Precious Metals Commodity Management LLC

Weekly Precious Metals News Articles: August 19, 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

Friday LBMA: Gold $1,765.55/toz Silver $19.83/toz

- **China's Swiss gold imports soar nearly 150% in July as gold price trades below $1,800**
  - Demand from China is starting to pick up over the summer months, with Switzerland shipping 80.1 tonnes of gold to China, worth $4.6 billion. This is a monthly increase of 146% and the biggest cargo since December 2016, Swiss customs data showed Thursday.
- **Russia is looking into its own gold standard after LBMA ban**
  - Russia is proposing its own international standard for precious metals after getting banned by the London Bullion Market Association (LBMA). And it could have a fixed price in national currencies.
  - The country's Finance Ministry said it is "critical" to create the new Moscow World Standard (MWS) to "normalize the functioning of the precious metals industry" and have an alternative to the LBMA.
- **The Inflation Reduction Act is a 'tax-and-spend package' that won't reduce inflation; Investors should diversify into 'real' assets**
  - As U.S. inflation remains high at 8.5 percent in July, Phil Magness, Research and Education Director at the American Institute for Economic Research, called the Inflation Reduction Act "just a tax-and-spend package," arguing it wouldn't reduce inflation.
  - "[The Inflation Reduction Act] is another exercise in Orwellian language," said Magness. "They're redefining terms… [it's] just a tax-and-spend package."
  - Michael Ashton, Managing Principal at Enduring Investment LLC, said that during times of high inflation, investors should diversify away from stock markets, and hold "real things" such as farmland, commodities, and precious metals. "Diversify away from stocks," said Ashton. "They don't do well in inflationary periods… Most importantly, broaden your exposure to real things like land."
- **How the US Toppled the World's Most Powerful Gold Trader**
  - JPMorgan's former gold boss was convicted last week.
- **Precious metals fall as dollar firms, gold hits 1-week low**

    - Gold fell over 1% to its lowest in a week on Monday amid sharp declines across precious metals due to a stronger dollar, with concerns over further rate hikes by the U.S. Federal Reserve adding to pressure on bullion.
- **Traders buy the dip all week reinforcing support for gold futures at $1800**
    - Traders buy the dip all week reinforcing support for gold futures at $1800

Semiconductor Related Articles (impacting Precious Metals electronics):

- **China's largest chipmaker warns of rapid freeze as smartphone demand skids**
    - China's largest chipmaker reported revenue rose 42% to $1.9 billion in the second quarter, generally in line with expectations
    - Semiconductor Manufacturing International warned that clients in sectors such as smartphones were freezing orders, underscoring how a downturn in consumer electronics demand is hurting the chip sector. Waning demand from makers of smartphones and TV components is forcing SMIC to readjust its manufacturing plans. The economic downturn and inventory adjustments have spurred "rapid freeze and urgent order halts" as some clients hold off on placing new orders, he said on a conference call. SMIC fell as much as 3.1% in Hong Kong.
- **China's laggard chips industry rotten with corruption**
    - Series of top executive and official arrests point to graft and rot in government's drive for chip-making self-sufficiency
    - An anti-corruption storm in that kicked up in mid-July has so far resulted in the arrest of a dozen top Chinese officials and executives of a national investment fund and related companies, prompting a course shift in Beijing's chip-making strategy.
- **China's semiconductor output shrank 17 per cent in July as supply chains remained under pressure from strict Covid-19 policies**
    - The production of integrated circuits (ICs) last month dropped 16.6% y/y to 27.2 billion units
    - The weakness in chip production is a further setback for China's ambition to boost local semiconductor production
- **Semiconductor hiring slows amid labor shortage**
    - Taiwan's ongoing labor shortages have prompted local semiconductor firms to recruit more women and foreigners in Taiwan and in Southeast Asia, the job bank said.
    - The talent gap in the first quarter reached 35,000 people per month, a surge of 39.8 percent from the same period last year, as the contactless economy and digital transformation shore up demand for semiconductors,
- **Is chip shortage ending? Fusion Worldwide sees rough waters at least for another quarter**
    - Fusion Worldwide is still seeing a hyper-shortage in the automotive space. And their factory automation customers, IoT customers, data center customers, and so forth are still chasing after chips. "With consumer electronics, it's softened a bit – we all hear about the excess amount consumer products like phones with Samsung. But the shortage is very much ongoing and still very much real for those other business verticals," said Gonnerman.
- **EDA software ban latest blow to China's chip makers**
    - New US export controls on electronic design automation software seeks to box China out of the 3-nm and lower chip mark

Silver

- **Investment demand to lift India's silver imports to record high**
    - India's silver imports are set to triple in 2022 from a year ago to record highs after a dip in prices to 2-year lows spurred investors to bet that the metal was primed for a rebound and could outperform gold in the coming years.

- **ITO-free organic solar cells for large modules**
    - Researchers in South Korea have reported success in developing large-area, indium tin oxide-free, flexible organic solar cells. Their zinc oxide bilayer-based organic solar cells demonstrated an efficiency of 7.67% for a module area of 528 square centimeters.
    - "The ultra-thin silver film electrode with ZnO bilayer has the flexibility, wettability, and high surface energy of ITO, but is not brittle or expensive," said Hongkyu Kang, a senior researcher at GIST. "This makes it easier to use ZnO for manufacturing organic solar cells and developing a printing technology for large-area solar cell technology."
- **US solar industry eyes 50 GW of manufacturing capacity by 2030**
    - The Solar Energy Industries Association (SEIA) has released a roadmap to achieve a domestic supply chain in the United States. *Matt: 50GW is a lot considering installed Solar PV manufacturing base today around 180-210GW total capacity. This would drive incremental 20-25% Solar PV silver demand.*
- **Chinese PV Industry Brief: Tongwei temporarily halts polysilicon output in Sichuan**
    - Tongwei is temporarily halting polysilicon output in Sichuan due to high temperatures, while Yingli has completed a 5 GW N-type solar cell base in Hebei. Shangji, meanwhile, has revealed plans to build a massive wafer and solar cell factory in Jiangsu.

Precious Metals Mining:

- **Northam Platinum says lower PGM prices and inflationary pressures impacted its FY22 financial results**
    - Northam Platinum is a primary integrated producer of platinum group metals. All operating mines and recycling operations are wholly owned. The company's target is to produce 1 million oz 4E annually.
    - Northam announced yesterday that for the year ended 30 June 2022 (FY2022), the group's equivalent refined metal from own operations increased to 716,488 oz 4E +3.7% y/y (FY2021: 690,867 oz 4E).
- **Sibanye-Stillwater, DRDGold raise red flag on lower full year profits as market cools**
    - The Sibanye share price has fallen 43% from around R74 in early March to around R42 currently while the DRDGold share price is -34% over the same period from around R16 to current levels around R10.5.
    - Sibanye attributes the drop to lower gold production from its South African mines which were affected by a strike that ran from March 9 through to June 3. In addition, no ore was processed or sold from the Beatrix mine in the first quarter of 2022 because processing was suspended to allow for the re-inforcement of the Beatrix tailings storage facility.
- **The presentation will focus on tech implemented at the Anglo-American Barro Alto Smelter.**
    - The Anglo-American Barro Alto industrial complex in Brazil will be implementing the 100 percent carbon-free hydrogen fuel technology from eCombustible Energy this year. The project's details are going to be presented along with a paper at the 2022 Annual Conference of Metallurgists taking place in Montreal, Quebec, Canada next week.
- **SA Govt's artisanal mining policy is sheer fantasy. Start by stopping the criminals.**
    - 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.
- **Wheaton to terminate silver stream deal with Glencore for Peru mine**
    - Canadian mining firm Wheaton Precious Metals has agreed to terminate its silver streaming deal with certain Glencore subsidiaries on the Yauliyacu mine in Peru, for $150m in cash.

- The move would allow Glencore to divest the Yauliyacu underground zinc-lead-silver mine, which has been in continuous production for more than 100 years.
- In 2006, Wheaton acquired the mine's silver stream for an upfront consideration of $285m. Subsequently, the firm generated a cash flow exceeding $485m from the stream.

- **Junior Explorer Hits 'Bonanza Grade' Silver in Golden Triangle**
  - Dolly Varden Silver Corp. releases results from the first hole in its 30,000-meter drilling campaign at its sprawling Kitsault Valley project in British Columbia. Junior explorer
  - The junior explorer has intersected 414 grams per tonne silver (g/t Ag) over 50.2 meters in a step-out hole at the Kitsol vein in its Kitsault Valley project in northwest British Columbia's Golden Triangle

E-Waste & Precious Metals Recycle Related:

- **Heraeus Precious Metals adds a smelter to its recycling capabilities (in next two years)**
  - "We are convinced that the precious metals recycling market will continue to grow as a result of more regional supply chains and an increasing demand for both secondary recycled materials and circular solutions," explains Uve Kupka, President Heraeus Precious Metals Americas. "The investment in our site in Wartburg will be in the mid double-digit million USD range and is part of a larger expansion program executed at our locations worldwide." Furthermore, it will contribute to the advancement of the local economy through the creation of 40 to 50 new jobs in Morgan County, Tennessee.
- **Top 100: Let's hear it for the e-scrap innovators**
  - The global e-scrap recycling market was worth around US$ 3.3 billion (EUR 3.2 billion) last year and is predicted to exceed US$ 8 billion by 2028. RI's Top 100 celebrates this highly competitive business by including almost thirty e-cycling leaders in the 2022 edition.
- **Steelmakers, smelters may be paid to cut emissions**
  - Trade-exposed industrial companies such as steelmakers and alumina refiners could be offered taxpayer-funded financial support to cut emissions, in a move that would better share the burden across the nation's biggest polluters as they help deliver Labor's 43 per cent target.
- **Secondary Lead Smelters across Many Parts of China Are Affected by Power Rationing**
  - One secondary lead smelter in Hunan is currently subject to 10 hours of power blackout per day, leading to a daily output loss of 150-200 mt. Secondary lead smelters across Hunan, Anhui, Sichuan and Jiangsu are all suffering from power rationing. As such, lead ingot supply has tightened.
- **AutoCat Anti-Theft: More than 200 car owners get VIN, license plate numbers etched onto catalytic converters**
  - (Catalytic converter) The thefts have grown in the last year and a half. Maricopa County Attorney's Office says Phoenix Police reported around **70** catalytic converter thefts in 2019. In 2020, there were **720** reports. In 2021, that number grew to more than **4,700**. This year already, the police department received roughly **2,300 (YTD)** reports, on pace to reach similar numbers as last year.

Platinum

Platinum Prices for the Last 5 Years

Palladium Prices for the Last 5 Years

Friday LPPM PM Fix: Platinum $926/toz Palladium $2,170/toz

- **UCLA team designs graphene-nanopocket-encaged PtCo nanocatalysts for fuel cells; highly durable, ultra-low loading**
    - The PtCo@Gnp delivers a state-of-the-art mass activity of 1.21 A mgPGM–1, a rated power of 13.2 W mgPGM–1 and a mass activity retention of 73% after an accelerated durability test. With the greatly improved rated power and durability, the researchers project a 6.8 gPGM loading for a 90 kW PEMFC vehicle; the loading approaches that used in a typical catalytic converter.
    - *Matt: Loadings and FC Stack Size Correction - The Toyota Mirai loadings on their latest 2022 model is 17g, not 34 as indicated in the article and chart. Also, FCEVs kWh ratings tend to be 20-30% higher than the relative equivalent BEVs lithium battery capacity. The 2022 Mirai has a 124kWh stack. Also, the latest Toyota Class 8 Truck uses two full LDV stacks.*
    - *Matt: DOE goals are for .1g/kWh, or 12.4g in the case of the Mirai 124kWh FC Stack.*
    - *Matt: Most importantly, the equivalence to Autocat loadings is misleading. Sure, all PGMs in LDV AutoCat are around 5-7 grams, but mostly Pd in gasoline AutoCat. There is only ~1g of Platinum in gasoline LDV catalytic converter. So, the scalability of FCEVs is still a limiting concern, even with long term AutoCat platinum recycle.*
- **Truckmakers drop lawsuit challenging tailpipe emissions standards**
    - A lawsuit from an industry group, challenging California's Omnibus standard for heavy-duty trucks and vans aimed at dramatically cutting emissions, was dropped last week.
    - The challenge came from the Truck and Engine Manufacturers Association (EMA), an industry group representing a long list of vehicle makers, including Ford, GM, Honda, Navistar, Paccar, Volkswagen Group North America, and Volvo Group North America.

Fuel Cells/Hydrogen Economy Related Articles:

- **Hydrogen BMW developed with Toyota to enter production in 2025 – report**
    - The first mass-produced BMW with a hydrogen fuel-cell will soon be available to buy, jointly developed with Toyota.
    - In May 2021, BMW announced it would be putting the hydrogen SUV into 'pilot' production before the end of 2022, but now says hydrogen vehicles will be available in European showrooms from 2025. It's understood BMW developed the fuel-cell powertrain jointly with Toyota – one of the first carmakers to offer a hydrogen vehicle in Australia – with the two companies beginning the project back in 2013.
- **Johnson Matthey: Achieving 95% direct CO_2 reduction for hydrogen plants**
    - Based on decades of reforming experience, solutions using Advanced Reforming technologies can be integrated into existing hydrogen plants for 95% carbon dioxide (CO_2) reduction.1 The syngas industry can reduce its CO_2 emissions using innovative solutions for the energy-efficient production of hydrogen, ammonia, and methanol that are demonstrated at scale and available today.
- **Fuel cell electric vehicles and platinum demand**
    - However, demand for platinum in hydrogen-fueled FCEVs is likely to offset the eventual decline in automotive demand for platinum for catalytic converters. To date, broad-based FCEV adoption has been slow to materialize due to both limited vehicle and green hydrogen production volumes restricting economies of scale and hydrogen refueling infrastructure deployment.
- **Nel is doubling its water electrolyzer manufacturing capacity**
    - Water electrolyzer Nel has announced that it will be spending $36.2 million to double the capacity of its Herøya, Norway alkaline electrolyzer factory to reach 1GW, following announcements in the United States and Europe that will be favorable to green hydrogen production and use.
    - Max tax credit of $3.0/kg of hydrogen
    - Green hydrogen will become competitive with grey hydrogen in many applications x
- **US Senate passes bill including new hydrogen tax credits**

- The new Section 45V production tax credit (PTC) was also created by the bill, aimed at clean H_2. The hydrogen tax credit is meant for H_2 produced at qualified facilities starting construction before the close of 2032. It would begin applying to H_2 produced after the end of this year. Depending on the specific project, it could be anywhere from 12 cents per kilogram to $3 per kilogram, according to the writing of the bill.

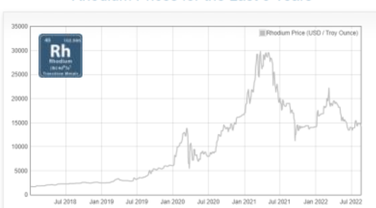
- **[Hyzon Ousts CEO in Wake of Delisting Fears]**
  - Hyzon Motors Inc. announced a change of leadership in the wake of missing the deadline to file second-quarter results with the Securities and Exchange Commission amid a "myriad of issues," including accounting irregularities.
  - Hyzon appointed Chief Strategy Officer Parker Meeks as president and interim CEO, effective immediately, replacing Craig Knight, who is also departing from his role as a director of the company. Hyzon's BOD plans to initiate a search to identify potential external and internal candidates to serve as the next CEO.
- **[Using Carbon Savings]**
  - Platinum's use in PEM electrolysers could enable delivery of over 10 per cent of global CO_2 emissions-reduction targets by 2030

Palladium

- **[Single-atom-kernelled nanocluster catalyst obtained in 'anti-galvanic reaction' for carbon dioxide conversion]**
  - According to a study published in Nano Letters, researchers led by Prof. Wu Zhikun from the Hefei Institutes of Physical Science (HFIPS) of the Chinese Academy of Sciences (CAS) obtained reduced palladium (Pd)-based alloy nanoclusters (abbreviated as Au4Pd6 and Au3AgPd6) for the first time.

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

Rhodium Prices for the Last 5 Years



Iridium Prices for the Last 5 Years

Ruthenium Prices for the Last 5 Years

Friday EIB USA Index Price: Rhodium $14,250/toz Iridium $4,750/toz Ruthenium $585/toz

- **[Power-to-X integration, the methanol case]**
  - Renewable power to methanol projects can provide an economically attractive route to renewable methanol production
  - Power to methanol projects can provide an economically attractive route to renewable methanol production when the plant is co-located in a pulp mill or bio-waste site with sources of biogenic CO_2 and a source of renewable electricity.
- **[Sibanye-Stillwater and Heraeus enter into a Partnership to develop and commercialise Novel Electrolyser Catalysts for the Production of Green Hydrogen]**
  - Collaborative project for the development of novel electrocatalysts based on ruthenium and iridium
  - Cooperative communication and marketing activities to support PGM containing PEM electrolysers
- **[Canada and Germany to sign ammonia and hydrogen fuel production agreement]**
  - The clean energy plant will be constructed in Stephenville, Newfoundland and Labrador.
  - Stephenville will become home to a wind-energy plant that will be used to power green ammonia and hydrogen fuel production. The deal is considered to be highly promising as a jumping off point for the

nascent H2 industry in Canada. If the project receives official approval from both sides, it will be a first of its kind for the North American country.

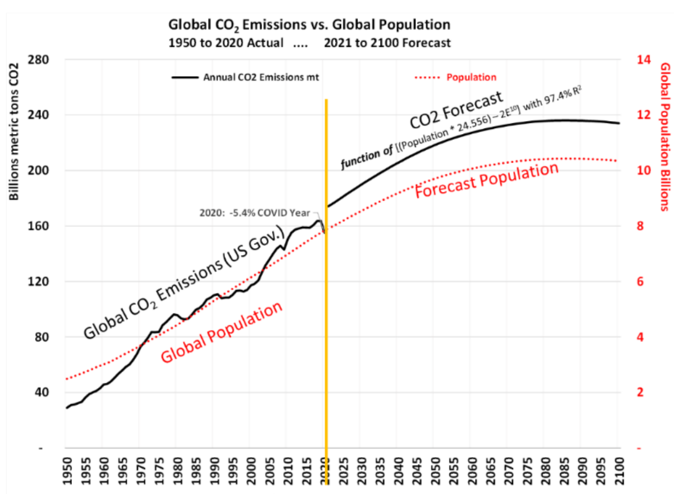
Clean Energy General News

Electrification Metals: Silver $617,000/mt Copper $ 8,062 /mt, Aluminum $ 2,594/mt

- **The Mineral Conflict Is Here**
  - *Matt: Long thought piece. Very interesting for anyone involved in clean energy metals.*
  - The green energy transition is, in reality, an electrification transition. Electrification requires hardware, and hardware requires mines. Some of the minerals critical for electrification include copper, nickel, cobalt, lithium, rare earth elements (REE), graphite, and polysilicon. Of these, copper and lithium are the most important. Copper has been called the "metal of electrification" because it is needed in everything associated with the transition to clean energy and electric vehicles. Lithium has earned the nickname "white gold" because it is needed for the lithium-ion batteries that are used for the grid-stabilizing energy storage, and to power Tesla cars and iPhones.
  - In a world where China dominates the electrification supply chain, its control over the clean energy and automotive sectors serves as a useful political weapon. Nowhere in the world has felt the effects of China's disciplined strategy more than Africa.
- **How Much Energy Will the World Need?**
  - Are we heading toward an all-renewable energy future, spearheaded by wind and solar? Or are those energy sources wholly inadequate for the task? Mark Mills, Senior Fellow at the Manhattan Institute and author of The Cloud Revolution, compares the energy dream to the energy reality.
- **Looming copper squeeze may force market to seek a recycling fix**
  - Annual copper demand is set to expand 53% to 2040, mainly driven by the electrification of transport and infrastructure, BNEF analysts including Sung Choi wrote in the report released Tuesday. In the same span, BNEF's base case has supply up +16% amid a dearth of new mines, leaving a shortfall of 14 million metric tons by 2040. Even in a best-case scenario, a shortage of more than 5 million tons is possible.
- **Output of Pr-Nd Oxide and Pr-Nd Metal Dropped in July amid the Weak Demand**
  - China's output of praseodymium-neodymium (Pr-Nd) metal in July 2022 stood at 4,895 mt, down 5% MoM. The output mainly declined in Sichuan, Inner Mongolia, Jiangxi and Guangxi.
  - In July, new orders of magnetic material producers were few, and the rare earth prices were declining, so the demand for praseodymium-neodymium metal remained weak.
- **China Targets Record Rare Earths Output in 2022**
  - China raised its RRE mining quota +25% on the back of growing global demand. The full year production quota is a new record for the world's top producer. China is dominant in the production of rare earths, a group of 17 minerals used in everything from consumer electronics to military equipment. The quotas are closely watched as a supply indicator and are typically issued twice a year. Beijing has set the full-year REE mining output quota at 210,000 tonnes in 2022, +25% y/y from 168,000 tonnes in 2021
- **The World Is Scrambling For New Rare Earth Supplies**

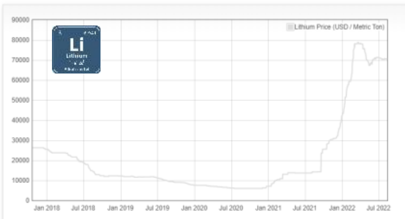
- Back on July 7th, Turkey reported that it had discovered the second largest reserve of rare earth metals in the world. The site, located in central Anatolia, is estimated to contain 694 million tons of rare earth reserves. This would put it just 106 million tons behind the Bayan Obo deposit in Northern China. If true, this would represent a supply shift that could impact rare earths prices significantly.
- chains and bolster national security

- **Is sustainable mining possible? The EV revolution depends on it.**
  - A proposal for a 'sustainable mine' in Minnesota has the backing of Tesla. But will it win over the community? It is a growing conundrum for climate activists: meeting the Biden administration's ambitious goals for cutting car emissions hinges on the quick approval of large, invasive projects environmentalists are predisposed to resist. Mining companies are trying to use the timelines for the energy transition to their advantage, promising wary conservation and tribal groups to shape projects around community concerns.
- **The West Must Wean Itself Off Russian Titanium**
  - Aerospace companies like Airbus need alternative sources of titanium sponge to diversify their supply
- **How Is Aluminum Made?**
  - Roughly a quarter of annually produced aluminum is used by the construction industry. Another 23% goes into vehicle frames, wires, wheels, and other parts of the transportation industry. Aluminum foil, cans, and packaging also make up another major end-use with a 17% consumption share.
  - Aluminum's widespread applications have made it one of the most valuable metal markets. In 2021, the global aluminum market was valued at around $245.7 billion, and as consumption grows, it's projected to nearly double in size to $498.5 billion by 2030.
  - Over 80% of the global Aluminum smelting capacity is China.
- **Thungela creams it as Ukraine war puts coal price through the roof**
  - "Coupled with supply constraints in major coal producing regions this resulted in the price of thermal coal increasing to unprecedented levels. Ukraine will reset the geopolitics of energy and we will see how this affects fossil fuels in general and coal in particular." Coal price past 5 years below.
- **Global CO2 Emissions and Global Population**
  - This chart is compliments of myself.
    - CO2 Global Emissions data from the US DOE, and Global Population data from www.worldometers.info. Correlation Coefficient R^2 97.4%
  - Extrapolating out to year 2100 using that transfer function is extremely discouraging.
  - Even COVID year with -5.4% y/y reductions is smaller reduction than one would hope in CO^2 emissions.

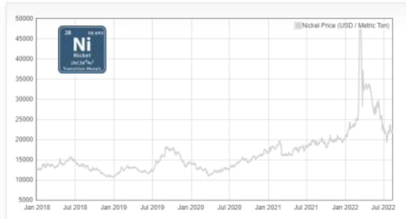


BEV / LiB Mineral & Battery Market News

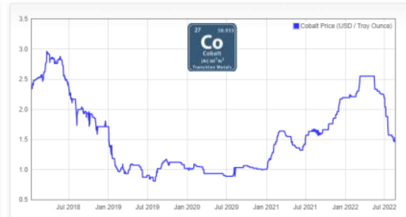
Lithium Prices for the Last 5 Years



Nickel Prices for the Last 5 Years



Cobalt Prices for the Last 5 Years



Friday: Lithium $70,474/mt Nickel $22,787/mt Cobalt $47,455/mt

- **London Metal Exchange Bans Russian Nickel from Its Two British Warehouse**
    - The LME has banned Russian nickel from its two approved warehouses in the UK (Hull and Liverpool) exported on or after July 20. The LME had previously banned copper, lead, primary aluminum, and aluminum alloy.
- **Indonesia revokes thousands of mining permits covering over 3 million hectares**
    - Indonesia's investment minister said more than 2,000 mining permits for various minerals have been revoked amid efforts to tighten the sector's governance and plan for land redistribution. The ministry has revoked 2,065 permits covering more than 3.1 million hectares (7.66 million acres) of land across the country.
    - Of the total number of permits that have been revoked, 306 were **coal** mining permits, 307 were for **tin** mining, and over 100 were for **nickel** mining, Bahlil said, adding that dozens of **bauxite, copper and gold** mining licenses have also been revoked.
    - Indonesia revokes thousands of mining permits covering over 3 million hectares
- **Carmakers' battery plans in peril as raw material costs soar**
    - VW and its US rivals face struggle to source materials to power EVs as China monopolises supply
- **Rivian earnings: 2Q net loss widens**
    - Rivian Automotive Inc. reported revenue tallied $364 million in the second quarter while the EV maker's net loss widened to $1.71 billion, from $580 million a year earlier.
    - The startup, headquartered in Irvine, Calif., said it's received 98,000 pre-orders for the R1T pickup and R1S SUV. Rivian also has an initial order for 100,000 EDV electric delivery vans from Amazon, which received the first batch of the trucks last month.
    - But Rivian warned that it now expects to post a wider annual adjusted loss before interest, taxes, depreciation and amortization of $5.45 billion, compared with $4.75 billion previously.
- **Rivian Vans Delivered Over 430,000 Amazon Packages Throughout Pilot Program**
    - Rivian's Electric Delivery Vans have been operational since early 2021.
- **Giga Metals and Mitsubishi Corporation Agree to Establish Joint Venture to Develop Turnagain Nickel Project**
    - Martin Vydra, President of Giga Metals Corporation (TSX.V: GIGA) announced today that the Company has entered into a binding agreement with Mitsubishi Corporation("MC") (Tokyo Stock Exchange: 8058) to form a new joint venture company, Hard Creek Nickel Corp. ("Hard Creek"), to jointly pursue the development of the Turnagain Nickel Deposit in northern British Columbia, Canada.
    - MC will acquire a 15% equity interest in Hard Creek in exchange for cash consideration of Cdn $8 million. Giga will receive an 85% equity interest in Hard Creek in exchange for contributing all related assets for the Turnagain project.
    - *Matt: This will be a very responsibly mined low CO_2 nickel source for Mitsubishi*
- **Latin America Lithium Laws Rattle Western Miners, Investors**

    - Argentina’s openness to private investment has made the country a bright spot for lithium productions in South America. The government needs every foreign currency it can get its hands on to help its cash-strapped economy. The authorities have produced businesses with financial stability deals and eased some foreign exchange controls that are affecting other sectors.
    - As a result, the country has seen an influx of investors, including Anglo-Australian miner Rio Tinto, Chinese battery maker Ganfeng Lithium and French multinational Aramet. The global auto giants are also betting on Argentina, with Toyota having a stake in a local mine and Ford and BMW having entered into agreements to acquire Argentine Lithium
- **China has encroached on Canada’s critical minerals industry, with almost no obstruction from Ottawa**
    - For the past two decades, China has built up a powerful position in Canada’s critical minerals and mining sector, with little oversight from Ottawa
- **Toyota, CATL Shut Plants in Sichuan as Power Crisis Worsens**
    - Japanese carmaker closes Chengdu factory through Aug. 20
    - Top EV battery maker CATL halts lithium output in province
- **The Place With the Most Lithium Is Blowing the Electric-Car Revolution**
    - A California-sized piece of South America is stifling production of the metal at a time when battery makers desperately need it
    - Chile—Hailed as the Saudi Arabia of lithium, this California-sized chunk of terrain accounts for some 55% of the world’s known deposits of the metal, a key component in electric-vehicle batteries.
    - As the Chinese EV giant BYD Co. recently learned, tapping into that resource can be a challenge. Earlier this year, after BYD won a government contract to mine lithium, indigenous residents took to the streets, demanding the tender be canceled over concerns about the impact on local water supplies. In June, the Chilean Supreme Court threw out the award, saying the government failed to consult with indigenous people first.
    - *Matt: This is the big lithium mining dilemma. How to access over 60% of the Li global reserves, and most of the Li inferred resources which are contained in the Brines. Conventional separation requires 500,000 gallons of fresh water for every 1 mt Li Brines processed. Given these Chilean, Bolivian, and Peruvian high deserts are some 12,000+ elevation, desalinization and pumping water up 12,000 ft has been discussed. Water scarcity is what the indigenous people are pushing back on the most. Also note 30% of Chile’s power grid today is already for mining. Copper and Lithium mining going forward are going to increase that dramatically.*

Regards –

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