Precious Metals Commodity Management LLC

Weekly Precious Metals News Articles: August 21, 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-

Sorry for the delayed distribution this week. I have been managing a family health emergency.

Gold

- **Daily Gold News: Friday, August 20 – Gold's Low Volatility**
    - The gold futures contract lost 0.07% on Thursday, as it extended its short-term consolidation following the recent advances. The market got close to $1,800 price level after bouncing from the August 9 local low of 1,675.90. Despite an increased volatility on the stock market, the yellow metal has been fluctuating within a relatively narrow trading range since Monday.
    https://finance.yahoo.com/news/daily-gold-news-friday-august-115619048.html
- **Markets slide as China throws sand into the gears of recovery**
    - European stocks have come under further pressure today, and in a contrast to last week the falls appear to be being driven by several factors, so you can pick your poison to a certain extent, however the prospect of a Federal Reserve taper is unlikely to one of the main factors, given that US yields are lower.
    https://www.cmcmarkets.com/en/news-and-analysis/markets-slide-as-china-throws-sand-into-the-gears-of-recovery
- **Stock markets sink on 'cocktail of worries'**
    - Share markets and oil prices tanked on Thursday after the US Federal Reserve warned it could soon start to cut back its support for the economy.
    https://www.bbc.com/news/business-58262203?xtor=AL-72-%5Bpartner%5D-%5Bmicrosoft%5D-%5Bheadline%5D-%5Bnews%5D-%5Bbizdev%5D-%5Bisapi%5D

Semiconductor Related Articles (impacting Precious Metals electronics):

- **Semiconductor market to grow 25% in 2021, says WSTS**
    - The worldwide semiconductor market is forecast to surge 25% in 2021, according to the World Semiconductor Trade Statistics (WSTS). WSTS estimated previously a 19.7% increase.
    - Following 6.8% growth in 2020, the worldwide semiconductor market is expected to grow 25.1% to US$551 billion in 2021, WSTS said.
    - All major product categories will enjoy increases this year, with memory set to register the largest growth, WSTS indicated. The memory sector is forecast to post 37.1% revenue growth in 2021, followed by the analog segment with 29.1% growth and logic with 26.2%.

https://www.digitimes.com/news/a20210818PR202.html

- **Water With Your Chips? Semiconductors and Water Scarcity in China – The Diplomat**
    - Everyone knows it's a bad idea to spill water on a cell phone, but did you know that it takes more than 3,000 gallons of water to produce one? Water is needed for mining the metal, making the glue and plastic for assembly and packaging, and then diluting the wastewater used throughout the process. This amount is 10 times the average per capita daily water consumption in China.
    - Semiconductors, the tiny circuits known as chips that power all of our electronic devices — including your phone — are particularly thirsty. Each 30 cm integrated circuit board that holds the chips in your phone requires at least 2,000 gallons of H2O to produce. This is because each chip needs to be rinsed with ultrapure water (UPW) — water so pure that is considered an industrial solvent — to remove debris (ions, particles, silica, etc.) from the manufacturing process and prevent the chips from becoming contaminated. It takes 1,400-1,600 gallons of tap water to make 1,000 gallons of UPW.
    https://thediplomat.com/2021/08/water-with-your-chips-semiconductors-and-water-scarcity-in-china/
- **Global chip shortage may last until 2023, Infineon CEO Reinhard Ploss tells FAZ**
    - "Building new facilities and clean rooms in which the silicon wafers are processed into chips can take two to two and a half years; upgrading existing facilities three quarters to one year," he said.
    - The chip crunch this year is hurting production at companies from Tesla Inc. to Apple Inc. and Microsoft Corp. The amount of time it's taking for manufacturers to get orders filled stretched to more than 20 weeks in July, worsening from the previous month, research by Susquehanna Financial Group showed.
    https://www.livemint.com/companies/people/global-chip-shortage-may-last-until-2023-infineon-ceo-reinhard-ploss-tells-faz-11629071329223.html
- **Chipmaker GlobalFoundries files confidentially for U.S. IPO -sources**
    - GlobalFoundries Inc has filed confidentially with U.S regulators for an initial public offering (IPO) in New York that could value the chipmaker at around $25 billion, people familiar with the matter said on Wednesday.
    - The move is the clearest sign yet that GlobalFoundries, which is owned by Abu Dhabi's sovereign wealth fund Mubadala Investment Co (MUDEV.UL), is not eager to accept a potential tie-up with Intel Corp (INTC.O), which the Wall Street Journal reported last month was in talks to acquire the U.S. chipmaker.
    https://www.reuters.com/technology/exclusive-chipmaker-globalfoundries-files-confidentially-us-ipo-sources-2021-08-18/
- **Samsung Considering 3 U.S. Fab Locations**
    - Samsung said it is negotiating with three U.S. states to build a $17 billion chip facility that could start production as early as the end of 2024. If the world's second-largest chipmaker fails to win sufficient subsidies in the U.S., the company said it would instead construct the new fab in South Korea, where Samsung is headquartered.
    - The company is evaluating sites in Texas, where it operates two chip facilities, including an EUV fab in Austin, along with New York and Arizona. If built, the new fab that would make advanced logic chips for Samsung's new foundry business, the company said in a filing with the Texas comptroller's office.
    https://www.eetimes.com/samsung-considering-3-u-s-fab-locations/#

Silver

- **Silver Price Forecast – Silver Markets Continue to Show Weakness**
  - Silver markets initially tried to rally during the trading session on Wednesday but gave back the gains near $24 to show signs of weakness. Ultimately, this is a market that I think is probably going to continue to reach towards the $23 level, possibly even down towards the lows of last week. Breaking down below that would then open up the possibility of a move down to the $20 level. In the short term, I think that rallies will continue to be sold into, especially as the US dollar continues to show signs of strength. Ultimately, the market is also paying close attention to the "death cross" that just formed, and therefore I think it makes quite a bit of sense that longer-term sellers continue to move into this market.
    https://finance.yahoo.com/news/silver-price-forecast-silver-markets-161910363.html
- **Chinese PV Industry Brief: Longi raises PV wafer prices, new entrant switches on 15 GW of wafer capacity**
  - GokinSolar has commissioned the first 15 GW unit of its 50 GW PV wafer manufacturing facility in Zhuhai City, Guangdong Province and Golden Solar New Energy Technology last week announced commercial production plans for the flexible, lightweight, cast-mono, heterojuntion (HJT) solar modules. Meanwhile, Longi has raised the prices of its wafers.
    https://www.pv-magazine.com/2021/08/20/chinese-pv-industry-brief-longi-raises-pv-wafer-prices-new-entrant-switches-on-15-gw-of-wafer-capacity/
- **Mercom 1H & Q2 2021 Solar Funding and M&A Report**
  - Industry report
    https://mercomcapital.com/secure_pdf.php?pdf=Aug2021/MercomSolarReport16Aug2021.pdf

Precious Metals Mining:

- **Implats expects full-year profit to double due to higher metals prices**
  - Implats will join Amplats in reporting bumper profits, as they cash in on higher PGM prices
    https://www.businesslive.co.za/bd/companies/mining/2021-08-16-implats-expects-full-year-profit-to-double-due-to-higher-metals-prices/
- **The Anglo-American share price is down 10% today! Should I buy the dip?**
  - One reason that can be seen for this is the fall in the price of key commodities. For example, oil is down 3% on the day. On the metals front, copper is also down 3%, with platinum and palladium also down at least 2%.
  - Anglo American is the world's largest producer of platinum but also has exposure to other metals mentioned above, including copper. So the fall in prices is a negative knock-on impact for the company. This applies for the rest of the sector in general.
    https://www.fool.co.uk/investing/2021/08/19/the-anglo-american-share-price-is-down-10-today-should-i-buy-the-dip/
- **Amcu rejects Sibanye's R250 wage increase offer**
  - The Association of Mineworkers and Construction Union (Amcu) has criticised a proposed wage increase at Sibanye-Stillwater in the gold wage talks, describing it as even less than the government's grant to the unemployed affected by Covid-19.
  - Amcu president Joseph Mathunjwa said the union would approach this year's wage negotiations with the spirit of honouring the fallen Marikana miners who were killed by police in a labour dispute in 2012. The Star understands that the unions were negotiating with individual mining companies because of the impact of Covid-19 on individual companies.
    https://www.iol.co.za/the-star/news/amcu-rejects-sibanyes-r250-wage-increase-offer-6118086d-296e-49e4-977f-d33e8e257f88
- **The life of your mine may be shorter than you think**

    - Environmental concerns are rising. There is no doubt that mining companies will end up with zero-tolerance policies towards environmental degradation, as they have with respect to mine safety, but the pace of change will inevitably differ across countries. Europe is currently leading: here, the expectation is that new mines will only be approved if they are fully reliant on renewable energy. Change is likely to be slower in Africa and Central and South Asia, where economies are still developing and net zero commitments will come later.
    - The social license to operate a mine has become more expensive. Recent damage to Aboriginal heritage sites represents a landmark moment. It has made companies more averse to mining in areas of cultural, historical, and sacred significance to local communities. Furthermore, it has led to a more challenging operating environment and increased difficulties with regards to expansion plans, as in the case of Baffinland in Canada.
    https://sustainability.crugroup.com/article/life-of-your-mine-may-be-shorter-than-you-think
- **(S. African Power Company) Eskom electricity prices have skyrocketed, and it's going to get worse**
    - Eskom has warned that it might may be forced to implement load shedding at short notice particularly between 6 pm and 9 pm "should further generating losses occur". The power utility reported the loss of four generating units since Thursday morning, including Medupi.
    - Average electricity prices in South Africa have surged by over 582% since load-shedding was first implemented in 2007. Last year saw Eskom implement the greatest amount of load-shedding in 14 years. The utility also slapped an average increase of 15.06% on tariffs for the 2020/2021 financial year. This was the biggest increase in electricity prices in the last eight years.
    https://mybroadband.co.za/news/energy/410044-eskom-electricity-prices-have-skyrocketed-and-its-going-to-get-worse.html

E-Waste & Precious Metals Recycle Related:

- **The Recyclable Value Of End Of Life Vehicle Components - Auto Recycling World**
    - Spark Plugs, Oxygen Sensors, and Catalytic Converters All Have Recyclable Value
    https://autorecyclingworld.com/the-recyclable-value-of-end-of-life-vehicle-components/
- **Environment Preservation & Other Outstanding Benefits of Battery Recycling**
    - Millions of batteries with their hazardous components get dumped in landfills all over the world. Most of these batteries are never properly disposed of and recycled. Battery recycling is the solution to this problem.
    https://www.altenergymag.com/article/2021/07/environment-preservation-other-outstanding-benefits-of-battery-recycling/35580

Platinum

- **Gold and platinum found in the sewers of Brussels**
    - Researchers from the two Brussels universities VUB and ULB have succeeded in extracting particles of gold, platinum and other metals from the sewers of the city.
    - The work is part of the Sublimus project carried out with the Meurice Research Institute in Anderlecht. It set out in March 2019 to measure the presence of gold, platinum, nickel and copper in sewer water, with a view to recuperation.
    https://www.brusselstimes.com/news/belgium-all-news/180998/gold-and-platinum-found-in-the-sewers-of-brussels/
- **WPIC: Platinum Truth**
    - Strong launch for inaugural platinum Truth Series coins
    https://platinuminvestment.com/files/sixtysecs/WPIC_60seconds_Platinum_truth_18082021.pdf

Fuel Cells/Hydrogen Economy Related Articles:

- **Hyundai Motor creates an 'independent brand' for hydrogen commercial vehicles**

- Hyundai Motor will introduce its own independent brand that will promote commercial hydrogen fuel cell electric vehicles (FCEVs) similar to 'IONIQ', an eco-friendly vehicle brand. Hyundai Motor organized a marketing team dedicated to global hydrogen commercial vehicles under strategic support division, and started preparatory work, including creating a new brand. It is at the stage of establishing brand identity and discussing detailed plans. The name for the independent brand has not been confirmed.
  https://english.etnews.com/20210818200001

- **Integrated electrolyser and hydrogen fuel cell system set to benefit decentralised energy generation and storage**
  - Nel and SFC Energy want to develop what they say to be the world's first integrated electrolyser and hydrogen fuel cell system for decentralised energy generation and storage.
  - Formalising a new partnership today (August 18), the duo said they hope to replace diesel generators with hydrogen fuel cell-based systems in combination with green hydrogen production through electrolysis.
  - Such effort will see developments set to be carried out in two phases. Initially, Nel and SFC Energy will focus on applications in a power range of up to 50kW with a daily operating time of two to ten hours which can be used as reliable emergency power generators.
    https://www.h2-view.com/story/integrated-electrolyser-and-hydrogen-fuel-cell-system-set-to-benefit-decentralised-energy-generation-and-storage/

- **Fuel cell trucks are now shipping to Hyzon Motors customers**
  - Hyzon Motors, a heavy-duty hydrogen fuel cell truck maker, recently announced that it is now shipping its products to customers in Europe. This is the result of the merger the company has completed with blank-check firm Decarbonization Plus Acquisition Corp.
    https://www.hydrogenfuelnews.com/fuel-cell-trucks-hyzon-motors/8547929/?mc_cid=714e1862a0&mc_eid=70c1246d58

- **Deutz hydrogen fuel engine will hit full production in 2024**
  - The Deutz TCG 7.8 hydrogen fuel engine is now moving forward beyond its initial testing and will begin its manufacturing. It is slated to reach full production in 2024. After the initial testing phase, the first pilot application for the H2 engine will be in stationary power generation equipment. This first real-world application is a component of a regional utility company partnership with Deutz.
  - The next phase of testing will start next year. Those tests will be focused on demonstrating the suitability of this H2 powered equipment for everyday use. That testing will be integral to progressing forward and reaching its production targets two years afterward.
    https://www.hydrogenfuelnews.com/hydrogen-fuel-engine-deutz/8547934/?mc_cid=714e1862a0&mc_eid=70c1246d58

- **This Futuristic Hydrogen-Powered Catamaran Concept Was Designed for Long-Range, Zero-Emissions Cruising**
  - Aboard the cat, there is a tank to store liquid hydrogen, lithium-ion batteries, PEM fuel cells and two electric motors. This setup could theoretically see the vessel cover exceptionally long ranges sans noise, emissions, fumes or vibrations. It sounds too good to be true, but similar hybrid systems have already hit the high seas. Last year, a converted ocean-racing catamaran, known as the Energy Observer, completed a 5,000-nautical mile transatlantic voyage from France to the Caribbean using a hydrogen fuel cell and solar power. Furthermore, marine heavyweights like as Lürssen, Sinot and Alva Yachts have all announced hydrogen-powered vessels.
    https://www.yahoo.com/lifestyle/futuristic-hydrogen-powered-catamaran-concept-220000165.html

- **Hydrogen-powered vehicles: Realistic path to clean energy?**

- The most abundant element in the universe increasingly is seen as an answer to slowing the catastrophic effects of climate change blamed gas and diesel cars and trucks. https://chicago.suntimes.com/2021/8/16/22627926/hydrogen-powered-vehicles-clean-energy-climate-change

- **Misleading paper on blue hydrogen revised, with modified conclusions**
  - And let me provide the following alternative conclusions:
  - A) There are clear environmental advantages in using blue hydrogen powered by natural gas compared with simply using the natural gas directly for heat or other fossil fuels.
  - B) In order for blue hydrogen to have a role in the transition to a carbon-free future, it is key to:
  - Adopt processes with high CO2 capture rate (order of 90% or higher. Develop a low emission natural gas supply chain, minimizing methane leakage and exploiting renewable energies for power supply
  - Consider LCA emissions in sustainable hydrogen taxonomy https://www.linkedin.com/pulse/misleading-paper-blue-hydrogen-revised-modified-matteo-romano
- **Panasonic takes Japan's bet on hydrogen power to a new level**
  - Panasonic Corp. is turning a fuel-cell factory in the lakeside city of Kusatsu in central Japan into what could be the world's first hydrogen-based plant powered entirely by renewable energy. https://www.postguam.com/business/panasonic-takes-japans-bet-on-hydrogen-power-to-a-new-level/article_a8b1da14-fe61-11eb-92a1-7f8809d7e41d.html

Palladium

- **Palladium Auto Catalyst: VW might have to cut production further due to chip shortage**
  - Volkswagen may need to cut production further due to a semiconductor supply crunch, the German carmaker said on Thursday, after a report that Toyota would slash output by 40% in September.
  - "We currently expect supply of chips in the third quarter to be very volatile and tight," Volkswagen, the No.2 volume carmaker behind Toyota, said in answer to a request for comment by Reuters. "We can't rule out further changes to production." https://www.reuters.com/business/autos-transportation/vw-says-might-have-cut-production-further-due-chip-shortage-2021-08-19/
- **Passenger car sales in China drop in July**
  - Sales of passenger cars in China last month declined from a year ago, an industry association said Tuesday. Retail sales of passenger vehicles, including sedans, sport-utility vehicles, and multipurpose vehicles, dropped 6.2 percent year on year to 1.5 million units in July, data by the China Passenger Car Association (CPCA) showed. https://www.msn.com/en-xl/news/other/passenger-car-sales-in-china-drop-in-july/ar-AAN9CcC?ocid=BingNewsSearch
- **Biden administration proposes tougher fuel standards for new vehicles starting in 2023**
  - EPA said the proposed tighter standards for greenhouse gas emissions and some other emissions would cut those emissions by about 10% in 2023 from what they would have been under existing regulations, then by about 5% a year over the next 3 years, through 2026. https://www.ogj.com/general-interest/article/14209092/biden-administration-proposes-tougher-fuel-standards-for-new-vehicles-starting-in-2023

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

- **Rhodium party still going strong**

- Can rhodium be expected to continue at this clip? Amplats said in a presentation that the 72 000 oz rhodium deficit of last year would become a small surplus this year before returning to a fresh deficit in 2022, albeit of a much smaller scale than in 2020.
- That, however, is all that's required for the rhodium party to kick off again.
https://www.news24.com/fin24/Finweek/rhodium-party-still-going-strong-20210812

- **Ruthenium: UT Arlington chemists develop a new drug to fight bladder cancer**
    - Scientists looking for new cancer-fighting molecules want a drug that is much more toxic to cancer cells than healthy cells, she said. Many metal-based drugs have shown this property — known as selectivity — in preclinical models and even in clinical trials, she said.
    - Contel said the compound that the UT Arlington chemists have developed builds nicely on other ruthenium-based compounds.
    https://www.msn.com/en-us/health/medical/ut-arlington-chemists-develop-a-new-drug-to-fight-bladder-cancer/ar-AANcFII?ocid=BingNewsSearch
- **Iridium: Chemists Take a Vital Step Towards Greener Food Production**
    - Shining blue light on iridium gets it "excited," giving it the energy to bump into the anthracene molecule and transfer a hydrogen atom, making a weak bond. The iridium catalyst then activates hydrogen gas, completing the cycle.
    https://www.azocleantech.com/news.aspx?newsID=29903

Clean Energy General News (New Section)

- **The scary new climate report means fossil fuel use needs to start falling, fast**
    - The global climate report released Monday offered a dramatic reminder of the need to slash use of fossil fuels, not just by 2050, when many corporations have pledged to stop scorching the planet, but in the next few years.
    https://www.nny360.com/news/nationandworld/the-scary-new-climate-report-means-fossil-fuel-use-needs-to-start-falling-fast/article_f91bb371-80ab-5b3d-8076-18da97f2d9df.html
- **First Clean Power Annual Report Shows Record U.S. Renewables Growth and Investment**
    - U.S. installed 26 gigawatts of new clean power in 2020; 170 GW of capacity enough to power 50 million homes. Industry employs 415,000 Americans and has invested $334 billion in the U.S. economy since 2005 with more growth coming.
    - The rapid pace of new clean power installations included 16,836 MW of land-based wind, representing 50 percent of new additions; 8,894 MW of utility-scale solar projects, capturing 26 percent of the market; and 760 MW of battery storage capacity. Combined wind, solar, and battery storage power represent 78 percent of new power installations in 2020.
    https://www.altenergymag.com/article/2021/07/first-clean-power-annual-report-shows-record-us-renewables-growth-and-investment/35603
- **Nuclear scientists in the US hail a fusion breakthrough**
    - Nuclear scientists using lasers the size of three football fields on Tuesday said that they had generated a huge amount of energy from fusion, possibly offering hope for the development of a new energy source.
    - Experts focused their giant array of almost 200 laser beams onto a tiny spot to create a mega blast of energy, eight times more than they had ever done in the past.
    - Although the energy only lasted for a very short time, just 100 trillionths of a second, it took scientists closer to the holy grail of fusion ignition, the moment when they are generating more energy than the activation process requires.
    - "This result is a historic advance for inertial confinement fusion research," said Kim Budil, the director of Lawrence Livermore National Laboratory, which operates the National Ignition Facility (NIF) in California, where the experiment took place this month.

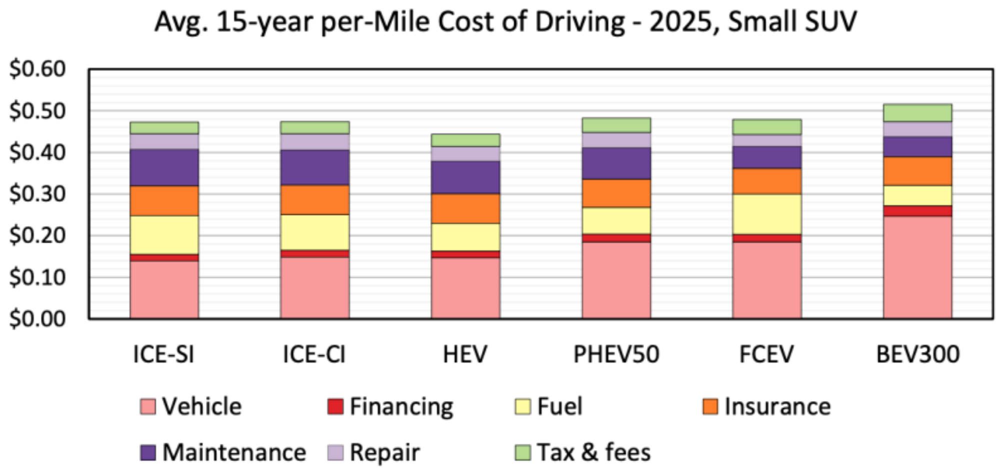
https://www.taipeitimes.com/News/front/archives/2021/08/19/2003762848

- **China eying Afghan rare earth windfall: Congressman**
  - China is set to move to Afghanistan to mine rare earth elements (REEs), and the profits could be used to fund future terrorism, said a Texas Congressman on Tuesday..
  - "China will be moving. There are rare earth minerals in (Afghanistan). I don't know why we didn't work with the Afghans to develop that, we we never did," the top Republican on the House Foreign Affairs Committee Michael McCaul said. https://asiatimes.com/2021/08/china-eying-afghan-rare-earth-windfall-congressman-2/
- **South Africa has potential to become major player in green ammonia – Isondo adviser**
  - Green ammonia can be used to transport green hydrogen from the source of production to the end-user in a cost-efficient manner and, owing to its endowment of natural resources, South Africa is ideally positioned to become a major international player in this industry, fuel cell components manufacturer Isondo Precious Metals technical adviser Kevin Fothergill says. https://www.engineeringnews.co.za/article/south-africa-has-potential-to-become-major-player-in-green-ammonia-isondo-adviser-2021-08-16

BEV / LiB Battery Market News

- **Energy storage appears to be fully charged for exponential growth**
  - Lithium-based energy storage volumes are expected to grow by multiple orders of magnitude in the coming years, with a 1,000% capacity increase by 2023. https://www.pv-magazine.com/2021/08/20/energy-storage-appears-to-be-fully-charged-for-exponential-growth/
- **Tesla Says It Can Now Recycle 92% of Battery Cell Materials**
  - The electric vehicle maker recycled 1,300 tons of nickel in 2020. https://interestingengineering.com/tesla-says-it-can-now-recycle-92-of-battery-cell-materials
- **Sumitomo Metal develops rechargeable battery recycling technology**
  - Japan's Sumitomo Metal Mining Co Ltd said on Monday it had developed a technology to recover nickel and cobalt from rechargeable batteries such as used lithium-ion-batteries (LIBs) that can be reused as raw materials for LIBs.
  - Japan's biggest nickel smelter, which has been able to recover nickel and copper from rechargeable batteries since 2017, has successfully recovered a high-purity nickel-cobalt mix by separating impurities, it said in a statement. https://batteryindustry.tech/sumitomo-metal-develops-rechargeable-battery-recycling-technology/
- **Fubon leads $64 million investment round in graphene battery maker Nanotech Energy**
  - Fubon Financial Holding, the Taiwan financial services business led by the billionaire Tsai family, has led an $64 million investment round in U.S. battery maker Nanotech Energy, Chico, California, Forbes.com reports.
  - Nanotech Energy makes batteries for the fast-growing electric vehicle market, as well as consumer electronics. U.S. President Joe Biden on Aug. 5 called for half of new vehicles sold in the U.S. by 2030 to have zero-emissions, potentially boosting makers of battery electric, plug-in hybrid electric, or fuel cell electric vehicles. https://batteryindustry.tech/fubon-leads-64-million-investment-round-in-graphene-battery-maker-nanotech-energy/?
- **New salt could overcome safety issues in high-performance li-ion batteries**
  - "When put in a lithium battery with lithium manganese oxide cathodes, the cell cycled for more than 1000 cycles even after atmospheric exposure, an unimaginable feat compared to the hyper-sensitive hexafluorophosphate salt," Roy said. https://batteryindustry.tech/new-salt-could-overcome-safety-issues-in-high-performance-li-ion-batteries/?

- **Elon Musk Calls Renesas and Bosch's Chip Supply 'Problematic'**
  - "We are operating under extreme supply chain limitations regarding certain 'standard' automotive chips," Tesla's chief executive officer wrote in a tweet Thursday, responding to a tweet from Ark Investment Management CEO Cathie Wood. "Most problematic by far are Renesas & Bosch."
  - Musk isn't the first in the auto industry to point fingers at Japan's Renesas Electronics Corp. and Germany's Robert Bosch GmbH for holding up vehicle output. Ford Motor Co. called out the fire at a Renesas factory north of Tokyo as a major risk to its production schedules earlier this year. Volkswagen AG held talks with major suppliers including Bosch about possibly claiming damages related to the semiconductor shortage, a spokesperson told Reuters in January.
  - Renesas said in early June that its chip plant in Naka would resume full production by mid-month. Representatives for the company didn't immediately respond to a request for comment. https://www.supplychainbrain.com/articles/33578-elon-musk-calls-renesas-and-boschs-chip-supply-problematic
- **Proterra and LG Energy Solution to partner on long-term supply agreement for EV battery cells**
  - Since 2016, Proterra and LG Energy Solution engineering teams have been collaborating to maximize cell performance to meet the stringent requirements of commercial vehicle markets. The cylindrical cells to be manufactured at the new LG Energy Solution plant will feature a new, high nickel NMCA chemistry ideal for commercial vehicle and industrial applications. With the introduction of cylindrical cells manufactured in the United States, Proterra battery systems will further meet content requirements under the United States-Mexico-Canada Agreement (USMCA). https://batteryindustry.tech/proterra-and-lg-energy-solution-to-partner-on-long-term-supply-agreement-for-ev-battery-cells/
- **Chasing Tesla: Here are the current electric vehicle plans of every major car maker**
  - Here are each major car maker's stated plans for EVs, including, when available, investment amounts and the range of models they hope to bring to market. This information was collated from company sites, previous reports, and BloombergNEF projections, and will be updated regularly. https://www.marketwatch.com/story/chasing-tesla-here-are-the-current-electric-vehicle-plans-of-every-major-car-maker-11628876816
- **DOE labs study on costs and benefits of new transportation technologies the most comprehensive to date**
  - Overall, hybrid electric vehicles tend to be the lowest-cost powertrain. Hydrogen-powered fuel cell electric vehicles will reach cost parity with conventional vehicles as the price of hydrogen falls. Battery electric vehicles, meanwhile, will reach cost parity as battery prices drop.
  - Cars depreciate faster than light trucks. Older electric vehicles have a greater depreciation rate than newer electric vehicles.
  - Light-duty vehicle insurance costs are comparable for different powertrains, and vehicle size and vocation both affect incurred costs for medium/heavy-duty commercial vehicle insurance.
  - Light-duty vehicle taxes and fees are comparable across powertrain types and size classes, though marginally higher registration fees exist for alternative fuel vehicles in many states.
  - Many electric tractor trailers would be affected by additional battery weight, reducing the available payload capacity, and this cost can be substantial.
  - Electric vehicle charging for commercial vehicles can be time-consuming; if this charging is paid at an hourly rate, labor can cause this cost to dominate total cost of ownership. https://www.greencarcongress.com/2021/08/20210814-doe.html



Avg. 15-year per-Mile Cost of Driving - 2025, Small SUV
$0.60
$0.50
$0.40
$0.30
$0.20
$0.10
$0.00
ICE-SI
ICE-CI
HEV
PHEV50
FCEV
BEV300
Vehicle
Financing
Fuel
Insurance
Maintenance
Repair
Tax & fees

Regards –