
## Weekly Precious Metals News Articles: October 22, 2021

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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 edges down as rising U.S. bond yields weigh**
  - U.S. 10-year Treasury yields at 5-month peak. Gold prices edged lower in choppy trading on Thursday, pressured by rising U.S. bond yields that countered support from concerns over rising inflation and China's troubled property sector.
  - Spot gold fell 0.1% to $1,780.61 per ounce by 1:38 pm EDT (1738 GMT). U.S. gold futures for December delivery settled down 0.2% at $1,781.9 per ounce.
  - Palladium fell more than 3% earlier in the session
    https://www.reuters.com/article/global-precious/precious-gold-steadies-as-inflation-worries-counter-rising-yields-idUSL4N2RH33J
- **Inflation a key factor in driving short-term gold demand: WGC**
  - A report released by the World Gold Council (WGC) has identified inflation as the strongest factor influencing gold demand in India in the short term. However, in the long term, income rather than inflation becomes the key driver of demand for gold. According to the report, a 1% rise in inflation pushes up gold demand by 2.6%.
    https://www.livemint.com/money/personal-finance/inflation-a-key-factor-in-driving-short-term-gold-demand-wgc-11634664236320.html
- **Comparing the Carbon Footprint of Gold and Bitcoin**
  - Each $1 billion USD of inflows into Bitcoin uses the same amount of energy as 1.2 million cars.
    https://www.visualcapitalist.com/comparing-the-carbon-footprint-of-gold-and-bitcoin/
- **The drivers of Indian gold demand: India gold market series | World Gold Council**
  - Econometric analysis shows that rising income is the most powerful driver of Indian gold demand in the long term. This bodes well for gold demand as the economy is set to benefit from a demographic dividend: the IMF forecasts per capita GDP growth of 23% between 2022 and 2026.
    https://www.gold.org/goldhub/research/drivers-indian-gold-demand-india-gold-market-series

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

- **Taiwan's IC strength could spur Chinese takeover: IC Insights**
  - Taiwan has more semiconductor capacity than any other economy in the world, and that strength could prompt China to take it over amid growing tensions between Beijing and Washington, according to U.S.-based market information advisory firm IC Insights.

- In a research paper, IC Insights said Taiwan commanded a 21.4%of global installed IC capacity, ahead of South Korea's 20.4%, Japan's 15.8% and China's 15.3%, North America's 12.6%, and Europe's 5.7%.
- Taiwan held a 62.8% share of the world's capacity for producing advanced ICs using the 10 nanometer process or better, ahead of South Korea, which holds the remaining 37.2%.
- "It is increasingly apparent that China's answer to lagging in the semiconductor market centers on its reunification with Taiwan," IC Insights argued.
  https://focustaiwan.tw/cross-strait/202110160009

- **Global Silicon Wafer Shipments Projected to Log Robust Growth Through 2024, SEMI Reports**
  - Global silicon wafer shipments are projected to register robust growth through 2024, with wafer area increasing 13.9% year-over-year in 2021 to a record high of nearly 14,000 millions of square inches (MSI), SEMI reported today in its annual silicon shipments forecast for the semiconductor industry. The logic, foundry and memory sectors are contributing to the 2021 silicon shipment expansion.
    https://www.semi.org/en/news-media-press/semi-press-releases/global-silicon-wafer-shipments-projected-to-log-robust-growth-through-2024-semi-reports
- **Apple unveils new computer chips amid shortage - BBC News**
  - Apple has unveiled its M1Pro and M1Max chips used to power new MacBook Pro laptop computers.
  - Apple says the M1 Max chip, with 57 billion transistors is the most powerful it has ever built.
  - The new chips were announced almost a year after the firm revealed its first Mac computers powered by silicon of its own design.
    https://www.bbc.com/news/technology-58917992
- **Apple Just Upturned the Industry. Who's Next?**
  - It's safe to say from the reactions over the last twelve hours that Apple just left Intel in the dust when it comes to power and performance metrics. A truly astonishing leap forward.
    https://www.eetimes.com/apple-just-upturned-the-industry-whos-next/
- **Inside TSMC, the Taiwanese chipmaking giant that's building a new plant in Phoenix**
  - CNBC got an exclusive tour of the $12 billion fabrication plant, or fab, outside Phoenix, Arizona, where TSMC will start making 5-nanometer chips in 2024. The company says it will produce 20,000 wafers each month.
    https://www.cnbc.com/2021/10/16/tsmc-taiwanese-chipmaker-ramping-production-to-end-chip-shortage.html
- **Sole-source subcontractor constrains America's defense grade FPGA production**
  - Monopoly suppliers, though rare in the semiconductor industry, can drive up costs if left unchecked. Today, 90% of major semiconductor companies that make defense grade FPGA devices are at the mercy of just a tiny, privately-held subcontractor located in Silicon Valley, California. Its owners may be nearing the age when most business owners are contemplating selling the business or retiring.
    https://www.topline.tv/MEPTEC4.html

## Silver

- **Visualizing the Global Silver Supply Chain**
  - Top 10 global silver mines are 29.5 years old, and approaching end of life.
    https://www.visualcapitalist.com/visualizing-the-global-silver-supply-chain/
- **Silver Pricing Down, But Keeping Pace With S&P 500**

- Silver prices are tethered to gold's performance in the current market environment, but looking at its three-year chart, the precious metal is actually keeping pace with the S&P 500.
- The apex of the pandemic's negative effects on the markets in 2020 saw silver prices skyrocket close to 90% before coming back down to earth in 2021. Meanwhile, the S&P 500 has made its V-shaped recovery and extended well beyond that en route to its almost 60% gain.
  https://www.nasdaq.com/articles/silver-pricing-down-but-keeping-pace-with-sp-500-2021-10-19

## Precious Metals Mining:

- **Russian Mining Giant Slashes Nickel Output By 23% Over Suspension Of Production**
  - Russian metals producer Norilsk Nickel (Nornickel) said on Wednesday that it was forced to cut back on production of nickel by 23% to 130,000 tonnes, and the output of palladium by 7% to 1,913 million ounces in the first three quarters of this year after suspension of its underground mines and production facilities.
  - Platinum output dropped by 10%, to 463,000 ounces, while copper production decreased by 20%, to 288,000 tonnes, the company said.
  - "In 9M 2021, the output of all key metals decreased owing to the temporary suspension of Oktyabrsky and Taimyrsky underground mines and Norilsk Concentrator. Over this period, production volumes of saleable nickel and copper reduced more relative to platinum group metals due to the shorter production cycle from ore to refined metal of the former," Nornickel Senior Vice President of Operations, Sergey Stepanov was quoted as saying.
    https://www.urdupoint.com/en/world/russian-mining-giant-slashes-nickel-output-by-1380691.html
- **Anglo American records marginal hike in production during the thrid quarter ending Sept. 2021**
  - In terms of platinum group metals (PGM), Anglo American Platinum (Amplats) total PGM production remained in line with the prior period at 1.116 million ounces with platinum production 1% higher at 519 100 ounces, offset by a 3% decrease in palladium production to 342 600 ounces.
    https://www.iol.co.za/business-report/companies/anglo-american-records-marginal-hike-in-production-during-the-thrid-quarter-ending-september-2021-6402d36f-9fd4-4262-8f21-17ae41d5c2c9
- **US plan would block Minnesota copper-nickel mine**
  - The U.S. Forest Service on Wednesday proposed a 20-year ban on mining in Minnesota's Boundary Waters region, a step that would block Antofagasta Plc's Twin Metals copper and nickel mine project.
    https://www.mining.com/web/in-blow-to-twin-metals-us-proposes-mining-ban-for-boundary-waters/

## E-Waste & Precious Metals Recycle Related:

- **The BEST4Hy H2020 project, first project results - best4hy**
  - An international partnership developing technologies for the recovery of critical raw materials from hydrogen technologies
  - BEST4Hy project focuses on the development and validation of existing and novel recycling processes for two key fuel cell and hydrogen products: proton exchange membrane fuel cells (PEM FC) and solid oxide cells (SOC) including both fuel cells (SOFC) and electrolysis cells (SOEC). The project aims to adapt two existing recycling processes applied already to other technologies and to validate a novel dismantling process for PEMFC. Furthermore, a novel SOC recycling technology will be tested
    https://best4hy-project.eu/the-best4hy-h2020-project-first-project-results/
- **Smartphones: The Royal Mint to extract gold from old phones - BBC News**
  - The Royal Mint has signed an agreement with Canadian start-up Excir to recover 99% and more of gold from devices' circuit boards. It said the chemistry selectively targets and extracts precious metals from circuit boards in seconds.
    https://www.bbc.com/news/uk-wales-58978512
- **Amid shipping crisis, recycling loads often 'first to get cut'**

- For a few reasons, the recycling sector has it worse than other industries that export and import goods. One is the relatively low value of scrap materials, making it harder to compete with higher-value finished products, one exporter told E-Scrap News.
- "When space needs to get cut, ours is the first to get cut," stated the exporter, who spoke on the condition of anonymity.
  https://resource-recycling.com/e-scrap/2021/10/21/amid-shipping-crisis-recycling-loads-often-first-to-get-cut/?utm_medium=email&utm_source=internal&utm_campaign=Oct+21+ESN

- **Handling a hazard**
  - Shipping lithium batteries has become a complex and highly regulated endeavor. These batteries, which power everything from cell phones to laptops to cars and more, pose such a fire risk that stringent restrictions – from commercial aircraft bans to state-of-charge rules – have been imposed regarding both their initial and return shipping. This extends to the transport, recycling and disposal of end-of-life batteries and the devices that contain them.
  - The issue of proper management of lithium-ion batteries is constantly evolving and is only becoming more critical for recycling stakeholders to thoroughly understand. This article will lay out the basics on shipping the items correctly.
    https://resource-recycling.com/recycling/2021/09/13/handling-a-hazard/?utm_medium=email&utm_source=internal&utm_campaign=Oct+PE+RR

## Platinum

- **A Rare Sentiment Setup Points to Double-Digit Upside in Platinum**
  - Still, not everything is soaring. Platinum is down 20% since peaking in February. And after that consistent fall, investors have been jumping ship.
  - In fact, traders recently became the most bearish they've been on platinum in years. This negative sentiment is telling us something important... It's telling us that the bottom is likely close – and big gains in platinum could be right around the corner.
    https://dailywealth.com/articles/a-rare-sentiment-setup-points-to-double-digit-upside-in-platinum/
- **Treating Cancer at a Nanoscale**
  - Gold Nanoparticle delivery system
    https://phys.org/visualstories/2021-10-cancer-nanoscale.amp
- **World Platinum Investment Council - About Us**
  - The People's Bank of China has authorised a set of Panda precious metal coins, the flagship products of the Chinese sovereign mint, in celebration of the iconic Panda series' 40th anniversary on 20 October 2021. The range includes the first platinum Pandas to be released since 2005.
    https://platinuminvestment.com/about/60-seconds-in-platinum/2021/10/20?utm_source=LinkedIn&utm_medium=social&utm_campaign=60+Seconds+in+platinum+271021&utm_id=60+Seconds+in+Platinum

## Fuel Cells/Hydrogen Economy Related Articles:

- **ITOCHU Announces Conclusion of Memorandum of Understanding with Nel for Hydrogen Business Partnership**
  - Under this MOU, Nel and ITOCHU will jointly explore hydrogen business opportunities, develop tangible projects and, as a future goal, aim to expand the hydrogen business worldwide by establishing a production, transportation and distribution hydrogen value chain together with potential partners in each area of the value chain.
    https://www.itochu.co.jp/en/news/press/2021/211008.html
- **Ineos confirms fuel-cell version of Grenadier retro SUV, green hydrogen plan**

- Ineos on Monday announced a $2.3 billion investment in what the chemical company calls green hydrogen production, which could pave the way for a fuel-cell version of the Ineos Grenadier SUV.
- The investment will fund plants in Norway, Germany, Belgium, and the United Kingdom that will produce hydrogen through electrolysis, an Ineos press release said. The company already has some plants in operation through its subsidiary Inovyn, and claims to be the largest operator of such plants in Europe.
  https://www.greencarreports.com/news/1133908_ineos-confirms-fuel-cell-version-of-grenadier-retro-suv-green-hydrogen-plan

- **Renewable hydrogen fuel could slash shipping emissions by 80 percent, says IRENA**
  - The new report IRENA recently published, called "A Pathway to Decarbonize the Shipping Sector by 2050", provides a roadmap for the global shipping sector to reach global climate targets. According to IRENA in that report, renewable hydrogen fuel, advanced biofuels and other cleaner alternatives to fossil fuels should comprise at least 70 percent of the marine shipping sector's energy mix by 2050 in order to achieve global climate targets.
    https://www.hydrogenfuelnews.com/renewable-hydrogen-fuel-irena/8548800/?mc_cid=bbf3f15cba&mc_eid=70c1246d58
- **Plug Power & FFI JV electrolyser gigafactory in Queensland to help Fortescue fulfil its decarbonisation ambitions**
  - Plug Power Inc, a leading provider of turnkey hydrogen solutions for the global green hydrogen economy, and Fortescue Future Industries Pty Ltd (FFI), recently signed a letter of intent for a 50-50 joint venture to build a gigafactory in Queensland, Australia. As part of the agreement, the two organisations intend to build a two gigawatt factory to produce large-scale proton exchange membrane (PEM) electrolysers, with the ability to expand into fuel cell systems and other hydrogen-related refuelling and storage infrastructure in the future.
    https://im-mining.com/2021/10/20/plug-power-ffi-jv-electrolyser-gigafactory-queensland-help-fortescue-fulfil-decarbonisation-ambitions/
- **French President Macron to build 2 pink hydrogen megafactories by 2030**
  - Matt: Mini Nuclear Reactors to fuel green hydrogen electrolyzers.
    https://www.hydrogenfuelnews.com/hydrogen-megafactories-france/8548752/
- **BMW to source hydrogen-produced steel from H2 Green Steel**
  - With the potential that hydrogen-produced steel has in decarbonising the supply chain for car manufacturing, BMW Group has revealed that it will source green, hydrogen-produced steel from Swedish start-up H2 Green Steel.
    https://www.h2-view.com/story/bmw-to-source-hydrogen-produced-steel-from-h2-green-steel/

## Palladium

- **The Palladium Challenge: Promoted by IPMI and Sponsored by Nornickel**
  - Matt: The worlds largest Palladium producer is starting a contest for next generation uses of palladium. Palladium will push into surplus with the 1.5 billion ICE vehicles on the road being recycled over time, and increasing Palladium as a byproduct to N. American and Russian nickel mining. It's not an "If", it's a "When" question. So in response, Nornikcel is holding a contest.
  - Projects from any field of science and technology can participate in the competition. However, palladium applications in the hydrogen economy (including hydrogen storage and cleaning films, catalysts for electrolyzers and fuel cells, and hydrogen sensors), battery technologies (with palladium as a battery energy density booster), sensors, industrial catalysts or alloys are seen as the most promising areas of the research.

- 1st place – US$200,000, 2nd place – US$100,000, 3rd place – US$50,000, Winners to be selected by September 2022
  https://ipmi.corgano.com/

- **The chips are down for automakers – and so are car sales**
  - At one point, the auto industry was on track to sell more than 18 million vehicles in a year for the first time ever. That would have broken the old record of 17.9 million cars and trucks sold in both 2016 and 2015. By September, the annualized rate of sales had tumbled by one-third to just 12.6 million vehicles from as high as 18.8 million in April.
    https://www.marketwatch.com/story/the-chips-are-down-for-automakers-and-so-are-car-sales-11634317537?siteid=msnheadlines

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

- **Ruthenium and Iridium: New PEM fuel cell catalyst can oxidize CO, H2 or a combination; addressing the poisoning problem**
  - Researchers in China have developed a class of IrRu-N-C catalysts, with Ir and Ru single atoms uniformly populated in nitrogen–carbon composites, that exhibits excellent CO electrooxidation reaction (COOR) behavior as well as high-efficiency single-atom catalysis toward H2 electro-oxidation.
    https://www.greencarcongress.com/2021/10/20211020-irru.html
- **Iridium and Platinum Catalyst: Siemens Energy CEO says "no commercial case for green hydrogen"…yet**
  - Siemens Energy's (ETR stock symbol ENR) CEO Christian Bruch recently discussed the challenges facing the widespread commercial production and use of green hydrogen. In an interview, he stated that as of yet, there was "no commercial case" for renewably produced H2.
  - The production of this renewable energy needs to become more affordable before it will be viable.
    https://www.hydrogenfuelnews.com/green-hydrogen-commercial/8548827/?mc_cid=c394891cb5&mc_eid=70c1246d58
- **What's Next For Transistors And Chiplets**
  - Imec's SVP drills down into GAA FETs, interconnects, chiplets, and 3D packaging:
  - Our view is that copper dual damascene will scale down to about a 21nm pitch. But the challenge the industry faces is in via resistance. As you scale down the pitches, the via resistance is one that takes off. We've been looking at ways to mitigate the via resistance. You can do it a couple of different ways. You can selectively deposit different materials like **ruthenium**, molybdenum or tungsten, for example, so that you have a different via material with copper lines.
  - But when you go to high-aspect ratio lines, the capacitance is a problem, because you have a lot of overlap area between the two lines. If you want to do a direct metal etch in the semi-damascene integration, you have to go with metals that can be easily etched. Copper is not one of them. That's why we chose ruthenium. Ruthenium is easier to etch compared to copper, and also it has a low resistance as you scale the linewidth.
    https://semiengineering.com/whats-next-for-transistors-and-chiplets/
- **Ruthenium Catalyst and the Habor Bosch Ammonia Synthesis Process: The Little-known Nitrogen and Phosphorus Crisis of Industrial Agriculture - The Wire Science**
  - Matt: Long but fascinating read on the latest environmental issue impacted out lakes, rivers and oceans due to algae blooms from fertilizer nitrogen and phosphate run off. Ru has played a key role enable the Habor Bosch reaction/process to operate more efficiently at lower temperatures.
  - Benefits of Ammonia and Fertilizer to mankind: Between 1900 and 2000, the number of human beings on the planet rose from 1.6 billion to 6 billion, while the total land mass used for agriculture increased by only 30% — an impossible feat without synthetic fertiliser.

- While nitrogen-based fertilisers, which also contain phosphorus mined from the earth, today produce food that sustains around half of the world's population, their liberal application has created a nitrogen "cascade." In turn, the massive influx of nitrogen and phosphorus became a form of pollution, spilling into Earth's ecosystems. Now, nearly 80% of the nitrogen used in synthetic fertiliser is lost into the environment through soil erosion, runoff, atmospheric conversion and other forms of waste. A 2002 study estimated that for every 100 nitrogen molecules converted by the Haber-Bosch process into fertiliser, only 14 end up consumed as food.
  https://science.thewire.in/environment/nitrogen-phosphorus-crisis-industrial-agriculture-climate-change/

## Clean Energy General News (New Section)

- **China blows top and lashes out at UK over climate goals: 'We don't need help!'**
  - With pressure from the international community mounting, the world's biggest polluter has vowed to slash its planet-warming carbon emissions by 2030. Xie Zhenhua, China's special envoy on climate, said on Tuesday the nation is additionally aiming to hit net zero emissions but will do so in its own time frame. As world leaders prepare to attend the COP26 climate summit in Glasgow next month, countries like the UK and US have committed to reaching net zero targets by no later than 2050.
  - Matt: China has its next 1 billion mt of coal underpinned and is building new coal fire plants. Period.
    https://www.express.co.uk/news/science/1508710/china-climate-change-cop26-net-zero-target-xie-zhenhua-global-warming-xi-jinping
- **Chemical companies collaborate on low-carbon initiative**
  - Ten major global chemical sector companies have agreed with the World Economic Forum (WEF) to establish what they called "a breakthrough, pre-competitive development platform to accelerate net-zero climate technologies". They are BASF, Dow, DSM, Solvay, Clariant, Covestro, Mitsubishi Chemical, Air Liquide, Sabic and Sibur.
    https://www.specchemonline.com/chemical-companies-collaborate-low-carbon-initiative
- **Critical Minerals: Focus on Copper & Silver**
  - Matt Watson keynote speech at the RedCloud Oktoberfest 2021 Mining Conference
    https://youtu.be/p1S3H0QWABs
- **Copper is 'the new oil' and could hit $20,000 per ton, analysts say**
  - The world risks "running out of copper" amid widening supply and demand deficits, according to Bank of America, and prices could hit $20,000 per metric ton by 2025.
    https://www.cnbc.com/2021/05/06/copper-is-the-new-oil-and-could-hit-20000-per-ton-analysts-say.html
- **Copper price surges past $11,000 on supply squeeze**
  - Copper for delivery in December rose on the Comex market in New York, touching $4.8055 per pound ($10,572 per tonne), a record high.
  - CASH copper on the London Metal Exchange also soared to a new record high overnight. Spot copper jumped 7.2% to $11,299.50 per tonne.
    https://www.mining.com/copper-price-surges-through-11000-on-supply-squeeze/
- **Global Copper Inventories Are Getting Critically Low**
  - Copper inventories available on the London Metal Exchange hit the lowest since 1974, in a dramatic escalation of a squeeze on global supplies that sent spreads spiking and helped drive prices back above $10,000 a ton.
    https://ca.finance.yahoo.com/news/copper-warehouse-stocks-drop-critical-090720863.html
- **Copper price soars to new high as stockpiles hit 47-year low**
  - Copper price hit a record high on Friday as surging power prices threaten to curb supply at a time when exchange stockpiles are at rock bottom.
    https://www.mining.com/copper-price-hits-new-high-on-low-inventories/

- **The Largest Copper Mines in the World by Capacity**
    - Copper has made the headlines for its critical role in clean energy technologies. But where does the worlds copper come from? Here are the 20 largest copper mines based on production capacity, which produce 45% of today's global mined copper supply.
      https://elements.visualcapitalist.com/the-largest-copper-mines-in-the-world-by-capacity/
- **'It's just outlandish' - Matt Watson on EV uptake and mineral demand | Kitco News**
    - (Yours truly) Watson estimates that EV penetration currently sits between 4% to 5%.
    - "I think the message is: you haven't seen anything yet. By 2030 to hit the zero emission mandates that have been put into place by different governments, 25% penetration is needed," said Watson.
    - "And then jumping ahead to 2035, then the numbers get really silly. Then you need 62% of the global feet transitioned to EVs. In terms of total aggregate mineral demand [to build these EVs], it's just outlandish."
      https://www.kitco.com/news/2021-10-15/-It-s-just-outlandish-Matt-Watson-on-EV-uptake-and-mineral-demand.html
- **Aluminium makers sound alarm about US magnesium shortage**
    - There is a widening scarcity of essential raw materials for aluminium used to make cars and building supplies that threatens to worsen a supply squeeze that already has pushed US prices close to all-time highs. Matalco, the largest United States producer of aluminium billet, is warning customers it may curtail output and ration deliveries as soon as next year amid a magnesium shortage.
      https://www.straitstimes.com/business/economy/aluminium-makers-sound-alarm-about-us-magnesium-shortage
- **Wind Turbine Blades Can't Be Recycled, So They're Piling Up in Landfills - Bloomberg**
    - Companies are searching for ways to deal with the tens of thousands of blades that have reached the end of their lives.
      https://www.bloomberg.com/news/features/2020-02-05/wind-turbine-blades-can-t-be-recycled-so-they-re-piling-up-in-landfills

## BEV / LiB Battery Market News

- **Musk: Tesla Semi to Hit in 2023**
    - Matt: This news is fascinating to me because: 1) Elon has been dying to get this Semi electric truck on the road, but felt he couldn't yet due to limited Nickel and LiB mineral supply. 2) California has a new mandate for 25% of the Heavy/Medium duty trucks to be zero emission by 2025. 3) Semi's batteries are so large (10k-15k pounds) that they dig into the available 40k pound payload of semi-trucks and do NOT lend themselves to long distance trucking due to lack of infrastructure and recharge timing needs. Meanwhile, Tesla has internal shipping Tesla EV trucks transporting batteries daily from outside its Reno Gigafactory to its Fremont California factory, putting demo test miles on while they optimize the design and the electronics/controllers to same.
      https://www.act-news.com/news/musk-tesla-semi-to-hit-in-2023/
- **Chile to launch 400,000 tonnes lithium mining tender**
    - Chile, which until 2018 was the world's top lithium producer, lost its crown to Australia and is about to descend further as China is projected to become the second largest producer of the metal by the end of the decade. The country currently generates about 29% of the world supply, but it plans to double production by 2025
      https://www.mining.com/chile-to-open-400000-tonnes-of-lithium-reserves-up-for-exploration/
- **Taiwan's Foxconn unveils first three electric vehicle prototypes**
    - Taiwan tech giant Foxconn unveiled its first three electric vehicle prototypes on Monday, underscoring ambitious plans to diversify away from its role of building consumer electronics for Apple Inc and other tech firms.

- The vehicles - an SUV, a sedan and a bus - were made by Foxtron, a joint venture between Foxconn and Taiwanese car maker Yulon Motor Co Ltd
  https://www.businesstoday.in/auto/story/taiwans-foxconn-unveils-first-three-electric-vehicle-prototypes-309704-2021-10-18

- **What the energy transition may bring for five battery metals**
  - ING Economics published a new report in which its experts predict what the ongoing energy transition might bring for five key metals – copper, aluminum, nickel, cobalt, and lithium.
    - Copper demand will always grow
    - Aluminum - Including secondary aluminum, annual consumption of the metal totals around 90mt with the largest end-user being transportation (25% of total demand), construction (24%) and electrical (12%)
    - Stainless steel production continues to drive nickel demand.
    - EVs back up lithium demand
    - Uncertainty surrounds cobalt

    https://www.mining.com/what-the-energy-transition-may-bring-for-five-battery-metals-report/
- **Nickel at seven-year high**
  - The nickel price shot to a seven-year high on the London Metal Exchange as the market digested news of Vale's production guidance cut.
    https://www.mining-journal.com/capital-markets/news/1419956/nickel-at-seven-year-high?
- **Global nickel market deficit shrinks in August to 15,500 T -INSG**
  - The global nickel market deficit fell to 15,500 tonnes in August from a shortfall a month earlier of 25,700 tonnes, data from the International Nickel Study Group (INSG) showed.
    https://www.nasdaq.com/articles/global-nickel-market-deficit-shrinks-in-august-to-15500-t-insg-2021-10-21

**Regards –**