

Technology Metals Report (01.17.2025): A New Era for Nuclear Energy

written by Tracy Hughes | January 17, 2025

In this week's **Technology Metals Report**, we're tracking several significant developments in the energy and metals sectors for the week ending January 17th. The International Energy Agency's (IEA) [report](#), "*The Path to a New Era for Nuclear Energy*," predicts a resurgence of nuclear power, with record electricity generation expected by 2025. This revival is supported by new projects, investments, and advancements in small modular reactors (SMRs). Additionally, Saudi Arabia is [ramping](#) up its uranium enrichment capabilities as part of its broader strategy to diversify from oil, aiming to become a key player in the nuclear energy market. These initiatives underscore the strategic importance of nuclear energy and critical minerals in the global energy transition.

Geopolitical tensions over critical minerals also made headlines, with Canada warning of [retaliatory](#) measures if President-elect Donald Trump enacts tariffs on Canadian imports. Canada's Minister of Energy and Natural Resources, Jonathan Wilkinson, emphasized the need to focus on China's dominance in critical minerals rather than U.S.-Canada trade disputes. Canada has proposed greater bilateral cooperation on mineral projects to counteract China's control, reflecting the global urgency to secure supply chains for these essential resources.

In the U.S., President-elect Trump's nominee for Energy Secretary, Chris Wright, has outlined a vision for [expanding](#) domestic energy production, prioritizing liquefied natural gas (LNG) and nuclear power. Wright supports alternative energy

sources like geothermal and small nuclear reactors while expressing skepticism toward wind and solar energy. His confirmation is expected to bring significant policy shifts, including reduced energy costs and expanded fossil fuel development, marking a departure from the current administration's climate-focused policies.

Other notable stories include Saudi Aramco's increased [investment](#) in lithium production to establish a commercial supply chain for electric vehicle (EV) batteries, and GM's multi-billion dollar supply deal with Norway's Vianode for synthetic graphite, aimed at reducing dependence on China's dominance in the graphite market. Additionally, the U.S. has lifted long-standing restrictions on Indian entities involved in nuclear and rare earth sectors, enhancing U.S.-India cooperation in energy and critical materials. These developments reflect a rapidly evolving global landscape where energy security and critical mineral access are paramount.

The **Technology Metals Report (TMR)** is a compilation of the top stories of the week, selected by the [Critical Minerals Institute](#) Board of Directors. To access this Board, [click here](#) or to become a **Critical Minerals Institute (CMI)** Member and have the TMR emailed to you weekly, [click here](#)

A new era for nuclear energy beckons as projects, policies and investments increase (January 16, 2025, [Source](#)) – The IEA's report, "The Path to a New Era for Nuclear Energy," highlights the resurgence of nuclear power as a key player in meeting the growing global demand for electricity. With nuclear power projected to generate record levels of electricity by 2025, the report emphasizes the role of new projects, investments, and innovative technologies like small modular reactors (SMRs). It notes the importance of overcoming challenges such as project delivery on time and within budget, financing, and developing

diversified supply chains. With 70 gigawatts of new capacity under construction and a shift in the nuclear landscape, with China and Russia leading in new builds, the sector faces significant potential. The report also underscores the importance of strategic vision and stable regulatory frameworks to attract private investment and harness nuclear energy's capabilities to provide clean, reliable power.

Canada warns of 'tit-for-tat' tariffs on US if Donald Trump imposes levies (January 15, 2025, [Source](#)) – Canada has issued a stern warning of implementing “tit-for-tat” tariffs on U.S. goods like steel and orange juice if President-elect Donald Trump follows through with proposed levies on Canadian imports. Jonathan Wilkinson, Canada's Minister of Energy and Natural Resources, emphasized the country's readiness to retaliate by targeting U.S. products that would maximize domestic impact with minimal repercussions at home. He suggested that the real international challenge lies with China's dominance in strategic sectors, particularly critical minerals, rather than with the U.S. Wilkinson also expressed openness to increased U.S. cooperation, mentioning potential military purchases and joint critical mineral projects to counteract Chinese influence. Amidst these tensions, Canada is actively lobbying to prevent the tariffs, which could severely impact its economy. Both Canadian Prime Minister Justin Trudeau and Alberta Premier Danielle Smith have voiced strong opposition to the proposed tariffs, underscoring the deep economic ties between Canada and the U.S.

Trump's energy department pick calls for more LNG and nuclear power (January 15, 2025, [Source](#)) – Chris Wright, nominated by President-elect Donald Trump to lead the U.S. Energy Department, emphasized the expansion of domestic energy production, focusing on liquefied natural gas (LNG) and nuclear power, during his confirmation hearing. As the former CEO of Liberty Energy Inc.

(NYSE: LBRT), Wright prioritizes ending world poverty through fossil fuels, viewing climate change as a less immediate issue. He supports alternative energy sources like small nuclear reactors and geothermal power but criticizes the efficacy of solar and wind energy. His stance could reverse Biden's policies on LNG and drilling, especially as U.S. LNG exports and oil production have surged. Wright's approach includes advocating for reduced energy costs and increased global competitiveness. His confirmation seems likely with a Republican-controlled Senate. Amidst protests linking fossil fuels to wildfires, Wright remains critical of climate change policies.

US lifts decades-old restrictions on BARC, IGCAR and Indian Rare Earths in diplomatic breakthrough with India (January 15, 2025, [Source](#)) – The U.S. Bureau of Industry & Security (BIS) has lifted long-standing restrictions on three key Indian entities: Indian Rare Earths, Indira Gandhi Atomic Research Center (IGCAR), and Bhabha Atomic Research Center (BARC). This action marks a significant diplomatic development aimed at bolstering U.S.-India relations and enhancing advanced energy cooperation. According to the U.S. Department of Commerce, this move will facilitate joint initiatives in research and development and science and technology, particularly in shared energy security needs. These entities play crucial roles in India's nuclear energy and rare earth materials sectors. The decision follows over a decade of discussions, which notably included the 2007 U.S.-India agreement on civilian nuclear technology. This resolution, announced by U.S. National Security Advisor Jake Sullivan during his recent visit to New Delhi, also aims to alleviate past tensions by promoting civil nuclear collaboration between India's leading nuclear entities and U.S. firms.

Saudi Aramco to expand investments in lithium as it diversifies from oil (January 15, 2025, [Source](#)) – Saudi Aramco, the world's largest oil company, is set to increase its investments in

lithium, aiming to establish a supply chain for the metal essential for electric vehicle batteries. Amidst China's dominance in lithium processing, which accounts for about two-thirds of the market, Aramco plans to diversify its economy away from oil by developing mining and refining capabilities. The kingdom intends to create facilities for commercial processing of lithium within three to five years and is also developing an EV manufacturing hub with plans to launch its own EV brand. Additionally, Aramco has recently achieved its first successful extraction of lithium from oilfield brine, demonstrating Saudi Arabia's growing commitment to becoming a key player in the global lithium market, despite current challenges such as price downturns and the need for vertical integration in new lithium projects.

GM signs supply deal with Vianode for synthetic graphite for EV batteries (January 15, 2025, [Source](#)) – General Motors (GM) has entered into a long-term agreement with Norway's Vianode, securing a multi-billion dollar supply of synthetic graphite for electric vehicle (EV) batteries from 2027 to 2033. This graphite will be used in batteries produced by Ultium Cells, a joint venture between GM and LG Energy Solution. The deal is crucial as China currently dominates 95% of the global graphite market, essential for EV battery production. Vianode's planned North American plant aims to produce about 80,000 tons of synthetic graphite annually by 2030, enough for approximately 1.5 million EVs. Vianode's production method significantly reduces CO2 emissions and offers quicker scalability compared to traditional mining, promising a more resilient supply chain for North American EV production.

Commonwealth to invest a further \$200m in rare earth mining project backed by Gina Rinehart (January 14, 2025, [Source](#)) – The Australian government is set to invest an additional A\$200 million in Arafura Rare Earths Limited (ASX: ARU), a project

supported by Gina Rinehart, raising the total public funding to over A\$1 billion. The investment will be managed by the National Reconstruction Fund, which will acquire an equity stake in Arafura's future mining and processing facility located 135km north of Alice Springs. This facility aims to produce approximately 4,400 tonnes of neodymium and praseodymium annually for 38 years. These minerals are essential for manufacturing components in various technologies, including mobile phones and electric vehicles. This move is part of a broader effort to reduce dependence on Chinese-controlled supply chains and stimulate job creation and economic growth in central Australia, benefiting notably the First Nations communities.

China's rare earth exports in 2024 climb as home demand limited (January 13, 2025, [Source](#)) – In 2024, China's exports of rare earth minerals increased by 6% despite limited domestic demand due to sluggish economic growth, reaching a record 55,431 metric tons—the highest since 2014. However, the total value of these exports fell by 36% to \$488.8 million, reflecting a decline in prices due to ample supply. For instance, the price of praseodymium oxide dropped 26% in 2024, following a 37% decrease in 2023. Meanwhile, China's rare earth imports in December plummeted by 41.1% year-on-year to 9,645 tons, culminating in a 24.4% decrease for the year. This decline was primarily attributed to reduced supplies from the U.S. and Myanmar, which faced significant disruptions including the takeover of a major mining hub by an armed group in Myanmar.

China's iron grip on critical minerals puts US in 'unfathomable' national security bind: experts (January 13, 2025, [Source](#)) – China's control over critical minerals represents a significant national security threat to the U.S., according to experts. China dominates up to 70% of the world's mining and 90% of the processing of these minerals, crucial for electronics, renewable energy, and military hardware. This monopoly, backed by

Beijing's subsidies and minimal environmental constraints, allows China to manipulate market prices and strategically withhold supplies. Recent export bans to the U.S. on minerals like gallium highlight the potential risks. U.S. reliance has deepened due to stringent environmental regulations and slow permitting processes that deter domestic mining investment. Experts suggest strengthening alliances with countries like Canada and Australia and enhancing U.S. mining and processing capacities as critical steps to reduce dependency on China.

Saudi Arabia plans to enrich and sell uranium, energy minister says (January 13, 2025, [Source](#)) – Saudi Arabia aims to utilize its uranium resources by enriching and selling them as part of its broader strategy to monetize minerals, according to Energy Minister Prince Abdulaziz bin Salman. Speaking at a Dhahran conference, he detailed plans to produce 'yellowcake,' a concentrated powder form of uranium used for nuclear reactor fuel, emphasizing the need for careful handling due to minimal radiation risks. This initiative is part of Saudi Arabia's emerging nuclear program, which seeks to diversify its energy sources through nuclear power. The kingdom's nuclear ambitions, however, raise concerns due to potential regional tensions, especially with Iran, as Crown Prince Mohammed bin Salman previously indicated that Saudi Arabia might pursue nuclear weapons if Iran does. Additionally, the kingdom plans to implement regular international nuclear safeguards by the end of 2024 and is yet to activate its first reactor.

UK chemicals industry heading for extinction, warns Jim Ratcliffe (January 13, 2025, [Source](#)) – Sir Jim Ratcliffe, chairman of Ineos, warns that Britain's chemicals industry is on the brink of extinction due to high energy costs and carbon taxes, highlighted by the closure of Ineos's synthetic ethanol plant at Grangemouth. This shutdown resulted in the loss of 80 direct jobs and impacted over 500 others indirectly. The

Grangemouth facility, which has been operational for over 40 years, was the last synthetic ethanol plant in the UK, making the nation fully dependent on imports for synthetic ethanol. This closure follows the upcoming shutdown of Scotland's last oil refinery, which is expected to result in a loss of 400 jobs. Ratcliffe criticizes the UK's lack of an effective energy strategy and urges immediate government action to reduce energy and carbon costs to save the industry.

China marks breakthrough in utilizing niobium resources (January 13, 2025, [Source](#)) – China has achieved a significant breakthrough in efficiently utilizing its niobium resources, according to the China Geological Survey (CGS). This advancement has revitalized approximately 929,000 metric tons of niobium, particularly unlocking the economic potential of a substantial niobium-rare earth deposit in Miaoya, Hubei province. The project, a collaboration between the CGS and the Hubei provincial government, has enhanced niobium content in ores from 5-8% to 17% and increased the recovery rate from 20% to 50%. Niobium is vital for its corrosion resistance and high-temperature stability, crucial in aerospace, defense, and nuclear energy sectors. This breakthrough, developed over two years, offers a more cost-effective method for exploiting niobium ore, boosting China's self-reliance and security in critical mineral resources.

Global electric vehicle sales up 25% in record 2024 (January 13, 2025, [Source](#)) – In 2024, global sales of fully electric and plug-in hybrid vehicles surged by 25%, reaching over 17 million units, driven by robust growth in China and a stabilized market in Europe. December marked a record month with a 25.6% increase to 1.9 million vehicles sold. China led the surge with a 36.5% jump in sales to 1.3 million vehicles in December alone, totaling 11 million for the year. Although growth slowed slightly for a second consecutive month, EV sales in the U.S.

and Canada also rose by 8.8% to 0.19 million, while Europe saw a modest increase of 0.7%. Rho Motion highlighted the impact of subsidy removals and emission targets, noting that upcoming U.S. policy changes and new emissions regulations in Europe could further shape the market. Additionally, automakers are pooling resources to buy carbon credits to comply with tougher CO2 rules, while China continues to promote EV adoption with extended subsidies.

UK to sign critical minerals partnership with Saudi Arabia (January 13, 2025, [Source](#)) – The UK is set to sign a critical minerals partnership with Saudi Arabia to enhance supply chains, boost British businesses, and attract investment. This agreement is vital for Britain to secure a long-term supply of essential minerals like copper, lithium, and nickel, crucial for producing smartphones, electric cars, and developing AI technologies. Saudi Arabia, with mineral resources valued at \$2.5 trillion, aims to become a key global player in the minerals market. The deal is part of Britain's broader industrial strategy to promote national security, economic growth, and job creation. Talks are also ongoing with the Gulf Cooperation Council about a free trade agreement. British Industry Minister Sarah Jones will lead a trade mission to Riyadh, featuring companies like Cornish Lithium and Beowulf Mining PLC (LSE: BEM), aligning with the Future Minerals Forum where the partnership will be formalized.

Investor.News Media Highlights

- January 15, 2025 – Hallgarten + Company Releases Update on First Phosphate Report: PEA Initiates Development Phase for BLM <https://bit.ly/42f8qu9>
- January 15, 2025 – Voyageur Pharmaceuticals Gains Momentum as a Solution to the Critical Minerals Barium Supply Challenge <https://bit.ly/40glf4H>

- January 14, 2025 – The end of net-zero targets <https://bit.ly/3CaFfhg>
- January 12, 2025 – Melissa “Mel” Sanderson to Champion Critical Minerals Sustainability at Future Minerals Forum 2025 <https://bit.ly/4jfsnSP>

Investor.News Member News

- January 17, 2025 – First Phosphate Announces Filing of PEA Technical Report for the Bégin-Lamarche Phosphate Project, Saguenay-Lac-Saint-Jean, Quebec, Canada <https://bit.ly/40C3JcJ>
- January 17, 2025 – Power Nickel appoints Joe Campbell as VP Exploration <https://bit.ly/3E0wcA0>
- January 16, 2025 – American Rare Earths Named to the 2025 OTCQX Best 50 <https://bit.ly/4gSZFur>
- January 16, 2025 – Letter to the Shareholders of Power Nickel Inc. <https://bit.ly/40BrYYz>
- January 15, 2025 – Voyageur Recaps Significant 2024 Achievements and Unveils Plans for Transformational 2025, Including Market Launch for Barium Suite of Products and Advancement of Iodine Suite <https://bit.ly/4agyGWU>
- January 15, 2025 – Vatic Announces Renegotiated Option Agreement for Brazil Hardrock Lithium Pegmatite Property and Acquisition of Additional Property <https://bit.ly/3PCPmP6>
- January 13, 2025 – Vatic Closes Private Placement Financing <https://bit.ly/3Cc06PC>
- January 13, 2025 – Western Uranium & Vanadium Recaps 2024 Milestones and Highlights <https://bit.ly/4gP1zfy>
- January 13, 2025 – Voyageur Commences Testing of Innovative Barium Contrast Product Line in Human Radiology Scans, Paving the Way for Near-Term Market Launch

<https://bit.ly/4jffjtt>

The upcoming **CMI Summit IV**, themed *The War for Critical Minerals and Capital Resources*, is scheduled to take place in Toronto, Ontario, on May 13-14, 2025. This event aims to unite industry leaders to tackle pressing issues in the global critical minerals market. To learn more about the CMI Summit IV, [click here](#)

