



## Weekly Precious Metals News Articles: October 16, 2020

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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. Enjoy-

### Gold

- **Gold set for weekly decline as U.S. stimulus hopes ebb**
  - Spot gold fell 0.3% to \$1,901.87 per ounce. Bullion is down 1.4% so far this week. U.S. gold futures settled 0.1% lower at \$1,906.40.
  - “With a stimulus bill this year highly uncertain, gold remains beholden to the USD,” said Tai Wong, head of base and precious metals derivatives trading at BMO.  
<https://www.cnbc.com/2020/10/16/firm-dollar-fading-stimulus-hopes-put-gold-on-track-for-weekly-loss-.html>
- **Gold dealers stock up, hope to usher in festive glitter**
  - Physical gold dealers in India continued to stock up this week ahead of an expected festival sales bump, while the Golden Week in top consumer China did little to revive bullion demand. Gold is considered an intrinsic part of Indian festivals such as Dussehra in late October, and Diwali and Dhanteras in November.  
<https://timesofindia.indiatimes.com/business/india-business/gold-dealers-stock-up-hope-to-usher-in-festive-glitter/articleshow/78708596.cms>
- **Gold settles back above \$1,900 an ounce**
  - For gold, we are just waiting for a clear cut catalyst and yes, the dollar and any updates on the stimulus negotiations [have] the biggest influence on the price as of now,” said James Hatzigiannis, chief market strategist at Ploutus Capital Advisors.  
<https://www.msn.com/en-us/money/markets/gold-settles-back-above-1-900-an-ounce/ar-BB1a0Ymp>
- **Nervous Investors Buy Gold At Record Pace On US Election Fears**
  - Nervous investors have bought more than 1,000 tonnes of gold this year, a record figure equivalent to the entire hoard the Swiss National Bank has stashed away in its vaults.  
<https://www.forbes.com/sites/jamesphillipps/2020/10/09/nervous-investors-buy-gold-at-record-pace-on-us-election-fears/#4b08eb585979>

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

- **5G Rollout on a Steady Ramp Toward Big Growth**
  - 101+ mobile operators in 44 countries have commercial 3GPP-compliant 5G services.
  - 138 million 5G connections globally, +116% improvement over the first quarter of 2020.
  - 400 commercially available 5G devices globally, 20 commercially available 5G-capable mobile processors/platforms, and eight discrete 5G modems from five different semiconductor companies.
  - Growth strongest China, South Korea, North America, with most EU countries just starting to catch up.
  - The three giant Chinese operators to deploy 600,000 5G bases-stations by the end of this year.

<https://www.eetimes.com/5g-rollout-on-a-steady-ramp-toward-big-growth/>

- **Wafer Shipments Head for Record Increases**
  - Semi forecast of wafer square inch demand y/y:
  - 2018 +8.0%; 2019 -6.9%; 2020 +2.4%; 2021 +5.0%; 2022 +5.3%; 2023 +4.1%

<https://www.eetimes.com/wafer-shipments-head-for-record-increases/>
- **Gartner Says Worldwide PC Shipments Grew 3.6% in Third Quarter of 2020**
  - Ongoing Consumer Demand for Home Entertainment and Distance Learning Drove Strongest U.S. Market Growth in 10 Years.

<https://www.gartner.com/en/newsroom/press-releases/2020-10-12-gartner-says-worldwide-pc-shipments-grew-3-point-six-percent-in-the-third-quarter-of-2020>
- **Apple just unveiled its iPhone 12 lineup, with 4 new 5G phones starting at \$699**
  - Apple launched the iPhone 12 lineup during a virtual event on Tuesday.
  - The new iPhone 12 starts at \$799, while the new iPhone 12 Mini starts at \$699. Both phones come in five colors, have a new squared-off design, and are 5G-enabled.
  - The iPhone 12 Pro and 12 Pro Max cost \$999 and \$1,099 and include pro-level camera features and high-end design.

<https://www.businessinsider.com/apple-iphone-12-price-specs-release-date>
- **Apple MacBooks and iPads may one day be powered by hydrogen fuel cells**
  - On September 29, 2020, Apple filed a patent application for what it described as the “design of a portable and cost-effective fuel cell system for a portable computing device.” The description also goes on to mention “proton exchange membrane (PEM) fuel cells” which use H<sub>2</sub>, indicating specifically hydrogen fuel cells as a power source.

<https://www.hydrogenfuelnews.com/apple-macbooks-and-ipads-may-one-day-be-powered-by-hydrogen-fuel-cells/8540679/>
- **China’s semiconductor quest is likely to fail, leaving rapprochement with US the only way out**
  - China does not have a good track record when it comes to developing its own chip industry, even with the help of foreign technology partners
  - Country’s chip makers must invent new ways to design and make semiconductors of equal or better performance than products from TSMC, Samsung and Intel

<https://www.scmp.com/tech/article/3105156/chinas-semiconductor-quest-likely-fail-leaving-rapprochement-us-only-way-out>

## Silver

- **Silver Institute: Inflow Into Silver-Backed Exchange-Traded Products Nearly Triple Y/T Over The First Three Quarters of 2020**
  - Global silver ETP holdings rose by 297 Moz through the third quarter of this year, nearly tripling the growth in the comparable period last year (297 Moz v 103 Moz). ETP holdings through the end of September stood at 1.026 billion ounces (Boz), slightly off the high of 1.052 Boz recorded in August. Global ETP holdings are on the rise again, and as of October 12, totaled 1.045 Boz.

<https://www.silverinstitute.org/inflows-silver-backed-exchange-traded-products-nearly-triple-year-year-first-three-quarters-2020/>
- **China will need 1.9 TW of solar by 2060 to hit net zero – WoodMac**
  - The bill for full decarbonization of the economy – which is likely to see the decommissioning of no more than half the current coal fleet, with CCS doing some heavy lifting, according to the US-owned analyst – could come in at more than \$5 trillion.

- Matt: At today's Solar PV Loadings, 1.9TW of incremental demand = 1.56 Billion Toz of Silver over 40 years -or- 39Moz/year for the next 40-years.  
<https://www.pv-magazine.com/2020/10/08/china-will-need-1-9-tw-of-solar-by-2060-to-hit-net-zero-woodmac/>
- **Solar the new 'king of electricity' as renewables make up bigger slice of supply: IEA**
  - In its annual World Energy Outlook on Tuesday, the IEA said in its central scenario - which reflects policy intentions and targets already announced - renewables are expected to overtake coal as the primary means of producing electricity by 2025.  
<https://www.reuters.com/article/us-iea-energy-renewables-idUSKBN26YOE7>
- **Portugal sees 74 MW of utility-scale PV coming online**
  - German group WiNRG completed three of the six projects totaling 205 MW that it is currently building in Portugal.  
<https://www.pv-magazine.com/2020/10/15/portugal-sees-74-mw-of-utility-scale-pv-coming-online/>
- **Body Sensors Printed Directly on Skin at Room Temperature**
  - Now, researchers have developed a way to print electronic sensors, as well as the accompanying electronics, directly onto the skin without using any heat in the process. This allows for easily wearable, high quality recording of a number of vitals and body signals.  
<https://www.medgadget.com/2020/10/body-sensors-printed-directly-on-skin-at-room-temperature.html>
- **Silver EO Catalyst: Sinopec begins ethylene production at Zhanjiang refinery**
  - Sinopec has started operation of a 800,000 tpy ethylene facility at its Zhanjiang refinery, the company said in a statement on Monday.  
<https://www.hydrocarbonengineering.com/refining/13102020/sinopec-begins-ethylene-production-at-zhanjiang-refinery/>
- **Silver Conductive Silicone Adhesive Meets NASA Low Outgassing Specifications**
  - MasterSil 151S  
<https://www.masterbond.com/newsrelease/mastersil-151s>

## **Precious Metals Mining:**

- **Impala Approached Over Stake in Zimbabwe Platinum Project (Darwendale)**
  - Great Dyke hopes to secure \$500 million in initial capital by the end of the year and the mine could be commissioned in 2023, CEO Aleksandr Ivanov said. It could produce more than 860,000 of PGMs a year at full production. Ivanov declined comment when spoken to by Bloomberg on Tuesday.  
<https://www.bloomberg.com/news/articles/2020-10-07/impala-approached-over-stake-in-giant-zimbabwe-platinum-project>
- **Freeport does a balancing act as world's biggest gold mine grapples with COVID-19**
  - The tensions expose the balancing act to maintain output at full blast, while containing COVID-19 in mines like Grasberg, the world's largest gold mine and second-largest copper mine.  
<https://www.thezimbabwean.co/2020/10/impala-approached-over-stake-in-zimbabwe-platinum-project/>
- **Barrick's third-quarter gold output to fall 11% y/y**
  - Canada-based gold miner Barrick Gold on Thursday reported preliminary third-quarter gold production of 1.16-million ounces of gold and 103-million pounds of copper – a respective 11% and 8% decrease on its output a year earlier.  
<https://www.miningweekly.com/article/barricks-third-quarter-gold-output-to-fall-11-yy-2020-10-15>
- **Rhodium price rises may prompt South African producers to mull restarts**
  - The rhodium price dipped back below \$14,000/oz last week but remains very high, which, combined with a weak rand-dollar exchange rate, has boosted South African producers' profits this year, Heraeus said this week. With prevailing high prices and supply not expected to keep pace with demand, there is motivation for South Africa's producers to plug the gap.  
<https://www.spglobal.com/platts/en/market-insights/latest-news/metals/101320-feature-rhodium-price-rises-prompt-south-african-producers-to-mull-restarts>

- **Mining sector told to brace for raft of tax hikes as Govt.’s fund post-Covid-19 recovery**
  - “The probability is unfortunately high and the longer this pandemic prevails and the government can’t get back on its feet – whether there’s a recession or not – I think the probability of tax hikes is going to be real,” said Srinivasan Venkatakrishnan (Venkat), former CEO of mining groups Vedanta and AngloGold Ashanti.  
<https://www.miningmx.com/news/markets/43910-mining-sector-told-to-brace-for-raft-of-tax-hikes-as-govt-s-fund-post-covid-19-recovery/>
- **Gold mines will produce more than ever in 2021: Metals Focus**
  - The world’s mines will produce 3,368 tonnes of gold this year, down 4.6% from 2019 and the lowest in 5 years, but high bullion prices will help to push up output by 8.8% to a record 3,664 tonnes in 2021, consultancy Metals Focus said on Wednesday.  
<https://www.reuters.com/article/us-gold-production-idUSKBN26Z2KO>
- **Froneman won’t “speculate with shareholders’ money” despite “spectacular” PGM project**
  - “For PGMs, the market needs to be receptive to a growth in platinum that is also fundamental,” said Froneman when asked at the online conference, the Joburg Indaba, on the likelihood of the firm approving the development of the K4 project.
  - K4 was previously owned by Lonmin, the former UK-listed firm that Sibanye-Stillwater bought last year, renaming the assets Marikana. The existing K4 shaft was closed by Lonmin but it would be easy to switch on especially as the capital has been sunk. Lonmin planned a 250,000 to 300,000 ounces of 4E annually and a reserve of 12 million oz.  
<https://www.miningmx.com/news/gold/43906-froneman-wont-speculate-with-shareholders-money-despite-spectacular-pgm-project/>

## **E-Waste & Precious Metals Recycle Related:**

- **Tackling e-waste and enabling a circular economy for electronic products**
  - Only 17.4% of all e-waste generated is currently collected and recycled. Recoverable materials including gold, silver, copper and platinum valued conservatively at US \$57 billion are mostly dumped or burned – the equivalent of throwing away the annual GDP of Croatia or Costa Rica.  
<https://www.vodafone.com/perspectives/tackling-e-waste-and-enabling-circular-economy-electronic-products>
- **24Gold breaks ground on new gold refinery in Dubai**
  - Dubai: 24Gold has recently broken ground on the site of its new gold and precious metals refinery in Dubai, which is set to redefine the sector. The new facility is located in the Jumeirah Lakes Towers (JLT) district within the Dubai Multi Commodities Centre (DMCC), and will open its doors to trade in October 2021.  
<https://gulfnnews.com/business/company-releases/24gold-breaks-ground-on-new-gold-refinery-in-dubai-1.1602404772321>
- **‘We are enacting a planetary crisis with electronics’ – an interview with Julia Christensen**
  - The concept that I’m working with, what I call ‘upgrade culture’, is this sort of relentless notion that we constantly have to upgrade our electronics and media to remain relevant. I became interested in this, how this was culturally happening, because I visited, by a crazy chain of events, an e-waste processing centre in India several years ago. It was the first time I was faced with this global aggregate of e-waste, mountains of old computers and printers, etc. As a member of the consumer public I just had never thought about what happens when I take my computer to the recycling centre to be recycled.  
<https://www.apollo-magazine.com/interview-with-julia-christensen/>

## **Platinum**

- **WPIC expects ETF inflows to taper down in last quarter after record highs**
  - The World Platinum Investment Council (WPIC) reports that platinum ETF holdings closed the second quarter at 3.3-million ounces, which is almost as high as the all-time-high closing ETF holding of March 2, which was 3.5-million ounces.  
<https://www.miningweekly.com/article/wpic-expects-etf-inflows-to-taper-down-in-last-quarter-after-record-highs-2020-09-23>
- **PLTM Weekly: Waiting For Weakness In Q4**
  - Summary: Despite the recent rebound in the precious metals, PLTM has performed the weakest among its group. The relatively weak market action in PLTM confirms our cautious near-term stance toward PLTM, driven by negative fundamentals and unsupportive seasonality in Q4.
  - Platinum looks fairly valued based on its relationship with spec positioning and a little expensive based on its relationship with ETF positioning.
  - In case of a notable dip in Q4, we may intend to build a strategic long-term position in PLTM, especially considering that platinum looks substantially too cheap compared to palladium.  
<https://seekingalpha.com/article/4379110-pltm-weekly-waiting-for-weakness-in-q4>

### **Fuel Cells/Hydrogen Economy Related Articles:**

- **Cummins showcases hydrogen fuel cell truck during 2019 North American Commercial Vehicle Show**
  - The truck was designed and integrated by Cummins and includes a PEM fuel cell from Hydrogenics, a recent addition to Cummins. 90 kW fuel cell, and is scalable in 30 kW or 45 kW increments up to 180 kW, and also has a 100-kWh lithium-ion battery capacity. The truck has a range of 150 to 250 miles between filling up, however, that range can be extended with additional hydrogen tanks, by increasing the tank storage pressure or installing additional fuel cells to optimize management of the vehicle load factor.  
<https://www.cummins.com/news/releases/2019/10/30/cummins-showcases-hydrogen-fuel-cell-truck-during-2019-north-american>
- **MAD MONEY: 'I'm bullish on hydrogen' Jim Cramer breaks down his top hydrogen plays**
  - "If you want to speculate on a sexy long-term story, I'm bullish on hydrogen," CNBC's Jim Cramer said. "Over the next 10 to 20 years, I expect hydrogen to take major market share in transportation, power storage for renewables like solar, and even as a replacement for natural gas buildings all over America," the "Mad Money" host said.  
<https://www.cnbc.com/2020/10/09/jim-cramer-breaks-down-his-top-hydrogen-plays-i-am-bullish-on-hydrogen.html>
- **Los Alamos to lead fuel cell consortia**
  - The first of the consortia, the Million Mile Fuel Cell Truck (M2FCT) is funded over 5 years at \$10M/year (\$50M total). The M2FCT is a large-scale, comprehensive effort to enable widespread commercialization of hydrogen fuel cells for heavy duty applications.
  - Second, ElectroCat 2.0, co-led by Los Alamos and Argonne, this is the second iteration of a 3-year, \$3M/year (\$9M total). This will focus on the most promising approaches for platinum-group-material (PGM)-free catalysts that can meet both the durability required in heavy duty applications as well as cost, efficiency and other key metrics.
  - Third, H2NEW is funded over 5 years, at \$10M/year. This topic marks the official launch of the 'H2NEW' consortium, a comprehensive, concerted effort focused on overcoming technical barriers to enable affordable, reliable and efficient electrolyzers.  
<https://www.eurekalert.org/features/doi/2020-10/danl-lat100820.php>
- **Apple MacBooks and iPads may one day be powered by hydrogen fuel cells**
  - Apple filed a patent application for what it described as the "design of a portable and cost-effective fuel cell system for a portable computing device." The description also goes onto

mention “proton exchange membrane (PEM) fuel cells” which use H<sub>2</sub>, indicating specifically hydrogen fuel cells as a power source.

[https://www.hydrogenfuelnews.com/apple-macbooks-and-ipads-may-one-day-be-powered-by-hydrogen-fuel-cells/8540679/?mc\\_cid=6fe8b86000&mc\\_eid=70c1246d58](https://www.hydrogenfuelnews.com/apple-macbooks-and-ipads-may-one-day-be-powered-by-hydrogen-fuel-cells/8540679/?mc_cid=6fe8b86000&mc_eid=70c1246d58)

- **Hydrogen embrittlement creates complications for clean energy storage, transportation**
  - Matt: The predominate plan for large scale hydrogen storage is still putting into the underground pipeline network for natural gas at composition of 4-6% in the USA, and as high as 20% in Australia. There is one key risk to this plan in accelerated embrittlement and failure of cast iron and various steel alloy pipes from the hydrogen. There are numerous studies underway looking these rates of deterioration and attempts to understand the embrittlement failure mechanism to search for countermeasures to same.  
<https://phys.org/news/2020-10-hydrogen-embrittlement-complications-energy-storage.html>
- **Using Ammonia to Store and Transport Renewable Energy**
  - Ammonia (NH<sub>3</sub>) is a chemical compound made up of one nitrogen atom and three hydrogen atoms. Although it is a gas at room temperature, it is much more readily liquified than hydrogen, enabling large quantities of energy to be stored and transported. It can be directly used to produce electricity in some fuel cells, converted back into hydrogen, or burned in an internal combustion engine. These properties could make it a vital fuel for applications including shipping, aviation, grid energy storage and energy exports.  
<https://www.engineering.com/DesignerEdge/DesignerEdgeArticles/ArticleID/20807/Using-Ammonia-to-Store-and-Transport-Renewable-Energy.aspx>
- **Airbus to abandon gasoline, switch to hydrogen in 15 yrs**
  - The move by Airbus to switch to hydrogen fuel could mark a significant step toward making sustainable aviation fuels commercially viable. The company estimates that hydrogen has the potential to reduce aviation’s carbon emissions by up to 50 percent.  
<https://businessmirror.com.ph/2020/10/11/airbus-to-abandon-gasoline-switch-to-hydrogen-in-15-yrs/>
- **South Africa: Boost for Electrolyser Technology Development Towards Commercialisation**
  - Proton exchange membrane (PEM) water electrolyzers make use of platinum group metal-based CCMs at its core. As a custodian of around 80% of the world's platinum group metal reserves, this is an important step for South Africa in the transformation from a resource-based to a knowledge-based economy.  
<https://allafrica.com/stories/202010050930.html>
- **Xcel gets \$10.5M federal grant for pilot project on hydrogen power**
  - The new plant will be at either Prairie Island or the utility's Monticello nuclear facility.  
<https://www.startribune.com/xcel-gets-10-5m-federal-grant-for-pilot-project-on-hydrogen-power/572754271/>
- **His Holiness' hydrogen car: Toyota converts fuel-cell Mirai into a Popemobile to be used by the supreme pontiff in Japan next month**
  - Toyota has converted a Mirai hydrogen fuel cell vehicles into a popemobile.  
<https://www.thisismoney.co.uk/money/cars/article-8831519/Toyota-Mirai-popemobile-means-Holiness-using-hydrogen-power.html>



Toyota Mirai Fuel Cell Popemobile – Pope not included

## Palladium

- **China auto sales jump in 'Golden September' as shoppers return to showrooms**
  - Sales reached 2.57 million vehicles last month but were still down 6.9% for the year to date at 17.12 million vehicles, according to the China Association of Automobile Manufacturers (CAAM).
  - “Based on our dealer channel checks, the growth in momentum extended into the October Golden Week, as retail sales exceeded dealers’ expectations,”  
<https://www.reuters.com/article/us-china-autos-idINKBN26YOSL>
- **Global Auto Sales Won't Recover Pre-Coronavirus Highs Until 2023; Report**
  - Global new vehicle sales fell 25 to 30% in the first half, including 15% in China, 24% in the U.S. and 40% in Europe, according to a report in the late summer from Fitch Ratings. In 2019, global sales totalled about 90 million light vehicles – sedans, SUVs and pickup trucks – and are expected to fall to 75 million this year, and rally to 84 million in 2021, automotive forecaster LMC Automotive said then.
  - The consensus then was that the 90 million level would be in sight by the end of 2021 or early 2022 at the latest. But leading data and analytics company GlobalData, in a report published Thursday, says global sales won't recover pre-pandemic levels until 2023.  
<https://www.forbes.com/sites/neilwinton/2020/10/15/global-auto-sales-wont-recover-pre-coronavirus-highs-until-2023-report/>
- **Palladium catalysts can do it**
  - Direct coupling of aryl halides and alkyllithium compounds by palladium catalysis
  - One of the YPhos class of ligands, a ligand called joYPhos, was shown to have the most favorable architecture. Its combination of electronic properties and a space-filling architecture suppressed the many side reactions otherwise occurring in the coupling.  
[https://www.eurekalert.org/pub\\_releases/2020-10/w-pcc100920.php](https://www.eurekalert.org/pub_releases/2020-10/w-pcc100920.php)

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

- **Ruthenium shows way to 2nm**
  - Matt: Ruthenium ALD, CVD, and MOCVD products are increasingly likely to intercept at 3nm, and carry into 2nm node semiconductor IC's.  
<https://www.eenewseurope.com/news/ruthenium-shows-way-2nm>
- **FEATURE: Rhodium price rises may prompt South African producers to mull restarts**
  - Heraeus said that over the last decade just over 150,000 oz of rhodium supply was shuttered.
  - "Conceivably, some capacity could be recommissioned within three years," the refiner said.  
<https://www.spglobal.com/platts/en/market-insights/latest-news/metals/101320-feature-rhodium-price-rises-prompt-south-african-producers-to-mull-restarts>
- **Ru: Evidence of Exotic State of Matter Discovered in Candidate Material for Quantum Computers**
  - Researchers discovered the exciting behavior while studying the so-called electron spins in the compound ruthenium trichloride. Their findings, published recently in the journal Nature Physics,

show that electron spins interact across the material, effectively lowering the overall energy. This type of behavior — consistent with a quantum spin liquid — was detected in ruthenium trichloride at high temperatures and in high magnetic fields.

<https://scitechdaily.com/evidence-of-exotic-state-of-matter-discovered-in-candidate-material-for-quantum-computers/>

## **BEV / LiB Battery Market News**

- **Strict CO2 Limits Cause Electric Car Boom In EU, While U.S. Slumps**
  - The share of electric cars on Europe's roads has tripled since the start of this year, according to new data published today by campaign group Transport & Environment. By the end of the year they will represent 10% of vehicle sales, rising to 15% by in 2021. This is up from just 2% early last year.
  - There are now 130 electric vehicle models on sale in Europe, up from just a handful two years ago. By next year one in every seven cars in Europe will be a plug-in.  
<https://www.forbes.com/sites/davekeating/2020/10/13/electric-cars-are-booming-in-eu-thanks-to-strict-co2-limits-so-why-doesnt-us-have-them/>
- **Tesla Puts Nickel in Focus at Battery Day, but Details Still Needed**
  - There are several reasons why Tesla would want to increase nickel and reduce cobalt, including reducing exposure to the cobalt market and its associated reputational risks, decreasing the cost of raw materials and increasing cell energy density.
  - Meanwhile, research firm Roskill has noted that a number of companies are looking into developing other methods to reduce high-nickel cathode thermal runaway risks besides cobalt, including doping, cathode coating, electrolyte additives and battery management systems.
  - "Cathode chemistries like lithium-iron-phosphate (LFP) remove this problem and provide cost reduction," Jack Anderson of Roskill told INN.  
<https://investingnews.com/daily/resource-investing/base-metals-investing/nickel-investing/tesla-nickel-battery-day-details-needed/>
- **IDTEchEx report reveals how nickel is replacing cobalt in electric vehicles**
  - Many automakers are aware of the environmental concerns in nickel supply and that it can undermine the environmentally friendly message of the EV. Most, including PSA, VW, and Tesla, have pledged to reduce the environmental impact of their batteries. This becomes challenging as the choice of suppliers that can meet the demands of these large automotive companies is limited.  
<https://www.thefabricator.com/stampingjournal/news/electricvehicles/idtechex-report-reveals-how-nickel-is-replacing-cobalt-in-electric-vehicles>
- **As demand for nickel grows, so do environmental concerns**
  - Recently it has been announced that two nickel mining companies in Indonesia are planning to use deep-sea disposal for the raw material waste into the Coral Triangle as they ramp up operations.
  - "Less than 20 nickel mines worldwide use deep-sea disposal, but these new facilities would account for millions of tonnes of waste material each year. This method is typically used because it is cheaper than the alternatives of dam storage or converting the raw materials to useful products."  
<https://www.mining.com/as-demand-for-nickel-grows-so-do-environmental-concerns-report/>
- **Kingston (Ontario) business growing thanks to lithium-ion battery processing technology**
  - Li-Cycle has been in the Limestone City since late 2016, completing numerous stages of research and development. The Hagerman Avenue location has the capacity to process 5,000 tonnes of lithium-ion batteries per year.  
<https://globalnews.ca/news/7397330/kingston-business-growing-lithium-ion-recycling/>
- **EcoPro to invest 12 billion won for battery recycling business**
  - Anode material maker EcoPro will collaborate with Chinese company GEM in battery recycling, the company said. The South Korean company will invest 12 billion won by 2021 to build the recycling



factory at Pohang. EcoPro will increase synergy with its subsidiaries EcoPro BM, EcoPro EM, EcoPro GEM, EcoPro Innovation and EcoPro AP through the factory, people familiar with the matter said.  
<http://www.thelec.net/news/articleView.html?idxno=1550>

**Regards –**