



Weekly Precious Metals News Articles: July 16, 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

- **Researchers discover why gold is concentrated alongside arsenic**
 - Lead researcher, Dr. Gleb Pokrovski, directeur de recherche at CNRS, GET-CNRS-University of Toulouse Paul Sabatier, said, "Our results show that arsenic drives the concentration of gold. This arsenic-driven gold pump explains how these iron sulfides can massively capture and then release gold, so controlling ore deposit formation and distribution. In practical terms, it means that it will make it easier to find new sources of gold and other precious metals, which bind to arsenic-containing iron sulfides. It may also open the door to controlling the chemical reactions, and if we can improve gold processing, we can recover more gold."
<https://phys.org/news/2021-07-gold-arsenic.html>
- **Britain carves out exemption for gold clearing banks from Basel III rule**
 - The London Bullion Market Association (LBMA), an industry body, has lobbied against them, saying they are unnecessary and could force some banks – including clearing banks - to stop trading.
 - Following a consultation, the Bank of England's Prudential Regulatory Authority (PRA) said on Friday it had "decided to amend its approach to precious metal holdings related to deposit-taking and clearing activities."
 - It said it had introduced an "interdependent precious metals permission" which would reduce the size of the required capital buffer.
<https://www.reuters.com/world/china/britain-carves-out-exemption-gold-clearing-banks-basel-iii-rule-2021-07-09/>
- **Gold logs best week in 7 as Delta variant risks loom**
 - "We do continue to have issues with the Delta variant. That may very well slow economic progress, not only in the United States, but of course around the world," said Bart Melek, head of commodity strategies at TD Securities.
 - "As investors get convinced that the U.S Federal Reserve indeed is targeting full employment and that it's not particularly worried about inflation moving above targets for a period, we could see gold's move over \$1,850 by year-end."
<https://m.economictimes.com/markets/commodities/news/gold-logs-best-week-in-7-as-delta-variant-risks-loom/articleshow/84287822.cms>
- **Comparing the Carbon Footprint of Gold and Bitcoin**

- In early May, the value of the bitcoin market was \$1.05 trillion, only 9% of the gold market's \$11.67 trillion value. Despite this, bitcoin performance is rising to challenge gold as an alternative asset in volatile markets.
- In 2020, gold delivered a strong return with 25.12% over the year, and reached a historic high of \$2,067 per ounce in August. However, the value of bitcoin rose 536.7% between May 2020 and May 2021, outperforming pretty much every asset possible over that timeframe.
- According to Reuters, investors poured \$5.6 billion into cryptocurrency funds and products in 2020, up more than 600% from 2019. This increased activity led to increased trading in the Bitcoin network, needing more energy.

<https://www.visualcapitalist.com/comparing-the-carbon-footprint-of-gold-and-bitcoin/>

Semiconductor Related Articles (impacting Precious Metals electronics):

- **Volkswagen Sees Global Chip Shortage Worsening in Second Half**
 - AlixPartners, a global industry consulting firm, predicted in January that the chip shortage would cost global auto makers \$61 billion in lost revenue this year. But in May, AlixPartners revised its projection upward to \$110 billion.
 - Matt: \$110 Billion = 2.6 M vehicle impact, approx. -418koz of Pd autocatalysts assuming typical powertrain mix impact.
<https://www.wsj.com/articles/volkswagen-sees-global-chip-shortage-worsening-in-second-half-11625861486>
- **Semiconductor Equipment Forecast to Post Industry High of \$100 Billion in 2022, SEMI Reports**
 - Matt added context: The Semiconductor industry with a Total Available Market (TAM) revenue makes over \$500B this year and projected \$600B next year is spending over \$90B (18% of TAM) this year and \$100B (17% of TAM) next year on new equipment to populate new brick and mortar expansion. WOW. The world of electronics is about to explode in size.
<https://www.semi.org/en/news-media-press/semi-press-releases/semiconductor-equipment-forecast-post-industry-high-%24100-billion-2022-semi-reports>
- **As Europe hopes to double its share of global chip production, Intel comes along with \$20bn, plans for fabs**
 - Intel is planning to spend as much as \$20bn on building a couple of chip manufacturing plants in Europe, with more in the works.
 - CEO Pat Gelsinger has been traveling across the region and just met French President Emmanuel Macron, German Chancellor Angela Merkel, and Italian Prime Minister Mario Draghi to discuss component supply-chain problems amid the ongoing global chip shortage.
https://www.theregister.com/2021/07/12/intel_eu_chip_fabs/
- **U.S.-China Tech Conflict's Front Line Goes Through Belgium**
 - The European Commission is consulting with imec on its plans to build out the continent's chip capacity. A South Korean ministerial delegation visited this month. It was name-checked in last month's White House review of the U.S. supply chain alongside ASML NV of the Netherlands, which has a virtual monopoly on the machines needed to make the most advanced chips. In the words of one Washington observer, imec is one of those places very few people know about but which everyone should.
<https://www.bloomberg.com/news/features/2021-07-13/u-s-and-china-fix-their-sights-on-world-s-top-chip-research-center>
- **China chip giant: 'Insolvent' Tsinghua Unigroup Aims to Restructure**
 - Tsinghua Unigroup has been one of the most prominent investors financing the buildup of China's semiconductor industry in recent years. In 2015, Tsinghua made a \$23 billion bid to take over US memory chipmaker Micron Technology that was later thwarted amid a growing

China-US trade war. Tsinghua Unigroup is 51% owned by China's Tsinghua University and headed by former real estate tycoon Zhao Weiguo.

- The insolvency follows a similar financial collapse at Chinese chipmaker Wuhan Hongxin Semiconductor Manufacturing Co. (HSMC) in November 2020. HSMC was chartered as a chip foundry with the aim to rival Taiwan Semiconductor Manufacturing Co. (TSMC).
<https://www.eetimes.com/insolvent-tsinghua-unigroup-aims-to-restructure/>

Silver

- **China to add 619 GW of solar this decade**

- Indonesia will catch the eye too over the next nine years, according to analyst WoodMac, as its market grows from 300 MW to 8.5 GW.
- Matt: Given globally 2020 saw 115 GW on new installations, and we are on track for 2021 155GW, this 619 this decade is a big number requiring over 600 Moz of silver.

<https://www.pv-magazine.com/2021/07/14/china-to-add-619-gw-of-solar-this-decade/>

- **Post SNEC: Market demand and technology trends**

- PV InfoLink slightly lowered its China demand forecast to 50 GW, but keeping global demand for the year at 155 GW, as the United States and Europe saw stronger-than-expected solar demand.
- Matt: This puts 2021 on track for 155 GW of new global Solar PV installations consuming 126 Moz of Silver, + 28% from 2020

<https://www.pv-magazine.com/2021/07/15/post-snec-market-demand-and-technology-trends/>

Precious Metals Mining:

- **Sibanye may wind down gold mines in South Africa's fading sector**

- Sibanye-Stillwater may wind down its three South African gold mines in the next decade or so as it becomes harder to exploit aging assets in an industry that was once the world's largest.

https://www.miningweekly.com/article/sibanye-may-wind-down-gold-mines-in-south-africas-fading-sector-2021-07-14/rep_id:3650

- **Implats confirms AMCU work stoppage at Rustenburg mine, looks for resolution**

- Implats said it was confident work would resume at its Rustenburg operations by night shift today after its majority union, the Association of Mineworkers & Construction Union (AMCU) caused a stoppage related to inter-union rivalry.

<https://www.miningmx.com/news/platinum/46780-implats-says-amcu-work-stoppage-at-rustenburg-pgm-mine-will-be-resolved-today/>

- **S. African Unrest: Gravitas: Unrest & Riots grip South Africa**

- Matt: No known impact to mines, but the situation is ugly with looting and rioting in S. Africa. Are labor and supply disruptions risks increasing too? This certainly doesn't help.

<https://youtu.be/ypMdBdiyDo>

- **S. African Unrest: One killed, 62 arrested in Johannesburg and KwaZulu-Natal riots**

- Police in Jeppestown fired rubber bullets to disperse protesters burning vehicles, tyres and looting stores in the area. A crowd several hundred strong was spotted marching through the Johannesburg city centre on Sunday afternoon. "This group of about 800 people is reported to have attacked police, resulting in the shooting of police officers who have now received medical attention, with only one in hospital in a stable condition."

<https://www.news24.com/news24/southafrica/news/one-killed-62-arrested-in-johannesburg-and-kwazulu-natal-riots-20210711>

E-Waste & Precious Metals Recycle Related:

- **Recycling investment firm moves deeper into e-scrap**

- Hyundai Motor Company, Hyundai Global Service and Korean Register (KR) have signed a memorandum of understanding (MoU) to develop as well as commercialize hydrogen fuel cell propulsion systems for marine ships.
 - This agreement marks Hyundai Motor's debut partnership on the application of its fuel cell-powered technology in shipbuilding.
<https://www.ship-technology.com/news/hyundai-motor-signs-pact-for-hydrogen-fuel-cell-propulsion-systems/>
- Oil Companies Know Hydrogen Is A Dead End, But It's A Handy Way To Hold Back Electrification**
 - "In an attempt to guide governments and industry players away from the [oil industry-sponsored] spin, Liebreich has created what he calls his Hydrogen Ladder, a simple chart showing which use cases for H2 are uncompetitive, which are unavoidable for decarbonization, and which sit somewhere in the middle," writes Recharge's Leigh Collins.
<https://cleantechnica.com/2021/07/06/oil-companies-know-hydrogen-is-a-dead-end-but-its-a-handy-way-to-hold-back-electrification/>

Hydrogen – demand side merit order by sector

Liebreich Associates



Source: Michael Liebreich/Liebreich Associates Concept: Adrian Hiel/Energy Cities

- Nikola Stock - Trevor Milton resigns as Nikola executive chairman amid SEC probe**
 - The founder of Nikola Motor Company is resigning from his position as executive chairman amid a federal investigation into the start-up's claims about its technology.
 - Trevor Milton – who served as the charismatic public face of the Phoenix-based company, trumpeting its electric vehicle and hydrogen fuel cell technology and promoting a recent partnership with General Motors – is leaving the company effective immediately.
https://fintechzoom.com/fintech_news_nikola-stock/nikola-stock-trevor-milton-resigns-as-nikola-executive-chairman-amid-sec-probe/
- Hyzon: Liquid hydrogen fuel cell truck with 1,000 mile range in development**
 - The focus on liquid H2 instead of the gaseous form comes with a number of potential advantages in long-haul trucking. Primary among them is the amount of energy that can be stored in H2 as a liquid instead of a gas. At the current 700 bar gaseous storage, liquid H2 is twice as dense. As a result, the liquid makes it possible for the vehicle to have twice the range. Moreover, the liquid form also boosts a truck's payload capacity because they weigh less than the 700 bar tanks for the gas.
<https://www.hydrogenfuelnews.com/liquid-hydrogen-fuel-cell-truck/8547491/>
- Hyundai-Kia & Next Hydrogen to develop electrolysis system**
 - Hyundai and Kia want to develop an alkaline water electrolysis system and the associated stack together with the Canadian company Next Hydrogen in order to produce green hydrogen economically. The cooperation will also explore potential technological applications and future business opportunities.

- In alkaline water electrolysis, water is electrolysed using an alkaline electrolyte such as potassium or sodium hydroxide. Hyundai cites as advantages in a statement that this method can produce hydrogen on a large scale and that the catalysts used are “relatively inexpensive”.
<https://www.electrive.com/2021/07/12/hyundai-kia-next-hydrogen-to-develop-electrolysis-system/>
- **WPIC: Platinum Power**
 - Growth of renewable electricity supply is being unlocked by platinum-based proton exchange membrane technology
https://platinuminvestment.com/files/sixtysecs/WPIC_60seconds_Platinum_power_07142021.pdf
- **Hyzon & Chart work on 1000-mile H2 truck**
 - In the USA, Hyzon Motors and Chart Industries today announced an agreement to develop and produce a liquid hydrogen-powered heavy-duty commercial vehicle with a range of up to 1,000 miles. Among other news from Hyzon Motors today, the company announced a memorandum of understanding with TotalEnergies on hydrogen truck refuelling in Europe.
<https://www.electrive.com/2021/07/13/hyzon-chart-work-on-1000-mile-h2-truck/>

Palladium

- **Platinum, palladium, rhodium fabrication demand to rise in 2021**
 - Platinum fabrication demand is expected to grow to about 6.9 million oz in 2021 from just over 6 million oz in 2020, which was down 13% from 2019 levels because of weak auto and jewelry demand, vice president of research Rohit Savant said in a presentation to introduce the firm's Platinum Group Metals Yearbook 2021.
 - Jewelry and automotive demand account for nearly 80% of annual platinum demand.
<https://www.spglobal.com/platts/en/market-insights/latest-news/metals/071321-platinum-palladium-rhodium-fabrication-demand-to-rise-in-2021-cpm-group>
- **China Car Sales Fall With Chips in Short Supply - WSJ**
 - June sales were down -5.1% from a year earlier, ending an 11-month growth streak
<https://www.wsj.com/articles/china-car-sales-fall-with-chips-in-short-supply-11625747004>
- **States join coalition to stop California from setting U.S. automotive standards**
 - A coalition of 16 states is urging the U.S. Environmental Protection Agency to not reinstate a waiver allowing California to implement its own carbon emissions standards that essentially regulate the automotive industry for the rest of the U.S.
https://www.thecentersquare.com/national/states-join-coalition-to-stop-california-from-setting-u-s-automotive-standards/article_64506ce2-e3da-11eb-bf4f-43f030e9f2e2.html
- **Palladium to surge higher to \$3000, platinum to hit new highs above \$1375 – TDS**
 - “As the global economic recovery continues and global pollution standards tighten, the recent mine site disruptions suggest hefty deficits and another attempt at \$3,000/oz for palladium and new highs above \$1,375/oz for platinum next year.”
<https://www.fxstreet.com/news/palladium-to-surge-higher-to-3000-platinum-to-hit-new-highs-above-1375-tds-202107020930>
- **Palladium Price Analysis: XPD/USD sellers need \$2780 breakdown to retake controls**
<https://www.fxstreet.com/news/palladium-price-analysis-xpd-usd-sellers-need-2780-breakdown-to-retake-controls-202107090531>

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

- **Iridium/Platinum Catalyst: The Hydrogen Stream: Plans for \$75bn, 50 GW green energy hub in Western Australia**
 - Siemens has begun construction of the 8.75 MW Wunsiedel green hydrogen plant in northeast Bavaria which aims to produce up to 1,350 tons of the fuel per year. Featuring an electrolyzer

supplied by the Bavarian brand, the facility is being developed to feed hydrogen demand in the German regions of Upper Franconia, Upper Palatinate, Thuringia and Saxony, as well as Western Bohemia in Czechia.

<https://www.pv-magazine.com/2021/07/13/the-hydrogen-stream-plans-for-75bn-50-gw-green-energy-hub-in-western-australia/>

- **Iridium/Platinum Catalyst: Ineos to invest £25m in HydrogenOne fund as Shell fires up its 10 MW electrolyzer**
 - Energy company Shell has started its 10 MW polymer electrolyte membrane (PEM) hydrogen electrolysis plant at the Wesseling site of its Rheinland refinery, near Cologne. The plant, which opened last week after a two-year construction project, is the largest of its kind in Europe. "As part of the Refhyne European consortium, and with European Commission funding through the Fuel Cells and Hydrogen Joint Undertaking (FCH JU), the fully operational plant is the first to use this technology at such a large scale in a refinery," stated a note released by Shell on Friday.
<https://www.pv-magazine.com/2021/07/06/the-hydrogen-stream-ineos-to-invest-25m-in-hydrogenone-fund-as-shell-fires-up-its-10-mw-electrolyzer/>
- **Ruthenium: Caprolactam (CPL) and nylon 6 price almost same high, how do polymer makers survive?**
 - In the past three week, caprolactam and nylon 6 chip market have been rising continuously, but CPL price increase was apparently faster than its downstream polymer. By July 5, CPL RMB spot stood up to the platform 15,000yuan/mt (6 months payment), a highest rate in the past 32 months (the last highest price in CPL RMB spot was seen on November 16, 2018, at 15,000yuan/mt). This rate was almost same high with nylon 6 conventional spinning (CS) chip spot (15,200yuan/mt, T/T cash).
https://www.cfcgroup.com/newscenter/newsview.php?Class_ID=D00000&Info_ID=2021070730005
- **Ruthenium & Platinum: HDD makers to see supply constrained in 2H21**
 - A resurgence of the COVID-19 in Thailand, coupled with shortages of certain chips and components, may disrupt shipments of hard disc drives (HDD) in the second half of 2021 despite the period being a peak season for the consumer electronics market, according to industry sources. With Seagate and Western Digital (WD) now mainly producing HDDs in Thailand, their supply in the second half may be seriously impacted by the pandemic, the sources said.
<https://www.digitimes.com/news/a20210715PD206.html>

Clean Energy General News (New Section)

- **Electricity demand growing faster than roll-out of renewable energies, says IEA**
 - Electricity demand is expected to grow by 5% this year, much more than the 1% drop it experienced last year as the global economy tumbled into recession thanks to restrictions to stem the coronavirus pandemic. "Renewable electricity generation continues to grow strongly -- but cannot keep up with increasing demand," the International Energy Agency said in a semi-annual report on the electricity market. Renewable power production expanded by 7% in 2020 and the IEA expects it will grow by 8% this year and by more than 6% next year.
<https://www.livemint.com/industry/energy/electricity-demand-growing-faster-than-roll-out-of-renewable-energies-says-iea-11626349255619.html>
- **A shortage of these metals could make the climate crisis worse**
 - The world won't be able to tackle the climate crisis unless there is a sharp increase in the supply of metals required to produce electric cars, solar panels, wind turbines and other clean energy technologies, according to the International Energy Agency.
 - Limited access to known mineral deposits is another risk factor. Three countries together control more than 75% of the global output of lithium, cobalt and rare earth elements. The Democratic Republic of Congo was responsible for 70% of cobalt production in 2019, and China produced 60% of

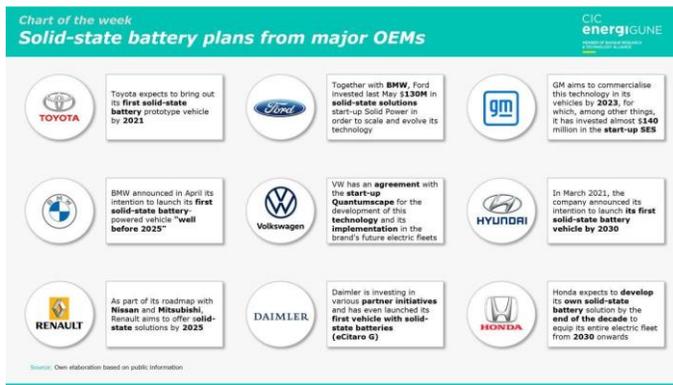
rare earth elements while refining 50% to 70% of lithium and cobalt, and nearly 90% of rare earth elements. Australia is the other power player.

- Matt: A great CNN 2 minute interview with the spokesman for the IEA is worth your time.
<https://edition.cnn.com/2021/05/05/business/climate-crisis-metals-shortage/index.html>
- **Keynote Speaker: Matt Watson - Red Cloud 2021 Green Energy Conference**
 - Yours truly - YouTube Video – 40 minutes
<https://youtu.be/4RCB4qwOog0>
- **Europe plans wide-ranging climate rules to slash emissions**
 - The most controversial element is likely to be the carbon border adjustment mechanism, which would level tariffs on goods from outside the EU based on the emissions required for their production. “This will ensure that European emission reductions contribute to a global emissions decline, instead of pushing carbon-intensive production outside Europe,” the EC explained in announcing the legislative package. It is also certain to upset the continent’s global trading partners and may also run afoul of World Trade Organization regulations.
<https://www.devex.com/news/europe-plans-wide-ranging-climate-rules-to-slash-emissions-100372>
- **Greens fear Biden will go easy on automakers over emissions**
 - Environment groups have warned against expanding extra credit for EV sales that could discourage automakers from aggressively bolstering the efficiency of the gas-powered vehicles they will sell for years to come.
<https://www.autonews.com/regulation-safety/greens-fear-biden-will-go-easy-automakers-over-emissions>
- **Traveling through deep time to find copper for a clean energy future**
 - Recently, the International Energy Agency sounded the warning bell on the global supply of copper as the most widely used metal in renewable energy technologies. With Goldman Sachs predicting copper demand to grow up to 600% by 2030 and global supply becoming increasingly strained, it is clear we need to find new and large deposits of copper fast. Getting this much copper will be impossible unless we discover significant new copper deposits. But there has been little exploration for copper over the past decade, as prices have been relatively low.
<https://techxplore.com/news/2021-07-deep-copper-energy-future.html>
- **‘Green’ metals demand contributes to renewed optimism among Canadian miners**
 - Rising demand for ‘green’ metals as the world transitions to clean energy is contributing to renewed optimism in the growth prospects for Canada’s mining industry, a new report by KPMG finds.
<https://www.miningweekly.com/article/green-metals-demand-contributes-to-renewed-optimism-among-canadian-miners-2021-07-09>

BEV / LiB Battery Market News

- **Energy Department Targets Vastly Cheaper Batteries to Clean Up the Grid**
 - The Biden administration's push for more wind and solar power poses big challenges. New types of energy storage could help — but only if they get much cheaper.
<https://www.nytimes.com/2021/07/14/climate/renewable-energy-batteries.html>
- **Volkswagen and Seat will build a battery factory in Spain**
 - The Spanish battery plant will become the third of the six that the Volkswagen Group will build in Europe by 2030 after Germany Y Sweden. “We are ready to establish the entire value chain of electric mobility in the country, including the production of electric vehicles, as well as their components, and a new battery factory for the group,” he said. This. “We intend to build the number three gigafactory in Spain.
<https://digismak.com/volkswagen-and-seat-will-build-a-battery-factory-in-spain/>
- **LG to invest \$5.2bn in production of electric vehicle battery materials**
 - South Korean group seeks to reduce its dependence on China

- “We will reinvent our company as the world’s largest battery material producer,” said LG Chem’s chief executive.
- South Korea is home to several of the world’s leading EV battery makers such as LG Energy Solution, as well as units of conglomerates SK and Samsung. LG Energy has battery production plants in China, Poland and the US, and in Korea. In March, the group announced a plan to invest \$4.5bn by 2025 to expand its battery production in the US. The company supplies automakers including Tesla, General Motors and Volkswagen.
<https://www.ft.com/content/eb8253b7-f024-45ac-96d0-39afc8f1ae35>
- **Samsung SDI May Join Forces with World’s Fourth-largest Carmaker**
 - Stellantis held Electric Vehicle Day on June 8 (local time) and took the wraps off its roadmap for electric vehicles. Just as major automakers did, Stellantis also announced a plan to secure batteries. Stellantis, the world’s fourth-largest automaker, was created through a merger between the United States’ Fiat Chrysler Automobiles (FCA) and France’s Peugeot Citroen Group (PSA). The company has a total of 14 car brands.
 - Samsung SDI is mentioned as a possible partner of Stellantis because FCA was one of Samsung SDI’s major customers before the merger. As Stellantis said it will launch all new models as electric vehicles starting from 2025, it is faced with the task to secure a stable battery supplier.
<http://www.iccsino.com/news/show-htm-itemid-14975.html>
- **Graphite and the green energy transition**
 - The European graphite industry is facing a number of challenges in satisfying the growing demand, particularly for battery applications, due to the specific graphite qualities required. Graphite is an anode material in lithium-ion batteries and represents 50% of its overall weight. These batteries contain both natural graphite and synthetic graphite and one of the challenges will be to increase the resource of these two variations. In 2019, graphite accounted for around 90% of all anode materials in batteries. For the period 2018 to 2023, critical materials supply chain intelligence company, Roskill forecasted a growth rate of about 29% py.
<https://www.innovationnewsnetwork.com/graphite-and-the-green-energy-transition/12295/>
- **Stellantis in lithium supply deals with California, German firms -sources**
 - Stellantis, the world’s fourth-largest automaker with brands that include Jeep and Peugeot, has signed memorandums of understanding for lithium supply with geothermal brine projects in California and Germany, according to two sources.
<https://batteryindustry.tech/stellantis-in-lithium-supply-deals-with-california-german-firms-sources/>
- **Congo likely to start artisanal cobalt buying within eight weeks**
 - The Democratic Republic of Congo is expected to start buying cobalt from artisanal miners within eight weeks as it aims to become the only legal buyer from miners in the informal sector.
 - The government is looking to capitalise on soaring demand for rechargeable lithium-ion batteries for electric vehicles and to curb illegal exports which strip the state of needed tax revenue. It is also aiming to end unsafe working practices and child labour.
https://www.miningweekly.com/article/congo-likely-to-start-artisanal-cobalt-buying-within-eight-weeks-2021-07-12/rep_id:3650
- **Solid State LiB Industry Announcements Summary**
 - Following our article this week, where we talked about #solidstate #batteries (<https://lnkd.in/e42MtHT>), today we identify which #OEMs have already announced their plans associated with this new generation of batteries, making it clear how many large players see this solution as an essential part of their future #electrification plans.
https://www.linkedin.com/posts/cic-energigune-brta_solidstate-batteries-oems-activity-6818807148458377216-30_i



Regards –