

The Shifting Dynamics of Resource Nationalism as the Demand for Critical Minerals is Set to Soar

written by Jack Lifton | April 18, 2024

As nations like Chile and Indonesia assert greater control over their resources, the global community must navigate this new reality where resource sovereignty becomes a cornerstone of national policy.

Technology Metals Report (02.16.2024): Australia makes Nickel a 'Critical', Hastings Rare Earth Deal with Baotou, and Uranium Market Continues to Rise

written by Tracy Weslosky | April 18, 2024

Welcome to the latest issue of the Technology Metals Report (TMR), brought to you by the [Critical Minerals Institute](#) (CMI). In this edition, we compile the most impactful stories shared by our members over the past week, reflecting the dynamic and

evolving nature of the critical minerals and technology metals industry. Among the key stories featured in this report are the Australian government's decision to classify nickel as a 'critical' mineral, entitling it to support from a significant stimulus fund, and the emerging competitive landscape in Africa as Western countries endeavor to reduce China's dominance in the critical minerals sector, particularly in cobalt production.

This week's report also highlights various strategic collaborations and developments, including Hastings Technology Metals Ltd.'s (ASX: HAS) offtake agreement with Baotou Sky Rock for the Yangibana Project, and the U.S. Department of Energy's funding allocation for projects aimed at extracting rare earth elements and critical minerals from coal-based resources. Furthermore, we cover the notable surge in uranium prices to a 17-year high and the strategic expansion plans by Energy Fuels Inc., alongside LG Energy Solution's efforts to secure lithium supply through a second agreement with WesCEF. Lastly, we touch on the advancements in battery technology, such as the pilot production of battery-grade purified phosphoric acid by First Phosphate Corp. and the formation of the China All-Solid-State Battery Collaborative Innovation Platform (CASIP) by leading Chinese battery and automobile manufacturers, including CATL and BYD, aiming to propel the development of all-solid-state batteries.

Australia classifies nickel as a 'critical' mineral to protect ailing industry (February 16, 2024, [Source](#)) – The Australian government has recognized nickel as a critical mineral, making it eligible for support from a A\$6 billion stimulus fund due to concerns over the nickel industry's decline, exacerbated by a supply glut from Indonesia and falling EV demand. This move aims to protect thousands of jobs and key producers like IGO Limited (ASX: IGO) and BHP Group (ASX: BHP | NYSE: BHP) from the impacts of falling nickel prices, which have dropped 43% in the past

year. BHP has announced a significant impairment charge on its Nickel West division, highlighting the industry's dire situation. The government's intervention, including potential low-interest loans and grants, is a response to the challenges posed by cheaper Indonesian nickel, driven by Chinese investment and a ban on nickel ore exports from Indonesia. This situation has led to reduced investment and operational suspensions in Australia's nickel sector, threatening its survival and the country's ambition to develop alternative supply chains to China.

West challenges China's critical minerals hold on Africa (February 16, 2024, [Source](#)) – In a significant development in the global minerals market, China's CMOC Group has surpassed Glencore PLC (LSE: GLEN) to become the leading producer of cobalt, primarily through its operations at the Kisanfu mine in the Democratic Republic of Congo. This surge in production has created one of the largest cobalt surpluses in recent years, despite a drastic fall in cobalt prices. Western countries, recognizing the strategic importance of cobalt and other critical minerals for clean energy and military applications, are challenging China's dominance in Africa. They are particularly focused on the rich copper and cobalt reserves in the Copperbelt region, which spans Zambia and the Congo. Western entities, including companies backed by prominent investors like Bill Gates and Jeff Bezos, are venturing into this region, despite political and infrastructural challenges. The U.S. and other Western nations are supporting infrastructure and energy projects to facilitate mining and reduce logistical costs. Efforts to de-risk mining in the Copperbelt include upgrading rail lines and developing solar power projects. Meanwhile, the Congolese government is asserting more control over its mineral resources, revising deals with Chinese companies and aiming to formalize artisanal mining to secure a fairer share of the

revenue from its mineral wealth. This marks a pivotal shift in the geopolitics of critical minerals, highlighting the strategic competition between the West and China over Africa's mineral resources.

Hastings And Baotou Sky Rock Sign Binding Term Sheet For Integrated Tolling And Offtake Arrangement (February 16, 2024, [Source](#)) – Hastings Technology Metals Ltd. (ASX: HAS) has entered into a binding term sheet with Baotou Sky Rock Rare Earth New Material Co., Ltd for an integrated tolling and offtake arrangement concerning the Yangibana Project's rare earth concentrate. This arrangement allows Hastings to toll treat its concentrate in China, transforming it into separated rare earth oxides, and sell them, improving Hastings' revenue and cash flows beyond previous models. The agreement, lasting seven years with a possible five-year extension, guarantees a minimum of 10,000tpa of concentrate processing. This deal complements Hastings' existing contract with thyssenkrupp and is part of negotiations with other potential customers for further offtake agreements. The updated financial model reflecting this integrated approach will support the project's funding, showcasing significantly enhanced project economics, including a notable increase in post-tax NPV, IRR, and life of mine free cashflow, while reducing the capital payback period.

The Up and Coming Uranium Boom (February 15, 2024, [Source](#)) – In an interview with Hallgarten + Company's Christopher Ecclestone and the [Critical Minerals Institute](#)'s (CMI) Tracy Weslosky, the discussion centered around the uranium market's burgeoning prospects. Ecclestone expressed skepticism regarding the effectiveness of a US ban on Russian uranium, suggesting that Russian uranium could be rerouted through Kazakhstan. He highlighted the challenges Western countries might face in replacing Russian uranium sources. Ecclestone described the uranium market as vibrant, contrasting it with the stagnation in

battery metals, and emphasized uranium's unique investment appeal. He advised investors to focus on proven assets from previous booms, cautioning against investing in new, unproven fields. Ecclestone also critiqued the hype around thorium and small modular nuclear reactors, advocating for their potential but also indicating a need for realism. Lastly, he mentioned Argentina and the Athabasca region as key areas for uranium investment, highlighting the importance of geographic and asset-based considerations in the uranium industry.

DOE Awards \$17M To Conduct FEED Studies for Production of Rare Earth Elements, Critical Minerals (February 15, 2024, [Source](#)) –

The U.S. Department of Energy (DOE) is allocating over \$17 million to three projects for extracting rare earth elements and critical minerals from coal-based resources. Funded by the Bipartisan Infrastructure Law, this initiative aligns with President Biden's Investing in America agenda to diminish reliance on foreign critical minerals vital for clean energy technologies, including solar panels and electric vehicles. Leveraging America's substantial coal reserves and waste, the projects aim to foster a self-reliant supply chain, enhance national security, support environmental sustainability, and create quality jobs. This strategic move towards utilizing domestic resources for critical mineral production underscores a significant push towards energy independence, aligning economic revitalization with clean energy advancements.

India to Capitalise on Coveted 'Critical Minerals Club' to Acquire Overseas Assets (February 15, 2024, [Source](#)) –

India is strategically enhancing its position in the global critical minerals market by focusing on acquiring overseas assets through collaborations with Western countries and leveraging partnerships within the US-led Minerals Security Partnership (MSP). This international coalition aims to ensure reliable critical mineral supply chains amidst global disruptions. India,

which joined the MSP in 2023, is encouraging public sector undertakings (PSUs) like Coal India Limited, NLC India Ltd., and NTPC Ltd. to secure strategic assets in lithium, cobalt, and graphite to bolster its green energy transition and manufacturing capabilities in electronics, including electric vehicles and semiconductors. Deals have been made, notably with Australia and countries in South America and Africa, to secure these essential materials. The initiative reflects India's ambition to become self-reliant in critical minerals crucial for the technology-driven world economy, particularly as it aims to accelerate its green energy transition and indigenous manufacturing.

Uranium Prices at a 17-Year High, Energy Fuels Rapidly Increases Uranium Production in 2024 (February 14, 2024, [Source](#)) – Uranium prices have surged to a 17-year high at \$106/lb, driven by reduced supply and increased demand, with [Energy Fuels Inc.](#) (NYSE American: UUUU | TSX: EFR) poised to benefit significantly. The uranium market's optimism is further bolstered by a commitment from over 20 countries at COP28 to triple nuclear energy capacity by 2050, highlighting a significant shift towards nuclear energy to meet clean energy goals. Additionally, 118 governments have pledged to triple renewable energy capacity by 2030. Energy Fuels, the leading uranium producer in the USA, has initiated production at three mines, targeting a significant increase in uranium output to over 2 million lbs by 2025, alongside exploring additional production avenues. With uranium's strategic importance in the clean energy transition underscored, Energy Fuels is leveraging favorable market conditions and long-term growth prospects, underlined by its ambitious expansion and production plans.

LG Energy signs 2nd agreement with WesCEF to expand lithium supply (February 13, 2024, [Source](#)) – LG Energy Solution from South Korea and Wesfarmers Chemicals, Energy, and Fertilisers

(WesCEF) from Australia have signed their second agreement to expand LG's lithium supply chain. WesCEF will supply LG with 85,000 tons of lithium concentrate, expected to yield about 11,000 tons of lithium hydroxide, sourced from the Mt. Holland project in Western Australia, set to start in early 2025. This agreement builds on a previous deal for 50,000 tons of lithium hydroxide in 2022. Additionally, LG Energy is focusing on expanding its presence in India's electric vehicle market, already leading in supplying battery cells to e-scooter makers. In 2023, LG secured a deal with Chile's SQM for 100,000 tons of lithium for seven years, highlighting its efforts to bolster its supply chain amidst increasing lithium demand for rechargeable batteries.

First Phosphate Corp. Completes Pilot Production of LFP Battery-Grade Purified Phosphoric Acid (February 13, 2024, [Source](#)) – [First Phosphate Corp.](#) (CSE: PHOS) announced the successful completion of a pilot project that converts high purity phosphate concentrate into battery-grade purified phosphoric acid (PPA) for the lithium iron phosphate (LFP) battery industry. In collaboration with Prayon Technologies SA, the company has transformed phosphate concentrate into merchant grade phosphoric acid and then into PPA, conforming to food and battery-grade specifications. This achievement enables the production of LFP cathode active material and battery cells from a North American source of battery-grade PPA. First Phosphate aims to integrate its mining operations in Quebec, Canada, into the supply chains of LFP battery producers, emphasizing high purity, responsible production, and a low carbon footprint.

CATL, BYD, others unite in China for solid-state battery breakthrough (February 12, 2024, [Source](#)) – In a bold move to spearhead the electric vehicle (EV) revolution, China's leading battery and automobile manufacturers, including CATL and BYD, have joined forces under the government-led China All-Solid-

State Battery Collaborative Innovation Platform (CASIP). Established in January, CASIP aims to commercialize all-solid-state batteries by 2030, enhancing EV performance with greater energy density and safety. This initiative, uniting industry rivals and leveraging AI technology, seeks to position China at the forefront of the next-generation battery technology, challenging current leaders like Japan and Western countries. With the participation of major companies and state support, China is poised to transform the EV market and maintain its global leadership in automotive battery innovation.

Investor.News Critical Minerals Media Coverage:

- February 15, 2024 – The Up and Coming Uranium Boom <https://bit.ly/3uAUdcv>
- February 14, 2024 – Uranium Prices at a 17-Year High, Energy Fuels Rapidly Increases Uranium Production in 2024 <https://bit.ly/48wVY8N>

Investor.News Critical Minerals Videos:

- February 13, 2024 – Tom Drivas on the 3 world-renowned rare earths experts on Appia's Critical Minerals Advisory Committee <https://bit.ly/49bVMNj>

Critical Minerals IN8.Pro Member News Releases:

- February 15, 2024 – First Phosphate and Integrals Power sign Joint Development Agreement to Produce Environmentally Compliant Battery Grade Iron III Phosphate Precursor for the LFP Battery Industry <https://bit.ly/3uDdslR>
- February 14, 2024 – Imperial Mining Announces Effective

Date of New Trading Symbols after TSXV Approves of Name Change to Scandium Canada Ltd. <https://bit.ly/48hRyl0>

- February 13, 2024 – Western Uranium & Vanadium Mining Operations Update <https://bit.ly/4bvDKHr>
- February 13, 2024 – Donald Swartz, CEO American Rare Earths, to speak at “The Future Panel” <https://bit.ly/3UF2M05>
- February 13, 2024 – First Phosphate Corp. Completes Pilot Production of LFP Battery-Grade Purified Phosphoric Acid <https://bit.ly/3P51pF5>
- February 13, 2024 – Defense Metals Updates Metallurgical Test Work and Preliminary Feasibility Study Progress for its Wicheeda Rare Earth Elements Project <https://bit.ly/3HYiV9R>
- February 13, 2024 – Power Nickel extends resource mineralization at Nisk Main <https://bit.ly/49aJCE9>
- February 12, 2024 – F3 Hits 66.8% U3O8 over 0.5m within 42.4% over 2.0m at JR <https://bit.ly/3HUa60a>

The Critical Minerals Institute Report for September 2023

written by Matt Bohlson | April 18, 2024

Welcome to the mid-September 2023 Critical Minerals Institute (“CMI”) report, designed to keep you up to date on all the latest major news across the critical minerals markets.

Move Over China, as Saudi Arabia Enters the Critical Minerals Stage in the Congo

written by InvestorNews | April 18, 2024

The Democratic Republic of Congo (DRC) is rapidly emerging as a focal point for global entities eager to obtain crucial metals pivotal for green technologies. This surge in interest has placed both the United States and the mining giant, Glencore PLC (LSE: GLEN | OTC: GLCNF | HK: 805), at the [forefront of news](#), particularly regarding their expanding interests in the DRC.

Recent [reports from Reuters](#) reveal advanced talks between the United States and Saudi Arabia to secure metals from Africa for their green energy transitions. Concurrently, the UAE has penned a \$1.5 billion agreement with the DRC to mine and process critical materials. This raises significant queries: Is Saudi Arabia charting a similar trajectory? How will these accords impact the region's fragile power infrastructure? Moreover, given the proposed framework allowing U.S. companies to purchase a part of Saudi's yield, what might be the potential cost for U.S. entities? This arrangement, echoing the prevalent market control where U.S. miners and manufacturers are tethered to China's market hegemony, prompts the contemplation: Is the U.S. merely substituting China with Saudi Arabia?

In a parallel move, the [Financial Times](#) has shed light on Glencore's ambitions in the DRC. The corporation's strategy is to fortify its stance in the electric vehicle battery domain by bolstering its investments in the African country. Their

[alliance](#) with the Toronto-listed [Tantalex Lithium Resources Corp.](#) (CSE: TTX | OTCQB: TTLXF) for a lithium mining project epitomizes this vision. Nevertheless, Glencore's African endeavors have not been without their share of scandals. In the previous year, they acknowledged bribery practices across the continent, culminating in a sizable \$180 million settlement with the DRC. Probes into their DRC activities persist.

[Critical Minerals Institute](#) (CMI) Director and DRC expert Melissa "Mel" Sanderson's discernment provides a deeper layer of scrutiny to these advancements. She underscores the ethical paradox in the U.S.'s methodology – a predisposition for mining in regions with more lenient ESG standards, while overlooking potential ventures domestically under more rigorous norms. She perceives this as a manifestation of an "out of sight, out of mind" philosophy.

Enriching the discourse, [CMI](#) Co-Chair Jack Lifton remarked, "I am deeply acquainted with this scenario. The American public remains oblivious to the fact that the lithium will be claimed by the highest bidder, not necessarily the most ethical. The Chinese had collaborated with an Australian firm that forfeited the concession due to alleged "corruption." It's plausible that they will, if not already, synergize with Glencore concerning expenses. Being Swiss, Glencore isn't bound by loyalty to the EU or the USA. It's widely recollected that an African leader observed, 'While Americans offer promises, the Chinese construct airports.' The U.S. and its industries are channeling funds into 'domestic' ventures from finite or economically precarious sources, providing fertile ground for unscrupulous practices."

In today's interconnected age, cultivating global alliances is undeniably pivotal. Yet, the overarching strategic, ethical, and environmental repercussions of these engagements demand unwavering attention. As the global compass aligns with

sustainability, it becomes imperative for entities like the U.S. government and Glencore to holistically evaluate the broader socio-political and environmental consequences inherent in their decisions. Reflecting upon this might hint that ethical, sustainable, and dependable alternatives may be more accessible than they presume. For more information on the CMI, [click here](#)

Fathom Nickel is looking to become a leader in the Canadian nickel exploration industry

written by InvestorNews | April 18, 2024

The global pursuit of key battery metals like nickel and copper appears to be reaching a fevered pitch. Mining M&A is being spurred on by investors betting on rising demand for critical minerals that are key for the global green energy transition.

Leading Producers and Junior Miners Who Benefit as EV Boom

Drives Cobalt Demand

written by Matt Bohlsen | April 18, 2024

Cobalt is a key component of the lithium-ion (“Li-ion”) battery used in electronics and many types of electric vehicles (“EVs”). The EV boom is causing cobalt demand to surge higher.

In 2021, the International Energy Agency [forecasted](#) that cobalt demand could grow between **6x to 21x** from 2020 to 2040 depending upon various scenarios. The main driver is the forecast surge in sales of EVs. Our Trend Investing [forecast](#) is for a **5.7x** increase from 2020 to 2037. The reason it is lower than the IEA is due to the emergence of lithium-iron-phosphate (“LFP”) batteries which do not use cobalt. Nonetheless, a 5.7x increase is still very significant, especially when we consider that cobalt has the most difficult supply chain of all EV metals.

The cobalt market is currently quite balanced with a mild surplus as demand from electronics remains weak; however, Trend Investing forecasts that by 2027 onwards this will become a growing deficit, assuming EVs sales continue to grow strongly.

As a result of the above, the cobalt price ([US\\$15.20/lb](#)) and many of the cobalt miner’s stock prices are depressed allowing a more attractive entry point for long-term investors into the sector.

Trend Investing vs IEA demand forecast for EV metals

Trend Investing v IEA demand forecast for EV metals ([Trend Investing](#)) ([IEA](#))

Increase in metal demand 2020 to 2037 (100% EV and sustainable energy world)			
	Trend Investing (f) to 2037	IEA (f) to 2040	
Lithium demand	35	13 --42	
Cobalt demand	5.7	6--21	
Nickel demand	2.8	7--19	
Manganese demand	1.7	3--8	
Flake Graphite demand	17	8--25	
NdPr demand	5.9	3--7	
Copper demand	2.3	2--3	

Sources: [IEA](#) and [Trend Investing](#)

The leading cobalt miners in 2023

[Glencore PLC](#) (LSE: GLEN | OTC: GLCNF | HK: 805) is the leading global producer of cobalt with production of [43,800t](#) in 2022. Most of this production came from the Democratic Republic of the Congo ("DRC"). In 2023, Glencore's guidance is for the production of [38,000t of cobalt plus or minus 5,000t](#). On the plus end, this would lead to the production of 43,000t in 2023 or slightly lower than the production in 2022.

From the Mutanda and Katanga mines in the DRC, Glencore has the potential to increase cobalt supply to approximately 57,000 tonnes-per-annum ("tpa") if market conditions suit. They also produce about 3,000tpa from their Murrin Murrin operation in Australia. Given total global cobalt supply was approximately 200,000t in 2022 it means that Glencore is a critical player in the market and can influence pricing by altering its supply. Glencore has agreed to [supply General Motors Co. \(NYSE: GM\)](#) with cobalt from its Murrin Murrin operation in Australia.

[CMOC Group Limited](#) (HKSE: 3993 | SHE: 603993 | OTC: CMCLF)

(formerly China Molybdenum) is the second largest global producer of cobalt producing [18,501t](#) in 2021 from their Tenke Fungurume mine in the DRC. For the first 3 quarters of 2022, CMOC's cobalt production stood at 15,300t. However, 2022 has seen a dispute with the DRC's Gecamines which has resulted in exports being suspended since July 2022. On a more positive note, CMOC [announced](#) in January 2023 that mining from their other DRC mine (KFM copper-cobalt mine) had begun.

[Zhejiang Huayou Cobalt](#) (SHA: 603799) is the third largest global cobalt producer at around 20,000tpa. They also rely on mines in the DRC. Huayou Cobalt [agreed to supply cobalt](#) to Tesla, Inc. (NASDAQ: TSLA) from July 1, 2022 until 2025.

Other cobalt producers

Other global cobalt producers include **Eurasian Natural Resources Corp. (private)**, **GEM Co Ltd. (SHE: 002340)**, **Jinchuan Group International Resources (HK: 2362)**, **Shalina Resources subsidiary Chemaf**, and several other smaller cobalt producers such as **Vale SA (NYSE: VALE)**, **Norilsk Nickel**, **Sumitomo Metal Mining Co. (TYO: 5713)**, **Sheritt International Corporation (TSX: S | OTC: SHERF)**, **Korea Resources Corporation**, **Umicore SA (Brussels: UMI | OTC: UMICY)**, and [Nickel 28 Capital Corp.](#) (TSXV: NKL).

Junior cobalt miners

The most advanced junior cobalt miners are **Jervois Global Limited (ASX: JRV | TSXV: JRV | OTCQX: JRVMF)** and **Electra Battery Materials Corporation (NASDAQ: ELBM | TSXV: ELBM)**. Jervois aims to commence commercial concentrate production by the end of Q1/2023 from their Idaho Cobalt Operations in the USA. Jervois also now owns the Kokkola producing refinery in Finland and plans to have a second refinery in Brazil up and

running [by the end of Q1/2024](#).

Electra targets to have their Ontario cobalt refinery (North America's first cobalt sulphate refinery) operational with ore feed from Glencore by the [Spring of 2023](#). They are also working on battery recycling and own the [Iron Creek Cobalt-Copper Project](#) in Idaho, USA.

Closing remarks

The cobalt market is quite small and is dominated by supply from the DRC, making it a rather risky market from a supply chain point of view. The current slowdown in electronics (smartphones, PCs) sales has temporarily hurt cobalt demand. Looking ahead this should recover and as electric car sales grow the demand for cobalt rises dramatically. It is looking like a fairly tight market from now to 2027, but from 2027 onwards the world will need multiple new junior cobalt miners to meet supply.

A look at the nickel sector and the leading companies as we head into 2023

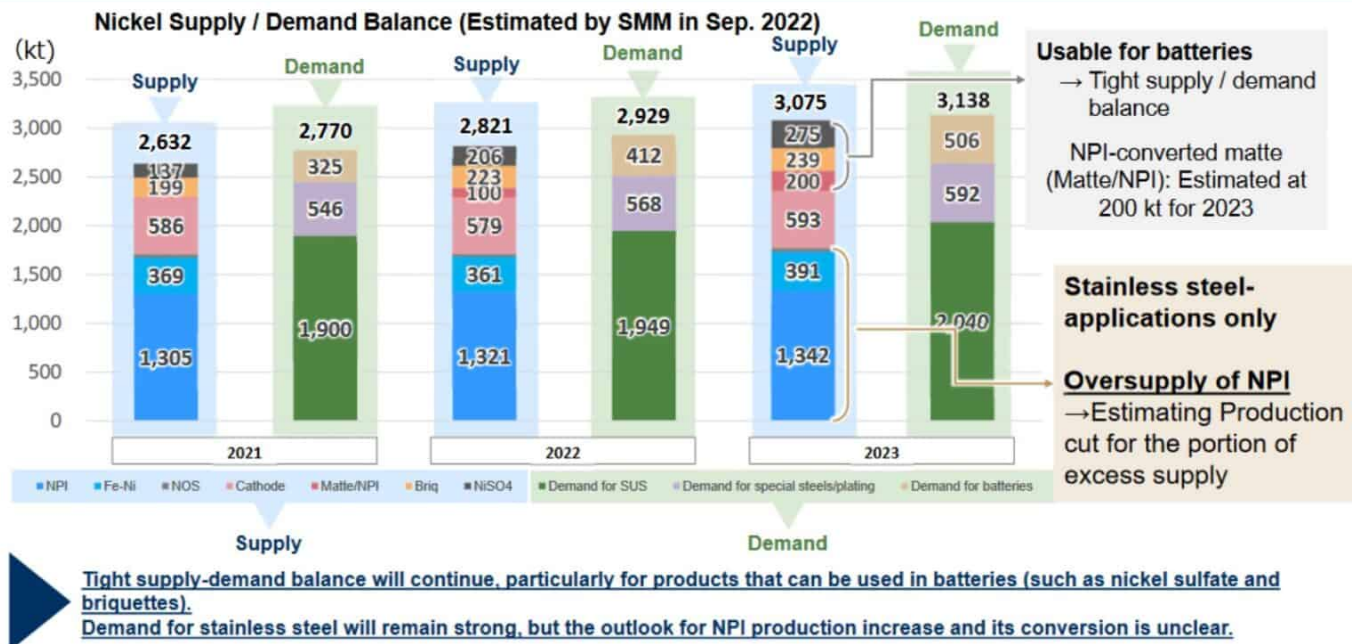
written by Matt Bohlson | April 18, 2024

Nickel prices have had a very good year in 2022, up [43%](#) YTD to [US\\$28,199/t](#) at the time of writing. This has been mostly due to a tight market with demand remaining strong and limited new supply.

2023 is forecast to be another tight year for the nickel market, although some analysts are [concerned with potential new supply from Indonesia](#). Sumitomo sees a tight nickel supply/demand balance for the battery sector with some potential oversupply of nickel pig iron (NPI) in 2023. Nickel pig iron is a low grade ferronickel commonly used in China as a cheaper alternative to pure nickel for the production of stainless steel.

Sumitomo Metal Mining forecasts (as of Sept. 2022) small nickel deficits for 2022 and 2023

5. Nickel Business Environment (2) Supply / Demand Balance



[Source:](#) Sumitomo Metal Mining (see page 11)

A huge demand wave ahead for nickel this decade and next

Looking out further, in 2021 the [IEA forecast](#) that nickel demand is set to increase by 7x to 19x from 2020 to 2040. This is driven by conventional demand from stainless steel plus surging demand from batteries, mostly to supply the electric vehicle boom. Not all batteries will use nickel; however nickel, manganese, cobalt (NMC) cathode batteries are set to remain as a dominant battery chemistry in Western markets due to their

superb energy density, combined with a good long cycle life. In 2022, the IEA [forecast](#) that **60 new nickel mines would be needed by 2030**.

Jessica Farrell, BHP's Asset President of Nickel West, recently was quoted as [stating](#): "We anticipate demand for nickel in the next 30 years will be 200% to 300% of the demand in the previous 30 years".

The leading nickel companies

Vale S.A. (NYSE: VALE) is consistently in the top 3 global leading producers of nickel. In 2020 they ranked second producing [215,000t](#). In 2021, Vale was the world's largest iron ore and nickel producer with iron ore and pellets making up [81%](#) of revenue in Q2, 2022, nickel making up 9%, and copper 3%. Vale has been working on expanding production capacity of both [iron ore](#) and [nickel](#). Vale's key nickel assets are well located in [Voisey's Bay](#) in Canada. Vale has nickel supply agreements to supply nickel to Tesla (NASDAQ: TSLA), Ford Motor Co. (NYSE: F), Northvolt, and [more recently](#) General Motors (NYSE: GM). Vale's stock currently trades on a 2023 PE of only [5.97](#) and an indicative 2023 dividend yield of 6.6%.

Norilsk Nickel was the leading global nickel producer in 2020 with [236,000t](#). Being a Russian company 2022 has not been kind for investors in Norilsk Nickel with the stock price plunging and stock trading being suspended from all Western stock exchanges. Norilsk Nickel recently [stated](#): "MMC Norilsk Nickel shares are listed on the Moscow and on the Saint-Petersburg Stock Exchanges, ADRs are accepted for trading on the Saint-Petersburg Stock Exchange."

Glencore PLC (LSE: GLEN | OTC: GLCNF) ranked the number 3 leading global nickel producer in 2020 with [110,000t](#) of production. Glencore's 2022 production for the first 9 months of

the year was [81,600t](#), 15% up on the same period in 2021.

BHP Group Limited (NYSE: BHP) is ranked 4th in 2020 with [80,000t](#) of nickel production. BHP's Nickel West mine has been ramping up operations in recent times with ore sent to BHP's Kwinana Nickel Refinery which can produce 100,000tpa of nickel sulphate. BHP is looking to grow their nickel business and recently announced [a takeover offer of OZ Minerals Limited](#) (ASX: OZL) (who themselves have an [option deal to acquire Havilah Resources' Kalkaroo Project](#) in SA that contains copper, gold and cobalt).

BHP's Nickel West operations in Western Australia



Source: [BHP website](#)

Others – Other key global nickel producers include **Jinchuan Group (HK: 2362)**, **Sumitomo Metal Mining Co. (TYO: 5713 | OTC: SMMYY)**, **Anglo American (LSE: AAL | OTC: AAUKF)**, **Eramet (OTC: ERMAY)**, **Sherritt International (TSX: S | OTC: SHERF)**, **IGO Limited (ASX: IGO | OTC: IIDDY)**, **Panoramic Resources (ASX: PAN | OTC: PANRF)**, **Nickel Industries Limited (ASX: NIC | OTC: NICMF)**, [Nickel 28 Capital Corp.](#) (TSXV: NKL), **Mincor Resources (ASX: MCR | OTC: MCRZF)**, and a few more.

Closing remarks

2022 was a great year for the nickel sector. 2023 looks like being a bit tougher as a global slowdown looms and as new

Indonesia supply comes online; however, looking out this decade it looks hard to see where the 60 new nickel mines needed will come from.

There are several exciting nickel juniors working to fill the impending nickel supply gap this decade. Some are [ii8 members here at InvestorIntel](#), such as [Power Nickel \(TSXV: PNPN\)](#), so feel free to read up on them over the upcoming Christmas break.

Russia's War, Supply Chain Turmoil and What It Means to You

written by InvestorNews | April 18, 2024

What a week! Last Thursday, Russia invaded Ukraine. Then this week global supply chains went crazy, with skyrocketing price moves and a global-scale sense of worry about where it all leads.

I won't dwell on war news, meaning stories and imagery from front lines. It's tragic and painful to witness, and no doubt you follow events.

But definitely, it's worth discussing the economic impacts of the war. In particular, consider the almost immediate commercial isolation of Russia that's now taking shape with a wide array of sanctions on Russia's government, her banks, businesses and people.

This is an entirely new page for the world economy. And what's

happening is not as easy as just saying, "Russia is bad so let's punish her." Sad to say, though, that's where much thinking across the world is focused. Do something. Make it fast. Think about it later.

Another way to say it is that Russia is a major, global-scale source of key energy and industrial resources. These range from products straight from the well like crude oil and natural gas, to refined hydrocarbons like gasoline, diesel and chemicals. Plus, Russia produces a vast array of industrially critical elements, again ranging from ores and concentrates to highly refined and processed alloys.

For example, as Russian sanctions kicked into play over the past few days the price of oil pulled up into a strong climb, with Brent Crude hitting \$114 per barrel at one point. This reflects market uncertainty over future access to Russian exports. Meanwhile, one sees stories of tanker-loads of Russian oil going "no bid" because traders are uncertain about the legality of even making an offer. It'll sort out, more or less. But for now, it's a serious mess.

Other important commodities with a Russia-trade angle are also rising in price. Wheat futures are soaring to two-decade highs, according to market tracking services. And lumber futures are up sharply as well, reflecting concern over diminishing Russian supply.

Other materials rising in price include aerospace-grade aluminum, now at record levels according to a market follower with whom I spoke earlier. Meanwhile, a significant fraction of the world's aerospace grade titanium – about 60% by some calculations – comes from Russia.

Or consider spot prices for other widely used, critical industrial elements like copper, nickel and uranium. All have a

strong Russia supply angle, and all are at 10-year highs, per trading data.

You get the picture, right? Literally, overnight, anti-Russia sanctions have created uncertainty over future supplies of key energy resources and metals.

Meanwhile, share prices for important Russian producers have collapsed. Consider just two key companies in the Russian investment space, gas producer **Gazprom (OTC: OGZPY)** and metals producer **Norilsk Nickel (OTC: NILSY)**. Both companies' share prices have tumbled in recent days, as you can see here:



Is there an investment angle? Well, the possibilities are many and depend on your risk tolerance.

For the truly bold, the collapse of Russian share prices creates a contrarian setup. If you are aggressive, and perhaps a bit crazy, feel free to wade into the selloff and buy shares of Norilsk and Gazprom. Of course, we don't yet know what will happen as events unfold, so the "buy low" idea could also lead to even more losses, or not a complete wipeout. You've been warned.

Or frame it this way: Russia now has a very significant level of what's called "war risk" in everything that has to do with its investment climate. Perhaps there's an upside in the not-too-distant future, but for now the entire space is a very dangerous place to be for most investors.

The safer investment idea is to focus on U.S. and Canadian names that work in the resource space that's affected by Russian sanctions. Of course, there are many names out there ranging from small exploration plays to large and mighty companies.

For example, let's look at nickel. Large nickel producers include Brazilian play **Vale (NYSE: VALE)**, as well as Swiss-based **Glencore (OTC: GLNCY)** and Australia's **BHP Group Ltd. (NYSE: BHP)**. These names have global operations and everything you would want in a major player. If customers need nickel and cannot obtain it from Russia and Norilsk, they can buy it from these other guys.

On the much smaller, exploration side, though, my strongest play is a Canadian junior operating in Montana, called [Group Ten Metals Inc.](#) (TSXV: PGE | OTCQB: PGEZF). This company is relatively early stage in its efforts, but with significant progress on the books. The play is focused within the well-regarded Stillwater District, where the company holds a massive land package. Exploration has already revealed extensive mineralization in copper, nickel, platinum, palladium, rhodium, gold, silver and even chrome. It's a superb asset (I've visited the site and seen the mineralization), with strong technical and management talent.

It's also worth noting that Group Ten holds lands directly adjacent to Sibanye-Stillwater, Ltd. (NYSE: SBSW), currently producing minerals in the region. This situation makes it more likely that Group Ten can eventually obtain necessary mining permits and move towards development and production.

To sum up, we can't do anything about the tragic war in Ukraine. Meanwhile, the anti-Russia sanctions are a massive, international phenomenon, again out of our hands. But already these dynamics have set up severe supply chain issues, all based on just a few days of history being made. And more disruptions are, no doubt, in the pipeline as events unfold and politics play out.

Finally, looking ahead the world is not simply on a glide path

to a new version of the Cold War. No, Western nations are on the path to a “Commodity War” scenario, firmly embedded inside the looming political, economic and perhaps military confrontations. In this sense, holding real assets – including ores in the ground – is critical to your investment future.

On that note, I rest my case.

That’s all for now... Thank you for reading.

Best wishes...

Byron W. King

Welcome to the Future, Critical Metals’ Ventures Discover Reality

written by Jack Lifton | April 18, 2024

Way back in 2011 there were nearly 250 rare earth themed junior mining ventures looking at 400 “deposits” mainly in Canada and Australia. Today, just two of them are producing, [Lynas Rare Earths Limited](#) (ASX: LYC) and [MP Materials Corp.](#) (NYSE: MP) (the successor in interest to the bankrupt Molycorp of yore). These two ventures, even then, stood out from the pack by their common purpose of delivering a value-added product, individual separated (or blended) rare earth chemical forms, in the case of Lynas, and “magnets,” in the case of Molycorp. All of the others, without exception, stated that their saleable product would be a “mixed con.” This was the great “con” of the rare

earths' boom and bust of 2010-2013.

A concentrate of a mixture of all of the rare earths, from which the chemical elements that interfere with the separation of those rare earths into individual, or purposely blended combinations, of individual rare earth salts, is what is targeted to be produced at a mining operation where the ore is "mined," concentrated, cracked and leached, and then is chemically processed to remove elements that interfere with the next step, selective separation of the individual elements in a form required for the next step in the supply chain that ultimately results in a finished product for sale to consumers.

For the rare earths this concentrate is, for practical purposes of safety and economics, a mix of rare earth carbonate solids. This should have been the initial target of 2011's 250 rare earth juniors. It wasn't. They overwhelmingly (other than Lynas and Molycorp) did nothing to advance towards this target. That turned out to be a good thing, because the only non-Chinese customers for this "mixed con" before 2017 were Solvay in France (9,000 tpa capacity to produce individual rare earth salts), Silmet in Estonia (2,500 tpa), and assorted small operations in Asia, outside of China, with a combined capacity of perhaps 3,000 tpa. All of these bought their feedstock from China or (a tiny amount) from Russia at the time.

No 2011 junior sold a single gram of mixed con to the marketplace prior to 2017 (Lynas)

Why was the first 21st century, rare earth boom, such a bust?

Because none of them had the knowledge, education, experience or skill in processing or mineral economics to see that integration into a total rare earths supply chain targeted to a final product is necessary for **profitable operation**. Almost without

exception the profitable part of the rare earth supply chain is concentrated in the metals, alloys, and magnet making end, and the only way to make a mine and separation system profitable is to distribute costs along a total supply chain. (America's [Energy Fuels Inc.](#) (NYSE American: UUUU | TSX: EFR), which is operating on a total supply chain model through magnet alloys, is an exception, because it is able to make a profit selling a mixed carbonate due to the skill of its administrative and operation management and a unique, for North America, existing processing infrastructure).

If there is to be a domestic American, or European, total rare earth permanent magnet supply chain then there will have to be in place operating commercial rare earth separation systems, rare earth metals and alloys production, and rare earth permanent magnet production capability and capacity to support it.

In fact, if there are to be total domestic supply chains for any critical metals, then, not just a mine, but also all of the downstream elements of the supply chain have to be in place before that can happen.

I note that for the cobalt chemicals necessary for the production of lithium-ion battery cathodes, the Canadian integrated cobalt processing junior, Electra Battery Materials Corporation (TSXV: ELBM | OTCQX: FTSSF), has entered into a supply agreement for cobalt concentrates from the world's largest non-Chinese producer, Glencore, to process that concentrate into fine cobalt chemicals for the battery manufacturing industry in its existing Canadian facility. When and if Electra can produce cobalt concentrates from its company-owned deposits there will already be in place the downstream operations to support that. In the meantime, it will buy feedstocks from others, and/or also toll them for others.

Electra's management looks also to have given considerable thought to pricing, so as to ensure profitability.

This business model, to have in-house as much of the total final product supply chain as is necessary to be profitable, is the only practical business model for the production of critical metals and materials.

As of December 31, 2021, America's Energy Fuels (rare earths) and Canada's Electra (cobalt) are setting the pace for the future development of a North American critical metals' industry by commencing operations.

Happy New Year!