



Geopolitical risks and the mining industry: Looking beyond the Ukraine/Russia conflict

Introduction: Lapland's magic

In most people's minds, Lapland evokes images of magical Northern Lights and Santa Claus. The Swedish state-owned mining company, LKAB may have just added a third attribute, almost as magical: on January 12 2023, it announced that it had found one million tons of rare earth metals¹.

With current regulations and technology, it could take a decade for this find to make its way into your phone — however, the geopolitical context could speed up change on both fronts.

The world is increasingly dependent on those rare earth elements (REEs) for digital modern life: consumer goods such as smartphones, LED lights, electric cars etc, but also key components of defense systems, space technology and green energy transition technology. According to the European Commission, demand for these elements is expected to increase more than fivefold by 2030².

Much of the supply of REEs is coming from China, which accounts for 36% of the known global reserves and 61% of global production in 2022 according to the US

Geological Survey. The US comes a distant second with a 16% market share, followed by Myanmar 9% and Australia 8%³.

China's consistent strategy of mining and processing rare-earth minerals cheaply has made it convenient for western economies to outsource this messy business and uneconomical to develop it elsewhere — a perfect example of the convenience of the Ricardian model of trade and of unfettered globalisation. In his comparative advantage theory, the 19th century British economist David Ricardo stated that nations will gain an international trade advantage if they focus on producing goods at the lowest opportunity costs as compared to other nations.

However, this increasing dependence is making western leaders uneasy; understandably so, as REEs can easily be used as a geopolitical tool in disputes. In 2010, when Japan arrested the captain of a Chinese fishing boat which had rammed a Japanese Coast Guard vessel near the contested islands of Senkaku (Diaoyu in Chinese), China appeared to restrict exports of rare earths to Japan for two months.

¹ <https://www.washingtonpost.com/world/2023/01/13/rare-earth-metals-sweden-discovery/>

² https://ec.europa.eu/commission/presscorner/detail/en/STATEMENT_22_3643

³ <https://pubs.usgs.gov/periodicals/mcs2022/mcs2022-rare-earth.pdf>

Rare earth and key metals supply chains disruptions in Eastern Europe and Africa

With these tensions simmering in the background, the Russia/Ukraine conflict grabbed the headlines and made those supply chain dependencies considerably more visible to a wider audience.

Russia has large reserves of rare earth elements (17.5% — the same as Brazil and Vietnam) but sanctions have been restricting exports. The Canadian mining company Kinross Gold Corp is one of the many companies that had to go through rapid and costly divestments from their Russia-based operations, another immediate impact of the conflict. In July 2022 it sold all its Russian assets, including a gold mine, but for only half of the sale price initially agreed⁴.

The mineral wealth of Ukraine may not have been the main driver for the invasion but would have been a bonus. Ukraine is not only an agricultural “breadbasket” but also has reserves of minerals such as lithium oxide (a core mineral for modern batteries), copper, cobalt and nickel, as well as major energy deposits and precious metals such as titanium. Before March 2021, investors from Australia and China were trying to secure rights to Ukrainian lithium reserves⁵. Small changes in the supply can have a significant impact on global markets. Between July 2021 and Nov 2022, the price of lithium was multiplied by 6⁶. Price increases are largely driven by the growing demand for Electric vehicles, but tight availability is exacerbating the problems.

Supply chains of REEs and critical metals often rely on less than stable countries. More than 70% of the world’s cobalt is produced in the Democratic Republic of the Congo (DRC)⁷, a country riddled with human rights issues, corruption, ethnic conflict (the civil war killed over 5 million people since 1996), repeated Ebola outbreaks, and one of the worst transportation networks in the world, partly to due to President Mobutu not developing roads for fear of a coup against him. Now China is investing in the DRC transportation system in exchange for concessions for the mining of critical minerals⁸. For the rest of the world, diversifying away from China may require a closer look at these foreign direct investments.



Other African regimes such as Mali, Madagascar and the Central African Republic are propped up by a Russian mercenary conglomerate, the Wagner Group, known to have been involved in atrocities in Syria and Ukraine. Officially, the group trains local forces, provides security services to senior officials, and advises governments, but it also takes advantage of the situation to spread Russian influence and secure financial advantages, often being rewarded with mining concessions, for example in the Central African Republic, and uses profits to prop up Russia despite international sanctions⁹. In December 2022 at the US — Africa Leaders’ summit in Washington, Ghana accused neighbouring Burkina Faso of having contracted Wagner in exchange for a mining concession, dangerously close to Ghana’s border.

The growing hold of the Wagner group over African countries is a risk for western companies already operating in those areas. “These governments may be inclined to drive them out of the country, seize assets, withdraw a concession, punish trumped-up environmental violations, selectively block currency transfer, and with or without Wagner foment anti-Western sentiment within the population,” says Laura Burns, senior vice president for political risk at WTW. “And these are not hypothetical fears. Some companies appear to already have fallen victim to such actions¹⁰.”

⁴ <https://mqworld.com/2022/06/16/kinross-sells-russian-assets-at-half-the-previously-agreed-price/#:~:text=Thursday%2C%20June%2016th%2C%202022%20Canada%E2%80%99s%20Kinross%20Gold%20on,for%20%24340-million%2C%20compared%20with%20the%20%24680-million%20previously%20announced.>

⁵ <https://www.nytimes.com/2022/03/02/climate/ukraine-lithium.html>

⁶ <https://tradingeconomics.com/commodity/lithium>

⁷ <https://www.kitco.com/news/2022-02-02/Global-cobalt-production-hits-record-in-2021-as-mined-cobalt-output-in-DR-Congo-jumps-22-4.html#:~:text=%28Kitco%20News%29%20-%20The%20Democratic%20Republic%20of%20the,in%20DRC%20increased%20by%2022.4%25%20to%20120%2C000%20tonnes.>

⁸ <https://www.aspistrategist.org.au/how-china-wrested-control-of-the-congos-critical-minerals/>

⁹ <https://www.politico.com/news/2023/01/19/u-s-cable-russian-paramilitary-group-set-to-get-cash-infusion-from-expanded-african-mine-00078551>

¹⁰ <https://www.wsj.com/articles/russian-corporate-mercenaries-move-into-africa-wagner-group-russia-ukraine-mali-commerce-private-sector-concessions-gold-11662582748>

Friend-shoring of rare earth supply chains?

With the supply of raw materials visibly becoming more of a real geopolitical tool, countries are considering the resilience of their supply chains.

In February 2022, an overreliance on increasingly unfriendly supply chains led US President Biden to request a review of the domestic supply chains for REEs, medical devices, chips and other key resources¹¹. In March, the Department of Energy announced a \$30m investment to improve the security of the US domestic supply chain for REEs and other important minerals in battery-making such as cobalt and lithium.

REEs are a lot more abundant than their name suggests, but extracting, processing and refining the metals poses a range of technical, political, environmental and health risks that western countries have preferred to outsource to other regions rather than carrying out these activities in their own backyards.

Reducing the dependence on rare-earth minerals produced in China, Russia or unstable African countries and creating a friendly (not necessarily domestic) supply chain involves two main challenges: one, rethinking those entire supply chains and managing local environmental costs, and two, facing local opposition and the risk of foreign meddling.

Nimbyism fuelled by grayzone aggression

For every ton of rare earth, 2,000 tons of toxic waste are produced¹², some of which radioactive. No wonder then that such mining operations raise legitimate concerns by local citizens.

Nimbyism (“not in my backyard”) is nothing new but can be exacerbated by foreign interference. In her book “The Defender’s dilemma” (2021), Elisabeth Braw, WTW Research Network partner and senior Fellow at the American Enterprise Institute, defines grayzone-aggression as “the use of hostile acts outside the realm of armed conflict to weaken a rival country, entity or alliance”.

In recent years, a number of mining projects in the US (Texas and Oklahoma) and Canada have been targeted by Chinese-backed social media accounts. Since 2021, the Dragonbridge group, which works to advance China’s interests, has weaponized NIMBYism, supporting disinformation campaigns¹³; for example, orchestrating social media posts on Twitter and Facebook to look like Texas residents objecting to the new site on

environmental grounds. Kenton Thibaut, China fellow at the Atlantic Council’s Digital Forensic Research Lab, remarked that with environmental concerns being raised over some Chinese mining, it makes sense for China to punch back in kind. Mostly, given its dominance on this market, China would not doubt prefer to keep this leverage and may not hesitate to undermine Western rivals.

Although limited in what they can achieve, this type of intervention shows the inventiveness and microtargeting of western audiences. As opposed to Russia’s campaigns to influence politics in the US or the UK, Chinese grayzone aggressions are more economically focused. While politicians may be more aware of disinformation attacks, this is not something that private companies have had to deal with as much.

Western governments may also consider whether foreign stakes in their domestic operations is sustainable. In late 2022, Canada required China investors to immediately divest its holdings in three Canadian mining companies, due to growing concerns over national security¹⁴.

The other complication with onshoring rare earth supply chains is that this implies covering all the steps between mining and manufacturing. Turning lithium ore into the purer lithium carbonate or lithium hydroxide needed for batteries is a complex, expensive process. China controls two-thirds of the world’s lithium processing capacity. Ironically, lithium extracted from new mines in the US and Europe may still need to be shipped to China to be refined, a difficulty that the European Union is well aware of¹⁵.

Technology advances could make extraction easier, cleaner and possibly upcycling leftovers from existing mines and landfills. In all cases, this will require considerable investment in an industry that is often seen by electorates as polluting rather than critical to national security¹⁶.

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¹¹ <https://www.cnbc.com/2021/04/09/white-house-set-to-host-google-intel-ceos-to-discuss-computer-chip-supply-chain.html>

¹² <https://getrepowered.org/rare-earth-metals-recycle-technology/#:~:text=Oftentimes%2C%20metals%20are%20laced%20with%20radioactive%20materials%20from,ground%20and%20water%20around%20refining%20and%20mining%20sites.>

¹³ <https://www.mandiant.com/resources/blog/dragonbridge-targets-rare-earths-mining-companies>

¹⁴ <https://www.theguardian.com/world/2022/nov/03/canada-china-mining-companies-divest>

¹⁵ [https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/659426/EPRS_BRI\(2020\)659426_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/659426/EPRS_BRI(2020)659426_EN.pdf)

¹⁶ <https://foreignpolicy.com/2022/12/06/nimbyism-is-a-strategic-threat/>

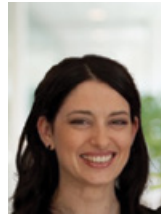
Conclusion: new frontiers, with their own geopolitical implications

Another unexplored frontier which could be explored and lead to further geopolitical tensions is the deep ocean seabed¹⁷. In parts of the Pacific and Indian oceans, manganese nodules can be found, exceptionally rich in 37 metals; initial estimates hint that seabed reserves could dwarf those on land. Yet deep sea mining is bound to raise environmental concerns in areas of rich and unexplored biodiversity.

The basic rules for ocean resources are provided by the United Nations Convention on the Law of the Sea, which came into force in 1994, which states that countries can control economic activities within 200 miles of their coastlines. A specialised authority, the International

Seabed Authority, regulates seabed mining, although the US did not join the UN Convention because of the controversial provision that some of the profits from commercial mining should be shared with the international community. Environmental rules for deep sea mining are still being drafted.

Securing those key metals and rare earth elements is going to be an endless list of trade-offs, offshoring versus friend-shoring or onshoring, terrestrial mining versus deep sea mining — all with their respective geopolitical complications.



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¹⁷ <https://theconversation.com/deep-seabed-mining-plans-pit-renewable-energy-demand-against-ocean-life-in-a-largely-unexplored-frontier-193273>

