



Weekly Precious Metals News Articles: September 10, 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 prices end lower, mark first weekly loss in 5 weeks**
 - Gold prices fell back below the key \$1,800-an-ounce mark on Friday, settling with a weekly loss, their first in five weeks. The ICE U.S. Dollar Index was slightly higher and Treasury yields also inched up Friday, “so gold had a double headwind,” said Michael Armbruster, managing partner at Altavest. Bullion tends to be sensitive to moves in the U.S. dollar and government debt yields, which can undercut appetite for precious metals.
<https://www.msn.com/en-us/money/markets/gold-prices-end-lower-mark-first-weekly-loss-in-5-weeks/ar-AAOiBw0?ocid=BingNewsSearch>
- **Wednesday: Gold Price Today: Yellow metal trades higher but stronger dollar, rising bond yields weigh heavy**
 - Gold was moving higher in early trade in the Indian market on September 8 as investors kept faith in safe-haven metal amid concerns over the third wave of the coronavirus pandemic. However, a rise in the US dollar and benchmark US treasury yields capped the gains of gold.
 - Despite strength in the dollar index, gold and silver prices are finding support at lower levels as rising coronavirus cases in the United States and tensions in Afghanistan underpin prices.
<https://www.msn.com/en-in/money/topstories/gold-price-today-yellow-metal-trades-higher-but-stronger-dollar-rising-bond-yields-weigh-heavy/ar-AAOcSxp?ocid=BingNewsSearch>

Semiconductor Related Articles (impacting Precious Metals electronics):

- **Global Semiconductor Sales in July Up 29.0% Year-to-Year, 2.1% Month-to-Month - SIA**
 - The Semiconductor Industry Association (SIA) today announced global semiconductor industry sales were \$45.4 billion in the month of July 2021, an increase of 29.0% over the July 2020 total of \$35.2 billion and 2.1% more than the June 2021 total of \$44.5 billion.
<https://www.semiconductors.org/global-semiconductor-sales-in-july-up-29-0-year-to-year-2-1-month-to-month/>
- **Chip prices set to rise into 2022 as TSMC hikes rates**
 - Semiconductor and electronics prices are set to rise absent major economic slowdowns
 - Prices of semiconductors have been climbing since the last quarter of 2020 amid a global supply crunch. TSMC controls over half the global foundry market, making chips for the likes of Apple, Nvidia and Qualcomm. Known for its cutting-edge tech and high quality, the

Taiwanese company normally commands production fees around 20% higher than its rivals, according to industry insiders.

<https://asia.nikkei.com/Business/Tech/Semiconductors/Chip-prices-set-to-rise-into-2022-as-TSMC-hikes-rates>

- **Chip supply to stay tight for another year: Toshiba**
 - “The supply of chips will remain very tight until at least September next year,” said Takeshi Kamebuchi, a director in charge of semiconductors at one of the company’s units. “In some cases, we may find some customers not being fully served until 2023.” Material shortages and demand outpacing output capacity are to blame for Toshiba’s inability to fulfill orders for a component that does not require advanced production technology and has typically been deemed a commodity.
<https://www.taipeitimes.com/News/biz/archives/2021/09/04/2003763750>
- **Intel to Build Semiconductor Plants in Europe – Businesskorea**
 - Intel announced on Sept. 7 that it would build two semiconductor plants in Europe by investing up to 80 billion euros. This is to take some foundry market share from TSMC and Samsung Electronics.
<http://www.businesskorea.co.kr/news/articleView.html?idxno=76103>
- **Downward Pressure on Pricing Drives Momentum in Wearables**
 - Global wearables shipments grew 32.3% year-over-year as volumes reached 114.2M during the second quarter of 2021, according to new data from the International Data Corporation (IDC) Worldwide Quarterly Wearable Device Tracker. Despite early signs of slower consumer tech spending, purchases of wearable devices remained strong during the quarter as consumers once again ventured outdoors with the urge to track their health & activity.
 - Among the various device types, hearables and watches each grew 39% during the quarter as demand continued to soar for these categories. Meanwhile, the market for wristbands remained flat as consumer continue to transition to watches and the category lacked notable product launches during recent quarters.
<https://www.idc.com/getdoc.jsp?containerId=prUS48195721>
- **Chip investment boom is just getting started**
 - Given persistent semiconductor production shortages, and the growing desire of nations from China to the United States to subsidize chip production, investment may well pick up next year. That would be a stronger sign that the inevitable hangover awaits further out.
<https://www.reuters.com/breakingviews/chip-investment-boom-is-just-getting-started-2021-09-08/>

Silver

- **Solar PV: 210mm-cell PV Modules Set the Stage for Further LCOE Reduction**
 - These new PV modules utilize the largest wafer format currently available (210mm) and the latest module construction technologies. When combined with Canadian Solar’s patented double-sided PERC cell technology, they achieve frontside power ratings up to 665W with efficiencies up to 21.4%. Module technologies implemented on these new products include half-cut cells, dual glass construction for bifacial modules, multi-busbars, and hetero type ribbon (HTR) to reduce cell gaps.
<https://www.altenergymag.com/article/2021/07/210mm-cell-pv-modules-set-the-stage-for-further-lcoe-reduction/35597/>
- **China exported 37 GW of panels in five months**
 - A booming overseas market has offset falls in demand in China caused by rising solar module prices, according to Flat Glass. In common with its PV glassmaking rivals, the company is pressing ahead with production expansion, betting reduced prices for its products will feed even greater demand.
 - Matt: 37 GW represents 31 Moz of silver demand

<https://www.pv-magazine.com/2021/09/08/china-exported-37-gw-of-panels-in-five-months/>

- **Silver ETFs Surge As Precious Metals React To Disheartening Jobs Report**
 - Precious metals and gold and silver ETFs are making moves higher on Friday, reaching month-long highs following August's disappointing U.S. employment report.
 - Both metals have been moving off their recent lows since early last month, with silver climbing over \$2.50 per ounce during that time and gold rallying more than \$150 an ounce. On Friday, gold has gained 1.23% to trade at \$1834 per ounce, while silver is up over 3.65%, at \$24.79 an ounce.
<https://finance.yahoo.com/news/silver-etfs-surge-precious-metals-183541950.html>
- **Costs at primary silver mines increased in Q2 2021 on higher sustaining capital spending – Metals Focus**
 - In a report published Wednesday, a leading metals consultancy Metals Focus said that in Q2 2021, global average all-in sustaining cost (AISC) for primary silver mines was \$10.09/oz, down 10% quarter-on-quarter but up 3% year-on-year. According to the report, the upward year-on-year trend was mostly the result of increasing sustaining capital spending.
 - North America has the largest share of production from primary silver mines and therefore the biggest influence on global AISC. In the region, AISC rose by 13% to \$11.66/oz, Metals Focus noted.
<https://www.kitco.com/news/2021-09-08/Costs-at-primary-silver-mines-increased-in-Q2-2021-on-higher-sustaining-capital-spending-Metals-Focus.html>
- **Silver seen tracking copper prices higher**
 - Traditionally, silver prices have tracked gold prices fairly closely, which makes sense given that both function as monetary metals, and they often occur together in mineral deposits. The correlation between gold and silver since 1975 has been 0.8876. The 10-year correlation coefficient is 0.7511.
<https://www.mining.com/web/silver-seen-tracking-copper-prices-higher/>

Precious Metals Mining:

- **Focus on South Africa's critical PGM supply role increasing – Implats**
 - "But if you look at future demand, particularly related to hydrogen, the metals that were linked to the hydrogen economy are platinum, iridium and ruthenium, and South Africa is by far and away the most dominant producer of those metals.
 - "So, I definitely think that, if we think about the conversations we have with our customers – after a kind of drought where our relevance and our importance in providing metal to this market was kind of discounted because there was assumption you could get it elsewhere – the conversations now are about the need of South Africa to provide those metals for the hydrogen economy, and the growth that all our customers and international markets and governments seek for that.
<https://www.miningweekly.com/article/focus-on-south-africas-critical-pgm-supply-role-increasing-implats-2021-09-02>
- **Hydrogen part of decarbonisation plans: Anglo American**
 - Using hydrogen is part of Anglo American's plans to decarbonise its operations, the online Hydrogen Economy Discussion was told in South Africa yesterday.
<https://www.mining-journal.com/energy-minerals-news/news/1417398/hydrogen-part-of-decarbonisation-plans-anglo-american>
- **Sibanye Wants to Tap Green Metals Boom as Gold Deals Lack Value**
 - CEO says battery metals are a more immediate priority
 - He's still interested in growing gold business in long term
<https://www.bloomberg.com/news/articles/2021-09-09/sibanye-wants-to-tap-green-metals-boom-as-gold-deals-lack-value>

E-Waste & Precious Metals Recycle Related:

- **Tesla Says It Can Now Recycle 92% of Battery Cell Materials**
 - The electric vehicle maker recycled 1,300 tons of nickel in 2020.
 - Tesla released its 2020 Impact Report this week, in which the electric vehicle (EV) automaker claims it has the capacity to recover approximately 92 percent of battery cell materials thanks to ongoing improvements to its recycling process.
 - The company has been working with third-party recycling firms for years to improve its capacity for end-of-life battery recycling. In doing so it hopes to curb the environmental cost of mining materials such as cobalt that are needed for the batteries — one of the main points EV detractors bring up when arguing against the technology.
<https://interestingengineering.com/tesla-says-it-can-now-recycle-92-of-battery-cell-materials>
- **Closing the Loop: The Recycling of End-of-Life Fuel Cells**
 - Best4Hy is the European Commission’s consortium tackling a problem that often goes overlooked in conversations about novel hydrogen technologies: end-of-life solutions. Here we explore the important work Best4Hy is doing and we introduce Hensel Recycling, one of the companies at the forefront of hydrogen fuel cell recycling.
 - Best4Hy is an international partnership developing tools for the recovery of critical raw materials from hydrogen technologies such as fuel cells. These include, among others, materials such as platinum group materials, rare earth elements, cobalt and nickel. They are all materials that can and should be used again. Because without closing the loop from cradle to grave in fuel cell technology, true sustainability is a distant dream.
 - Best4Hy is made up of nine different members, from six countries in Europe: Germany, France, Italy, Spain, Slovenia and Estonia. The consortium was established after successfully being approved by the EU Commission, submitting a joint proposition which covers the complexity stretching from re-using, recovering and re-manufacturing, to eco-designing, as well as LCA analysis of EOL fuel cells.
<https://thehydrogenstandard.com/2021/08/closing-the-loop-the-recycling-of-end-of-life-fuel-cells/>
- **Battery recycling firm to build Alabama processing plant - E-Scrap News**
 - Li-Cycle will site a lithium-ion battery facility in Tuscaloosa, Ala., the latest node in the company’s planned hub-and-spoke model for recycling batteries in North America.
 - The facility will serve as one of Li-Cycle’s “spoke” locations, providing size reduction services for batteries. Material will then be moved to the company “hub” in Rochester, N.Y. That site, which is still being developed, will use hydrometallurgy to process metals recovered from batteries into battery-grade end products, according to Li-Cycle.
<https://resource-recycling.com/e-scrap/2021/09/10/battery-recycling-firm-to-build-alabama-processing-plant/>
- **Catalysts – Recycling is the need of the times**
 - Thanks to TANAKA Precious Metals’ development of catalyst membranes, the durability of electrolyte membranes in hydrogen fuel cells can be quadrupled. Tanaka’s precious metals are used also in exhaust gas purification catalysts. In order to run its business more sustainably, TANAKA already gets 25 to 30 percent of the platinum it requires from its recycled catalysts. The company’s objectives for the next several years have been clearly depicted. The recycling ratio will rise.
<https://tanaka-preciousmetals.com/en/elements/article26/>

Platinum

- **Platinum PVD: Researchers Tap Antiferromagnets for Better RAM - IEEE Spectrum**

Antiferromagnets (for Non-Volatile Memories) —which include compounds of common metals such as manganese, platinum, and tin—don’t have that problem. Unlike with ferromagnets, the spins of

electrons within the same antiferromagnet don't all point in the same direction. Electrons on neighboring atoms point opposite to each other, effectively canceling one another out.

<https://spectrum.ieee.org/antiferromagnets-ram>

- **WPIC Platinum Quarterly Q2 2021**

- Platinum demand in the second quarter of 2021 continued the very positive year-on-year growth trends of the preceding two quarters, rising by 23%. The pace of economic recovery during the second quarter accelerated in comparison to the first quarter, as largely successful vaccination programs and widespread fiscal support increased economic activity. Automotive, industrial and jewellery platinum demand were up significantly year-on-year but weaker than in the first quarter while investment demand was well below the record level in Q2 2020. Mining supply benefitted from strong operational improvement compared to the severe COVID-19 restrictions in 2020 as well as the faster than anticipated processing of material built up during processing outages in 2020, helping to lift total supply by 55% year-on-year. This moved the market to a surplus of 161 koz, after four consecutive quarterly deficits.

https://platinuminvestment.com/files/165890/WPIC_Platinum_Quarterly_Q2_2021.pdf

- **Benefits of extending the EU heavy-duty CO2 emissions standards to other truck segments | International Council on Clean Transportation**

- An upcoming review of the heavy-duty CO2 emissions standards in the European Union will consider several adjustments to the regulation, including the possibility of extending the CO2 emissions reduction targets to other vehicle segments, as well as setting specific targets for trailers. This study assesses the additional benefits that would result from extending the CO2 standards to these other segments under several alternate scenarios and provides recommendations for the 2022 review of the standards.

<https://theicct.org/publications/extending-eu-hdv-co2-standards-sept21>

Fuel Cells/Hydrogen Economy Related Articles:

- **Two Toyota hydrogen car models to roll out in 2023**

- Two Toyota hydrogen car models to roll out in 2023. Toyota has announced that while it is delaying its electric vehicle launch, it will have two hydrogen car 2023 models – a Prius and Corolla – ready for showrooms by the end of next year.

https://www.hydrogenfuelnews.com/hydrogen-car-toyota-prius/8548186/?mc_cid=c890046b34&mc_eid=70c1246d58

- **Hyundai Motor Group unveils its hydrogen strategy, plans to offer fuel cell versions of commercial cars by 2028**

- Hyundai announced its strategy for the future of hydrogen on Tuesday during a livestream of the automaker's Hydrogen Wave conference. Saehoon Kim, executive vice president and head of the fuel cell center at Hyundai Motor Group, said Hyundai's goal is to also achieve cost competitiveness comparable to that of EV batteries by 2030.
- The company also shared details about its high-performance, rear-wheel drive hydrogen sports car, the Vision FK, with a 500kW fuel cell system that can push it from 0 to 100 kilometers per hour in less than four seconds and has 600 kilometers (373 miles) of range. Hyundai did not share when the vehicle would go into production.

<https://techcrunch.com/2021/09/07/hyundai-motor-group-unveils-its-hydrogen-strategy-plans-to-offer-fuel-cell-versions-of-commercial-cars-by-2028/>

- **Hino Trucks unveils hydrogen fuel cell truck prototype**

- The XL8 Class 8 vehicle made its way into the spotlight at the 2021 ACT Expo in California.
- Currently, the Hino Trucks vehicle remains in its prototype phase. Moreover, the company has yet to announce a date by which the vehicle will start production.

https://www.hydrogenfuelnews.com/hydrogen-fuel-cell-trucks-hino/8548218/?mc_cid=71a2213e6e&mc_eid=70c1246d58

- **WPIC: Spotlight on Refire**
 - Audrey Ma, REFIRE's Vice President, Marketing, Branding and International Business, on its growing hydrogen fuel cell business. Platinum is a key component of fuel cell stacks as it catalyses the electro-chemical processes required to produce electricity. Without platinum and other catalytic compounds, the efficiency of PEM fuel cells would be greatly diminished.
 - Fuel cell stacks that do not use platinum-based PEM technology need to be much bigger to achieve similar power outputs. This makes platinum essential to the efficiency of end-user applications and, in particular, its use ensures that the fuel cells are compact enough for use in FCEVs.

https://platinuminvestment.com/files/sixtysecs/WPIC_60seconds_REFIRE_09072021.pdf
- **Maritime liquid hydrogen fuel propulsion system development is KRISO's next big thing**
 - Several big players in South Korean shipbuilding are collaborating for H2-powered tech development. The liquid hydrogen fuel development collaboration includes KRISO as well as POSCO, Korea Shipbuilding and Offshore Engineering, and Hyrium Industry. They have signed a joint development agreement, which was announced earlier this week. As a part of this agreement, the organizations will be examining and developing liquid H2 tanks to be used by maritime ships. Moreover, they will also be investigating supply technology for that zero-emission fuel.

https://www.hydrogenfuelnews.com/liquid-hydrogen-fuel-maritime/8548276/?mc_cid=e1e58454e0&mc_eid=70c1246d58
- **World's biggest green hydrogen project announced for Kazakhstan**
 - Germany's Svevind has announced plans for a colossal green hydrogen project that will place some 45 gigawatts of wind and solar energy generation on the vast steppes of Kazakhstan to produce around three million tonnes of green hydrogen annually.
 - The biggest green hydrogen plant in the world today, Air Liquide's facility in Canada, marshals just 20 MW of peak electrolyzing capability, this Svevind project plans to run a monstrous 30 GW of electrolyzers to produce three million tonnes, (or 3 billion kg) of green hydrogen per year.

<https://www.energylivenews.com/2021/06/29/svevind-inks-deal-for-green-hydrogen-in-kazakhstan/>
- **Hyzon Motors to supply up to 500 hydrogen fuel cell electric vehicles to Shanghai logistics company**
 - Hyzon Motors Inc (NASDAQ: HYZN) today announced the signing of a memorandum of understanding (MoU) with Shanghai Hydrogen HongYun Automotive Co., Ltd for the purchase of 500 hydrogen-powered electric trucks.
 - Hyzon, a leading global supplier of zero-emission hydrogen fuel cell-powered commercial vehicles, expects, subject to execution of a definitive vehicle supply agreement, to provide 49-ton hydrogen-powered tractor trucks to HongYun. Under the non-binding MoU, the initial order of 100 vehicles is expected before the end of 2021 while the other 400 vehicles will be ordered in 2022.

<https://finance.yahoo.com/news/hyzon-motors-supply-500-hydrogen-125800654.html>
- **Eaton's Vehicle Group Partners With Ballard Fuel Cell Systems and National Renewable Energy Laboratory to Develop Heavy-Duty Truck Fuel Cell Technology**
 - Power management company Eaton today announced its Vehicle Group has partnered with leading fuel system manufacturer Ballard Fuel Cell Systems, and the Department of Energy's National Renewable Energy Laboratory (NREL), to develop heavy-duty truck fuel cell technology. The partnership is the result of a grant Eaton's Vehicle Group received from the

U.S. Department of Energy to develop highly efficient hydrogen fuel cells capable of powering heavy-duty machinery.

<https://finance.yahoo.com/news/eaton-vehicle-group-partners-ballard-103000829.html>

Palladium

- **China New-vehicle sales slump for 4th straight month in August amid chip crunch**
 - CAAM says deliveries plunged 22% to 1.71 million last month
<https://www.autonews.com/china/new-vehicle-sales-slump-4th-straight-month-august-amid-chip-crunch>
- **Mobility Notes 5-minute Monthly September Update:**
 - In Europe, hybrids now enjoy the same market share as diesels. Vehicle registration data for second quarter of 2021 is available and shows that electrics and hybrids are rapidly gaining share in Europe and China. In Europe, the registration of battery electric vehicles more than doubled from 3.5% in Q2 2020 to 7.5%. And one in every 4 cars is now a hybrid: plug-in hybrids sales are at 8.4% while other hybrids are at 19.3%. Petrol and diesel sales increased compared to last year (Covid impact), but overall market share of diesel is now at 20.4%.
<https://mobilitynotes.com/wp-content/uploads/2021/09/MobilityNews-5-Min-Monthly-September-2021.pdf>
- **Palladium Plunges to 12-Month Low on Automaker-Demand Concerns**
 - Spot palladium dropped to the lowest in more than a year, extending a slump in the metal amid concern over demand from automakers and prospects for substitution after a price-run-up earlier this year. Palladium, which reached a record high earlier in May, fell for a fourth straight day to the lowest since August 2020. Platinum also slipped.
<https://finance.yahoo.com/news/palladium-plunges-12-month-low-214220278.html>
- **Preparing for Euro VII : Sub-23 nm particles - Mobility Notes**
 - Starting with Euro 7 (or Euro VII for heavy-duty), the next phase of regulations in Europe for passenger cars and heavy-duty trucks, tailpipe limits on particulate emissions are expected to get tighter. Current regulations allow emissions of 600 billion particles per kilometer for cars or per kilowatt-hour of work done for trucks. Typically, successive regulations reduce the limits on particulates and other and accordingly this limit could decrease in Euro 7.
<https://mobilitynotes.com/preparing-for-euro-vii-sub-23-nm-particles/>

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

- **Iridium & Platinum PEM Electrolyser Catalyst: Advent Technologies Projects White Dragon & Green HiPo (4.65GW Green Hydrogen & 400MW Fuel Cells), approved by Greek Government and submitted to EU**
 - Advent Technologies Holdings, Inc. (NASDAQ: ADN) (“Advent” or the “Company”) today announced that its two Greek Important Projects of Common European Interest (“IPCEI”) have been approved by a joint decision by the Greek Minister of Development and Investments. The White Dragon and Green HiPo projects, each of which prominently features Advent’s innovative fuel cell technology, were among five projects, out of 20 submitted, that received approval.
 - The scope of the programs, as submitted by Advent and the White Dragon consortium of companies, is set to replace Greece’s largest coal-fired plants, with renewable solar energy parks, which will be supported by green hydrogen production (4.65GW), and fuel cell heat and power production (400MW). The projects are part of the “Hydrogen Technologies” IPCEI and will now move towards approval at European Union (“EU”) level.
 - Matt: Electrolyzer demand represents at least 60 koz of Iridium
https://www.galvnews.com/news_ap/business/article_1a4c3325-13f3-5bce-9871-ba9e8b9b905e.html
- **Ruthenium Catalyst: Sizable uptick in methanol bunkers ahead: Methanol Institute COO**

- There are 12 methanol-fueled ships currently operating internationally with at least that many more scheduled for delivery over the next 18 months, not counting the recent Maersk order, Chatterton said. Many shipping companies based in Asia are also mulling over methanol-fueled ships.
<https://www.spglobal.com/platts/en/market-insights/latest-news/energy-transition/090621-interview-sizable-uptick-in-methanol-bunkers-ahead-methanol-institute-cco>

Clean Energy General News (New Section)

- **Construction begins on UK's largest storage project**
 - FRV, Harmony Energy, and Tesla are building a 99 MW/198 MWh facility in Essex. The system will rely on the Megapack solution from the U.S. manufacturer.
<https://www.pv-magazine.com/2021/09/07/construction-begins-on-uks-largest-storage-project/>
- **Avoid Taliban-controlled critical mineral supply chains with American innovation**
 - There is an important consequence of the Taliban's resurgence in Afghanistan that has gone underreported: This regime now controls the nation's massive deposits of rare earth elements and critical minerals. These coveted resources, such as the lithium that some are banking on to fuel the global transition to clean energy, could be worth \$1 trillion. And China is making a serious play to access them. Every energy transition and climate model calls for more grid-scale energy storage, and lithium-ion batteries are the fastest-growing storage technology around the planet.
<https://www.washingtonexaminer.com/opinion/op-eds/avoid-taliban-controlled-critical-mineral-supply-chains-with-american-innovation>
- **A Climate Solution Lies Deep Under the Ocean, But Accessing It Could Have Huge Environmental Costs**
 - Scattered three miles deep along the floor of the central Pacific are trillions of black, misshapen nuggets that may just be the solution to an impending energy crisis. Similar in size and appearance to partially burned charcoal briquettes, the nuggets are called polymetallic nodules, and are an amalgamation of nickel, cobalt, manganese and other rare earth metals, formed through a complex biochemical process in which shark teeth and fish bones are encased by minerals accreted out of ocean waters over millions of years.
 - The nodules, which are strewn across the 4.5 million-sq-km (1.7 million-sq-mi.) swath of international ocean between Hawaii and Mexico known as the Clarion-Clipperton Zone (CCZ), contain significant amounts of the metals needed to make the batteries that power our laptops, phones and electric cars.
<https://sports.yahoo.com/news/climate-solution-lies-deep-under-110008057.html>
- **World's biggest machine capturing carbon from air turned on in Iceland**
 - Operators say the Orca plant can suck 4,000 tonnes of CO2 out of the air every year and inject it deep into the ground to be mineralized.
<https://www.theguardian.com/environment/2021/sep/09/worlds-biggest-plant-to-turn-carbon-dioxide-into-rock-opens-in-iceland-orca?>
- **Inflation: The unintended cost of decarbonisation (part 1)**
<https://www.kitco.com/commentaries/2021-09-02/Inflation-The-unintended-cost-of-decarbonisation-part-1.html>
- **Inflation: The unintended cost of decarbonisation (part 2)**
<https://www.kitco.com/commentaries/2021-09-08/Inflation-The-unintended-cost-of-decarbonisation-part-2.html>
- **The Truth About Renewables – Featuring Leigh Goehring and Adam Rozencajg**
 - Matt: Excellent video highlights some of the gaps in renewables
<http://blog.gorozen.com/blog/the-truth-about-renewables-featuring-leigh-goehring-and-adam-rozencajg>
- **Uranium surged 20% in last 2 weeks, where is this rally headed? Sprott's John Ciampaglia**

- The recent surge in uranium is only just the beginning, as investors are starting to realize that nuclear power is perhaps one of the more reliable, and safe, sources of base load power and uranium supply is limited, said John Ciampaglia, CEO of Sprott Asset Management.
<https://www.kitco.com/news/2021-09-03/Uranium-surged-20-in-last-2-weeks-where-is-this-rally-headed-Sprott-s-John-Ciampaglia.html?>

BEV / LiB Battery Market News

- **Shanghai squeeze revitalises flagging nickel market**
 - London Metal Exchange (LME) three-month nickel hit a seven-year high of \$20,225 per tonne on Thursday morning and has a new-found spring in its step after collapsing in February.
 - <https://www.reuters.com/article/metals-nickel-ahome-column-idUSKBN2G51CS>
- **Honda and GM to share EV platform for lower-cost North American models - Nikkei Asia**
 - By sharing EV platforms, Honda and GM will be able to standardize motors, batteries, inverters and other key components. This kind of collaboration will bring cost savings through ordering large quantities of the same parts.
<https://asia.nikkei.com/Business/Automobiles/Honda-and-GM-to-share-EV-platform-for-lower-cost-North-American-models>
- **LG Energy developing its own LFP battery tech**
 - LG Energy Solution has begun the development of lithium iron phosphate (LFP) battery late last year, TheElec has learned. The technology is mostly used by Chinese companies. LFP battery is a kind of lithium-ion battery. Instead of using nickel, cobalt and manganese or nickel, cobalt and aluminum as its cathode, it uses iron and phosphate.
 - Compared to NCM or NCA batteries, it is considered more stable. It rarely overheats and it is rare for electric cars that uses the battery to burn down. As it doesn't use nickel or cobalt, it is also cheaper. The downside is that it is relatively heavier and has lower energy density, shortening the travel distance per charge.
<http://thelec.net/news/articleView.html?idxno=3321>
- **India's incentives EV and fuel cell vehicles get a shake-up**
 - India has tossed its \$8 billion auto sector incentive strategy into the blender to take a new angle toward boosting automakers to build hydrogen fuel cell vehicles and battery electrics, said a recent Reuters report, citing two sources familiar with the matter.
<https://www.hydrogenfuelnews.com/fuel-cell-vehicles-india-green/8548287/>
- **Lithium prices: Australia's Eastern Iron to develop lithium projects with China's Sichuan Yahua, Auto News**
 - Eastern Iron said on Monday it would collaborate with a unit of China's Sichuan Yahua Industrial Group to buy and develop lithium projects, including the Trigg Hill Lithium Tantalum Project in Western Australia. Prices of lithium, a key ingredient used in electric vehicle batteries, have surged over the past year amid a global push to cut carbon emissions and move to cleaner modes of transportation.
 - The partnership includes supply of spodumene concentrates and the potential acquisition and development of lithium projects in Australia and in other countries, except China, the Australian lithium explorer said.
<https://auto.economictimes.indiatimes.com/news/auto-components/australias-eastern-iron-to-develop-lithium-projects-with-chinas-sichuan-yahua/85965641>
- **Lithium Market Update**
 - Supply: More than 80% of the world's lithium hydroxide production is concentrated in China. Spodumene concentrate is used as the main raw material to produce lithium hydroxide (without additional causticising costs), more than 90% of China's lithium hydroxide plants uses this method. At the same time, more than 80% of the China's spodumene is imported from Western Australia. With

the continuous clearing of the production capacity of the spodumene mines in Western Australia over the past few years, there are currently only 4 mines in production. Lithium is fully underwritten, and Greenbushes production capacity is jointly underwritten by Tianqi Lithium and Albemarle. Only a small amount of bulk orders from Pilbara and Mt Cattlin are available for external supply. This has led to a low level of capacity utilisation of China's lithium hydroxide manufacturers, resulting in supply of lithium hydroxide being insufficient.

https://www.linkedin.com/posts/brendanjephcott_lithium-nickel-cobalt-activity-6840468274648612864-lxHs

- **SVOLT Reveals First NMx Cobalt-Free Battery Pack**

- SVOLT Energy Technology unveiled at the 2021 Chengdu Motor Show its first production cobalt-free NMx battery pack, which will be used in the upcoming Great Wall's ORA Cherry Cat, also displayed at the show.
- Let's recall that NMx is a new lithium-ion battery chemistry, with SVOLT's in-house developed NMx cathode material (75% nickel and 25% manganese). Through the cobalt elimination and reduction of the nickel content, it's expected to be 5% less expensive than comparable NCM chemistry.

<https://insideevs.com/news/530037/svolt-first-nmx-cobaltfree-battery/>

- **NREL: Energy Systems Integration Newsletter: August 2021**

- U.S. Could Reach 300 Times Today's Installed Behind-the-Meter Battery Storage Capacity by 2050

https://www.nrel.gov/esif/esi-news-202108.html?utm_source=NREL+Energy+Systems+Integration+News&utm_campaign=7498abf0b5-EMAIL_CAMPAIGN_2019_04_23_09_39_COPY_01&utm_medium=email&utm_term=0_e50a8e7330-7498abf0b5-289561471#capacity

- **Genesis dual electrification: all new vehicles from 2025 to be fuel cell EVs or battery EVs**

- Genesis announced its vision for electrification with the live stream release of its vision statement film, "Futuring Genesis". Under the dual electrification strategy, all new vehicles will be purely electric starting from 2025 with fuel cell EVs and battery EVs. Genesis plans to become a 100% zero emission vehicle brand by 2030 and aims to become carbon-neutral by 2035.

<https://www.greencarcongress.com/2021/09/20210903-genesis.html>

- **India revamps incentives for autos to boost EVs, hydrogen fuel cells**

- The move to clean technologies comes as Tesla Inc (TSLA.O) is gearing up to enter India and is lobbying for lower import duties on electric cars. While the government is considering the request, it wants some economic benefit in return which could include a commitment from Tesla to produce cars locally. Under the new proposal, India will give incentives to automakers for building EVs and hydrogen fuel cell cars only, the sources said.

<https://www.reuters.com/world/india/india-revamps-incentives-autos-boost-evs-hydrogen-fuel-cells-sources-2021-09-03/>

Regards –