



China's Rare Earth Dominance: Exploring Australia-India Partnership

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Summary

Recent threats by China to curb exports of rare earths have highlighted the vulnerability many countries face when importing these strategically important minerals. It has prompted like-minded countries like India and Australia, along with their Quad partners, to explore new avenues of partnership to counter Beijing's monopoly. This paper analyses the geopolitical and geoeconomics influences impacting the supply chains of rare earths.

Introduction

Rare earth elements (REEs) are 17 metallic elements comprising the lanthanide series and (usually) scandium and yttrium. Deemed strategically critical, REEs are a vital commodity with many industrial applications. For instance, the United States (US) relies on REEs to manufacture sophisticated weaponry, including the F-35 fighter jets and Virginia-class submarines.¹ REEs are also required in significant quantities to manufacture everyday items such as smartphones and electric vehicles. As the world heads towards a fourth industrial revolution, with an emphasis on eco-friendlier technologies, countries will require REEs in more significant numbers to ensure technological sophistication.

However, the entire rare earth supply chain is monopolised by a single country – China. In 2020, China accounted for more than 55 per cent of total global mining output and 85 per cent of globally refined rare earth products.² Notwithstanding China's natural advantage given its vast mineral deposits, Beijing came to dominate this industry through a combination of internal and external factors. In the 1980s, domestic, economic and socio-political reforms allowed China to reform its rare earth policy and render the country the preferred source for these globally. This included the nationalisation of rare-earth mineral deposits, low standards for labour and environmental rights and a significant incubation of refinement technologies. In other words, China out-competed other countries in producing REEs. China was ably assisted by liberal economics underpinned by America's emergence as a unipolar power in the late 1980s and early 1990s. The liberal international economic system privileged economic efficiency, interdependence and globalisation over national self-sufficiency and autarkic economic practices. Under the liberal model, China's rare earths dominance reflected the economic ideals of comparative advantage and fair division of economic labour and inculcated a political expectation of greater openness and acceptance

¹ Shubham Kalia, 'China explores rare earth export curbs to target U.S. defence industry: FT', *Reuters*, 16 February 2021. <u>https://www.reuters.com/article/us-usa-china-defence-idUSKBN2AG0C1</u>.

² Carl A Williams, 'China continues dominance of rare earths market to 2030, says Roskill', *Mining.com*, 26 February 2021. <u>https://www.mining.com/china-continues-dominance-of-rare-earths-markets-to-2030-says-roskill/-</u>.

of liberal principles within Chinese domestic politics. Both these assumptions have come a cropper: economic efficiency has not only allowed the Communist Party of China, (CPC) to tighten its control over the polity, but any economic monopoly has now been used in extending China's coercive diplomacy against its rivals. The country's dominance of the industry is just another facet of its economic coercion. China's monopoly has allowed it to gain substantial leverage throughout the supply chain. Subsequently, this has translated to economic and political power on the international stage.

The Establishment of China's Rare Earth Monopoly

Before the 1980s, the rare earths industry remained underdeveloped in China. American companies dominated the global production of REEs as byproducts of their mining operations.³ However, through a combination of internal reforms and external factors, Beijing developed its monopoly, whilst the US willingly relinquished theirs.

When the Cultural Revolution subsided, Chinese government officials embarked on a massive campaign of economic development. Exploiting the country's national resources and creating value-added products became a priority. With the development of new technological innovations, officials soon realised the importance of REEs, and China was in a unique position to exploit its natural advantage. Within its borders, deposits were discovered in Shandon, Sichuan, Fujian and Bayan Obo. Bayan Obo was the world's largest rare earth resource and accounted for about 45 per cent of the world's production.⁴ This concentration led Deng Xiaoping to famously declare that "while the Middle East has oil, China has rare earths".⁵ Later, Beijing declared that rare earths were a "protected strategic mineral". The declaration implied that foreign firms could only participate in the industry as part of a joint venture with Chinese firms.⁶ Centralised authority and expanding production meant that foreign entities were being outcompeted. These companies were unable to obtain a foothold in the market.

Once Beijing had secured its base of production domestically, attention was turned overseas. The "Go Out" national plan incentivised Chinese companies to invest in foreign rare earth companies and tap on global reserves.⁷ Chinese companies first began to flex their muscles in 1995 when a consortium of Chinese state-owned companies purchased a majority stake in Magnequech. In 2005, the China National Offshore Oil Cooperation submitted a bid to purchase the Mountain Pass Mine in California. In 2009, an attempted bid to purchase a majority stake in Lynas Corporation, the possessor of the Mount Weld Mine, one of the largest deposits of rare earths situated outside China, failed. Despite such setbacks, Chinese companies have fully embraced the strategic logic of economic

³ James Kennedy, 'China Solidifies Dominance in Rare Earth Processing (UPDATED)', National Defense, 21 March 2019. <u>https://www.nationaldefensemagazine.org/articles/2019/3/21/viewpoint-china-solidifiesdominance-in-rare-earth-processing.</u>

⁴ Sophia Kalantzakos, 'China and the Geopolitics of Rare Earths', *Oxford Scholarship Online*.

⁵ Mary Hui, 'How China built up its dominance in rare earths', *Quartz*, 30 October 2020. <u>https://qz.com/1924282/how-china-became-dominant-in-rare-earths/.</u>

⁶ Sophia Kalantzakos, op. cit.

⁷ Emily de la Bruyere and Nathan Picarsic, 'Absolute Competitive Advantage: Rare Earth Elements in China's Strategic Planning'. Actionable Geopolitical Insight, Horizon Advisory, June 2020.

consolidation. For government officials, it was essential to penetrate global reserves while maintaining and protecting local reserves.⁸

Despite this conscious strategy undertaken by the CPC, it is unlikely that Beijing would have achieved its dominance without the help of external conditions in the international system. Firstly, changes to the definition of source material for nuclear weapons by the US Nuclear Regulatory Commission and the International Atomic Energy Agency (IAEA) prompted REEs to be placed under new and extensive licensing, regulatory, disposal and liability rules.⁹ The cost of mining and refining REEs, already a costly venture, increased further for the US and other IAEA member states. China only held an observer status within the IAEA and was not obliged to comply with these new regulations.

Secondly, the 1980s and 1990s witnessed the pinnacle of liberalism in international affairs. The collapse of the Soviet Union ushered in an era of American hegemony and ideology. Politicians and scholars championed a liberalist world order as they felt that economic interdependence and efficiency would promote mutual benefits. Moreover, it was believed that economic integration would raise the cost of war and reduce the risk of great power contestations.¹⁰ Within this framework, international institutions were given elevated positions of power to guarantee the system's legitimacy. Hence, the US pushed for China's accession into the World Trade Organization. American companies would gain access to cheaper sources of labour, vast quantities of raw materials and were not bound by stringent domestic environmental regulations. In return, Washington granted Beijing the most favoured nation trading status, and this would open the door for the seamless exchange of goods, knowledge and technology. In the eyes of American policymakers, it was beneficial that China would do the dirty work of extracting rare earths while American companies sat at the end of the supply chain and manufactured value-added products.

Vulnerability Interdependence

The global dependency on China for REEs is multifaceted. Many countries either heavily rely or almost entirely rely on imports for their rare earths consumption, of which China is the leading supplier.¹¹ Compounding this quantitative dependence is the qualitative aspects. For now, product substitution is impossible. There are no available substitutes for REEs, and developing new technologies that bypass the need for REEs remain a distant possibility. Furthermore, developing recyclable sources of rare earths has proven costly and not worthwhile.¹² Although future research projects may yield results, it will require considerable amounts of time and money before new elements or technologies could be implemented on a massive scale. With many countries pledging to cut carbon emissions, the demand for rare earths will only increase.

⁸ Ibid.

⁹ Jamil Hijazi and James Kennedy, 'How the United States Handed China its Rare-Earth Monopoly', Foreign Policy, 27 October 2020. <u>https://foreignpolicy.com/2020/10/27/how-the-united-states-handed-china-itsrare-earth-monopoly/</u>.

¹⁰ Bruce Jones, 'China and the return of great power strategic competition', Brookings Institution, February 2020. <u>https://www.brookings.edu/research/china-and-the-return-of-great-power-strategic-competition/</u>.

¹¹ 'Critical Minerals in Australia: A Review of Opportunities and Research Needs', Geoscience Australia, 2018.

¹² Jessica Marshall, 'Why Rare Earth Recycling is Rare – And what we can do about it', *Ensia*, 7 April 2014. <u>https://ensia.com/features/rare-earth-recycling/</u>.

The fact that REEs are critical to many strategically essential sectors of the economy, the lack of available substitutes and the temporal and costly incursions required to create alternative supply chains have engendered a three-sided vulnerability dependence which many countries experience with Beijing. As Robert Keohane and Joseph Nye pointed out, vulnerability interdependence provides power resources to the actor controlling the asymmetrical relationship.¹³ Vulnerability interdependence takes on a strategic dimension as it cannot be alleviated in the short run by altering domestic policies. Countries exposed to vulnerability interdependence are at the mercy of external shocks in the international system.

Breaking China's Monopoly

Recently, Beijing has begun to leverage its commanding position in the rare earths market. Government officials would use this tactic as an escalatory measure to obtain concessions in response to geopolitical disputes. For instance, in 2010, Chinese government officials imposed a rare earths export ban on Japan during a territorial dispute.¹⁴ Recently, Chinese government officials have hinted at the possibility of export bans to countries deemed a threat to Beijing's national security.¹⁵ These threats have accelerated countries with conflict of interests with Beijing to diversify their supply chains. Like-minded countries are coming together to leverage upon their comparative advantages to mitigate the impacts of Beijing's geopolitical and geoeconomics threats.

The recent signing of the Memorandum of Understanding (MoU) on Cooperation in the field of Mining and Processing of Critical and Strategic Minerals between India and Australia highlights the growing partnership amongst like-minded countries. This MoU aims to increase trade, investment, research and development in rare earths mining, exploration and processing between the two countries. The partnership aims to leverage upon the competitive advantages of both countries and deliver on mutual benefits¹⁶.

The year 2020 signalled a sharp deterioration in relations between New Delhi and Beijing due to escalating border tensions and product boycotts. These actions have prompted Chinese government officials to hint at possible retaliation, including a rare earths export ban. India possesses a vast coastline rich in minerals and is estimated to account for six per cent of the world's rare earths reserves. However, the country only accounted for one per cent of global rare earths production in 2020.¹⁷ The mining industry remains

¹³ Robert O Keohane and Joseph S NyeJr, *Power and Interdependence*, (New York: Longman Pearson, 2012).

¹⁴ Keith Bradsher, 'Amid Tension, China Blocks Vital Exports to Japan', *The New York Times*, 22 September 2010. <u>https://www.nytimes.com/2010/09/23/business/global/23rare.html</u>.

¹⁵ 'China May Ban Rare Earth Tech Exports on Security Concerns', *Bloomberg News*, 19 February 2021. <u>https://www.bloomberg.com/news/articles/2021-02-19/china-may-ban-rare-earth-technology-exports-on-security-concerns</u>.

Keith Pitt, 'Australia and India sign critical minerals agreement', Government of Australia, 4 June 2020. <u>https://www.minister.industry.gov.au/ministers/pitt/media-releases/australia-and-india-sign-critical-minerals-agreement</u>.

¹⁷ 'Quad tightens rare-earth cooperation to counter China', Nikkei Asia, 11 March 2021. https://asia.nikkei.com/Politics/International-relations/Indo-Pacific/Quad-tightens-rare-earth-cooperationto-counter-China.

underdeveloped and has yet to realise its true potential. New Delhi's strategic interest is to diversify its sources of rare earths imports, and a partnership with Canberra can mitigate its vulnerability. Expertise and technological transfers can allow India to harness its indigenous sources of rare earths, and while domestic supply chains are being established, India could meet its rare earths demands by importing from Australia.

Similarly, 2020 also witnessed a souring of diplomatic relations between Canberra and Beijing. Several points of contestation include the origins of COVID-19 and trade disputes. China is by far Australia's largest trading partner, accounting for 39.4 per cent of goods exports and 17.6 per cent of services exports.¹⁸ As ongoing disputes continue to simmer, doubts persist over the resiliency of the Australian economy. There are worrying indications that Australia's gross domestic product might contract significantly should these disputes continue. It is in Canberra's interest to seek alternative trading partners. India's growing appetite for REEs and Australia's expertise seems a perfect fit. Australian mining companies can benefit from gaining exploration rights to India's reserves and can plug the gap should India's rare earths supply get cut. This would benefit one of the largest industries in Australia and help cushion the country's economic fallout.

However, it remains to be seen if this partnership would translate into meaningful outcomes. Establishing new supply chains from scratch would require time and considerable investment.¹⁹ Domestic politics may also hamper progress. For instance, environmentalists may oppose new mining contracts or production increases stipulated by the central government. These pressures cast doubts over the commitment of subsequent administrations to the partnership. Furthermore, Beijing could test the resolve of both parties by quickly reducing its quotas and flood the rare earths market. This would decrease the prices of REEs, making new investment projects costly. However, the India-Australia partnership feeds into the larger Quad narrative as all four countries seek to counter China along the entire supply chain. Australian companies have similarly teamed up with the US to fund rare earth exploration projects, and the transfer of expertise and technologies could incentivise the creation of lower-cost and cheaper recycling technologies. The partnership will provide a boost to the Quad's production capabilities.

Conclusion

Despite its idealistic rhetoric, the era of liberalisation has created new forms of power and new sites of power contestation. Interconnectedness and dependence have created a world whereby everything can be implied and used by the state as tools of war.²⁰ The rare earths industry is no exception. Before the 2010 Sino-Japanese crisis, under the banner of economic efficiency, many industrialised countries willingly gave up the production of REEs within their borders, and mining companies relocated to China to pursue cheaper labour

¹⁸ Tan Weizhen, 'Australia's growth may 'never return' to its pre-virus path after trade trouble with China, says economist', *CNBC*, 29 December 2020. <u>https://www.cnbc.com/2020/12/29/trade-war-with-china-australias-economy-after-covid-19-pandemic.html</u>.

¹⁹ 'GT Voice: Will Australia benefit from over-hyped rare-earth threat?', *Global Times*, 18 February 2021. <u>https://www.globaltimes.cn/page/202102/1215877.shtml</u>.

²⁰ Henry Farrell and Abraham L. Newman, 'Weaponized Interdependence: How Global Economic Networks Shape State Coercion', *International Security*, Vol 44, No. 1, pp. 42-79.

and lax environmental, health and safety regulations. The India-Australia partnership has helped create a mutually beneficial scenario where both countries benefit by reducing their dependence on China. Australia could become a reliable and leading export partner for India's REE demands. Also, Canberra could help India's mining sector realise its actual potential and enable it to tap on its indigenous endowments of rare earths. These are significant contributions that could help India realise its aspiration of becoming a US\$5 trillion (S\$6.65 trillion) economy by 2026-27. Similarly, India's massive and growing economy would provide significant amounts of investment into Australia. This would grow the Australian economy and provide more jobs and wealth to its society. Finally, the partnership could pave the way for further collaboration in other emerging critical sectors.

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