NEW ZEALAND'S CRITICAL MINERALS STRATEGY 2025: OPPORTUNITIES FOR INDIA – NEW ZEALAND

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The growing global demand for critical minerals has made resource security a strategic priority for many nations. New Zealand's recently released critical minerals strategy outlines a long-term vision for developing its mineral sector to support economic growth and sustainable resource management. For India, securing a stable supply of critical minerals is essential for advancing its clean energy transition, high-tech manufacturing, and infrastructure development. This article analyses New Zealand's critical minerals strategy and explores the potential for India-New Zealand collaboration in the critical minerals sector, focusing on trade, investment, sustainable mining practices, and technological exchange.

A Minerals Strategy for New Zealand to 2040

In January of 2025, the Government of New Zealand launched a Minerals Strategy along with a Critical Minerals List, to chart a strategic roadmap for the country's minerals sector. The document, entitled *"A Minerals Strategy for New Zealand to 2040"*, was released by Resources Minister, Shane Jones, with the aim of doubling exports to $3 billion by 2035.[1] Mr Jones released the documents at OceanaGold's Waihi Operation in Hauraki, where gold has been mined since the 1800s, with OceanaGold having acquired the mine in 2015.[2] The document highlights the high dependence of New Zealand upon critical minerals, which form the backbone of technology, infrastructure, and industry, while emphasising the need for a cohesive strategy to guide New Zealand's mineral sector. It also states that the absence of a clear vision creates risks, including potential disruptions in the supply of essential minerals and missed economic opportunities for New Zealanders. The document underlines that a well-defined strategy is necessary to secure access to vital resources and seeks to ensure that mineral development aligns with both, national interests and global trends.

New Zealand's *"Minerals Strategy to 2040"* emphasises that by proactively shaping its mineral future, New Zealand can establish a framework that reflects domestic needs, considers international geopolitical factors, and integrates responsible mining practices. As of June 2023, the value of mineral exports by New Zealand was $1.46 billion, with 5,290 people employed in the sector and $21.6 million received in royalties.[3] The current strategy aims to increase exports to $3 bn in 2035 and to create 7,000 regional jobs. It lists three

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[1] New Zealand Government, Ministry of Business, Innovation and Employment, "A Minerals Strategy for New Zealand to 2040", January 2025. https://www.beehive.govt.nz/sites/default/files/2025-01/202501%20A%20Minerals%20Strategy%20for%20New%20Zealand%20to%202040.pdf

[2] "Waihi Operation", Oceana Gold, https://oceanagold.com/operation/waihi/

[3] New Zealand Government, Ministry of Business, Innovation and Employment, "A Minerals Strategy for New Zealand to 2040", January 2025. https://www.beehive.govt.nz/sites/default/files/2025-01/202501%20A%20Minerals%20Strategy%20for%20New%20Zealand%20to%202040.pdf

desired features — indicated as "outcomes" of New Zealand's critical minerals strategy: *Productive, Valued and Resilient.* The first focuses upon streamlining processes to increase efficiency in obtaining permits and attracting foreign and domestic investment in the critical minerals sector. The outcome in respect of *"Value"* aims to maximise the economic benefits derived from mineral resources, while *"Resilience"* seeks to ensure supply-chain stability and also that the country's minerals sector can withstand economic and environmental challenges.[4] The strategy also includes two guiding principles of *"Te Tiriti O Waitangi"* and of being *"Responsible"*.

"Te Tiriti O Waitangi" is a treaty that was signed in 1840 between the British Crown and Māori chiefs, establishing a relationship based on governance, the protection of Māori rights, and land.[5] The guiding principle of *"Te Tiriti o Waitangi'* embeds values of partnership, participation, and protection within the strategy. This approach ensures that the Māori have a meaningful role in decision-making, with their rights, interests, and self-determination over land and resources being properly recognised. By integrating *"Te Tiriti"* principles, the strategy seeks to foster equitable economic opportunities while safeguarding the Māori cultural heritage.

Alongside this, responsible mineral development is central to the strategy, emphasising environmental sustainability, ethical supply chains, worker safety, and community engagement. The approach prioritises minimising ecological impact, ensuring ethical sourcing, and promoting circular economy principles to reduce reliance on virgin mineral extraction. The document also underlines that high-value conservation areas, such as "Schedule 4 Land" under the "Crown Minerals Act 1991", will remain protected.[6] By balancing economic growth with environmental stewardship and social responsibility, the strategy aims to secure a sustainable, inclusive, and resilient minerals sector for New Zealand's future.

New Zealand's "Critical Minerals List" comprises minerals that are both economically significant and vulnerable to supply disruptions, and play a crucial role in national security, technological advancement, and the transition to a low-emissions economy. These minerals are essential for international trade and supply-chain diversification, with their availability being impacted by domestic regulatory constraints, geopolitical factors, and global market dynamics. Industrial rock and building stone, aggregate, limestone, gravel, sand, and clay, are extracted in and around New Zealand.

Commodities Included in New Zealand's Critical Minerals List:

	Mineral	Key uses	Produced in New Zealand?
1	**Aggregate & Sand**	Roading, construction	Yes
2	**Aluminium**	Packaging, automotive, aerospace, defence	Yes
3	**Antimony**	Defence, electric vehicles (EVs), medical	Potential
4	**Arsenic**	Treatment of wood, electronics (including semiconductors)	Yes
5	**Beryllium**	Aerospace, electronics (including semiconductors)	No

[4] *Ibid* (A Minerals Strategy for New Zealand to 2040)
[5] Claudia Orange, "Te Tiriti o Waitangi – the Treaty of Waitangi", https://teara.govt.nz/en/te-tiriti-o-waitangi-the-treaty-of-waitangi/print
[6] New Zealand Government, Ministry of Business, Innovation and Employment, "A Minerals Strategy for New Zealand to 2040", January 2025. https://www.beehive.govt.nz/sites/default/files/2025-01/202501%20A%20Minerals%20Strategy%20for%20New%20Zealand%20to%202040.pdf
[6] "Waihi Operation", Oceana Gold, https://oceanagold.com/operation/waihi/

6	**Bismuth**	Electronics (data storage)	Potential
7	**Boron**	Permanent magnets, electronics, solar photovoltaic (PV) cells, fertiliser	No
8	**Caesium**	Cancer treatments, electronics, optics, aerospace, solar PV cells	Potential
9	**Chromium**	Stainless steel and other steel alloys	Potential
10	**Cobalt**	Battery and energy storage, steel alloys, fertiliser and livestock health	Potential
11	**Copper**	Power transmission, electronics, EVs, fertiliser and livestock health	Potential
12	**Fluorspar**	Aluminium production, insulating foams, refrigerants, steelmaking	No
13	**Gallium**	PV cells, electronics (including semiconductors)	No
14	**Germanium**	Electronics (including semiconductors)	No
15	**Gold**	Jewellery, electronics, dentistry, aerospace	Yes
16	**Graphite**	Battery and energy storage applications	No
17	**Indium**	Electronics, solders, batteries, PV cells, bearings	No
18	**Magnesium**	Lightweight alloys, fertiliser and livestock health	Potential
19	**Manganese**	Steel and aluminium alloys, batteries, catalysts, glass, electronics, fertiliser, and livestock health	No
20	**Metallurgical coal**	Steelmaking, industrial processes	Yes
21	**Molybdenum**	Steel alloys and high temperature alloys, fertiliser and livestock health	No
22	**Nickel**	Stainless steel and other steel alloys, battery and energy storage	No
23	**Niobium**	High-temperature superalloys	No
24	**Phosphate**	Fertiliser, battery and energy storage applications	Potential
25	**Platinum Group**	Catalysts, hydrogen fuel cells, EVs, electronics, communications	Potential
26	**Potash**	Fertiliser	No
27	**Rare Earth Elements**	Permanent magnets, glass polishing, ceramics, metal alloys, LEDs, lasers	Yes
28	**Rubidium**	Medical, electronics	No
29	**Selenium**	PV cells, electronics, fertiliser and livestock health	No
30	**Silicon**	Glass, casting sand, nanomaterials, electronics	Yes
31	**Strontium**	Magnets, alloys, paints	No
32	**Tellurium**	PV cells, electronics	No
33	**Titanium**	Aerospace, medical	Yes
34	**Tungsten**	Tools for drilling, mining and cutting	Potential
35	**Vanadium**	Steel and titanium alloys, catalysts, magnets, coatings, battery and energy storage applications	Yes
36	**Zinc**	Anodising, corrosion protection, fertiliser and livestock health	No
37	**Zirconium**	Fuel cells, auto catalysts, bearings	Yes

Source: GlobalData, adapted from *"A Critical Minerals List for New Zealand, January 2025"*

New Zealand's mining sector contributes significantly to its economy. In the year ending March 2024, the country's mining industry contributed approximately 2.2 billion NZD to the national GDP.[7] Given that the total GDP for this period was about 262.92 billion USD, or roughly 420 billion NZD, the mining sector's contribution equates to approximately 0.5% of the total GDP. Resources such as coal, iron ore, gold, and silver are mined by the thousands of people directly employed in that industry. On the other hand, some see this as part of a broader government retreat from climate commitments, with experts suggesting New Zealand is easing green policies to boost the economy.

[7] L Granwal, "Gross domestic product (GDP) of the mining industry in New Zealand from 2019 to 2024", Statista, January 30, 2025, https://www.statista.com/statistics/1012085/new-zealand-gdp-of-mining-industry/

Gold and metallurgical coal are key additions to the critical minerals list.

> New Zealand has a rich gold mining history, dating back to the 1860s gold rush.[8] Despite producing less gold than Australia, New Zealand remains a key gold-mining nation in the Indo-Pacific, with the Macraes Mine leading output in 2023.[9] However, similar to coal, overall gold production has declined over the past decade. A range of factors is responsible for this decline.[10] The decrease in the production of gold is attributed to major resource depletion. After extensive mining since the 19th century gold rushes, accessible gold reserves have diminished, leading to reduced production. The COVID-19 pandemic also led to operational challenges and restrictions, leading to less profitable mining ventures, especially for smaller-scale gold operations that were once prevalent in the country.[11]
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> While coal is a key energy-source, much of it is exported, although exports have declined over the past seven years, with current production being significantly lower than that of a decade ago. Coal is found in regions of the country such as Waikato and Taranaki in North Island and the West Coast, Otago, and Southland in South Island, with the West Coast producing the most.[12] Organisations such as GNS Science have recommended excluding coal to align with Australia and the country's net-zero 2050 goal,[13] and New Zealand's commitment to reducing carbon emissions has, indeed, prompted a transition from coal to renewable energy sources, decreasing coal demand. Extant government policies include prohibiting new coal boilers in manufacturing and aiming to phase out existing ones by 2037, which have further reduced both production and consumption of coal.[14]

India's Critical Minerals Landscape

Against the foregoing background of New Zealand's critical minerals strategy, it is essential to examine India's critical minerals landscape, including its resource potential, growing demand, and strategic initiatives to secure supply chains. By identifying complementary strengths and resource needs, India and New Zealand can explore areas of collaboration to support mutual economic and strategic interests.

India's Ministry of Mines defines critical minerals as *"those minerals which are essential for economic development and national security, the lack of availability of these minerals or even concentration of existence, extraction or processing of these minerals in few geographical locations may lead to supply chain vulnerability and disruption".*[15]

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[8] L Granwal, "Gross domestic product (GDP) of the mining industry in New Zealand from 2019 to 2024", Statista, January 30, 2025, https://www.statista.com/statistics/1012085/new-zealand-gdp-of-mining-industry/

[9] Ibid

[10] "Gold Ore Mining in New Zealand - Market Research Report (2014-2029)", IBIS World, Last Updated: January 2024, https://www.ibisworld.com/new-zealand/industry/gold-ore-mining/68/

[11] Ibid

[12] New Zealand's Minerals and Petroleum Industry, Mineral Statistics, Coal, https://www.nzpam.govt.nz/nz-industry/nz-minerals/minerals-statistics/coal#:~:text=New%20Zealand%20has%20extensive%20coal,skewed%20towards%20low%20rank%20coals.

[13] Eve Thomas, Energy Monitor, "Which governments are backpedalling on climate commitments?", August 21, 2024, https://www.energymonitor.ai/features/governments-are-backpedalling-on-climate-commitments-who-are-the-culprits/

[14] New Zealand Government, "Government Ban on New Coal Boilers in Place" June 2023, https://www.beehive.govt.nz/release/government-ban-new-coal-boilers-place

[15] Government of India, Ministry of Mines, Critical Minerals for India, "Report of the Committee on Identification of Critical Minerals", June 2023, https://mines.gov.in/admin/download/649d4212cceb01688027666.pdf

In the fiscal year 2023-24, India's mining and quarrying sector contributed ₹5,25,881 crore (~$63.5 billion USD), making up 1.5% of India's GDP (estimated at $4.27 trillion).[16] Historically, the share of mining in India's GDP over the past decade has been 2.1–2.5% but this has now declined slightly. In FY22, for instance, the sector contributed 2.3%, down from 2.5% in FY18.[17] Mining is a smaller part of India's GDP compared to that of other major mining economies. For example, in 2022, mining contributed 12% to Australia's GDP and 7% to South Africa's GDP.[18]

While the percentage share of mining in India's GDP has declined, its absolute value (₹5.26 lakh crore) has grown, largely due to the overall expansion of India's economy.[19] Thus, the value of mining within India's GDP increased from ₹76,877 crore ($9.25 billion USD) in Q3 FY23 to ₹82,680 crore ($9.95 billion USD) in Q3 of FY24. This suggests that while there is growth in the sector it is at a slower pace than the rest of the economy. In other words, India's mining sector is growing in absolute terms but declining in its relative contribution to the national GDP. Investments like JSW Group's steel plant in Andhra Pradesh indicate ongoing industrial reliance on mining.[20] It remains crucial for raw material supply but lacks the growth momentum seen in other mining-heavy economies. The sector almost certainly needs policy support, investment, and reforms, so as to boost its share in the national GDP and to match global benchmarks.

In 2023, the Ministry of Mines identified 30 critical minerals deemed essential for the nation's economic development and national security. (**Table 2** refers)

Usage and Availability of Identified Critical Minerals

	Critical Mineral	Major Applications	Availability in India
1	**Antimony**	Flame retardants, lead-acid batteries, lead alloys, plastics (catalysts and stabilizers), glass and ceramics	No proven reserves; inferred reserves in Lahul & Spiti, Himachal Pradesh. Obtained as a by-product in lead-zinc-silver smelting.
2	**Beryllium**	Computer, electronic, and optical products	Not available; entirely imported.
3	**Bismuth**	Pharmaceuticals, casting of iron	Not available; entirely imported.
4	**Cadmium**	Electrical equipment, chemical products, solar cells, electroplating	Recovered as a by-product of zinc smelting and refining.
5	**Cobalt**	EV batteries, aerospace, pigments and dyes	Not available; entirely imported.
6	**Copper**	Electrical wiring, solar panels, automotive industry	Domestic production meets only 4% of demand; significant imports required.
7	**Gallium**	Semiconductors, LEDs, thermometers, barometric sensors	Recovered as a by-product of alumina production (e.g., HINDALCO, NALCO).
8	**Germanium**	Optical fibres, satellites, solar cells, infrared night vision	Not available; entirely imported.
9	**Graphite**	Batteries, lubricants, fuel cells for EVs	9 million tonnes of reserves exist.
10	**Hafnium**	Superalloys, catalysts, semiconductors, nuclear reactors	Present in zirconium compounds; IREL and KMML produce zircon.
11	**Indium**	Electronics (laptops, LED monitors/TVs, smartphones)	Not available; entirely imported.

[16] Government of India, Ministry of Mines, Mineral Production, https://mines.gov.in/webportal/nationalmineralscenario
[17] FICCI, Deloitte, *"Indian Mining Industry: The Amrit Kaal Journey",* March 2024, https://www2.deloitte.com/content/dam/Deloitte/in/Documents/energy-resources/in-eri-the-indian-mining-industry-noexp.pdf
[18] *Ibid* (*Indian Mining Industry: The Amrit Kaal Journey*)
[19] Government of India, Ministry of Mines, Critical Minerals for India, "Report of the Committee on Identification of Critical Minerals", June 2023, https://mines.gov.in/admin/download/649d4212cceb01688027666.pdf
[20] FICCI, Deloitte, *"Indian Mining Industry: The Amrit Kaal Journey",* March 2024, https://www2.deloitte.com/content/dam/Deloitte/in/Documents/energy-resources/in-eri-the-indian-mining-industry-noexp.pdf

	Critical Mineral	Major Applications	Availability in India
12	**Lithium**	EV batteries, rechargeable batteries, glassware, ceramics, lubricants	5.9 million tonnes inferred resources in Salal-Haimana, Jammu & Kashmir.
13	**Molybdenum**	Steel alloys, lubricants, medical applications	Mineable reserves available in Harur, Tamil Nadu.
14	**Niobium**	Jet engines, rockets, construction, superconducting magnets, MRI scanners	Not available; entirely imported.
15	**Nickel**	Stainless steel, solar panels, aerospace, EVs	Domestic production through Vedanta's NICOMET plant in Goa.
16	**Platinum Group Elements (PGE)**	Jewelry, medical devices, military electronics, LCDs, turbine blades	Found in Nilgiri, Boula-Nuasahi, Sukinda (Odisha), and Karnataka.
17	**Phosphorus**	Fertilisers, detergents, food additives, animal feed	Found in Rajasthan, Jharkhand, and Madhya Pradesh.
18	**Potash**	Fertilisers, explosives, road de-icing	Deposits in Rajasthan, Madhya Pradesh, and Uttar Pradesh.
19	**Rare Earth Elements (REEs)**	Permanent magnets, batteries, electronics, defence, aviation	India has 11.93 million tonnes of monazite-bearing beach sand reserves.
20	**Rhenium**	Superalloys, aerospace, petroleum catalysts	Not available; entirely imported.
21	**Selenium**	Pigments, photocells, solar cells, photocopiers, stainless steel	Not available; entirely imported.
22	**Silicon**	Semiconductors, electronics, transport equipment, paints	India produced 59,000 metric tonnes in 2022, ranking 12th globally.
23	**Strontium**	Aluminium alloys, pigments, glass, pyrotechnics	Not available; entirely imported.
24	**Tantalum**	Capacitors, superalloys, medical technology	Not available; entirely imported.
25	**Tellurium**	Solar power, thermoelectric devices, rubber vulcanizing	Not available; entirely imported.
26	**Tin**	Soldering, metal packaging, home decor	Produced in concentrates and metal form in Chhattisgarh.
27	**Titanium**	Paint pigments, aircraft, spacecraft, submarines, steel alloys	Found in Tamil Nadu, Andhra Pradesh, Odisha, Kerala, Gujarat, Maharashtra.
28	**Tungsten**	Hard materials, cutting tools, superalloys, oil drilling	Not available; entirely imported.
29	**Vanadium**	Steel alloys, military armour, superconducting magnets	24.63 million tonnes of vanadium ore reserves in India (as of 2015).
30	**Zircon**	Nuclear fuel rods, advanced ceramics, electronics	Found in beach sands of Kerala, Tamil Nadu, Andhra Pradesh, Odisha, Gujarat.

Table 2: Source: Ministry of Mines, Critical Minerals for India, *"Report of the Committee on Identification of Critical Minerals"*, June 2023 (compiled by the author)

While the report, as shown in **Table 3** highlighted India's complete import dependency for ten critical minerals, it did not fully address a far more pressing concern — the extent and nature of dependence upon China. The extraction and processing of critical minerals are largely dominated by a few countries, and China is in the vanguard of these. As a consequence, China's dominance in critical minerals significantly impacts the supply chains of countries such as India — and New Zealand — which rely upon imports for these essential resources. India relies heavily on imports for critical minerals such as lithium, cobalt, and nickel, with demand expected to more than double by 2030. Of great concern in the present and foreseeable geopolitical milieu, is the fact that India's dependence upon imports for its needs of lithium and cobalt is predominantly upon China, which also commands more than 60% of global lithium-ion battery production.[21]

[21] The Economic Times, "Energy transition: India remains highly dependent on imports of critical minerals, says report", October 2024, https://economictimes.indiatimes.com/news/economy/foreign-trade/energy-transition-india-remains-highly-dependent-on-imports-of-critical-minerals-says-report/articleshow/114680634.cms

India's Net Import Reliance for Critical Minerals (2020)			
	Critical Mineral	**Import Percentage**	**Major Sources of Import**
1	Lithium	**100%**	Chile, Russia, China, Ireland, Belgium
2	Cobalt	**100%**	China, Belgium, the Netherlands, the US, and Japan
3	Nickel	**100%**	Sweden, China, Indonesia, Japan, and the Philippines
4	Vanadium	**100%**	Kuwait, Germany, South Africa, Brazil, and Thailand
5	Niobium	**100%**	Brazil, Australia, Canada, South Africa, and Indonesia
6	Germanium	**100%**	China, South Africa, Australia, France, and the US
7	Rhenium	**100%**	Russia, the UK, the Netherlands, South Africa, and China
8	Beryllium	**100%**	Russia, the UK, the Netherlands, South Africa, and China
9	Tantalum	**100%**	Australia, Indonesia, South Africa, Malaysia, and the US
10	Strontium	**100%**	China, the US, Russia, Estonia, and Slovenia
11	Zirconium (zircon)	80%	Australia, Indonesia, South Africa, Malaysia, and the US
12	Graphite(natural)	60%	China, Madagascar, Mozambique, Vietnam, and Tanzania
13	Manganese	50%	South Africa, Gabon, Australia, Brazil, and China
14	Chromium	2.50%	South Africa, Mozambique, Oman, Switzerland, and Turkey
15	Silicon	<1%	China, Malaysia, Norway, Bhutan, and the Netherlands

Table 3: Source: Critical Minerals for India, Ministry of Mines

China has discovered 173 types of minerals, including 13 energy minerals, 59 metallic minerals, and 95 non-metallic minerals.[22] In 2020, China's cobalt-refining capacity was approximately 166,000 tonnes per year, with its refining facilities operating at about 60% capacity.[23] Additionally, China accounts for more than a third of the world's copper and nickel processing. China's extensive control over critical minerals presents significant supply chain challenges for both, India and New Zealand, prompting these nations to seek alternative strategies to ensure resource security. It is obvious that Indo-Pacific nations need to maximise their domestic resources and engage in global supply chains through diverse international partnerships across the mining-, processing-, assembly-, and end-use industries.

While India is currently exploring trilateral cooperation with France and Japan, the India-New Zealand relationship also stands to gain from bilateral cooperation. At the 26th Conference of Parties (COP26) in Glasgow, Prime Minister Narendra Modi outlined India's climate action plan, known as the *Panchamrit* strategy, which includes the following five commitments:

1. **Non-Fossil Energy Capacity**: Achieve 500 gigawatts (GW) of non-fossil energy capacity by 2030.
2. **Renewable Energy Consumption**: Source 50% of energy requirements from renewable sources by 2030.
3. **Emission Reduction**: Reduce total projected carbon emissions by one billion tonnes by 2030.
4. **Carbon Intensity Reduction**: Lower the carbon intensity of the economy by 45% by 2030, relative to 2005 levels.

[22] Ministry of Natural Resources, PRC, Geological Publishing House, Beijing "China Mineral Resources" 2023, http://chinageology.cgs.cn/fileZGDZYW/attachments/pdf/74238829-1ff5-44a6-9d1f-65025b387c6a.pdf
[23] Ji Won Moon, US Geological Survey, The Mineral Industry of China in 2020-2021, "2020-2021 Minerals Handbook", May 2024, https://pubs.usgs.gov/myb/vol3/2020-21/myb3-2020-21-china.pdf

5. **Net-Zero Emissions**: Achieve net-zero emissions by 2070. [24]

These five commitments underscore India's dedication to transitioning to sustainable energy and addressing climate change challenges.

Recommendations

Given these commitments, India and New Zealand need to develop complimentary policies and regulatory frameworks for ethical and environmentally responsible mining. By fostering investment, trade, research, and security cooperation, such a dyadic partnership would enhance resource security and economic resilience in both nations. The following policy-relevant recommendations are offered for consideration by the Governments of both nations:

(1) A key area of collaboration lies in investment and mineral exploration, where Indian mining firms such as Vedanta, Hindalco, NMDC, and ONGC can expand their operations by investing in exploration projects in New Zealand. At the same time, New Zealand-based companies like Bathurst Resources, Chatham Rock, and OceanaGold could partner with their Indian counterparts for mineral extraction and processing, promoting joint ventures that encourage responsible resource utilisation. Additionally, India and New Zealand can establish pilot projects for sustainable extraction techniques, including bio-mining and deep-sea mineral exploration, contributing to the development of eco-friendly and efficient resource utilisation strategies.

(2) In the domain of scientific research and technological exchange, joint research and development (R&D) efforts need to be focused upon advanced mineral processing and sustainable extraction technologies. Collaboration between the India's "National Institute of Oceanography" (NIO) and New Zealand's "National Institute of Water and Atmospheric Research Ltd" (NIWA) could lead to cooperative and collaborative deep-sea mining research in the South Pacific, ensuring that mineral exploration aligns with marine conservation priorities. Both nations can further advance low-carbon mineral processing technologies through partnerships between, say, the Indian Institutes of Technology (IITs) and New Zealand's University of Otago, thereby strengthening their commitment to sustainable industrial growth. Further, enhancing geospatial mapping for resource discovery by leveraging expertise from Geoscience Australia, the Geological Survey of India (GSI), GNS Science (New Zealand), and the New Zealand Institute for Minerals to Materials Research (NZIMMR) can facilitate more efficient mineral identification and extraction.

(3) Trade and resource-collaboration form another cornerstone of this partnership. India, with its significant reserves of Rare Earth Elements (REEs), titanium, and zirconium, can play a crucial role in supplying minerals that New Zealand requires in greater quantities than those that it produces. Similarly, New Zealand can benefit from India's support in the export and refining of copper and manganese, minerals that are scarce in New Zealand but essential for industrial applications. Establishing long-term supply agreements between both countries can promote market stability, decrease reliance on external sources, and create a more resilient critical minerals supply chain.

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[24] Government of India, Ministry of External Affairs, "National Statement by Prime Minister Shri Narendra Modi at COP26 Summit in Glasgow", November, 2021, https://www.mea.gov.in/Speeches-Statements.htm?dtl/34466/National+Statement+by+Prime+Minister+Shri+Narendra+Modi+at+COP26+Summit+in+Glasgow

(4) A strategic partnership in clean-energy supply-chains can further enhance mutually beneficial collaboration between the two nations. Joint initiatives could focus upon the development of EV battery mineral supply-chains, particularly in terms of the sourcing and processing of cobalt, graphite, and lithium. Partnerships between, say, India's "Tata Chemicals" or "JSW Energy" and New Zealand's "Meridian Energy" can strengthen the value chain for these essential minerals. Additionally, India's National Green Hydrogen Mission and New Zealand's expertise in renewable energy can facilitate joint R&D efforts on hydrogen storage materials, particularly utilising Nickel, and Platinum Group Elements (PGEs). These collaborations would contribute to advancing global clean energy goals while ensuring both nations benefit from secure and ethical mineral supply chains.

(5) Beyond trade and research, maritime security and logistics infrastructure present further opportunities for cooperation. As both nations seek to enhance mineral shipments and supply chain security, strengthening Indo-Pacific naval coordination between the Indian Navy and the Royal New Zealand Navy (RNZN) can ensure the safe and efficient transportation of critical minerals. New Zealand's expertise in marine conservation and sustainable seabed mining regulations can be leveraged to promote ethical resource extraction while balancing economic and environmental priorities. Additionally, joint investments in port infrastructure, particularly in Indian ports such as Visakhapatnam and Kandla, and New Zealand's ports such as Auckland and Tauranga, can improve the efficiency of mineral trade logistics and exports.

(6) To institutionalise these collaborative efforts, India and New Zealand should develop a Bilateral Critical Minerals Agreement under multilateral frameworks such as the Indo-Pacific Economic Framework for Prosperity (IPEF). Establishing a joint working group between India's Ministry of Mines and New Zealand's Ministry of Business, Innovation & Employment (MBIE) would facilitate government-level engagement, policy alignment, and investment promotion.

Conclusion

An India-New Zealand Critical Minerals Partnership has the potential to create a robust, mutually beneficial framework that strengthens resource security, technological innovation, and sustainable economic growth. By leveraging each country's strengths and utilising multilateral platforms, this collaboration can enhance supply chain resilience, support the global transition to a greener economy, and integrate responsible maritime exploration strategies. Through a combination of investment, trade agreements, research initiatives and security cooperation, India and New Zealand can establish a future-focused, critical minerals partnership that benefits both nations and the global economy.

About the Author

Ms Kripa Anand is a Research Associate at the National Maritime Foundation (NMF). Her research encompasses maritime security issues, with special focus upon the manner in which India's own maritime geostrategies are impacted by the maritime geostrategies of the island-States of Oceania in general and Australia and New Zealand in particular. She may be reached at ocn1.nmf@gmail.com.