Weekly Precious Metals News Articles: August 26, 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

LBMA pm: Gold $1,753.55/toz Silver $19.83/toz

- **Gold slides after Powell doubles down on tight monetary policy**
  - Gold fell over 1% on Friday after Federal Reserve Chair Jerome Powell in his speech at Jackson Hole said the U.S. economy needed a tight monetary policy until inflation was under control. U.S. consumer spending misses' expectation in July
- **Precious metals decline as Powell hints at prolonged inflation**
  - The prices of precious metals turned to losses on Friday following the speech by Federal Reserve Chair Jerome Powell, in which he confirmed the United States economy would be facing elevated inflation rates and impaired growth for some time.
  - Similar market movements were present on Wall Street and on the cryptocurrency front following Powell's remarks delivered before the Jackson Hole Economic Symposium.
  - Spot gold -1.16% to $1,738.26/oz at 1:39 pm ET
  - Silver -1.71% to $18.92/oz at the same time.
  - Platinum -2.12% to $867.47/oz, and Palladium traded -1.85% at $2,116.50/oz.

Semiconductor Related Articles (impacting Precious Metals electronics):

- **China's semiconductor industry faces another headache amid lacklustre demand for the low-end chips it has plenty of**
  - An oversupply of low-end semiconductors amid lacklustre demand from downstream sectors such as smartphones and home appliances is worsening in the world's biggest chip market, according to business merchants.
- **GlobalWafers' US plant on track after CHIPS Act**
  - The silicon wafer maker confirmed that it is investing US$5 billion to build a plant in Sherman City, Texas, after the US Congress passed the act to subsidize the US' chip program

- **A new normal is dividing the global chip industry**
  - Even though semiconductor demand has not declined, it is weakening as consumers tighten their belts and companies including Apple Inc freeze hiring or cut staff. Those chipmakers that focus mainly on older technology for mainstream use — such as components used in smartphones, computers and televisions —are seeing a more dramatic slowdown.
- **U.S.-led chip alliance aimed at curbing China influence: Analyst**
  - The Chip 4 alliance is a proposed alliance of semiconductor powerhouses in the US, Taiwan, Japan, and S. Korea to enhance cooperation on design and production of sophisticated semiconductors.
  - As such, it is believed that the U.S. may want to work with Taiwan, Japan, and South Korea to impose controls on semiconductor exports and technology outflows and thus form an anti-China group to exclude China from global semiconductor supply chains, Lee explained.

Silver

- **Silver Institute President Bradford Cooke Passes Away**
  - Bradford Cooke, the founder and Chairman of Endeavour Silver and President of the Silver Institute, passed away suddenly and unexpectedly in Vancouver, BC at the age of 67.
  - Cooke served as an industry voice in creating public awareness of the silver industry. He was an accomplished geologist with nearly five decades of experience in the metals and mining industry.
- **Michael Dirienzo Of The Silver Institute Speaks On Rise In Demand For Silver (video interview)**
  - Michael DiRienzo of The Silver Institute speaks to Manisha Gupta on the rise in demand for #silver. Says, silver industrial demand will hit record-highs in 2022 and expects prices to average between $21.60 and $22.10.
- **Solar power is booming in Germany as Russia turns down the gas**
  - People on the frontlines of Europe's gas crisis are scrambling to get solar panels for their homes and businesses as they confront a "perfect storm" that's sending energy prices to record levels.
  - In the first six months of this year, Germany saw a 22% jump in the installation of solar systems, compared with the same period last year, according to data shared with CNN Business by the German Solar Association. This included residential and commercial uses, from small installations on private rooftops to large solar farms, the group said.
- **Ethylene Oxide’s Invaluable Role In Protecting Public Health**
  - Ethylene Oxide (EtO or EO) is a colorless gas used commercially in a wide variety of ways, including the production of textiles, personal care items, and the sterilization of medical devices, cosmetics, and spices. EtO is one of the most common ways to sterilize medical devices, which is crucial for preventing infection in patients undergoing surgical procedures and other medical treatments.

Precious Metals Mining:

- **South Africa's Sibanye Stillwater profit halved after strike, floods**
  - South African miner Sibanye Stillwater Ltd reported a 50% slump in its half-year profit on Thursday, after a three-month strike at its gold mines and floods at its United States platinum group metal (PGM) operations cut production.
- **Northam Platinum posts profit dip as costs surge**
  - The company’s output rose 3.7% to a record 716,488 platinum group metal (PGM) ounces, up from 690,867 ounces previously, despite two mining-related fatalities, covid-19 induced absences and community unrest that affected its Booysendal operations.
  - However, increases in the price of chemicals, steel components, explosives and fuel drove Northam’s production costs 18.9% higher.
- **Sibanye-Stillwater holds back on battery metal deals until recession fears subside**

- Froneman says confidence is as high as ever regarding its expansion through deals; at the same time, however, investors ought not to expect another transaction soon, he says. "You are seeing a global economic reset taking place and the opportunity to make the right moves will probably happen in six to nine months' time. There's too much froth in the market."

E-Waste & Precious Metals Recycle Related:

- **Sulfuric acid: the next resource crisis that could stifle green tech and threaten food security**
  - Eliminating fossil fuels to rein in climate change will slash the annual supply of sulfuric acid just as demand is increasing. The world already uses over 246 Mt of sulfuric acid annually. Rapid growth in the green economy and intensive agriculture could see demand rise to over 400 Mt by 2040.
  - The rapidly expanding use of low-carbon technologies, such as high-performance batteries, light-weight motors for vehicles, and solar panels, will significantly increase mining of mineral deposits, particularly laterite ores that are increasingly important sources of cobalt and nickel. Cobalt demand could increase by 460%, nickel by 99%, and neodymium by 37% by 2050. All of these are currently extracted using large quantities of sulfuric acid.
  - The study concluded that by 2040, the world will have a shortage of 100 million to 320 m. tons of sulfuric acid annually. When this happens, sulfuric acid prices will likely skyrocket, which will have numerous consequences.
  - *Matt: It's also used in REE, Nickel, Cobalt, and Lithium processing, and used by many precious metals refineries. Is your sulfuric acid supply chain reliable?*
- **Sims reports higher sales but lower earnings**
  - Sims Lifecycle Services continued to boost the number of computers it repurposed last year, even as lower Chinese demand for used electronics cut into earnings.
  - Sims Lifecycle Services (SLS), the ITAD and e-scrap recycling arm of scrap metals giant Sims Limited, brought in ~$227 million USD in 2022 FY revenue, +2.5% from the 2021 fiscal year.
  - The company's underlying EBIT were $11.3 million, -25% y/y
- **California e-scrap recycler caught up in sting operation**
  - Arrow Recovery is under investigation by local police for buying large quantities of black-market catalytic converters, despite some having "stolen" etched onto them by undercover officers.
  - "The goal of this long-term operation was to shut down a major pathway for criminals to sell stolen catalytic converters, thereby reducing the desire of thieves to victimize community members and businesses," a press release from the Fremont Police stated.
  - Located in Fremont, Calif., Arrow recycles e-scrap and catalytic converters and recently had its R2 certification renewed. The company did not respond to a request for comment.
- **Recommendations Regarding Catalytic Converter Parts Marking Programs**
  - Some Recommendations Regarding Catalytic Converter Parts Marking Programs in General and Post-Vehicle Assembly Marking Programs in Particular
  - We have ample indications that once a thief sees that a converter has been marked with an anti-theft label, they terminate efforts to cut off these catalytic converters and to instead move on to another vehicle that is not marked with these anti-theft program labels. The thieves understand the risk factor these pre-registered converters represent to them, and they tend to avoid these pre-marked converters as a result. This can be especially worthwhile for dealerships and fleet management programs where a whole standing inventory can be at risk at one time. Converter marking programs can serve as a means of allowing the public to do something to help avoid thefts in the first place
- **Mineworx announces process breakthrough, The Canadian Business Journal**
  - Mineworks Technologies Inc. is pleased to announce that, in addition to platinum and palladium, rhodium has now been successfully recovered from spent catalytic converters.

- Mineworx anticipates growth in the catalytic converter sector through the development and commercialization of environmentally friendly processing technologies for precious metal recovery. The initial focus will be on the extraction of platinum and palladium from diesel catalytic converters provided by his business partner Davis Recycling Inc. For more information, please visit www.mineworx.net.

- [Scrap Metal Market Remains Volatile]
  - With global headlines dominated by bad news, metals markets - both ferrous and non-ferrous - remained volatile. Industry experts say negative trends are likely to continue for a few more months due to macroeconomic factors.

Platinum

Friday LPPM PM Fix: Platinum $875/toz Palladium $2,191/toz

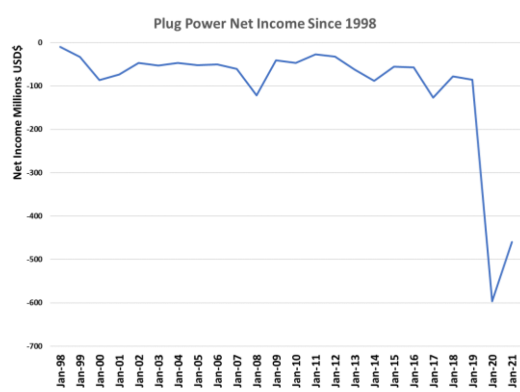
- [Platinum Prices Are Down, but Offer Investors Value for Diversification]
  - A stronger dollar is certainly pushing precious metals down amid inflation and rising interest rates. However, that doesn't necessarily mean that precious metals should be shunned because of the recent weakness. If anything, it offers investors an opportunity to get precious metals exposure at value-oriented prices.
- [Anglo American Platinum Awaits China-Delayed Automotive Recovery]
  - H1 2022 was momentarily strong for PGMs, but after the initial bout of panic and speculation, PGM prices came down. And Anglo-American Platinum follows PGM prices almost 1:1.
  - The automotive recovery continues to see issues with the China lockdowns.
  - Moreover, the latent issues in the economy could spell issues.

Fuel Cells/Hydrogen Economy Related Articles:

- [Toyota to launch new hydrogen fuel cell trucks]
  - Among the potential uses for the vehicles the companies will develop will include in the supermarket and convenience store sector. According to Toyota, LDVs of that nature are "required to drive long distances over extended hours to perform multiple delivery operations in one day." The automaker also underscored that vehicles serving those sectors must be able to refuel quickly.
- ['Expensive, wasteful, limited CO_2 reduction: Blending hydrogen into gas grid should be avoided']
  - Adding 20% green H_2 to Europe's distribution networks would increase end-user costs by up to 43%, while cutting greenhouse gases by just 6-7%, says Fraunhofer Institute study.
  - *Matt: This study highlights the same concerns I have on using Green H_2 in heavy industries for heating purposes. The Mass Flow characteristics and BTU's effectively just lower than gas. Cost impacts will be tough to overcome. But if conventional existing natural gas pipeline grid can be used to effectively transport the H_2 gas to different points of retail for transportation, then great. Bending the H2 transportation cost curve is a huge opportunity.*
- ['Wrong side of history' | Wake up to the hype around green hydrogen for heating]

- If providing the equivalent amount of heat by the green H_2 route requires up to six times as much primary energy, it would be necessary to build up to six times as many offshore wind turbines or nuclear power stations, all with their own environmental and resource impacts. Clearly this electricity capacity would take much longer to build, cost more and would delay decarbonisation. Hence comments from the UK's Climate Change Committee CEO warning that switching all heating to H_2 would be "impractical", particularly when climate change demands rapid & immediate action.
- Amidst the hype, citizens are become increasingly confused about future heating technologies. All of this leads to climate delay and continued exposure to fossil fuels.
- But when decision-makers are faced with the real-world cost implications of hydrogen for heat, the role of electrification and energy efficiency will eventually be realized. Yet this may be too late.

- **China Lithium Prices Near Record as Power Cuts Squeeze Market**
  - Lithium carbonate has jumped to highest level since April
  - Disruptions, low inventories may impact cathode makers: Rystad
- **Toyota and NREL partner to develop MW-scale fuel cell systems**
  - The fuel cell generator is part of NREL's Advanced Research on Integrated Energy Systems (ARIES) at the Flatirons Campus. The system includes a 1.25 MW PEM electrolyzer, 600-kg H_2 storage system and 1 MW fuel cell generator. The fuel cell generator system will be installed this summer, and the full system will be commissioned later in 2022, said Toyota.
- **Cobalt Miners News For The Month Of August 2022**
  - Cobalt spot prices were slightly lower for the month, LME inventory was slightly lower. The cobalt market is projected to be well balanced in 2022.
  - Cobalt market news - IEA: Battery and minerals supply chains will have to expand ten-fold this decade, 17 new cobalt mines are needed.
  - Cobalt miners' news - Glencore H1 2022 cobalt production +40% Y/Y, Jinchuan Group H1 2022 cobalt revenue from mining operations +157%.
  - Electra identifies new mineralization in Idaho Cobalt Belt. Cobalt Blue Demonstration Plant transitioning to operations. Giga Metals and Mitsubishi Corporation agree to establish Joint Venture to develop Turnagain Nickel Project.
- **Amazon To Buy Plug Power's 'Green' Hydrogen In Deal With $2.1 Billion Stock Option**
  - Plug Power, which supplies fuel cells for electric forklifts used by Amazon and other companies, said the retail giant plans to buy thousands of tons of carbon-free "green" hydrogen from it per year in a deal that also includes an option to acquire a stake in the company worth up to $2.1B.



  - *Matt: I don't talk about this enough in my presentations, but none of the PEM Fuel Cell stack producers are making any money. Most all are still burning cash. Plug Power has yet to turn a profit since 1998. This $2.1B infusion resolves Plug Powers cash burn problem for ~ 6-years at the present rate of elevated losses. Recall Plug recently went from producing ~400,000 10kWh Forklift FC Stacks over the past decade, to now wanting to make Green H_2 Electrolyzers and Refueling Stations. Now their cash burn rate is now accelerated.*
- **Booming hydrogen investment in China driving platinum demand growth**
  - With China's plan to have only low-carbon energy sources by 2030 and to achieve carbon neutrality by 2060, its demand for platinum-group metals (PGMs) is likely to continue growing.

- The country also has plans to grow its hydrogen fuel cell electric vehicle (FCEV) fleet, with initiatives aimed at developing the entire hydrogen value chain, including refueling infrastructure, rather than just offering subsidies on sales.

Palladium

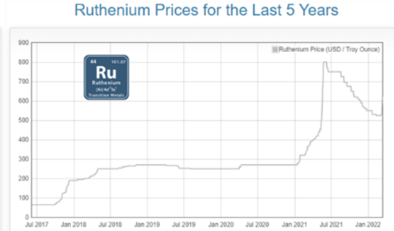
- **Average new car prices set to hit record $46,259 in August**
  - J.D. Power estimates that the average transaction price for August will be $46,259, which is up from July's record of $45,998. The price represents +11.5% from last August, which was when the supply shortages first started having a significant effect on the new-car market.
  - Monthly finance payments hit an all-time record of $716, +12.2%, at an average 5.51% interest.
- **U.S. August Auto Sales Forecast: Razor-Thin Increase Vs. A Year Ago; High Prices Continue**
  - U.S. auto sales are on track to be higher in August vs. the same month a year ago, but just barely, <+1% due to the ongoing shortage of new cars and trucks, according to J.D. Power and LMC Automotive.
  - For consumers, the upshot is continued, record-high transaction prices and record-low incentives.
  - The August auto sales forecast predicts August sales of about 1.1 million new cars and trucks, up 0.6% vs. August 2021, based on online shopping through roughly the first two-thirds of the month.
- **Palladium price to remain at 'historically high' levels for the next 24 months, says Capital Economics**
  - After reaching new record highs this year, palladium prices have a positive trajectory as the precious metal will remain in deficit for the next two years, according to Capital Economics.
  - The demand is estimated to improve while the supply remains muted, pushing prices higher from current trading levels, said Capital Economics commodities economist Edward Gardner.
  - Palladium's path for the next two years is to climb from $2,000 to $2,500/oz by the end of 2024.

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 $13,955/toz Iridium $4,750/toz Ruthenium $585/toz

- **How much water do you need for PtX/green hydrogen?**
  - With these rule of thumb numbers (ie, assumptions), it is possible to quickly estimate the water requirements for a given hydrogen project.
  - Example: A green hydrogen plant designed to produce 1,000 tons hydrogen, will require 9,000 m^3 of ultrapure water. This in turn will require either 12,000 m^3 of groundwater, or 13,000 m^3 of treated wastewater or 30,000 m^3 of seawater.
- **Barlow says the liberal denial of reducing fertilizer use is syntax and semantics - you can't reduce emissions unless you reduce fertilizer use**
  - *Matt: Ru-alloys used as a key catalyst in the Habor Bosch ammonia synthesis process. >75% of ammonia is used in global feterilizer production. And clean energy advocates want to grow the ammonia market by 6x to 10x to support use a fuel in maritime shipping. Yet here we are with both high-power prices and intentions to reduce global emissions is leading to the reduction in Ammonia and Fertilizer production. Supporting links - **Western Canada Wheat Producers Fertilizer Reduction Plan***
- **Interfacial engineering boosts the electrocatalytic ammonia synthesis of rhodium catalyst**

- *Matt: This is technical demo paper on synthetic green ammonia production using Rhodium.*
- In this research, the dodecanethiol-modified Rh was fabricated via a facile saturated dodecanethiol vapor-phase hydrothermal reaction followed by a low-temperature pyrolysis process. The hydrophobic dodecanethiol molecules on the surface of Rh created a stereo-hindrance effect, which inhibited the diffusion of water molecules or H+ to the metal surface and facilitates N2 adsorption, thus improving the NRR selectivity.

- **Olin Announces Chlor-alkali Capacity Reduction**
  - Olin announced today that it plans to permanently shut down approximately 225,000 ECU tons of diaphragm-grade chlor alkali capacity at its Freeport, TX facility. The closure is expected to be completed by year end 2022. "Including this closure, Olin will have rationalized over one million ECU tons of diaphragm-grade chlor alkali capacity in less than two years," remarked Scott Sutton, Olin Chairman, President, and Chief Executive Officer. "These actions demonstrate our commitment to lift and maintain our ECU values, while developing a more sustainable asset configuration."
  - *Matt: Industry transition from older diaphragm to Ir/Ru Membrane process for cost and efficiency*

Clean Energy General News

Electrification Metals: Silver $18.98/toz, Copper $ 8,062 /mt, Aluminum $ 2,594/mt

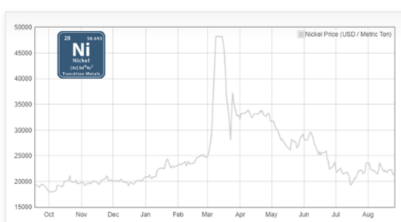
- **China Accelerates Approvals Of Coal-Fired Power Plants**
  - China has accelerated the approval of coal-fired power plants this year, and in the first quarter alone, it approved new coal capacity equal to nearly half of all the coal-fired capacity approved for the whole of 2021, Greenpeace said on Wednesday.
  - China gave the green light to as much as 8.63 gigawatts (GW) of new coal-fired power plants in the first quarter of 2022 alone, which was equal to 46.55% of all the coal capacity approved throughout 2021, the environmental group said in a research report.
  - In recent months, China has significantly boosted its coal production, following government orders for more coal supply. Faced with power shortages last autumn, Chinese authorities ordered an increase in domestic coal production as global coal prices soared. China relies on coal for around 60% of its electricity, and has asked domestic miners to increase capacity by 300 million tons this year.
- **GM, LG Energy Solution considering Indiana for fourth U.S. battery plant**
  - GM and LG Energy Solution are considering a site in Indiana for a fourth U.S. battery cell manufacturing plant, a spokeswoman for the companies' joint venture said on Thursday.
  - Ultium Cells LLC "is developing a competitive business case for a potential large investment that could be located in New Carlisle, Indiana," she said, adding that Ultium had submitted a tax abatement application that it hopes will be approved later this month.
- **Time to Ditch Meaningless Medieval Wind Power & Embrace Modern Nuclear Power**
  - And if coal-fired power is off the menu, there really is only one game in town: nuclear.
- **German Benchmark Year-Ahead Power Rises Another 11% to Record EU620/MWh ($0.62/kWh)**
  - *Matt: Stunning energy price climb.*

- ['Crisis': Could a looming shortage of sulfuric acid threaten food security and clean tech deployment]()
  - A looming shortage of sulfuric acid, a vital component for many modern manufacturing processes, poses a significant risk to the pace of clean technology deployment and efforts to maintain global food security, the Royal Geographical Society has today warned.
  - In a paper published in The Geographical Journal, researchers warn that the global supply of sulfuric acid - a critical component in the production of fertilisers which is also used in the extraction of minerals required for lithium-ion batteries - is soon to be significantly outpaced by demand.
- [Saudi Arabia to Build the World's Biggest Wind Farm in Uzbekistan]()
  - The agreements include a pledge from Saudi firm ACWA Power to build a 1.5GW Wind farm in Karakalpak stan.
- [Japan plans to build new nuclear power plants and restart reactors in 2023]()
  - Japan has announced its intention to develop and build next-generation nuclear power plants in a major shift from the country's post-Fukushima disaster policy of refraining from the construction of new nuclear plants. The Japanese Ministry of Economy, Trade and Industry (METI) has compiled a draft on the construction of new plants, with plans to start commercial operation during the 2030 decade.
  - In addition, the Japanese administration aims to secure electric power in the medium to long term with a plan to restart up to 17 nuclear power plants beginning in the summer of 2023 in a bid to help Japan reach net-zero carbon emissions by 2050.
- [More smelters face closure as Europe enters power-starved winter]()
  - These industries rely on smelters for metals such as aluminium and zinc to manufacture their products. If more smelters close, it will force them to turn to overseas producers, helping China and Russia cement their grip on global markets.

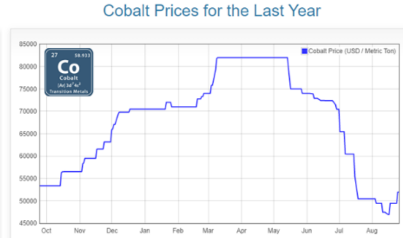
BEV / LiB Mineral & Battery Market News

Lithium Prices for the Last Year

Nickel Prices for the Last Year



Cobalt Prices for the Last Year



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

- [Volkswagen Lines Up Tariff-Friendly Battery Supplies in Deal With Canada]()
  - Accords secure raw materials like nickel, cobalt and lithium
  - Agreements to be signed during Scholz's current Canada trip
- [Carmakers' battery plans in peril as raw material costs soar]()
  - "Right now, 85-90 per cent of materials that go into a battery are coming from China," Bush added, and the incumbents have locked up most of the available supply. Ford's recent agreements to secure the minerals and cathode materials for its batteries were largely non-binding.
  - The cost of critical raw materials that remain on the market is soaring. The price of lithium carbonate hit an all-time high in April and is still eight times what it was at the start of last year.
  - More crucially, availability of minerals is a looming problem for latecomers VW, Ford and GM, with the latter agreeing last week to pre-pay $200mn to lithium producer Livent for supplies. Scott Yarham of S&P Global Commodity Insights predicted that along with the lithium supply crunch, shortages of nickel

and cobalt are likely to follow later this decade. “There’s a lot of investment in battery cell manufacturing in Europe and the US, but not sufficient enough in the raw materials,” he said. “There’s going to be a big disconnect.”

- **Electric Cars Battery Gross Capacity Comparison Chart**
  - *Matt: A nice current listing of all EV LiB kWh sizes for reference.*
- **Environmentalists Have Turned On The Lithium Industry**
  - The global minerals and metals market is expected to explode over the next decade as the energy transition takes place, and lithium is set to lead the way.
  - As the lithium industry grows, the environmental concerns associated with it are gaining more attention and could provide a significant headwind for producers.
  - The lithium industry will need significant investment if it is to keep up with demand and will need to focus on solving its environmental issues if it is to maintain its current positive image.
  - The IEA anticipates a 40-fold increase in lithium demand by 2040. Traditionally, Li mines require a two-year-long evaporation process, where lithium is separated from salty brines. At present, the production of one mt of lithium requires 500,000 gallons of water, with Chile’s lithium mining consuming around 65 percent of the region’s water. However, several mining firms are investing in the development of alternative methods that require less time and water to be used in the extraction process, through direct lithium extraction (DLE), to make it more profitable and less harmful to the environment.
- **Rare earths processor to explore in Greenland**
  - Toronto-based rare earths processor Neo Performance Materials on Monday said that it plans to develop the Sarfartoq deposit in southwest Greenland and would send the ore to its facility in Estonia in eastern Europe.

Regards –

Matt Watson, President
Precious Metals Commodity Management LLC.
1694 Cairo Street, Livermore, CA 94550
(925) 321-2686
Email MattWatson@PreciousMetalsCommodityManagement.com
URL: *https://www.PreciousMetalsCommodityManagement.com/*