Weekly Precious Metals News Articles: March 5, 2021

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Below is a cross section of relevant news article to the world of Precious Metals:

Markets, Supply & Demand, Investment, and Industrial Applications.

Printable PDF version attached. Enjoy-

Gold

- **Gold slides to 9-month low as high yields, dollar dull appeal**
  - Gold fell to its lowest in 9 months on Friday after better-than-expected U.S. employment data bolstered the dollar & U.S. Treasury yields, putting bullion on course for 3rd straight weekly decline.
  - Spot gold was little changed at $1,698.66, after falling to its lowest since June 8 at $1,686.40 in the session. It has fallen nearly 2% this week. U.S. gold futures slipped 0.4% to $1,694.20. https://www.cnbc.com/2021/03/05/gold-markets-us-federal-reserve-bond-yields-dollar.html
- **Gold and silver imports to U.S. soar during pandemic**
  - The value of precious metals pouring into the country hit a 19-year high last year, a $55 billion influx that doubled the volume of 2019. Analysts and traders say the trend reflects rising demand among purchasers that range from Wall Street investment funds to ordinary people buying up bullion. https://www.usatoday.com/story/news/2021/03/03/gold-and-silver-imports-pandemic/6891285002/
- **Why gold is underperforming when compared to the other precious metals**
  - There are many potential reasons for this occurrence, but one of the primary underlying forces is the incredible gains witnessed during the pandemic in the U.S. equities markets. While it might be said that market participants are incredibly over-optimistic, one clear fact remains, and that is those market participants, when looking at U.S. equities, are forward-thinking. In other words, they're looking as to what will happen in the future rather than focusing on the current economic scenario. https://www.kitco.com/commentaries/2021-02-19/Why-gold-is-underperforming-when-compared-to-the-other-precious-metals.html

Semiconductor Related Articles (impacting Precious Metals electronics):

- **TSMC sales might rise 25%**
  - TSMC is expected to post a 25% y/yr increase in sales in the first quarter of this year to US$12.91 billion, up from US$10.31 billion a year earlier, as its production is at full capacity, market advisory firm TrendForce Corp said in a note last week.
  - The increase would help TSMC cement its leadership in the industry by taking a 56 percent market share in the global pure wafer foundry business, TrendForce said. https://www.taipeitimes.com/News/biz/archives/2021/03/02/2003753060
- **Global smartphone shipments to grow 50% in 1Q21**
  - Global smartphone shipments are likely to grow nearly 50% on year to 340 million units in the first quarter of 2021, driven by robust sales of Apple's iPhone 12 Pro and iPhone Pro Max

as well as a ramp-up in shipments by Chinese brands to grab the market share relinquished by Huawei, according to Digitimes Research.

- Apple's iPhone shipments are expected to total 60+ million units in Q1 2021, having seen such shipments reach over 90 million units a quarter earlier, Digitimes Research estimates. https://www.digitimes.com/news/a20210302PD204.html

- **Global Semiconductor Sales Increase 13.2% year-to-year in January - SIA**
  - "Global semiconductor sales got off to a strong start in 2021 (+13.1% y/y in January), increasing both year-to-year and month-to-month in January," said John Neuffer, SIA president and CEO. "Global semiconductor production is on the rise to meet increasing demand and ease the ongoing chip shortage affecting the auto sector and others, and annual sales are projected to increase in 2021." https://www.semiconductors.org/global-semiconductor-sales-increase-13-2-year-to-year-in-january/
- **GlobalFoundries pours $1.4 billion into fab expansion amid chip demand boom**
  - Matt: Context here: Forth largest foundry in the world with annual revenue ~$6B/year is spending $1.4B on expansion. That is impressive. Auto OEM's including EV's, Mobile Phones, Computers, and explosion of IoT devices market expansions all dependent on massive semiconductor market growth. https://www.reuters.com/article/us-globalfoundries-expansion-chips-idUSKBN2AV0RV

Silver

- **February Silver Institute Newsletter with article on:**
  - Silver Consumption in Global Automotive Sector to Approach 90 Million Ounces By 2025
  - SoCal's Metrolink Trains Keep Passengers and Crew Safe with New Silver/Copper Air Filter
  - Silver Demand Forecast to Rise 11 Percent in 2021
  - Recovering Silver from Industrial Waste Made Easier with Plant Material
  - Are Battery-Free Wearables Possible?
  - A New Way to Harden Silver and Other Metals
  - Silver Aids Faster and More Accurate Diagnosis of
  - Tumors and Other Growths
  - Micromotors and Silver Join to Kill Bacteria

  https://www.silverinstitute.org/wp-content/uploads/2021/03/SNFeb2021.pdf

Solar PV Articles (Recall 10% of Silver goes to Solar PV with a huge ramp ahead of us):

- **Solar modules prices rose by up to 15% in China, Jinko's vice president says**
  - According to JinkoSolar vice president Dany Qian, PV panel prices rose significantly since the second quarter of last year due to an increasing shortage of polysilicon, glass, silver, and module frames. She also stated that rushing demand cannot stop prices from rising for at least the next six months or longer, until sufficient capacity ramps up. https://www.pv-magazine.com/2021/03/03/solar-modules-prices-rose-by-up-to-15-in-china-jinkos-vice-president-says/
- **Silver accounts for 10% of PV module costs**
  - Matt: PV Magazine interviewed me for this article which dovetails with the one above showing not just Silver, but Polysilicon, glass and aluminum Solar PV module framing costs are also climbing. Perhaps a end to the Solar PV cost take down for now.
  - "With PV module costs in the neighborhood of $0.018-$0.019/watt and silver representing around 10% of the overall module cost structure, and module and cell prices still declining, finding a means to lower the silver cost component is going to become an increasingly difficult task," Watson told pv magazine. "Over the past 20 years, silver has averaged an

8.31% year-on-year growth in prices, which is greater than the current rate of design thrifting. This means lowering that silver $/watt component is going to be very difficult." https://www.pv-magazine.com/2021/03/04/silver-currently-accounts-for-10-of-pv-module-costs/

- **Slot die coating for 20.83% efficient perovskite thin-film solar cell**
  - Matt: Interesting alternative to Organic Solar PV printing technology development. This new process could be used on roll-to-roll flexible substrates or large area industrial rigid glass to mass produce Solar PV for the sides of buildings. Not the subject of the article, but it's this sort of low-cost printed thin film technology that can generate huge scaling in Solar PV market, and the subsequent silver deposition still comes along for the ride as the energy collector technology. https://www.pv-magazine.com/2021/03/03/slot-die-coating-for-20-83-efficient-perovskite-thin-film-solar-cell/
- **Chinese PV Industry Brief: Plans to increase glass, polysilicon and wafer capacity move forward**
  - Panel maker JA Solar announced plan to invest RMB5 billion in new wafer 20GW solar cell manufacturing capacity in Baotou city, Inner Mongolia. Operations within 24 months.
  - Matt: The article describes polysilicon, glass and other factory additions coming to support the Solar PV ramp. 2020 115 GW new installations grow to projected 230 GW by 2025. https://www.pv-magazine.com/2021/03/02/chinese-pv-industry-brief-plans-to-increase-glass-polysilicon-and-wafer-capacity-move-forward/

Precious Metals Mining:

- **PGM expansions not enough to bridge supply deficits, say SA's big three producers**
  - South Africa's big three platinum group metal (PGM) producers last month unveiled production growth plans of up to 1.2 million PGM ounces annually, but the increases are probably insufficient to bring the market back into balance, they said.
  - "I think there is a very low risk of oversupply," said Nico Muller, CEO of Impala Platinum (Implats) which on February 25 announced it would spend R7bn adding 360,000 oz in PGM production from mines it controls. On an unattributable basis, accounting for joint venture partner contributions, the total project capital expenditure would be R10bn.
  - "In fact, I think the risk is the opposite. We need to show the world that we can invest in future demand," said Muller. South African produced about seven million ounces of PGMs in the last 12 months, an 18% year-on-year reduction, according to the Minerals Council in its 2020 review. https://www.miningmx.com/top-story/45436-pgm-expansions-not-enough-to-bridge-supply-deficits-say-sas-big-three-producers/
- **Implats poised to approve R10bn, 360,000 oz PGM expansions in SA, Zimbabwe**
  - Impala Platinum is assessing two growth projects that will add 262,000 oz to its annual production – just over 14% of total output – at a potential cost of R10bn.
  - Nico Muller, CEO, said in a press call today following the publication of the firm's interim results, that 180,000 oz in additional (growth) ounces would be produced from each of its Two Rivers joint venture and its 87%-owned Zimplats mine at a capital cost of R10bn over a four to five year period. https://www.miningmx.com/news/platinum/45402-implats-poised-to-approve-r10bn-360000-oz-pgm-expansions-in-sa-zimbabwe/
- **PGMs project will ensure Marikana's sustainability for 50 years-plus – Sibanye**
  - K4 mine, Froneman said, would produce 250 000 oz/y for more than a half century at an average operating cost of R16 000 per four-element (4E) ounce, compared with the current basket price of around R50 000 per 4E ounce, and would yield 11.5-million 4E ounces.

- A six-year payback at budgeted prices and a four-year payback at spot has been calculated with the internal rate of return (IRR) at spot hitting the sky-high 80% internal rate of return level. https://www.miningweekly.com/article/pgms-project-will-ensure-marikanas-sustainability-for-50-years-plus-sibanye-2021-03-02

- **Australian gold output tops record in 2020**
  - Australia's gold production totalled 327 t, or about 10.5-million ounces, in 2020, marking a record and a 1.5 t improvement on 2019's output, reports consultancy Surbiton Associates. https://www.miningweekly.com/article/australian-gold-output-tops-record-in-2020-2021-03-01
- **Anglo American ended 2020 stronger than expected**
  - The July-Dec. period saw Anglo's underlying EBITDA climb back up to $6.5 billion, the company's s best second-half performance in the past 10 years, as it resumed full operations at most of its mines. https://www.mining.com/anglo-american-ended-2020-stronger-than-expected/

E-Waste & Precious Metals Recycle Related:

- **Recycling old smartphones is not only good for the environment – it is a potentially lucrative business for e-waste companies in China**
  - Research by Greenpeace East Asia, an environment-focused non-government organisation, estimated that China's smartphone recycling rate is below 2%, meaning only two out of 100 old phones are properly recycled instead of being thrown away or left in the bottom of a drawer to gather dust. https://www.msn.com/en-xl/news/other/recycling-old-smartphones-is-not-only-good-for-the-environment-e2-80-93-it-is-a-potentially-lucrative-business-for-e-waste-companies-in-china/ar-BB1edo5D
- **What To Know Before You Start A Gold Or Precious Metals Business**
  - Selling gold and precious metals can be a highly lucrative endeavor if done right. In fact, it's a $182 billion industry that's expected to grow a whopping 9% per year until 2027. But far too often, I see entrepreneurs try to gain a foothold in the market only to fold within their first year. https://www.forbes.com/sites/theyec/2021/03/05/what-to-know-before-you-start-a-gold-or-precious-metals-business/?sh=889fd91661e0
- **IPMI Recycling Seminar – YouTube Video 99 mins**
  - TD Securities, BASF, Sabin Metals https://youtu.be/2aFRe1_itS4

Platinum

- **Platinum, palladium and rhodium in short supply –Johnson Matthey**
  - Supply shortfalls have driven rapid price gains, with platinum trading at six-year highs and rhodium and palladium close to record levels. A shortfall is expected for palladium and rhodium this year as well, the third consecutive annual deficit for rhodium and the tenth for palladium. https://www.reuters.com/article/palladium-platinum-johnson-matthey-idUSL1N2KG11I
- **Voyage of Discovery**
  - New applications for platinum as a catalyst, a use discovered over two centuries ago, are still being discovered
  - Tanaka, the leading Japanese precious metals business, has recently won a Technology Award from the Catalyst Manufacturers Association, Japan, in recognition of its involvement in the development of a 'hydrophobic' platinum-based catalyst that prevents moisture build-up and enables a catalytic reaction to be maintained, even at ambient temperatures. https://platinuminvestment.com/files/sixtysecs/WPIC_60seconds_Voyageofdiscovery_03032021.pdf
- **Platinum jewellery had a strong fourth quarter, says the PGI**

- In the fourth quarter of last year, platinum outperformed other jewellery categories such as gold and delivered remarkable 14% year-on-year growth in fabrication.
- The Platinum Guild International (PGI) reports that, although China's economy ended on a high note in the fourth quarter, retail sales lagged as the sporadic outbreaks of Covid-19 hit store traffic. https://www.miningweekly.com/article/platinum-jewellery-had-a-strong-fourth-quarter-says-the-pgi-2021-03-01

Fuel Cells/Hydrogen Economy Related Articles:

- **European Commission proposes 10 new clean hydrogen partnership projects**
  - The purpose is to bring on a more rapid transition toward green renewable energy sources. https://www.hydrogenfuelnews.com/clean-hydrogen-partnership/8543327/?mc_cid=2027c11270&mc_eid=70c1246d58
- **Toyota develops packaged fuel cell system module for sale**
  - Toyota Motor Corporation has developed a product that packages a fuel cell (FC) system into a compact module; the company plans to begin selling it in the spring of 2021 or later. The new module will be easily utilized by companies that are developing and manufacturing FC products for wide variety of applications, including mobility such as trucks, buses, trains and ships, as well as stationary generators. https://www.greencarcongress.com/2021/02/20210227-toyotafc.html
- **Toyota's New Modules Allow Other Companies To Use Its Fuel Cell Systems For Other Applications**
  - Toyota's new module is touted as the answer these companies as looking for. This new module already includes individual fuel cell system-related products derived from the Mirai, including the fuel cell stack and related components handling air supply, hydrogen supply, cooling, and power control. https://www.hotcars.com/toyotas-new-modules-allow-other-companies-to-use-its-fuel-cell-systems-for-other-applications/
- **Nel Launches Modular On-Site Hydrogen Generators**
  - Nel Hydrogen Electrolyzer announced it launched the MC250 and MC500 containerized Proton PEM electrolyzers, its modular on-site hydrogen generators. The new products are integrating Nel's newly developed 1.25 MW PEM cell-stack, allowing for higher capacities per unit and lower cost. The platform allows multiple units to be integrated easily in the field. https://www.ttnews.com/articles/nel-launches-modular-site-hydrogen-generators
- **Anglo CEO talks hydrogen, recycling, Scope 3, material solutions provision**
  - The surge of the hydrogen economy, the need to recycle, halving Scope 3 emissions through iron-ore-linked green steelmaking, assisting South Africa to create new industries, and becoming a one-stop material solutions provider, were among the issues discussed by Anglo American CEO Mark Cutifani in a wide-ranging interview. https://www.miningweekly.com/article/anglo-ceo-talks-hydrogen-recycling-scope-3-material-solutions-provision-2021-03-01
- **Yara Kickstarts Green Ammonia Industry With Green Hydrogen**
  - Yara is among the biggest ammonia producers in the world as well as the biggest ammonia shipper in the world, so its move into the green ammonia space will have a significant impact on the carbon footprint of the ammonia industry, with a ripple effect on agriculture and other sectors.
  - Back in 2017, Yara came up with the idea of a building a ship to run on ammonia fuel. Now that the ship is ready to ply the waters.

- Last week, Yara joined with the Norwegian utility Statkraft and the firm Aker Horizons for a plan to produce green ammonia at commercial scale, by deploying hydropower to electrify an existing Yara ammonia plant in Porsgrunn.
  https://cleantechnica.com/2021/03/01/yara-kickstarts-green-ammonia-industry-with-green-hydrogen/

- **HyPoint CEO Talks New Hydrogen Fuel Cell Operable Prototype for Electric Aircraft**
  - Among the testing that has already been done by HyPoint on the prototype, they have demonstrated the ability to generate up to 1,500 watt-hours per kilogram of energy density. Thermal management in the fuel cell system is achieved by using bipolar plates and corrosion-resistant coating.
  - A technical white paper published by HyPoint explaining the design of their turbo air-cooled system says that the idea behind their approach is to circulate high-pressure air through a fuel cell stack, or a bundle of fuel cells, and to recirculate the exhaust air. By re-distributing exhaust air across fuel cell stack inlets, they're able to save energy that would otherwise be spent by the system on compressing fresh air.

  HyPoint Technology Overview White Paper
  - Hypoint has developed a LTPEM (Low Temp PEM membrane) and a HTPEM (High Temp PEM membrane) fuel cell technology. A more in depth technical overview of HyPoint in link:.
    https://docsend.com/view/t9aw2mk

- **Dept. of Energy Launches Partnership for Next-Generation Fuel Cell Technologies**
  - In addition, the agreement with BNL will **focus on commercializing ultra-low platinum electrode technology that can bring the Pt/kW required number down 90% (a 10x improvement).** Pt is an essential precious metal that is used in mobility fuel cells, and the BNL technology has the potential to reduce costs along with supply chain and environmental problems. NREL will aid in developing mfg. processes for these advanced materials.
    https://www.environmentalleader.com/2021/03/dept-of-energy-launches-partnership-for-next-generation-fuel-cell-technologies/

Palladium

- **More states follow California's lead on vehicle emissions standards**
  - An increasing number of US states are looking to follow the precedent set by California and adopt stricter vehicle emissions standards.
  - The Virginia legislature this past week passed legislation to toughen its emission rules, and similar proposals are in the works in Minnesota and Nevada. If successful, those states would join the 13 others, plus Washington, D.C., that have adopted California's vehicle tailpipe emissions standard. During the Trump era, that standard was taken out of play.
  - For years, California was allowed by the federal government to set its own standards. The Trump administration revoked that authority, sparking a legal battle that's yet to be resolved. But as the Biden administration appears poised to reverse the Trump policy, states are laying the groundwork for implementing their own vehicle regulations.
    https://www.msn.com/en-us/news/politics/more-states-follow-californias-lead-on-vehicle-emissions-standards/ar-BB1e5wLD
- **Covering metal catalyst surfaces with thin two-dimensional oxide materials can enhance chemical reactions**
  - Physically confined spaces can make for more efficient chemical reactions, according to recent studies led by scientists from the U.S. DOE Brookhaven National Laboratory. They found that partially covering metal surfaces acting as catalysts, or materials that speed up reactions, with thin films of

silica can impact the energies and rates of these reactions. The thin silica forms a two-dimensional (2-D) array of hexagonal-prism-shaped "cages" containing silicon and oxygen atoms.
https://phys.org/news/2021-03-metal-catalyst-surfaces-thin-two-dimensional.html

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

- **AS Rhodium Price hits $735 Million per ton, Africa must be prepared for the gains.**
  - The world is about to experience an unprecedented price hike in Platinum Group Elements (PGEs).
  - As of 2021 the magnificent and indispensable metal, Rhodium is the most valuable metal in the world. The Rhodium price has been rocketing from $6,000 an ounce at the start of 2020 to a high of $21,000 an ounce by February 2021.
  - Matt: March 1 Rhodium Fix $/Toz: JM $27,400; BASF $28,000; Umicore $27,300; Heraeus $28,950
    https://www.esgadia.org/as-rhodium-price-hits-735-million-per-ton-africa-must-be-prepared-for-the-gains/
- **Iridium hits all-time high of $4800/oz on tight supply, 5G tech**
  - The platinum group metal has been on a tear over the past three months, rising nearly threefold since Dec. 18, when stood at $1,760/oz.
  - In recent weeks, market source told S&P Global Platts that the main driver for iridium's price increase has been the crucibles and the need for those to grow the lithium tantalate crystals for 5G technology. "Until the pandemic struck the iridium market had been a very stable market for many years," trader Karolina Jackiewicz of UK-based minor metals trading company Lipmann Walton & Co. said in an interview. "The main usage is in the production of crucibles for the SAW [surface acoustic wave] filters for growing of the lithium tantalate crystals for 5G," she said. "This demand will be increasingly important as we move towards 5G and other new technologies."
  - Matt: The article doesn't specify, but more specifically it is demand for larger 8" diameter crucibles that support 200mm wafers of LG which are the piezo electric substrates used In SAW/BAW filters used in 5G.
    https://www.spglobal.com/platts/en/market-insights/latest-news/metals/030221-iridium-hits-all-time-high-of-4800oz-on-tight-supply-5g-tech

BEV / LiB Battery Market News

- **World's nickel production dropped 4% in 2020**
  - With 760 ktonnes of mined metal, Indonesia was once again an undisputed leader in nickel production, followed by the Philippines (320 ktonnes) and Russia (280 ktonnes). New Caledonia sits fourth with 200 ktonnes of nickel mined in 2020. Australia is closing the top 5 largest nickel producing countries list with 170 ktonnes mined in 2020.
  - USGS estimates that Indonesia boasts the world's largest endowment of nickel reserves (21,000 ktonnes), followed by Australia (20,000 ktonnes) and Brazil (16,000 ktonnes).
    https://www.kitco.com/news/2021-03-02/World-s-nickel-production-dropped-4-in-2020.html
- **China says domestic competition hurting rare earth prices**
  - Prices for some rare earths in China, such as praseodymium-neodymium (PrNd), used in rare earth magnets, have spiked to multi-year highs this year amid strong demand from the EV sector.
  - However, prices for other rare earths mined simultaneously, such as cerium and lanthanum, used in catalysts for oil refining, remain depressed due to abundant supply.
  - https://www.reuters.com/article/us-china-rareearths-industry-idUSKCN2AT13G
- **Major questions hang over true ESG impact of commodities used in clean energy sector**
  - Emotionally, he said, environmentalists would love to distance themselves from the mining sector, but in actual fact, the current energy transition (from being fossil fuel reliant, to being reliant on renewable and other green energy sources) is a "commodity-driven energy transition".

- Therefore, Winter said, anyone campaigning for greener forms of energy really needed to embrace the mining supply chain and find a way to work more effectively with it.
  https://www.miningweekly.com/article/major-questions-hang-over-true-esg-impact-of-commodities-used-in-clean-energy-sector-2021-03-02

- **Volvo aims to become EV-only group by 2030 and to sell them all online**
  - Volvo Cars says it aims to become a fully electric vehicle (EV) company, on a global level, by 2030.
  - By then, the company intends to only sell fully electric cars and phase out any car in its global portfolio with an internal combustion engine, including hybrids.
    https://www.engineeringnews.co.za/article/volvo-aims-to-become-ev-only-group-by-2030-and-to-sell-them-all-online-2021-03-02/rep
- **Driving Change on the Grid—The Impact of EV Adoption**
  - As EV adoption grows, utilities and other power generators are grappling with the issue of determining the power load needed to charge those vehicles, and how to forecast when, and where, that electricity will be needed.
  - A recent article from The Conversation, written by researchers at the Univ. of Texas and the National Renewable Energy Laboratory (NREL), says, "if virtually all passenger cars in Texas were electrified today, that state would need .. a 30% increase over current consumption in Texas" … California "might require nearly 50% more electricity."
  - Matt: Honestly, if you do a proper lifecycle CO_2 emission LCA analysis, and add in the impacts of a shorter BEV lifecycle, and add in the massive grid infrastructure addition CO_2 impacts, BEV's very likely have higher lifetime emissions than ICE on today's ave. power grid, and the grid of the future.
    https://www.powermag.com/driving-change-on-the-grid-the-impact-of-ev-adoption/
- **Johnson Matthey: Racing to survive**
  - Can the world's biggest producer of catalytic converters pivot to battery materials and hydrogen?
  - Matt: JM has well balanced business units, with no threat of racing to survive like the sensational headline states.
  - Matt: The author of this article fails to realize that Hybrids and PHEVs have Engines and PGMs in their autocats as well. Peak ICE sales including Hybrids and PHEV's are around year 2023/33.
    https://cen.acs.org/business/specialty-chemicals/Johnson-Matthey-Racing-survive/99/i7
- **Roskill: a more sustainable cobalt supply chain will require huge improvements to the safety and security of ASM workers**
  - Cobalt producers within the DRC, as well as refiners, have been the subject of numerous allegations relating to illegal mining practices, a lack of supply chain oversight and governmental corruption. With demand for EVs and energy storage set to increase significantly over the next decade, downstream investors are becoming increasingly concerned with supply chain sustainability across all battery metals, particularly cobalt. These concerns will only increase as greater volumes of production are required to feed demand.
    https://www.greencarcongress.com/2021/02/20210211-roskillco.html
- **LG Energy recalling battery systems in Australia due to fire risks**
  - Matt: I cited in last week's list of articles a recall for 82k EV that will cost Hyundai and LiB producer LG $900M+ in battery replacement due to 15x+ fires globally. This has now expanded into storage LiB's as well. The GW of LiB storage not specified in this article.
    https://www.pv-magazine.com/2021/03/04/lg-energy-to-recall-battery-systems-in-australia-due-to-overheating-issues/
- **The Politics of Rare Earth Metals**
  - While major reserves do exist in other countries like the US, Australia, and Brazil, China accounts for over 60% of rare earth element production in the world and controls around thirty percent of the world's reserves, estimated at 99 million tons.

- In 2020, their exports sank to a 5-year low, and as of late January 2021, the Chinese government has released a draft bill requiring companies to follow control laws and regulations for the import and export of rare earth, an extension of policies aimed to prohibit the export of Chinese technologies that could be diverted for military use.
  https://www.eetimes.com/the-politics-of-rare-earth-metals/

Regards –