investors. "We are going to do this first in Europe, and we'll roll this out further in North America."
- **Umicore and Idemitsu to jointly develop high-performance solid-state battery materials**
 - Umicore and Idemitsu Kosan Co., Ltd have agreed to jointly develop high-performance catholyte materials for solid-state batteries, combining their respective expertise in cathode active materials and solid electrolytes, and aiming to provide the technological breakthrough to extend the driving range and thereby propel e-mobility.
 - Catholytes combine cathode active materials and solid electrolytes. The more intimate contact between these two components would enable the solid-state battery to achieve better performance. Solid-state batteries are the next-generation batteries with performance improvements on several fronts. In cars, for example, their higher energy density will increase the driving range and allow for faster charging. The replacement of today's liquid electrolyte with a solid one will enhance the safety and lifespan of batteries, reduce their size, weight and ultimately, cost.

Regards –