



## Weekly Precious Metals News Articles: June 3, 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 scores best day in 2 weeks and highest close in about a month](#)
  - Gold for August delivery settle at \$1,871.40 per troy ounce, that was its highest close since May 6, and the best daily percentage gain since May 19, according to Dow Jones Market Data. The yellow metal also is now +1.3% on the month.
  - Silver to settle at \$22.28 per ounce; +2.8% so far in June.
  - Platinum built upon its sizable gains from yesterday's session, ending +3.1% to settle at \$1,028.40.
  - Palladium rose +2.2% to end at \$2,036.50 per ounce.
  - Copper HGN22 climbed 4.8% to settle at \$4.55 per pound.
- [Gold Price Falls Amid 'Carnage' in Real Yields, Euro Chatter Over Rate Rises Gets 'Disorderly'](#)
  - Gold prices fell to start June 2022 at multi-week lows in all major currencies on Wednesday, extending yesterday's drop as major economy bond prices fell and real yields rose further on speculation grew that central bank led by the US Fed are set to hike interest rates further in a bid to cool energy-and-food-driven inflation amid Russia's continuing invasion of Ukraine.
  - With Friday set to bring market-moving US jobs data for May, large gold bars settled in London's wholesale market – center of the world's bullion trading and storage network – headed into the UK's long Jubilee Bank Holiday weekend at \$1840 per ounce, down \$50 from start-May and little changed from this time last year.
- [What's next for gold price after May's U.S. employment surprise?](#)
  - "The May jobs report is showing moderation in economic momentum. However, the sharp declines anticipated by the market recently don't seem to be materializing," TD Securities global head of commodity strategy Bart Melek told Kitco News. "On the margin, this implies that the market may well increase rate expectations. Indeed, rates (nominal and real) across the curve rose following the report. This helped to drive the yellow metal below \$1,860/oz at the time of writing, down from around \$1,863-66/oz before the report was released."
- [Jewellers' gold sourcing more challenging in times of war](#)
  - With Russian gold & diamonds off-limits due to the war in Ukraine, makers of luxury jewellery and watches are finding it more difficult to secure raw materials and address human rights issues in supply chains. Russia is the world's biggest producer of natural diamonds, according to the World Diamond Council, and the second-largest gold miner, according to the World Gold Council.

- Cartier maker Richemont said it was not buying any diamonds mined in Russia since the invasion, and it reaffirmed in its sustainability report on Thursday it was not buying any recycled gold from Russia.
- [Tennessee removes sales tax on gold and silver, only eight states to go](#)
  - Gold and silver made another important step to becoming legal tender in the United States. Ahead of the Memorial Day long weekend, Tennessee Governor William Lee signed into law House Bill 1874, removing sales taxes on gold, silver and platinum bullion coins.

### **Semiconductor Related Articles (impacting Precious Metals electronics):**

- [Tech war: China's semiconductor heartland woos foreign investors as US pushes for supply chain decoupling](#)
  - Jiangsu province is set to host an online seminar to entice foreign semiconductor firms to partner up with local counterparts
  - The region is home to factories of Taiwan Semiconductor Manufacturing Co and SK Hynix, whose expansion plan in Wuxi fell through
- [Apple's iPhone assembler says supply chain outlook better than feared](#)
  - Apple's iPhone assembler said the impact of Covid-19 lockdowns in China has been better than it feared, Nikkei Asia reported Tuesday.
  - Foxconn in late March paused its operations in the key manufacturing city of Shenzhen after Chinese authorities locked down several major cities.
- [Intel urges US and EU to collaborate to reinvigorate semiconductor leadership](#)
  - They stressed that aligning the semiconductor policies and principles of both sides of the Atlantic is "of utmost importance to achieve their common long-term objectives, yet finding shared solutions is key to practical implementation." Intel referred to the EU's requirement for member states to "expedite permitting processes of semiconductor facilities, and even allows derogations in permit granting procedures, including in certain environmental assessments if other conditions are met" as examples of such "practical implementations."
- [Semiconductor Growth Still Seen at 11% Despite 2022 Headwinds](#)
  - Despite rampant inflation, soaring energy costs, ongoing glitches in supply chains, recent Covid-19 virus lockdowns in China, and Russia's war with Ukraine, IC Insights continues to anticipate an 11% increase in total semiconductor sales this year—the same growth rate that was forecast in January. However, what's different in IC Insights' new updated forecast is how the semiconductor market achieves the low double-digit percentage growth and reaches record-high sales of \$680.7 billion in 2022.
- [Smartphone market to take 3.5% hit: research firm](#)
  - IDC attributed the downward projection to three consecutive quarters of decline in shipments, and increasing supply and demand challenges, the report said.
  - However, the market researcher expects the decline to be a "short-term setback" and retained its five-year compound annual growth rate projection of 1.9 percent through 2026, as it expects the market to rebound next year, it said.

### **Silver**

- [Silver supply diminishing as demand poised to blossom](#)
  - With supply trends likely unable to keep up with longer-term demand, silver has some compelling fundamentals that could make it a smart pick in today's market environment.
- [Trina Solar's pathway to TOPCon \(Solar PV cell metallization technology\)](#)
  - Trina Solar will eventually start selling TOPCon and heterojunction products, even though it built its first large-scale TOPCon project four years ago. The company says it is now making progress on TOPCon module production, despite supply chain issues.

- *Matt: n-type TOPCon - In the tunnel oxide passivated contact (TOPCon) and Silicon heterojunction solar (SHJ) cells, silver is used on both the front and rear contacts. So, consumption is roughly double at 25.6 mg/W (TOPCon) and 33.9 mg/W (SHJ). This would result in respective silver limited sustainable manufacturing capacities of 380 GW, 230 GW, and 170 GW, given 20% of the 2019 global silver supply.*
- [Rising costs affecting LSS progress](#)
  - Higher prices of solar panels are slowing the rollout of solar photovoltaic (PV) projects, especially large scale solar (LSS) farms with very competitive tariff bids.
  - From record lows in 2020, solar panel prices, which make up more than half of project costs if the land costs are excluded, had risen 30% to 40% to its three-year high in late 2021 as prices of polysilicon and aluminium jumped multifold to near decade highs.
- [The Great Ballistic Rally in Gold and Silver – Phase 2](#)
  - As mentioned in my earlier post, the Phase 2 rally in gold and silver would commence in the mid of May 2022 and I expect there would be a major rally in Silver (more than gold) on display. Silver has been an under-performer in this so-called commodity super cycle till date. Then would be the time for silver to take center-stage.

## **Precious Metals Mining:**

- [Three month strike set to end at Sibanye as miners back deal](#)
  - South African precious metals miner Sibanye Stillwater (SSWJ.J) said on Friday that trade unions leading a strike at its gold operations had a mandate from their members to accept a three-year wage deal.
- [Zimbabwe Darwendale PGM project struggling to attract backing](#)
  - The development of Darwendale, one of Zimbabwe’s largest platinum group metal (PGM) prospects, has been thrown into doubt as lenders don’t want to be connected to a venture which has Russian economic interests at its heart.
  - According to a report by Bloomberg News, the site of the deposit has been abandoned since the beginning of last year and its backers are finding it difficult to attract new capital. Vitaliy Machitskiy’s Vi Holding, which has a 50% stake, is reluctant to continue investing after years of delays, the newswire said.
- [Tharisa raises flag on capital cost lift at \\$250m Karo Platinum Project as inflation bites](#)
  - In March, Tharisa announced it had taken control of Karo Mining Holdings which controls the project. Karo Platinum Project is scoped to produce 150,000 ounces a year in PGM concentrate, effectively doubling Tharisa’s PGM footprint when complete – about 24 months after the start of construction

## **E-Waste & Precious Metals Recycle Related:**

- [Legislation Passed Banning Vehicle Recyclers From Accepting Any CATs Unattached To Cars](#)
  - In Connecticut, US, earlier this month, legislation {Public Act 22-43} to regulate the purchase of catalytic converters was passed. The act takes aim at the recent rise in catalytic converter thefts by establishing new requirements for businesses that purchase these parts.
- [Twenty Catalytic Converter Recycling Tips](#)
  - United Catalyst Corporation (UCC), a North American-based processor of scrap catalytic converters that offer global refining services provides twenty tips on recycling catalytic converters.
- [PGM Recovery Systems Becomes Noble6](#)
  - PGM Recovery Systems yesterday announced its rebrand to Noble6! Along with a new brand name and logo, there is a new website and a price guide that has been updated.

## Platinum

- [New-Generation Platinum Agents for Solid Tumors](#)
  - Cisplatin was one of the first chemotherapeutic agents to exhibit broad efficacy in solid tumors and it remains among the most widely used agents in the treatment of cancer. Its introduction inspired great efforts to design similarly effective platinum agents that overcome the three main limitations of cisplatin: toxicity, tumor resistance and poor oral bioavailability. However, **40 years after the initial discovery of cisplatin, only two platinum agents have garnered US FDA approval: carboplatin and oxaliplatin.**
  - Now, two exciting platinum agents have been brought to Phase III trials: **satraplatin** in hormone-refractory prostate cancer and **picoplatin** in small-cell lung cancer. If successful, they may inspire a new effort to bring better-designed platinum agents to market. This article reviews the clinical development of platinum agents to date and speculates on the role of platinum agents in the near future.
- [Could hydrogen-powered fuel cell vehicles be the PGM industry of tomorrow?](#)
  - Metals Focus flagged in its Platinum Group Metals Focus 2022 report that the International Energy Agency (IEA) has estimated that hydrogen electrolyser capacity may exceed 300MW and that 350 projects in development that could bring as much as 54GW capacity on stream by 2030.
  - “If realised, this could result in existing electrolyser demand of a few thousand ounces of PGM demand becoming several hundreds of thousands by the end of the decade,” the report said.
- [A unique nanocatalyst paves the way for plastic upcycling](#)
  - In 2020, a team of researchers led by Ames Laboratory scientists developed the first processive inorganic catalyst to deconstruct polyolefin plastics into molecules that can be used to create more valuable products. Now, the team has developed and validated a strategy to speed up the transformation without sacrificing desirable products.
  - The catalyst was originally designed by Wenyu Huang, a scientist at Ames Lab. It consists of platinum particles supported on a solid silica core and surrounded by a silica shell with uniform pores that provide access to catalytic sites. The overall amount of platinum needed is quite small, which is important because of platinum's high cost and limited supply.

## Fuel Cells/Hydrogen Economy Related Articles:

- [Johnson Matthey Invest in AEM Electrolyzer Manufacturer Enapter](#)
  - The partnership will include collaborating on the joint development of advanced components for Enapter’s AEM stacks. Specialized catalysts will also be supplied, recognizing Johnson Matthey’s undisputed expertise in catalysis. As part of the partnership, JM will invest €20m (representing 4.31%) in Enapter.
  - Both companies are committed to supporting the transition to net zero by accelerating the development of AEM electrolysis. Enapter’s highly efficient standardised and modular AEM electrolyzers allow green H<sub>2</sub> production from kW to MW scale at lower associated costs for various applications, including electricity storage, production of synthetic gas or methane (power-to-gas), mobility (H<sub>2</sub> refuelling and e-fuels) and industrial use.
- [Renault unveils hydrogen \(fuel cell + EV hybrid\) car concept with a 497-mile range](#)
  - The vehicle is called the Scenic Vision bringing together an electric motor and a fuel cell fed by H<sub>2</sub>. The hydrogen car has a 2.5-kilogram tank located at its front end. According to the automaker, it would take about 5 minutes to fuel up.
- [China has discreetly taken 10 per cent of the world's market for hydrogen fuel-cell vehicles. Here's a look at the company leading the charge](#)
  - Sinosynergy's ambitions in pushing for the embrace of hydrogen fuel cells. The company, which marks its seventh birthday on June 30, produces 70 per cent of China's fuel cell stacks at the heart of the fuel-cell system.

- [\*\*Nuclear hydrogen doesn't get the attention expected from REPowerEU\*\*](#)
  - The European Commission recently presented its new strategy to responds to the energy crisis.
  - When the European Commission (EC) released its REPowerEU Plan, nuclear hydrogen was expected to take one of the top spots in terms of attention. Now that it's out, many are surprised that this was not at all the case.
- [\*\*Are Reversible Power-to-Gas Systems an Economically Feasible Storage Medium?\*\*](#)
  - *Matt: Some Fuel Cell Stacks can process both direction, excess renewable Power-to-Gas (PtG) and reverse and burn the hydrogen Gas-to-Power (GtP).*
  - The overall results of the report showed that modular systems require low hydrogen prices for the reversibility feature to be of economic value. On the other hand, the calculations showed that the integrated PtGs can be economically viable when the hydrogen prices are high because they can not only generate the hydrogen easily but they can also provide more electricity back to the grid during times of limited power supply—making them a better buffer against price fluctuations and the intermittency of many renewable energy sources.
- [\*\*The Hydrogen Stream: World's first hydrogen-powered towboat\*\*](#)
  - Shipbuilder Hermann Barthel has developed the world's first push boat to combine battery-electric propulsion with hydrogen and fuel cell technology. Iberdrola and Fertiberia, meanwhile, have commissioned Europe's largest green hydrogen production plant.
- [\*\*Anglo launches world-first hydrogen-powered haul truck\*\*](#)
  - The NuGen hydrogen ecosystem comprises a 3.5 MW hydrogen electrolyser and hydrogen tanks storing 800 kg of hydrogen at 500 bars of pressure. The ecosystem also has a truck retrofit area and solar photovoltaic panels that feed the mine grid.

## **Palladium**

- [\*\*Toyota misses April global production target due to COVID, parts shortage\*\*](#)
  - Toyota last week downgraded its global production plan for June to around 800,000 vehicles due to the impact of COVID-19 containment measures in China and signalled the possibility of lowering its full-year output plan of 9.7 million vehicles
- [\*\*CPM Group's June market forecast: gold, silver, platinum, palladium\*\*](#)
  - CPM Group's Jeffrey Christian provides and short update on Gold and Silver markets and follows it up with a much more in depth conversation about CPM's views on why we expect Platinum to continue to trade at lower levels in the short and medium term, and why we are bullish on Palladium.
- [\*\*Ongoing Russia-Ukraine Conflict Could Keep Palladium Prices Elevated\*\*](#)
  - "Russia's invasion of Ukraine has infused massive uncertainty into the global palladium supply chain, pushing the autocatalyst metal to an all-time intraday high of US\$3,442 per ounce in early March," an Investing News report noted. "Positioned as the second largest producer of palladium, Russia's annual output of the precious metal accounts for 37 percent of primary palladium supply."
- [\*\*U.S. car sales at 'recessionary levels,' as inflation, rising interest rate concerns increase, RBC says\*\*](#)
  - US new-car sales dipped below an annualized 13 million vehicles in May, prompting analysts at RBC to say they are at "recessionary levels," although demand is still heated and auto makers offer few if any incentives to those looking to buy a new vehicle.

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

- [\*\*Novel tech for extracting hydrogen gas from liquid carriers\*\*](#)
  - "In a conventional batch reactor, 99% of the photocatalyst is titanium oxide, and 1% is rhodium. In our continuous flow reactor, we only need to use 0.025% rhodium, which makes a big difference in the final cost. A single gram of rhodium costs more than US\$500," said Milad Abolhasani, corresponding author

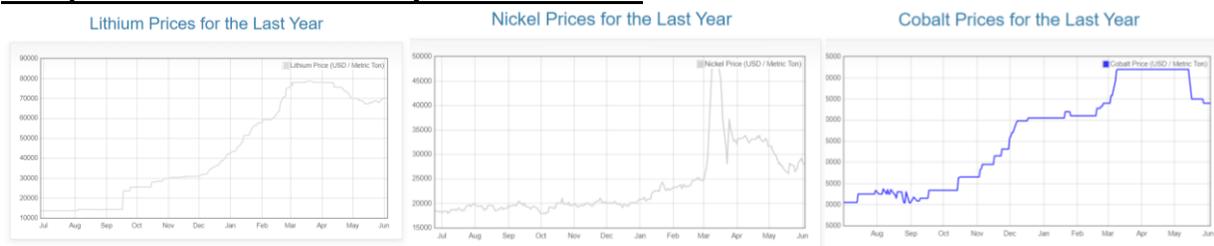
of the paper recently published in ChemSusChem. According to the researchers, the system should be easy to scale up or scale out to allow for catalyst reuse on a commercial scale. “You can simply make the tube longer or merge multiple tubes running in parallel.” The flow system can run continuously for up to 72 hours before losing efficiency. The catalyst can be “regenerated” without removing it from the reactor in about six hours. The system can then be restarted and run at full efficiency.

- **IrCl Compounds: [Samsung Aiming to Supply OLED Displays for Both iPads and MacBooks](#)**
  - Samsung is planning to build a new production line in South Korea to make larger OLED displays suitable for tablets and notebooks, with the company ultimately aiming to fulfill orders for future Apple products, according to The Elec.
- **[South Korean companies to build \\$1 billion green hydrogen plant in UAE](#)**
  - Three South Korean companies have signed an agreement to build a \$1 billion green hydrogen and ammonia production plant in the United Arab Emirates, their UAE partner said on Friday.

## **Clean Energy General News**

- **[Six million UK households now face BLACKOUTS this winter as energy crisis deepens](#)**
  - The UK has been sent a dire warning as Russia's invasion of Ukraine could plunge six million households in Britain into blackout this winter.
- **[Hydrogen Or Electric: Why Not Both?](#)**
  - Automakers are racing to build newer, greener vehicles as the world moves away from fossil fuels.
  - Hydrogen and electric-powered vehicles have led the race so far.
  - Now one company is looking to bring both together to create a vehicle with the best of both worlds.
- **[Elon Musk gives ringing endorsement to China's global lead in renewable energy and electric vehicles on Twitter and Weibo](#)**
  - “Few seem to realise that China is leading the world in renewable energy generation and electric vehicles,” he said in a post on Twitter as well as China's Twitter-like Weibo social-media platform on Monday. “Whatever you may think of China, this is simply a fact.”
- **[The World's Biggest Wind Turbines, Visualized](#)**
  - Bruno Venditti put the world's biggest wind turbines into perspective with this animated graphic that shows the biggest turbines have blade that are longer than 100 meters, reach heights of 200 meters and cost nearly \$12 million.

## **BEV / LiB Mineral & Battery Market News**



**Friday Fix: Lithium \$70,322/mt Nickel \$28,062/mt Cobalt \$74,000/mt**

- **[Tesla Reveals New Battery Design that Could Last 100 Years](#)**
  - A paper detailing the research, titled ‘Li[Ni<sub>0.5</sub>Mn<sub>0.3</sub>Co<sub>0.2</sub>]O<sub>2</sub> as a Superior Alternative to LiFePO<sub>4</sub> for Long-Lived Low Voltage Li-Ion Cells’, was published in the Journal of the Electrochemical Society.
  - Matt: This new NMC uses very low rates of Cobalt.

- Batteries in current Tesla models are estimated to last for around 200,000 miles, or 20+ years, before charge capacity begins to drop by more than 20%.
- **Goldman Says Bull Market in Battery Metals Is Finished for Now**
  - Cobalt, lithium, nickel to fall in the next two years: Goldman
  - A new bull market may start in the second half of this decade
  - *Matt: I disagree, all three Ni, Co, Li all to enter structural deficits by 2024/25*
- **Nano One to acquire Johnson Matthey Battery Materials Canada; JM takes stake in AEM electrolyzer pioneer Enapter**
  - Enapter. Separately, Johnson Matthey announced a strategic partnership with Enapter, a pioneer and commercial leader in Anion Exchange Membrane (AEM) electrolysis. AEM is a next-generation electrolyzer technology that promises to drive down the cost of green hydrogen towards a point where it becomes competitive with fossil fuels.
  - The partnership will include collaborating on the joint development of advanced components for Enapter's AEM stacks. Specialized catalysts will also be supplied, recognising Johnson Matthey's expertise in catalysis.
- **Li-Cycle And Glencore Announce Global Strategic Partnership; Glencore To Make A \$200 Million Investment In Li-Cycle**
  - Li-Cycle and Glencore have executed a global feedstock supply agreement under which Glencore will supply all types of manufacturing scrap and end-of-life lithium-ion batteries to Li-Cycle. Li-Cycle and Glencore have also entered into a non-binding Term Sheet for global, long-term strategic contracts, which would complement Li-Cycle's existing off-take and marketing agreements, including:
    - Supply of black mass to Li-Cycle's Hubs
    - Off-take of black mass from Li-Cycle's Spokes
    - Off-take of battery-grade end products produced by Li-Cycle's Hubs
    - Off-take of by-products from Li-Cycle's Spokes and Hubs, and
    - Supply of sulfuric acid, one of the key input reagents for Li-Cycle's Hubs
  - Upon execution of the commercial agreements, Glencore will make a \$200 million investment in Li-Cycle and Glencore will have the right to nominate one board member to the Li-Cycle board. Li-Cycle has agreed to nominate Kunal Sinha, Glencore's Head of Recycling, to the Li-Cycle Board of Directors.
- **EV battery costs to increase by 22% over the coming years**
  - Battery cell production cost is expected to fall to US\$110/kWh in 2023, before peaking at US\$138/kWh in 2026. Post this, the cost will gradually begin to reduce, maybe to prices as low as US\$90/kWh in the next decade. The spike in the cost of battery cells between 2023 & 2026 is said to be due to the sharp demand for key raw materials, including lithium. Prices of EVs in 2026 will be anywhere between \$1,500 - \$3,000 more than today.
- **Elon Musk feels 'super bad' about economy, needs to cut 10% of Tesla jobs**
  - Tesla CEO Elon Musk has a "super bad feeling" about the economy and needs to cut about 10% of jobs at the electric carmaker, he said in an email to executives seen by Reuters.
  - The message, sent on Thursday and titled "pause all hiring worldwide", came two days after the billionaire told staff to return to the workplace or leave, and adds to a growing chorus of warnings from business leaders about the risks of recession.
- **Nickel Miners' News For The Month Of May 2022**
  - Nickel spot prices were significantly lower the last month and LME inventory was slightly lower.
  - Nickel market to swing to mild surplus persisting beyond 2022: Nornickel.
  - Vale signs long-term nickel supply deal with Tesla.
  - Nickel Mines signs binding agreement to acquire the Siduarsi Nickel-Cobalt Project in Papua, Indonesia.
  - Horizonte Minerals Plc breaks ground at the Araguaia Nickel Project in Brazil.
  - Amur Minerals proposed sale of the Kun-Manie Project for US\$ 105 million.

- Canada Nickel announces new nickel discovery at Reid.
- [The Cobalt Market](#)
  - Last year, cobalt demand increased by more than 18 percent. This was due to the strong market for lithium-ion batteries. This development will also continue due to climate change and the increasing acceptance of electric vehicles and will probably gain even more momentum. In the long term, global demand for cobalt is forecast to grow by around 12 percent per year.

**Regards –**