Precious Metals Commodity Management LLC

Weekly Precious Metals News Articles: March 18, 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

- **Fed begins inflation fight with key rate hike, more to come**
  - The Federal Reserve launched a high-risk effort Wednesday to tame the worst inflation since the early 1980s, raising its benchmark short-term interest rate and signaling up to six additional rate hikes this year. The Fed's quarter-point hike in its key rate, which it had pinned near zero since the pandemic recession struck two years ago, marks the start of its effort to curb the high inflation that followed the recovery from the recession. The rate hikes will eventually mean higher loan rates for many consumers and businesses.
    https://apnews.com/article/federal-reserve-inflation-interest-rates-e017951eba9229353ab3166be075d82d
- **Gold settles nearly 2% higher to end a 4-session streak of declines**
  - Gold futures ended nearly 2% higher on Thursday to post their first gain in five sessions, buoyed by a drop in the U.S. dollar.
    https://www.marketwatch.com/story/gold-stages-2-rally-higher-as-dollar-takes-leg-lower-after-fed-rate-hike-11647518156?
- **Spray-on technology using customized gold nanoparticles could help treat heart disease**
  - Custom-made nanogold modified with peptides, a short chain of amino acids, was sprayed on the hearts of lab mice. The spray-on therapy not only resulted in an increase in cardiac function and heart electrical conductivity but that there was no off-target organ infiltration by the tiny gold particles.
    https://www.news-medical.net/news/20220315/Spray-on-technology-using-customized-gold-nanoparticles-could-help-treat-heart-disease.aspx
- **Russians are buying so much gold amid the ruble's collapse that the central bank halted its own purchases from banks**
  - Russia's central bank is suspending purchases of gold from banks amid increased consumer demand.
  - Russians have sought gold as a way to preserve wealth as the ruble tumbles to historic lows.
    https://www.businessinsider.com.au/russia-sanctions-gold-purchases-central-bank-ruble-collapse-demand-2022-3

Semiconductor Related Articles (impacting Precious Metals electronics):

- **Global Semiconductor Materials Market Revenue Tops $64B in 2021 to Set New Record**
  - The global semiconductor materials market grew 15.9% to $64.3 billion in revenue in 2021, surpassing the previous market high of $55.5 billion set in 2020, SEMI, the global industry association representing the electronics manufacturing and design supply chain.
  - Wafer fabrication materials and packaging materials revenues in 2021 totaled $40.4 billion and $23.9 billion, respectively, for y/y +15.5% and +16.5%. The silicon, wet chemicals, chemical-mechanical planarization, and photomask segments showed the strongest growth in the wafer

fabrication materials market, while packaging materials market growth was largely driven by the organic substrates, leadframes, and bonding wire segments.
https://www.semi.org/en/news-media-press-releases/semi-press-releases/global-semiconductor-materials-market-revenue-tops-%2464-billion-in-2021-to-set-new-record-semi-reports

- **Intel commits $36 billion to making chips in Europe**
  - The Santa Clara chipmaker said it will build a new "mega factory" in Germany as part of the investment, which is being subsidized with public funding. It also pledged to create a new R&D and design hub in France, and to invest in R&D, manufacturing and foundry services in Ireland, Italy, Poland and Spain.
  - Intel's investments are part of a broader package that will see the company invest as much as 80 billion euros in Europe over the next decade.
    https://www.cnbc.com/2022/03/15/intel-commits-36-billion-to-making-chips-in-europe.html
- **TSMC's largest customer makes up 26% of revenue**
  - Analysts said they believed Apple was responsible for NT$405.4 billion in TSMC sales, while they suspected that AMD generated NT$153.74 billion in sales
    https://www.taipeitimes.com/News/biz/archives/2022/03/14/2003774721
- **Chinese companies continue to increase investment in domestic chip production as Beijing keeps focus on self-sufficiency**
  - China's IC sales hit 1.05 trillion yuan in 2021, up 18.2 per cent from a year earlier
  - Chinese companies are lining up to invest in semiconductor sector amid Beijing's efforts to spur greater self-sufficiency amid US tech rivalry
    https://www.scmp.com/tech/big-tech/article/3170189/chinese-companies-continue-increase-investment-domestic-chip

Silver

- **World has installed 1TW of solar capacity**
  - The world has installed its first terawatt of hardware on Earth to generate electricity directly from the sun.
  - Matt: Given that Solar PV Silver loadings initially were far higher than they are today, approximately 1 billion troy ounces of silver have gone into this lead 1TW of solar capacity.
    https://www.pv-magazine.com/2022/03/15/humans-have-installed-1-terawatt-of-solar-capacity/
- **Copper-silver-gold nanostructure gives carbon-capture-and-utilization a boost**
  - Chemists have developed a nano-scale structure that combines copper, gold and silver to work as a superior catalyst in a chemical reaction whose improved performance will be essential if carbon capture and utilization efforts are to succeed in helping to mitigate global warming.
    https://vervetimes.com/copper-silver-gold-nanostructure-gives-carbon-capture-and-utilization-a-boost/
- **Silver Markets Recover Quite Nicely**
  - Silver markets have gapped higher to kick off the trading session on Thursday to break above the $25.50 level. At this point, we can break above the highs of the Thursday candlestick, I think we will try to recover silver pricing overall. The $26.30 level is an area that I am paying close attention to, and therefore I will be looking at that as a potential target, or perhaps a place to see a significant breakout.
    https://finance.yahoo.com/news/silver-markets-recover-quite-nicely-145512510.html

Precious Metals Mining:

- **Platinum workers eye windfall as wage talks near**
  - Negotiations for a three-year wage deal with producers including Anglo American Platinum Ltd., Sibanye Stillwater Ltd and Impala Platinum Holdings Ltd. are expected to start in the first week of April,

said Jimmy Gama, chief negotiator and treasurer at the Association of Mineworkers and Construction Union. He declined to disclose the union's demands.
https://www.moneyweb.co.za/mineweb/platinum-workers-eye-windfall-as-wage-talks-near/

- **Ivanhoe Mines Secures Options to Power Its Tier-one Platreef Palladium, Rhodium, Nickel, Platinum, Copper and Gold Mine in South Africa with Solar and LNG-Generated Electricity**
    - Construction of Ivanhoe's first solar power plant at the Platreef Mine is set to begin next month. The initial 5-megawatt (MW) plant is expected to begin supplying clean, solar-generated electricity to the mine in early 2023.
    https://investingnews.com/ivanhoe-mines-secures-options-to-power-its-tier-one-platreef-palladium-rhodium-nickel-platinum-copper-and-gold-mine-in-south-africa-with-solar-and-lng-generated-electricity/
- **South African platinum mining company wants to deploy 75MW of hybrid wind-solar**
    - South African platinum miner Sedibelo Platinum wants to deploy a 40MW hybrid wind-solar plant and a 35MW photovoltaic park to power its operations across several sites. The plants will be owned and operated by Sturdee and will supply power to the mining facilities via power purchase agreements.
    https://www.pv-magazine.com/2022/03/15/south-african-platinum-mining-company-wants-to-deploy-75mw-of-hybrid-wind-solar/
- **AMCU threatens to take Sibanye-Stillwater's PGM employees out in secondary strike**
    - "If Sibanye Gold continues not to accept the demand of the workers, we will definitely ask all our members in platinum operations to join a secondary strike," Jimmy Gama chief negotiator and treasurer at AMCU told Bloomberg.
    - AMCU and the National Union of Mineworkers (NUM) took members out on strike at Sibanye-Stillwater's gold mines on March 9 after failing to reach an agreement after more than five months of negotiations. The unions are aiming for a R1,000 per month increase in wages for entry level miners whereas Sibanye-Stillwater is offering R700/month extra. Solidarity and UASA, unions that had initially joined AMCU and NUM in a coalition, agreed to Sibanye-Stillwater's terms.
    https://www.miningmx.com/trending/49127-amcu-threatens-to-take-sibanye-stillwaters-pgm-employees-out-in-secondary-strike/
- **Sibanye-Stillwater opens gates to some employees after UASA, Solidarity accepts wage offer**
    - Sibanye-Stillwater will open its gates to employee members of the Solidarity and UASA after the unions today unconditionally accepted the firm's gold wage offer. The two unions account for about 1,550 people of the 34,000 employed at the firm's gold mines Kloof and Driefontein, west of Johannesburg, and Beatrix in the Free State.
    - Their acceptance signals the end of the coalition which negotiated with Sibanye-Stillwater for about half a year. Other members of the coalition, the AMCU and NUM remain on strike called on March 8.
    https://www.miningmx.com/top-story/49088-sibanye-stillwater-opens-gates-to-some-employees-after-uasa-solidarity-accept-wage-offer/

E-Waste & Precious Metals Recycle Related:

- **Metal thieves stealing exhaust pipes send US auto claims 1,000% higher**
    - State Farm said Thursday that metal thieves in search of platinum, rhodium and palladium are stealing catalytic converters in ever-greater numbers, sending auto-insurance claims soaring across the U.S.
    - Last year, State Farm paid $62.6 million for 32,265 catalytic converter theft claims nationally — a 1,173% increase from 2019.
    https://www.mining.com/web/metal-thieves-stealing-exhaust-pipes-send-us-auto-claims-1000-higher/
- **Calls mount for better enforcement at scrap yards to stem thefts of catalytic converters**
    - "There needs to be put in some kind of a restriction on how you can sell them or how people can buy them," said Heather Langille of Capital City Auto Parts, an automobile scrap yard in Fredericton.

- Langille said her company won't touch a catalytic converter unless it comes into the yard still attached to a vehicle with valid registration.
- However, she said, there are other scrap yards in and around the city that don't follow the same business practice.
  https://ca.news.yahoo.com/calls-mount-better-enforcement-scrap-110000025.html

- **Recycle like our planet depends on it**
  - The world is not receiving any new metals or precious materials, and we are seeing our existing reserves used at a staggering rate, which makes this reuse of what we have extracted so critical. This is a vision known as the circular economy, in which the things we buy are designed to be easily recycled into new products, rather than going straight to landfill contaminating groundwater, the soil, and using up precious resources.
    https://www.smh.com.au/environment/sustainability/recycle-like-our-planet-depends-on-it-20220313-p5a46p.html
- **ISU professor develops way to detect, remove precious metals from wastewater**
  - Dr. Jenkins and her students were able to form a sulfur-based, water-soluble polymer that binds to gold and silver. "Most filters remove all metal ions, so they filter out precious metals like gold and silver, but they also remove common metals like calcium and iron," Dr. Jenkins said. "Because the filters are removing all metals, this causes filters to clog more quickly and leaves you with an unusable mixture of metals. Because this polymer binds selectively to silver and gold, it allows those precious metals to be removed from wastewater and used."
    https://localnews8.com/isu/2022/03/14/isu-professor-develops-way-to-detect-remove-precious-metals-from-wastewater/

Platinum

- **The Platinum Story in 2022 & Beyond**
  - 55-minute video
    https://youtu.be/XyxjFw-_uBI
- **WPIC: Supersized Platinum (Coin)**
  - The Royal Mint unveiled its largest ever platinum coin to coincide with the year of Her Majesty the Queen's Platinum Jubilee. The coin has a diameter of 150 mm and weighs 2kg ($65,716 in Pt). With a face value of £1,000, with the flagship Britannia design, and The Royal Mint's innovative security features built in, including surface animation and micro-text to verify the authenticity of the piece.
    https://platinuminvestment.com/about/60-seconds-in-platinum/2022/03/16?
- **EPA will implement HD ultra-low NOx and Phase 3 GHG regulations**
  - EPA will fully phase-in Heavy Duty ultra-low NOx emissions regulations by 2031, and will implement HD Phase 3 GHG in 2030. The timeline is the same as the CARB HD Omnibus regulations. A few key elements of the ultra-low NOx rules include:
  - 90% NOx reduction over FTP/RMC cycles from 2010 rules, to 20 mg/bhp-hr.
  - Significantly extended FUL and warranty, e.g., 800k mi and 600k mi for Class 8, respectively. Recognizing SCR efficiency may be deteriorated over time, three NOx limits are set for 435k mi (current FUL), 600k mi and 800k mi, respectively.
  - In-use testing will adopt the 3BIN-MAW approach.
    https://www.linkedin.com/posts/reggie-zhan-003a974b_fact-sheet-vice-president-harris-announces-activity-6906722256618455041-y6Vc?
- **Platinum coin sales over 40 percent on day 1**
  - Within 24 hours of sales opening for the limited-edition Proof 2022-W American Eagle platinum $100 coins, U.S. Mint customers placed orders for nearly 41% of the 15,000 coins available.
  - The retail price when sales opened was $1,645. Pricing is subject to change weekly based on the spot price of the precious metal and the Mint's pricing grid.
    https://www.coinworld.com/news/precious-metals/platinum-coin-sales-over-40-percent-on-day-1

Fuel Cells/Hydrogen Economy Related Articles:

- **EU plunges into green hydrogen and renewables plans as it sidesteps Russian gas**
  - Commission says the RePowerEU plan will achieve independence from Russian energy before 2030. The Commission unveiled new proposals for quadrupling the current renewable H2 targets for 2030.
  - The Commission is seeking wind & photovoltaic solar energy “front loading” to accelerate build out and an additional 80 GW of capacity to make added green hydrogen viable. At the current Wind/Solar PV ratio this would represent +30 GW Wind and +50 GW Solar PV for the EU.
  - Matt: 2030 annual Solar PV silver demand forecast at 260-284 Moz at this accelerated trajectory. https://www.hydrogenfuelnews.com/green-hydrogen-europe-renewables/8551785/?
- **Ukraine war | Denmark approves new green hydrogen tender and 4-6GW target for 2030**
  - (Denmark) aims to produce ammonia, methanol and e-kerosene from renewable H_2 as part of a bid to reduce Europe's reliance on Russian fossil fuels. Denmark has set a new goal to produce 4-6GW of green hydrogen annually by 2030 — one of the highest targets in Europe — and will also hold a DKr1.25bn ($184m) tender for renewable H2 production. https://www.rechargenews.com/energy-transition/ukraine-war-denmark-approves-new-green-hydrogen-tender-and-4-6gw-target-for-2030/2-1-1185065
- **Unilever (Liverpool England) begins hydrogen fuel trial in its factory boilers**
  - Unilever will be testing hydrogen fuel in the boilers of its Port Sunlight factory located near Liverpool in the United Kingdom. This H_2 fuel test is a component of a broader HyNet Industrial Fuel Switching program, which is focused on the decarbonization of heavy industry in the northwest of England. This is believed to be the first 100% H_2 firing demonstration of its nature in a consumer goods production environment. According to the news release from the company, the facility makes products such as Persil laundry detergent and Tresemme haircare lines. https://www.hydrogenfuelnews.com/hydrogen-fuel-factory-boilers/8551771/?
- **Hydrotec Fuel Cells Have ‘Several Competitive Advantages’**
  - Finding like-minded partners is critical, Mann said. Partners include Navistar with class eight trucks, Liebherr with auxiliary plane power and Wabtec for locomotive and transit rails. Additionally, Mann said there isn’t a compromise to payload or performance.
  - “GM Hydrotec is on the cusp of commercializing fuel cells,” she said. “What excites me about working at General Motors is I get to work on this one technology that I’m really passionate about and that’s fuel cell technology and electrification in general.” https://businessjournaldaily.com/engineering-manager-says-hydrotec-fuel-cells-have-several-competitive-advantages/
- **Fraunhofer working on optimized methanol reformers to deliver hydrogen**
  - We are opting for catalyst coatings containing precious metals similar to those used in automotive catalytic converters, because there is no attrition with these coatings. Less catalyst material is required as a result. Because our catalyst materials also have a higher activity, the amount of catalyst required is reduced even further, and consequently the costs. https://www.greencarcongress.com/2022/03/20220312-fraunhofer.html
- **Emission-Free Fuel Cell Drives from Proton Motor for Maritime Mobility**
  - Europe's leading hydrogen fuel cell producer Proton Motor Fuel Cell GmbH enables ship and maritime manufacturers to implement climate-neutral fuel cell propulsion systems for the inland and offshore sectors https://www.maritime-executive.com/features/emission-free-fuel-cell-drives-from-proton-motor-for-maritime-mobility
- **Hydrogen fuel cell plant opens in UK | Aerospace Testing International**
  - Hypoint has opened an R&D and production site in the UK to make its air-cooled hydrogen fuel cells, which are being developed specifically for use in aircraft.
  - The laboratories in Sandwich, Kent were officially inaugurated last month. Speaking at the opening ceremony Alex Ivanenko, HyPoint’s founder and CEO said, “The launch of the manufacturing site is an important step in our journey.

https://www.aerospacetestinginternational.com/features/hydrogen-fuel-cell-plant-opens-in-uk.html

- **Record-breaking hydrogen electrolyzer claims 95% efficiency**
  - A kilogram of hydrogen holds 39.4 kWh of energy, but typically costs around 52.5 kWh of energy to create via current commercial electrolyzers. Australian company Hysata says its new capillary-fed electrolyzer cell slashes that energy cost to 41.5 kWh, smashing efficiency records while also being cheaper to install and run. The company promises green hydrogen at around US$1.50 per kilogram within just a few years.
    https://newatlas.com/energy/hysata-efficient-hydrogen-electrolysis/

Palladium

- **Russia's Nornickel has new routes for palladium supplies - Potanin says**
  - Nornickel is facing significant logistics issues but has managed to secure alternative routes for its palladium deliveries, its biggest shareholder, Vladimir Potanin, told Russian RBC TV on Saturday.
  - Matt: Both Nornickel and Russian PGM refiners are resolving logistics issues by shipping by air using Turkish Airlines, Emirates Airlines, or Qatar Airlines, and then routing from there. London and Zurich receiving fresh shipments of palladium increasing trading desks liquidity and dropping prices. Look for further uncoiling of the $800-$1,000/Toz spike observed during Russia's invasion of Ukraine.
    https://www.mining.com/web/russias-nornickel-has-new-routes-for-palladium-supplies-potanin-tells-rbc/
- **Russia's invasion of Ukraine has shone a spotlight on palladium and platinum supplies. What does the future hold?**
  https://stockhead-com-au.cdn.ampproject.org/c/s/stockhead.com.au/resources/russias-invasion-of-ukraine-has-shone-a-spotlight-on-palladium-and-platinum-supplies-what-does-the-future-hold/?amp
- **Palladium dives about 17% as Russia supply fears recede**
  - "There's been a sudden shift of expectations that there might not be much disruption with exports and that we could start to be seeing some demand destruction for the chip sector and auto manufacturers," said Edward Moya, senior market analyst at OANDA.
    https://www.nasdaq.com/articles/precious-palladium-dives-about-17-as-russia-supply-fears-recede

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

- **Ru & Pt Alloy PVD Targets: MRAM Process Development And Production Briefing**
  - Today's STT-MRAM is gaining adoption for embedded memory applications to replace flash, EEPROM and SRAM. Several logic IDM/foundries are offering embedded STT-MRAM solutions: TSMC, Samsung, Global Foundries, and Intel. In the near future, we see embedded STT-MRAM (eMRAM) emerging in applications, such as the Internet of Things (IoT), microcontroller units (MCUs), automotive, edge computing and Artificial Intelligence (AI).
  - From a market perspective, although NAND and DRAM will maintain dominant positions over the next several years, MRAM is forecasted to grow significantly. By 2024, Yole Développement has reported the STT-MRAM market potential growth to be $1.8B ($1.2B embedded plus ~$0.6B stand-alone), an 85% CAGR (2018-2024) with a total wafer production volume of >300K, a 126% CAGR (2018-2024).
    https://semiengineering.com/mram-process-development-and-production-briefing/
- **Pt & Ru: Data Center Growth Faces Rising NIMBY Pushback**
  - The relentless push to expand regional data center hubs outward is encountering growing resistance from residents who don't want these facilities near them and public officials who say the facilities are not sustainable.
  - The large amount of water used to cool data centers is generating opposition to new facilities in expanding data center hubs like Greater Phoenix, a region where local water resources soon will not be adequate to support the needs of one of the nation's fastest-growing cities.
    https://www.globest.com/2022/03/18/data-center-growth-faces-rising-nimby-pushback/?

Clean Energy General News

- **Finland starts much-delayed nuclear plant, brings respite to power market**
    - Finland's much-delayed Olkiluoto 3 nuclear reactor started test production on Saturday, operator TVO said, delivering power to the national grid which over time is expected to reduce the need for electricity imports and lead to lower prices. The 1.6 GW reactor will ramp up to full output by the end of July, and represent 14% of Finland's electricity demand.
    - *Matt: The nuclear plants neutron absorbing control rods, designated as Rod Cluster Control Assemblies (RCCAs) for a 1.6 GW reactor will contain approximately 49koz of Silver.* https://www.reuters.com/world/europe/finland-starts-much-delayed-nuclear-plant-brings-respite-power-market-2022-03-12/
- **BP predicts renewables will dominate global power**
    - Renewables will account for all or most of the increase in global power generation in the years to 2050, according to BP. The oil major said wind and solar energy will expand rapidly, underpinned by continuing falls in their costs and an increasing ability of power systems to integrate high concentrations of variable sources. The share of (variable) renewables in global primary energy will increase to between 35% and 65% by 2050 from around 10% in 2019 in the three scenarios. https://renews.biz/76339/bp-predicts-renewables-will-dominate-global-power/
- **Big polluters: One massive container ship equals 50 million cars**
    - So ... you want to help "save the world" by buying an electric car?
    - Did you know ... in a single year 15 of the largest cargo ships produce the same amount of pollution as ... wait for it ... ALL OF THE AUTOMOBILES IN THE ENTIRE WORLD?
    - Now, let's add some more perspective ... there are 90,000 cargo ships! Shocking! Isn't it? So why, oh why, are we focused on automobile pollution when ships generate 260 times more global pollution??? https://newatlas.com/shipping-pollution/11526/
- **Climate-positive, high-tech metals are polluting Earth, but there are solutions**
    - Green energy technology growth is crucial if the world is to meet Paris climate agreement goals. But these green solutions rely on technology-critical elements, whose production and disposal can be environmentally harmful.
    - These 30 to 35 TCEs (Technology Climate Elements) are essential to computers, consumer electronics, solar cells, wind turbines, electric cars, plus military and medical applications.
    - They include the platinum family of precious metals, rare-earth elements such as neodymium and scandium, and other metals such as cobalt, lithium and tungsten. What this diverse grouping has in common isn't some shared chemistry, but rather its technological necessity and geopolitical scarcity. https://www.eco-business.com/news/climate-positive-high-tech-metals-are-polluting-earth-but-there-are-solutions/
- **Supply Shock: What Happens If Russian Metals Go Offline?**
    - Russia is more than oil and gas; it is a major supplier of metals and minerals. What would happen if those supplies were no longer available for sale? The hypothetical shock used had no end period and only the immediate effects, those limited by a 1-year period, were modeled and expressed as a percentage price movement.
    - Palladium would be the most affected metal, followed by titanium, platinum, potash, aluminum and then nickel in the low elasticity assumption. This is revealing because it was nickel prices that spiked the most on news of Russian supply concern. *← Ni had more to do with Tsingshan's; see articles below.*
    - This reveals commodities may be more exposed to speculative and warehousing risks immediately shock than actual long term supply shortages. ←Also logistics & buying countries supply chain alignment https://thenugget.prospectorportal.com/supply-shock-russian-metals-go-offline

BEV / LiB Mineral & Battery Market News

- **Insane lithium price rally continues with "little relief in sight"**

- Lithium prices have jumped across the board over the past year on the back of heavy demand from the automotive sector, but inside China there is a mad scramble, particularly for carbonate.
- Carbonate continues to soar in 2022 after more than quadrupling in value last year, according to Benchmark Mineral Intelligence, a battery supply chain researcher and price reporting agency. https://www.mining.com/insane-lithium-price-rally-continues-with-little-relief-in-sight/

- **China Power Battery loading capacity in February: CATL remains a leader and LFP keeps advantageous market position**
    - The lithium iron phosphate battery keeps advantageous market position, with the total loading of LFP batteries is 7.8GWh, while the total loading of NCM & NCA batteries only 5.8GWh. As the prices of nickel and cobalt continue to rise, more and more car companies will choose lithium iron phosphate in the second half of the year.
    - In terms of output, in February 2022, China's power battery output totaled 31.8GWh, and lithium iron phosphate (LFP) battery output was 20.1GWh, accounting for 63.1% of the total output.
    - Matt: Even with Lithium Carbonate prices at $77,430/mt, it is not clear that LFP Recycle is economically viable. Treatment Charges still outweigh returned metals prices on LFP. Most of China's LFP are still destined for landfills at end of life without government regulations. The explosion in LFP chemistry LiB mix is predictable for cost and because of Ni and Co supply constraints. http://www.iccsino.com/news/show-htm-itemid-16557.html
- **Rivian will follow Tesla and change the type of battery cells it uses (to LFP) in standard packs**
    - Electric vehicle maker Rivian plans to use new battery cells will be made with high nickel, and lithium iron phosphate (LFP) chemistries. LFP cells will be used in Rivian's standard battery packs.
    - The company is following in the footsteps of Tesla and several Chinese automakers by adopting LFP battery cells for its standard-level battery packs. https://www.cnbc.com/2022/03/10/rivian-changing-battery-cells-to-lfp-following-tesla-and-high-nickel.html
- **Chinese tycoon's 'big short' on nickel trips up Tingsha's miracle growth**
    - One of the world's top nickel producers faces massive losses on its short positions after prices soared over $100,000/mt last week and forced the London Metal Exchange to halt nickel trading.
    - Tsingshan has to either pay off the outstanding short positions, which could be as high as $8 billion, or prove it has sufficient deliverable nickel (~100 ktons or 4% of the 2.1 Mt mined last year) to repay. https://mail.yahoo.com/d/folders/1/messages/AGOBnXAliF2TYi9tugnjQIDtTfE?reason=invalid_crumb
- **(2019) Tesla Model 3 Battery Degradation At 100K Miles, Highway Range Test**
    - In the end, the car proved capable of traveling 225 miles at a constant 70 mph, followed by about 20 additional urban miles until the battery's capacity and its buffer were essentially spent. This all proved that the pack delivered just over 67 kWh. When the car was new, it had about 75 kWh battery capacity (250-mile range @ 70 MPH). The total loss at over 100,000 miles is ~10%-11%. Pretty impressive!
    - Matt: 10%-11% degradation after 3-years of service to me is a concern. Again, ICE surviving > 19 years on average in US today. https://insideevs.com/reviews/573397/tesla-model-3-100k-battery-degradation-range-test/?
- **China's Tsingshan agrees standstill agreement on LME nickel margins with banks**
    - China's Tsingshan Holding Group has reached an agreement with banks under which they will not make margin calls on or close out the producer's nickel positions on the London Metal Exchange (LME), the company said on Monday, a move sources said should help calm the market. https://www.reuters.com/world/china/chinas-tsingshan-agrees-standstill-agreement-lme-nickel-margins-with-banks-2022-03-14/
- **Investors find they have no easy alternative to chaotic LME nickel trade**
    - The LME benchmark nickel contract slumped to $41,945 a tonne on Thursday, hitting its daily limit for the second day in a row. Traders said it would probably continue to slide until it reached parity with the price of the metal in China at about $34,300/mt.

http://www.reuters.com/article/lme-nickel-alternativesidUSKCN2LE2C3?

- **Nickel slides as LME glitches fuel more market mayhem**
  - The London Metal Exchange's (LME) benchmark nickel contract slumped to its daily limit for the second day in a row on Thursday and traders said it would probably continue to slide until it reached parity with the price of the metal in China.
  - As on Wednesday, the exchange's electronic system LMEselect was hit by technical glitches with some traders unable to enter nickel orders ahead of the open at 0800 GMT. To iron out the disruption, electronic trading started at 0845 GMT instead.
    https://www.reuters.com/world/uk/lme-nickel-slides-technical-glitches-hit-trading-again-2022-03-17/

Regards –

Tom Brady Realizes It's Easier To Be Hit By 300-Pound Linemen Than Stay Home All Day With Young Kids